THE REPUBLIC OF THE PHILIPPINES
NATIONAL ECONOMIC AND DEVELOPMENT AUTHORITY
NATIONAL WATER RESOURCES BOARD

THE REPUBLIC OF THE PHILIPPINES

DATA COLLECTION SURVEY FOR NATIONAL WATER RESOURCES DEVELOPMENT AND MANAGEMENT PLAN IN THE REPUBLIC OF THE PHILIPPINES（QCBS）

FINAL REPORT

SUPPORTING REPORT (1)

JULY 2023

JAPAN INTERNATIONAL COOPERATION AGENCY

NIPPON KOEI CO., LTD.
CTI ENGINEERING INTERNATIONAL CO., LTD.
JAPAN WATER AGENCY

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FINAL REPORT: SUPPORTING REPORT (1)

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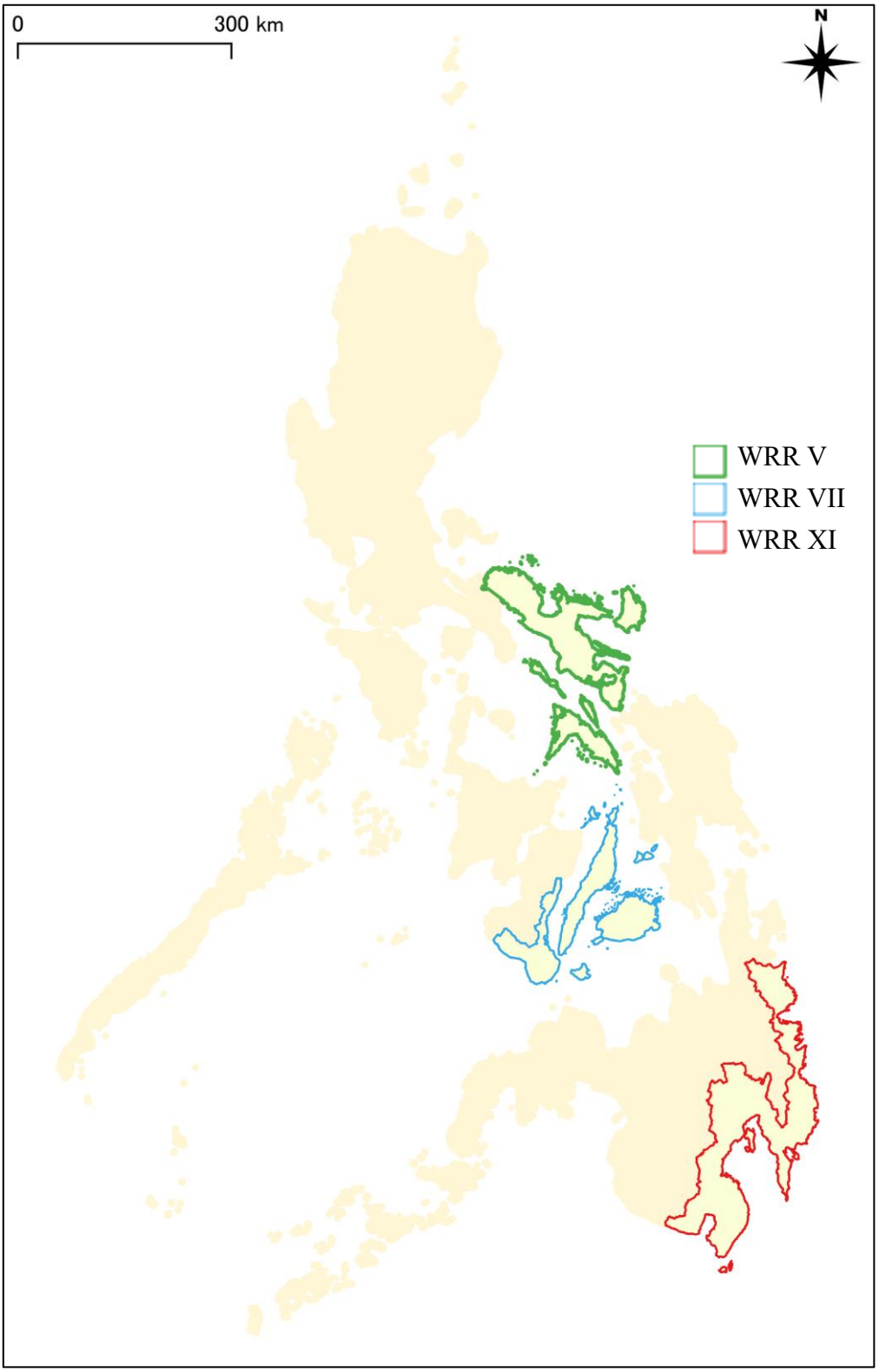
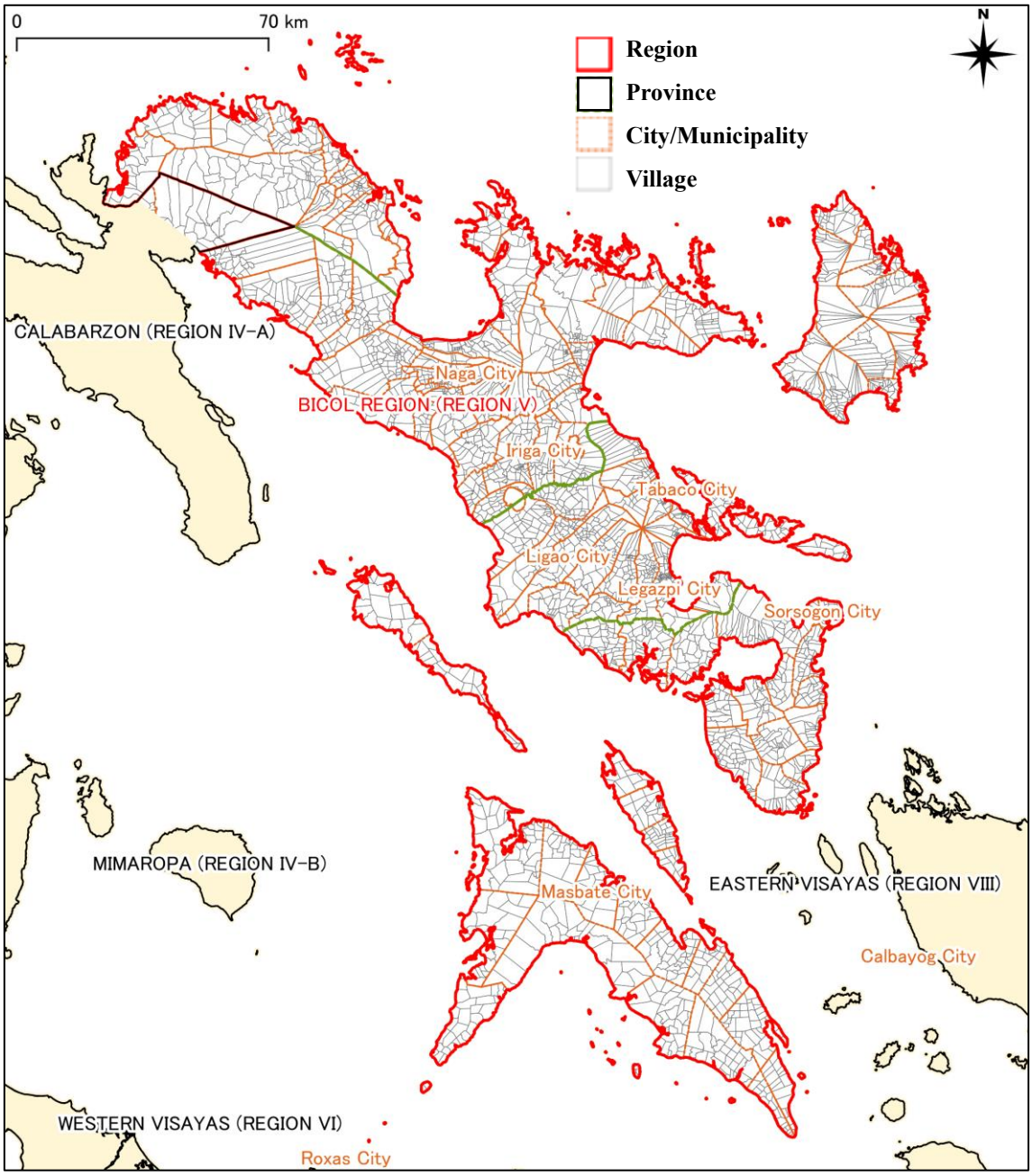


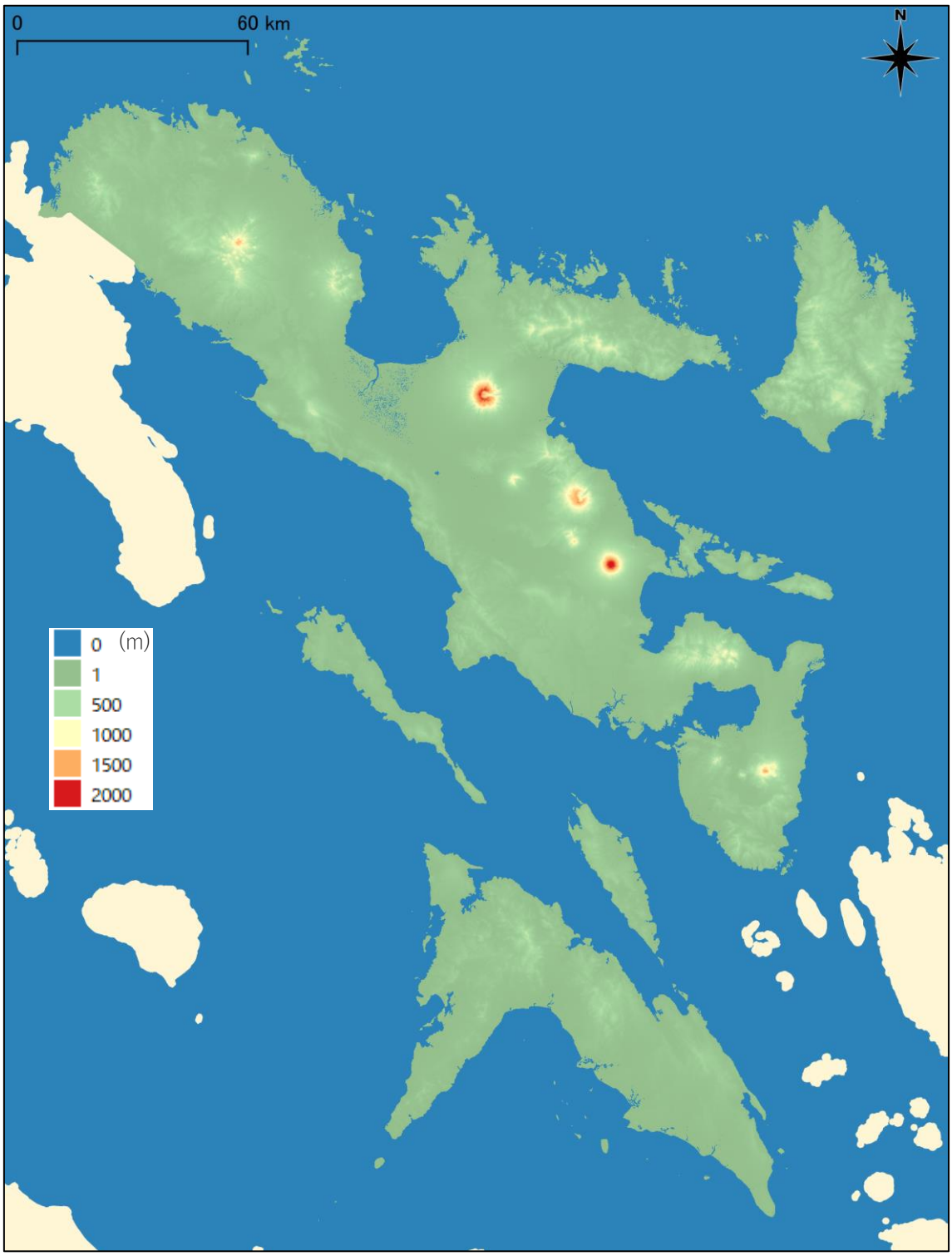
Source: https://www.philatlas.com/regions.html

Figure A-1 Priority Water Resources Regions (WRR V, WRR VII, WRR XI)



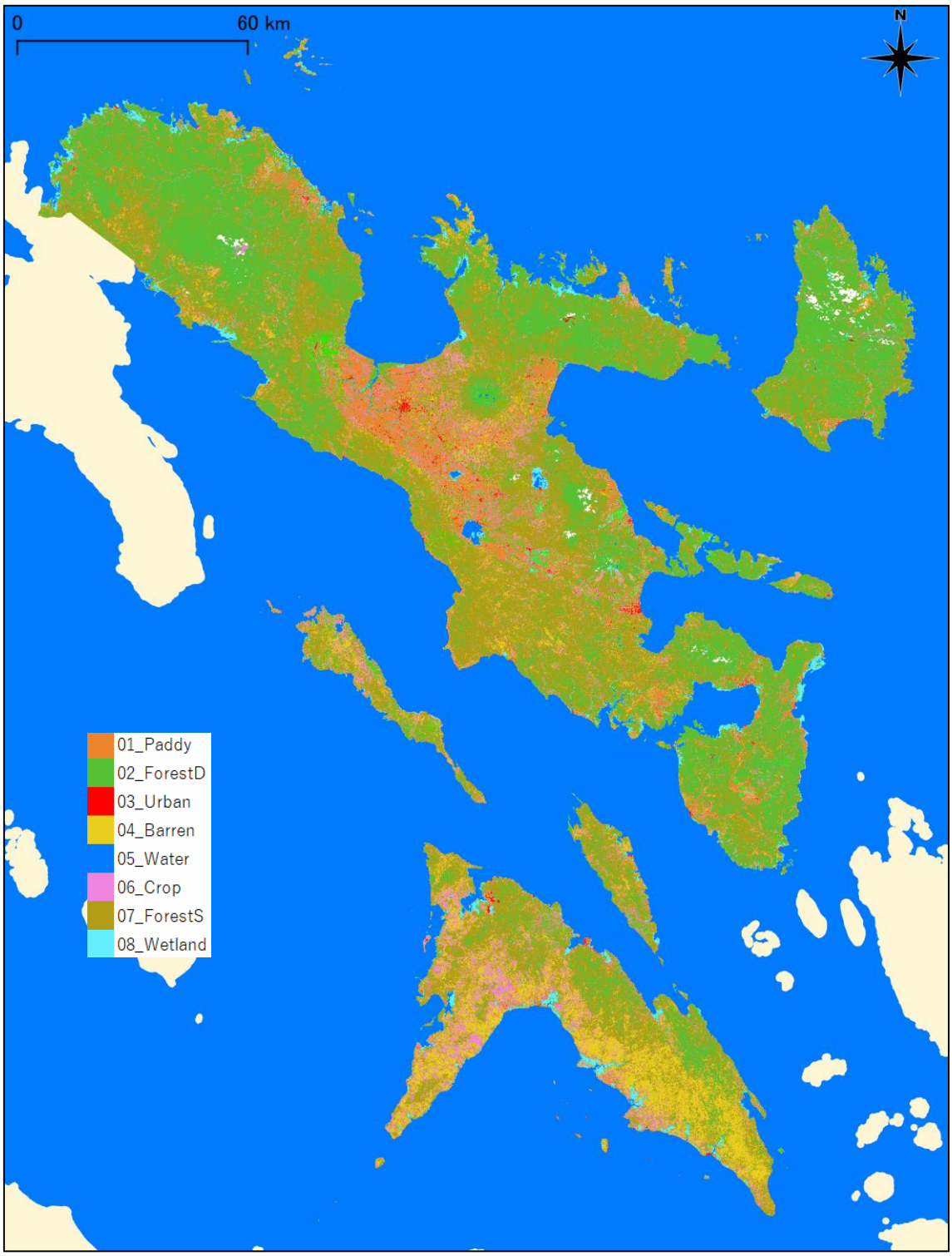
Source: https://www.philatlas.com/regions.html

Figure A-2 WRR V: Administrative Boundaries



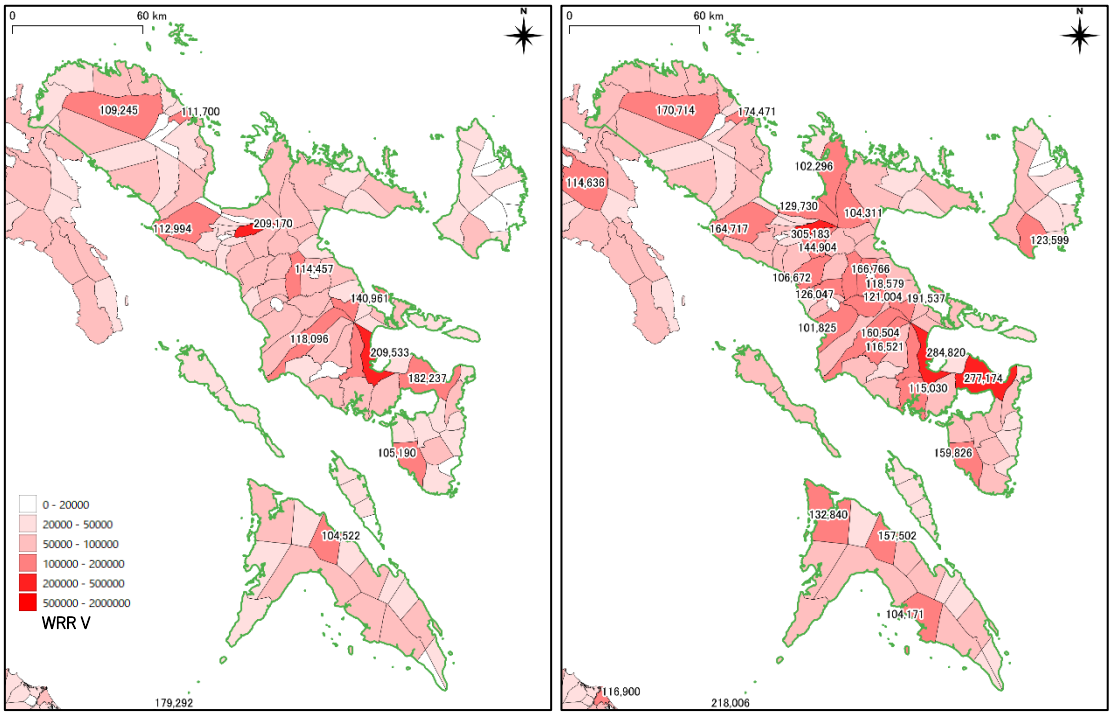
Source: NASA/USGS

Figure A-3 WRR V: Digital Elevation/Terrain Model (SRTM)



Source: JICA Survey Team using Landsat series data

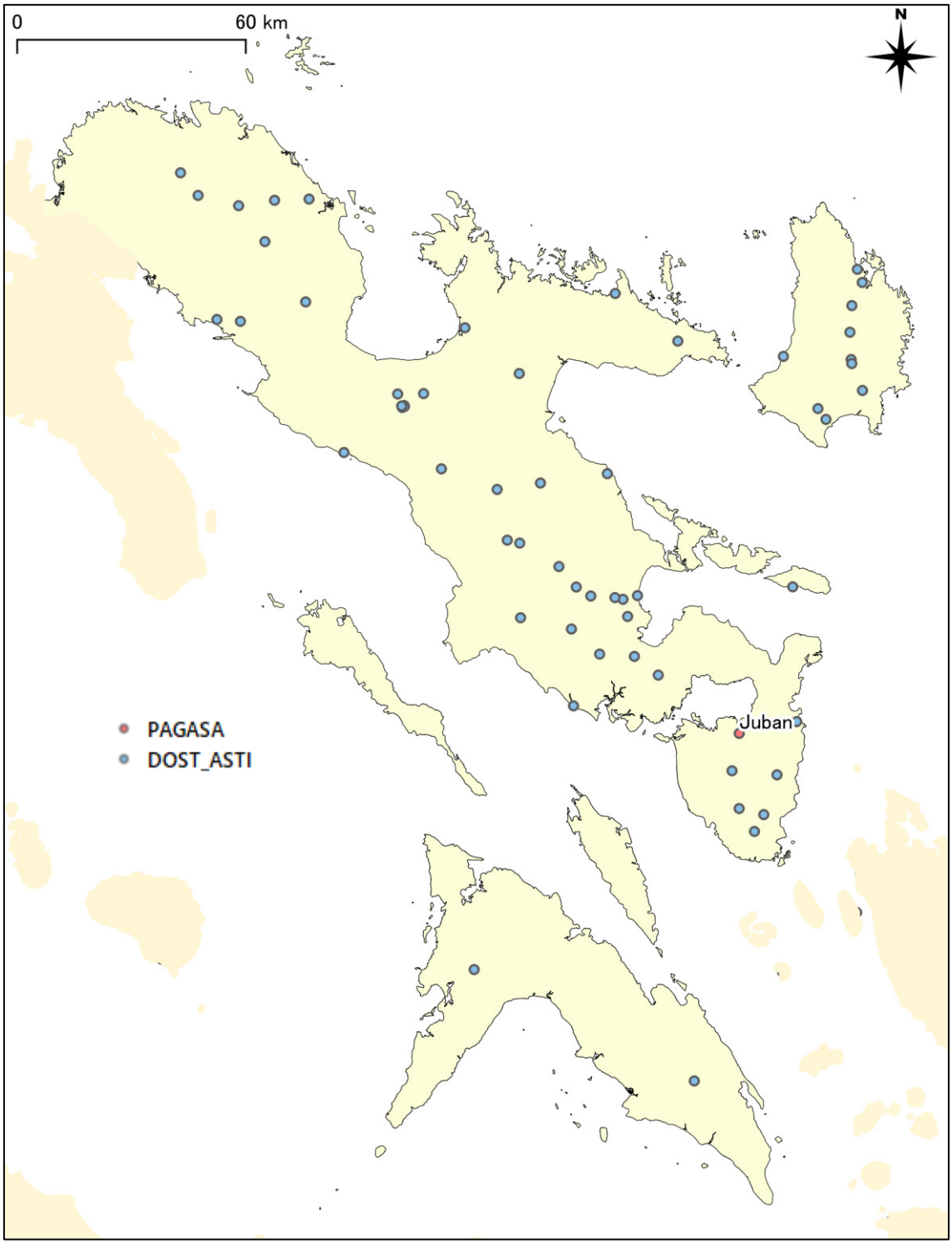
Figure A-4 WRR V: Land cover/Land use map (2020, 10m)



Source: JICA Survey Team

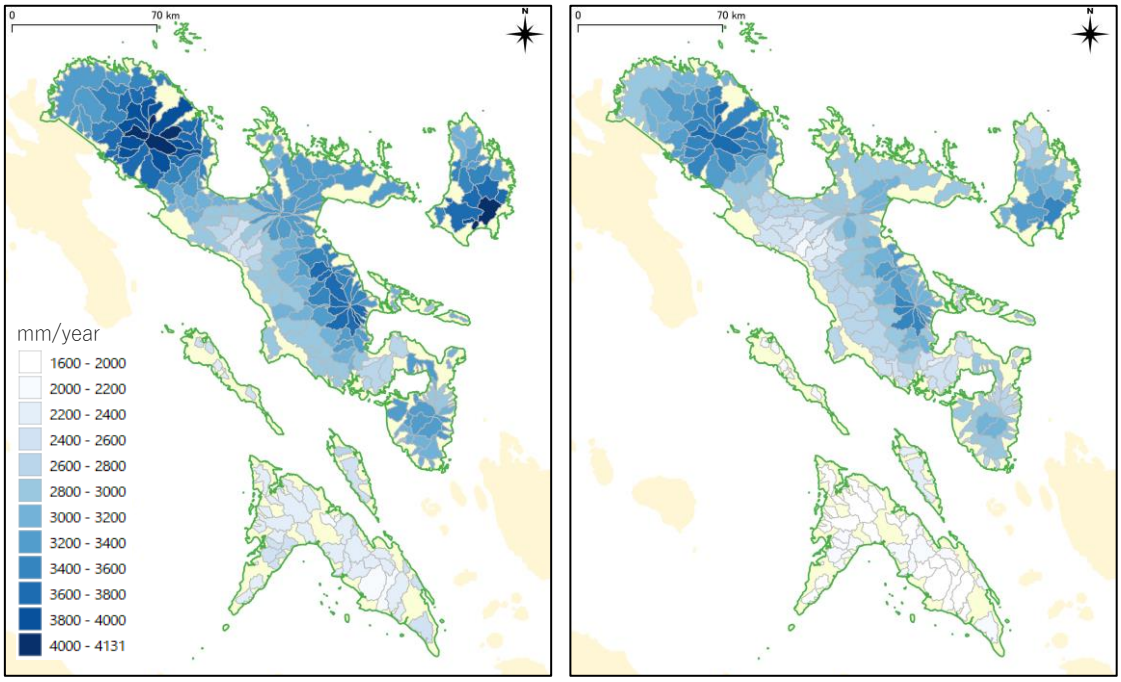
Figure A-5 WRR V: Population Map (Left 2015, Right 2050)

(Figures are for municipalities with more than 100,000 people)



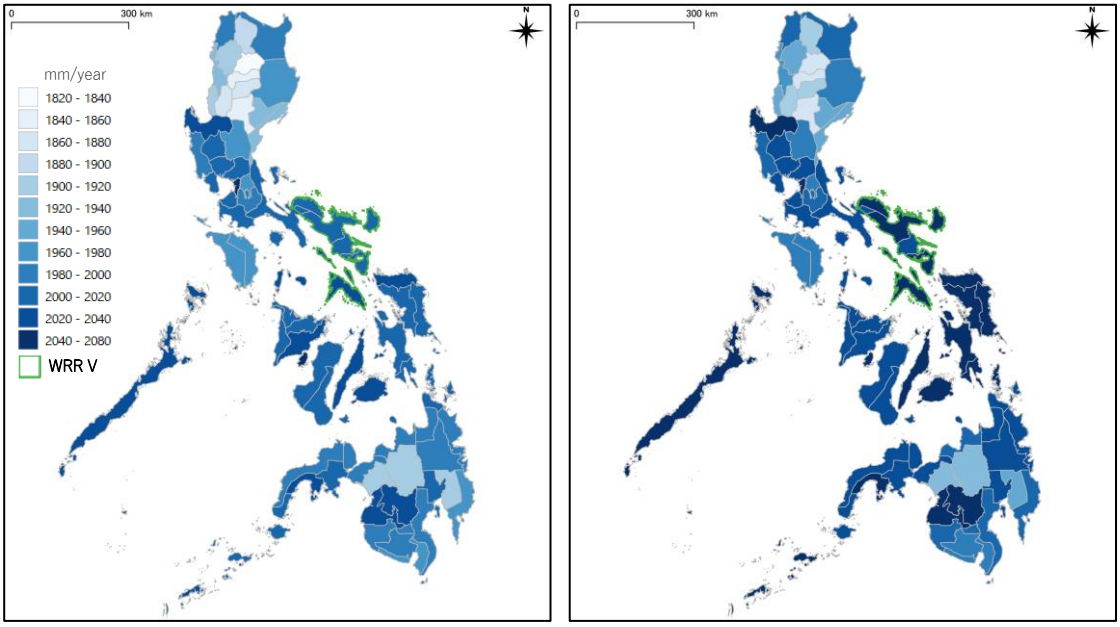
Source: PAGASA/DOST-ASTI

Figure A-6 WRR V: Rainfall Station



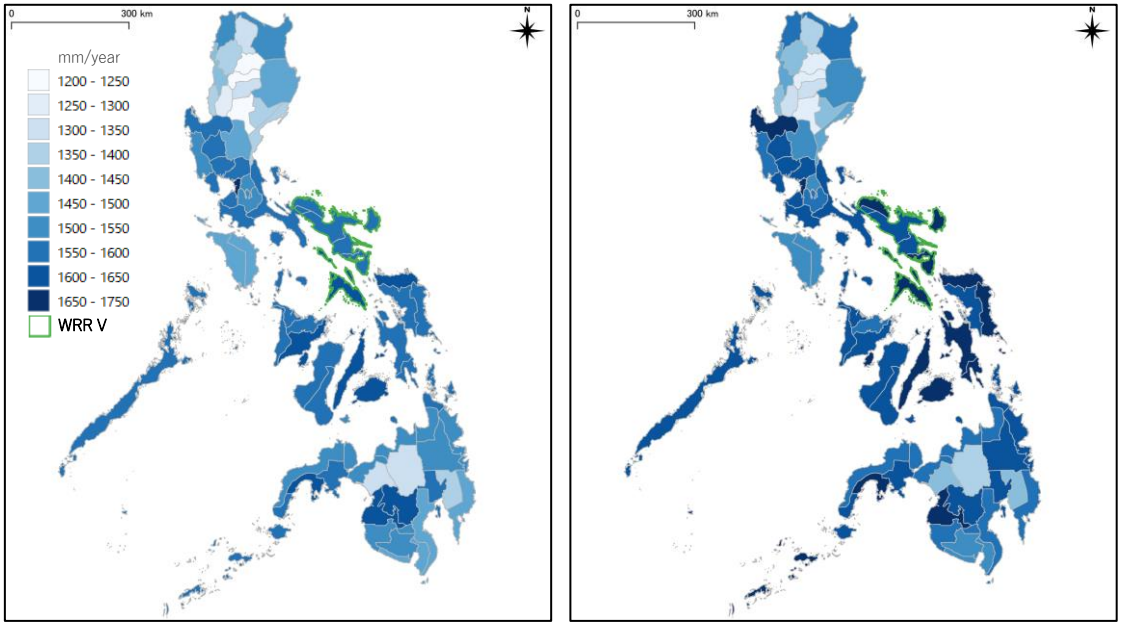
Source: JICA Survey Team

Figure A-7 WRR V: Precipitation (mm/year)
(Left: 2020, Right: 2050 (RCP8.5 Low))



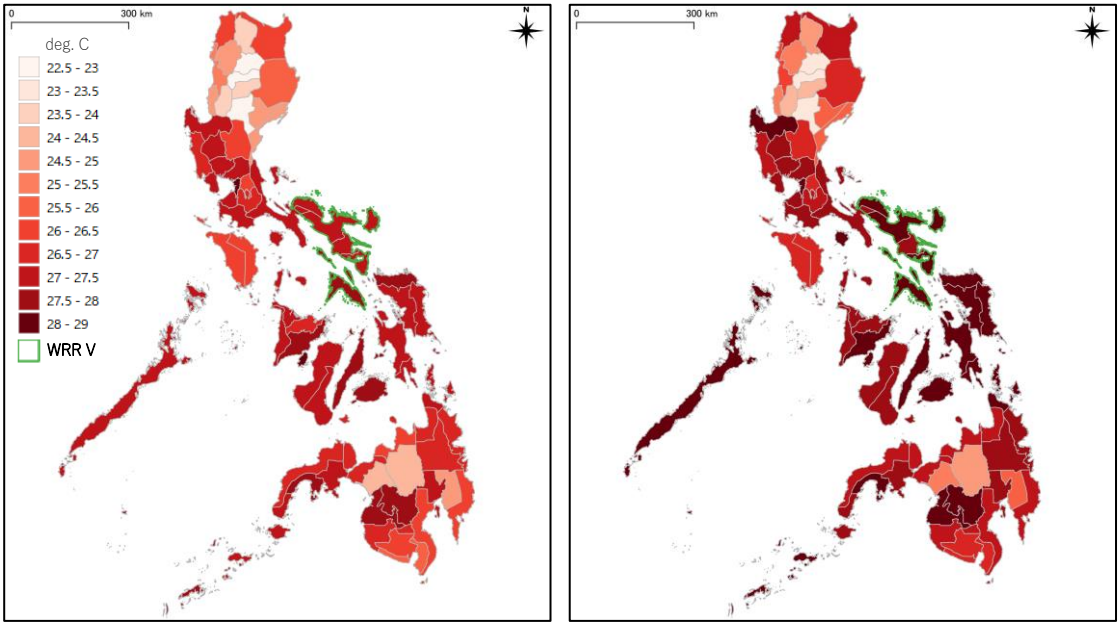
Source: JICA Survey Team, based on ERA5 and CHIRPS data

Figure A-8 WRR V: Yearly potential evapotranspiration by FAO Penman-Monteith Method (Left: 2020, Right: 2050 (RCP8.5 Low))



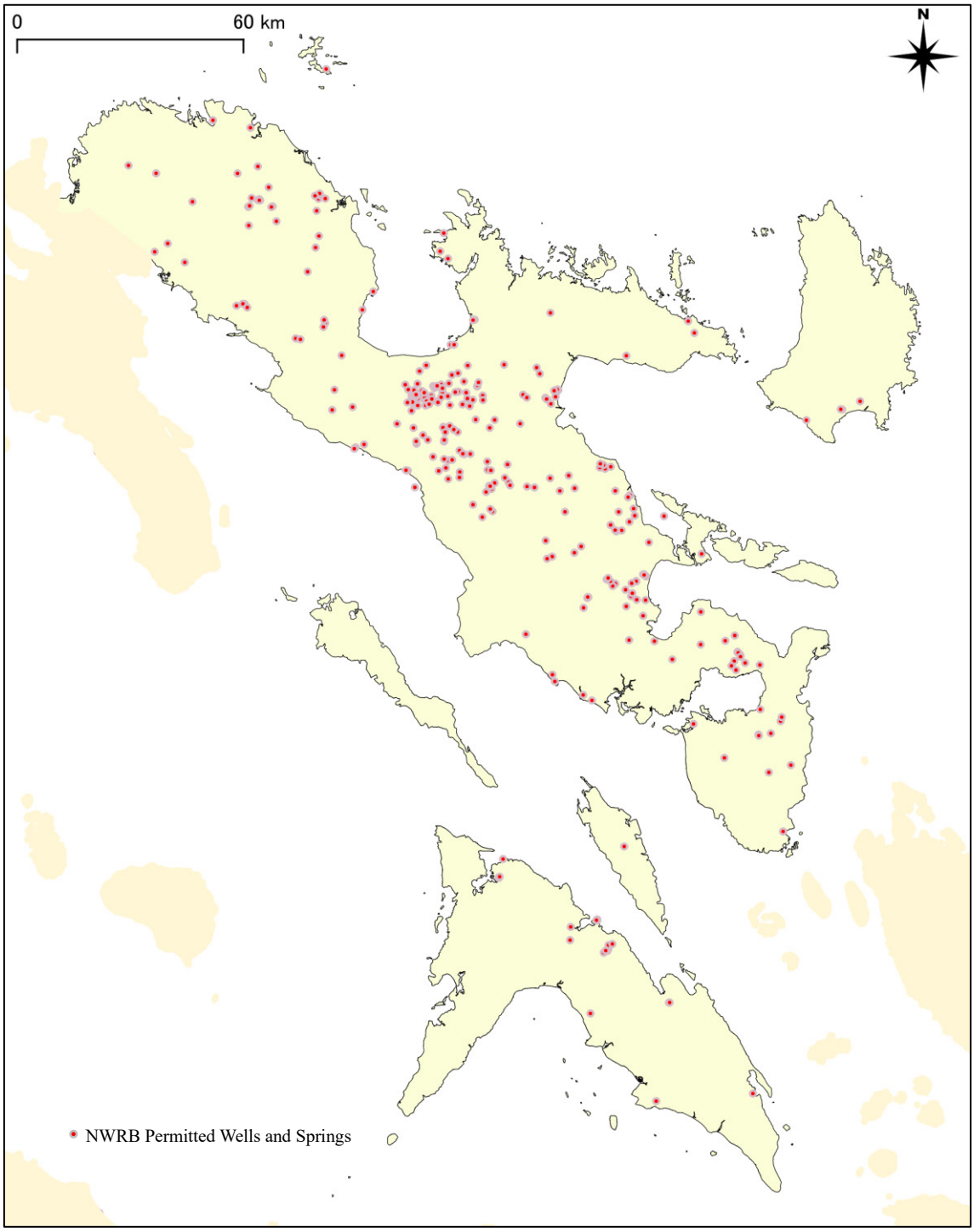
Source: JICA Survey Team, based on ERA5 and CHIRPS data

Figure A-9 WRR V: Yearly potential evapotranspiration by Hamon Method (Left: 2020, Right: 2050 (RCP8.5 Low))



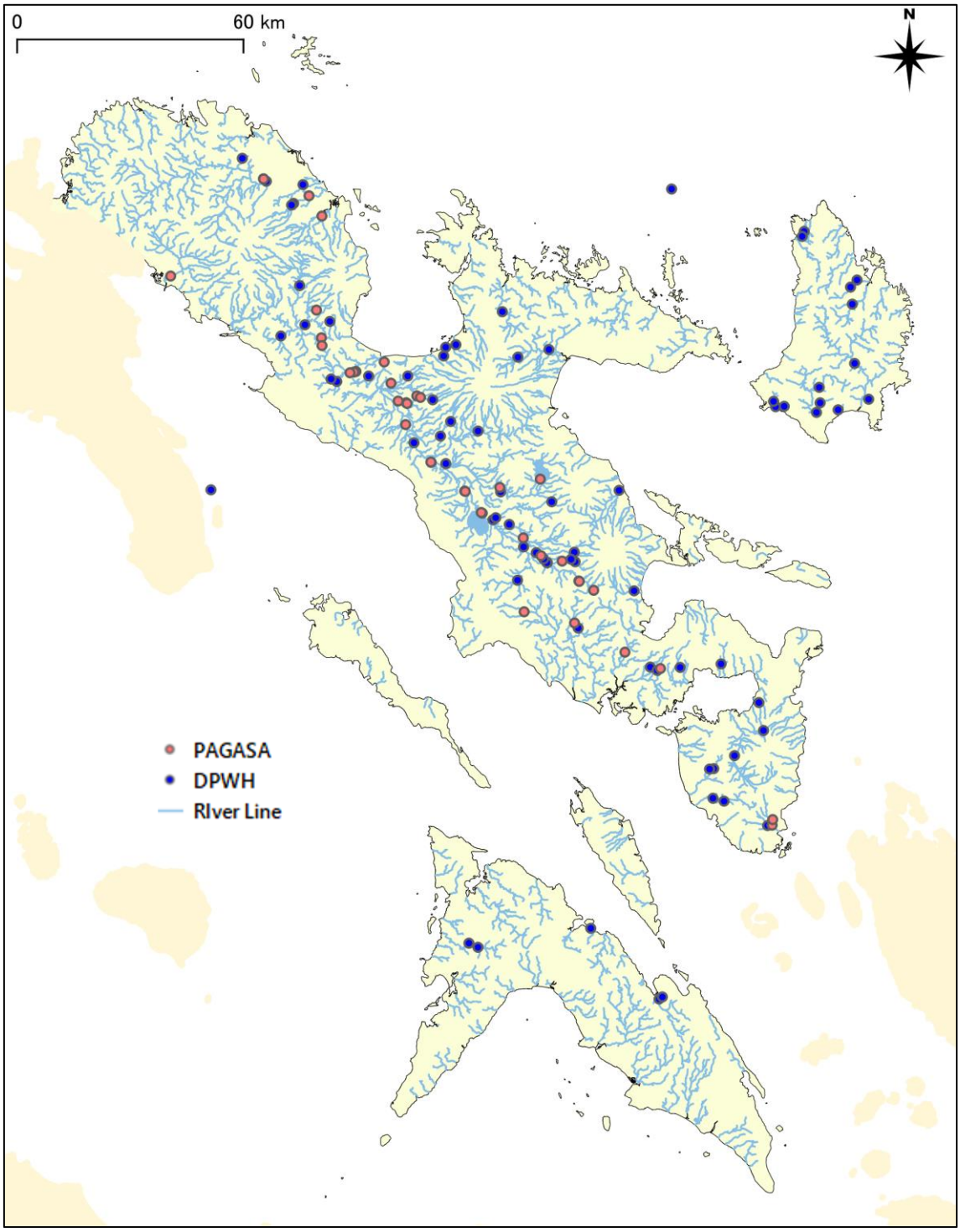
Source: JICA Survey Team, based on ERA5 and CHIRPS data

Figure A-10 WRR V: Yearly temperature (Left: 2020, Right: 2050 (RCP8.5 Low))



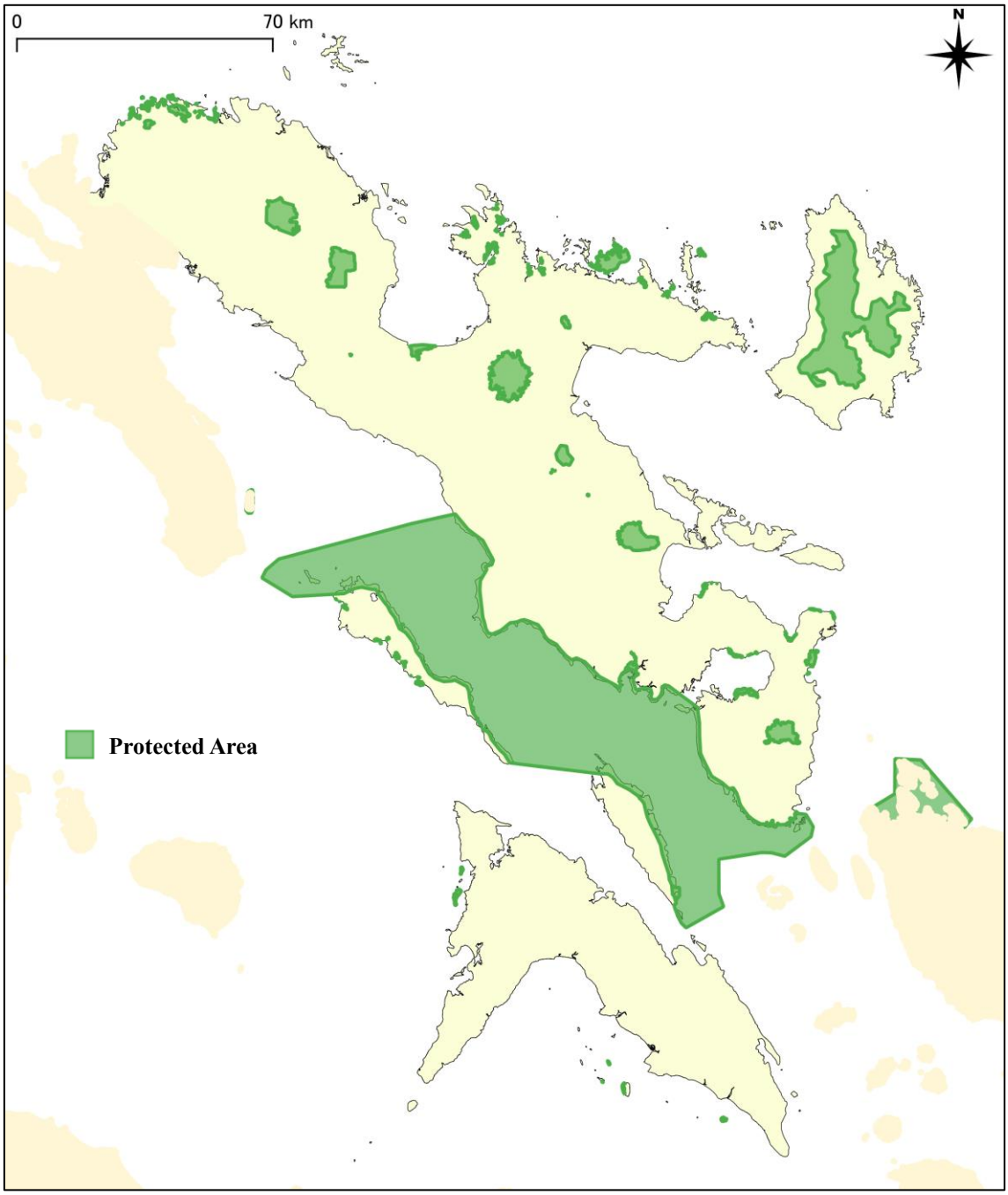
Source: NWRB

Figure A-11 WRR V: Location of well and spring managed by NWRB



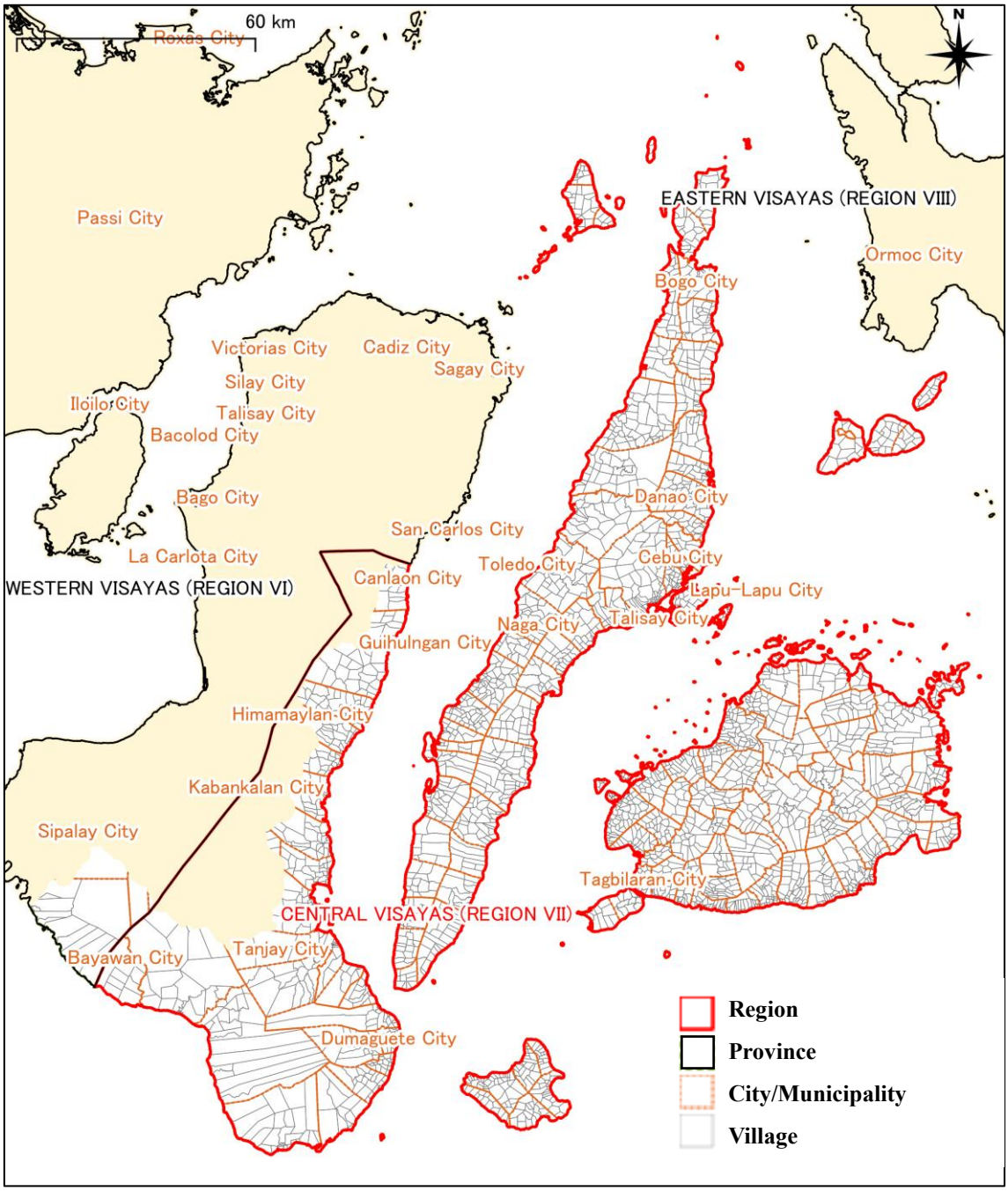
Source: PAGASA/DPWH

Figure A-12 WRR V: Location of River Water Level Observatory Station



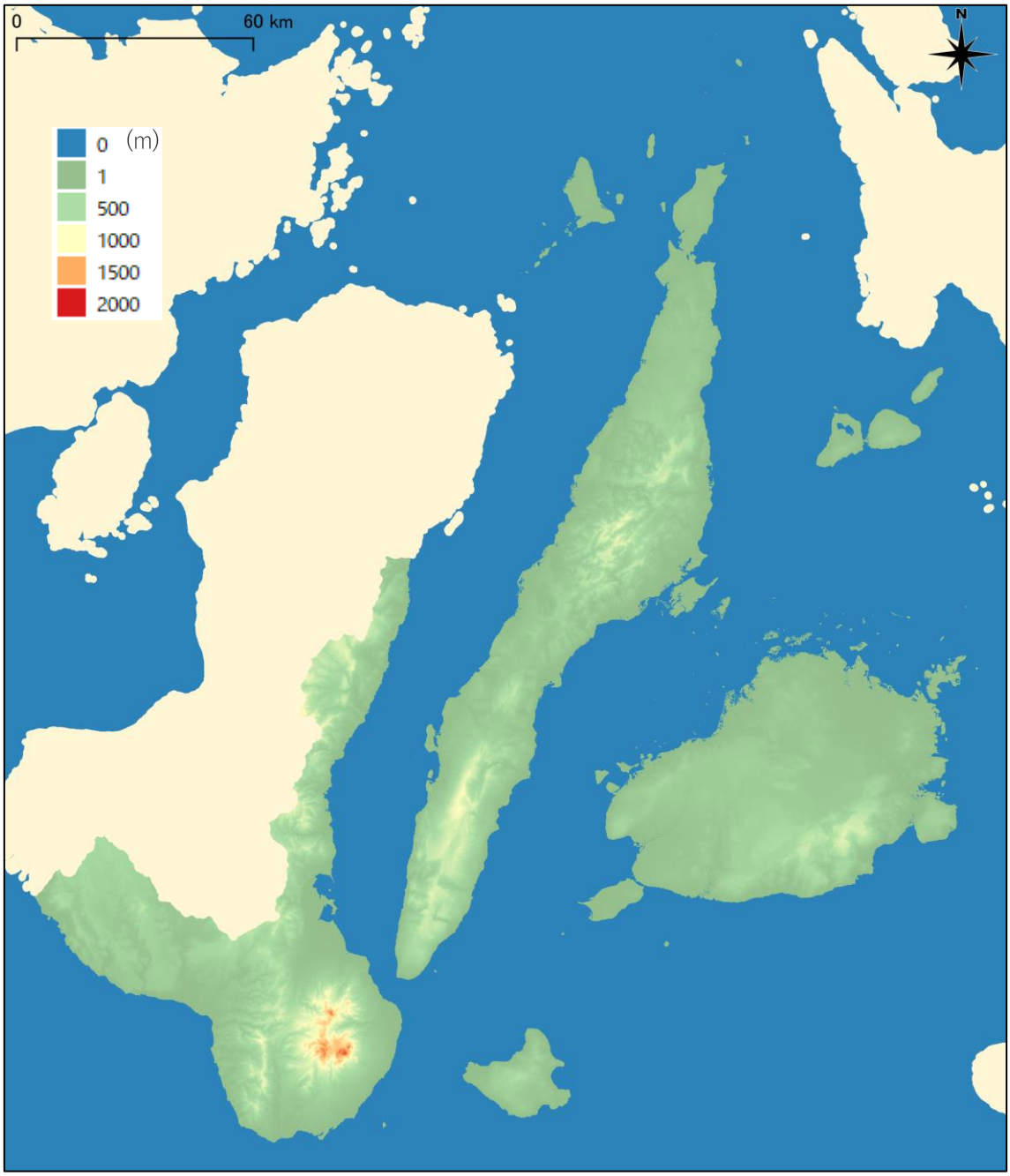
Source: JICA Survey Team based on Biodiversity Management Bureau

Figure A-13 WRR V: Protected Area



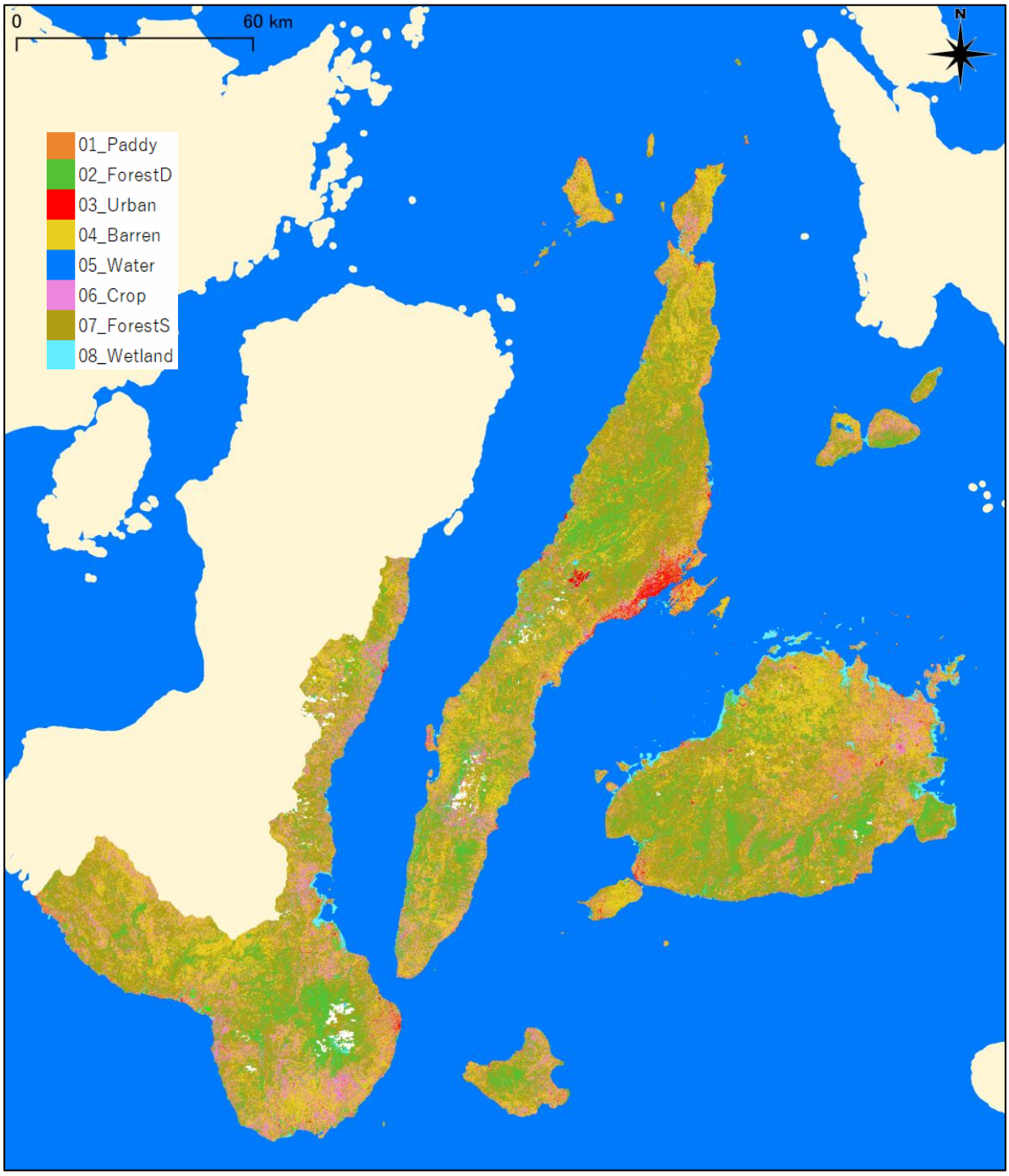
Source: https://www.philatlas.com/regions.html

Figure A-14 WRR VII: Administrative Boundaries



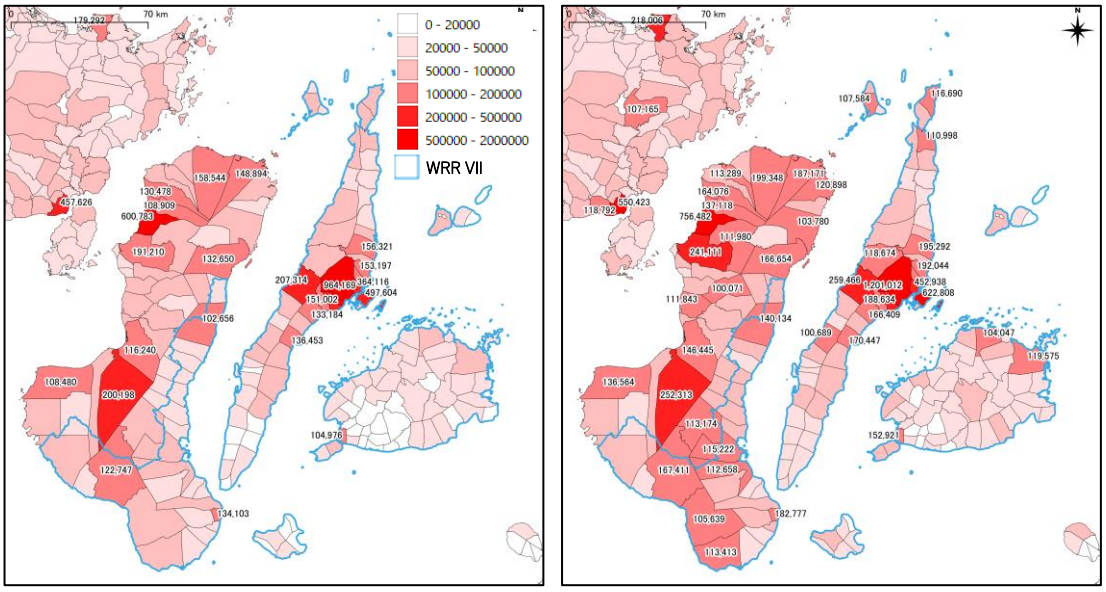
Source: NASA/USGS

Figure A-15 WRR VII: Digital Elevation/Terrain Model (SRTM)



Source: JICA Survey Team using Landsat series data

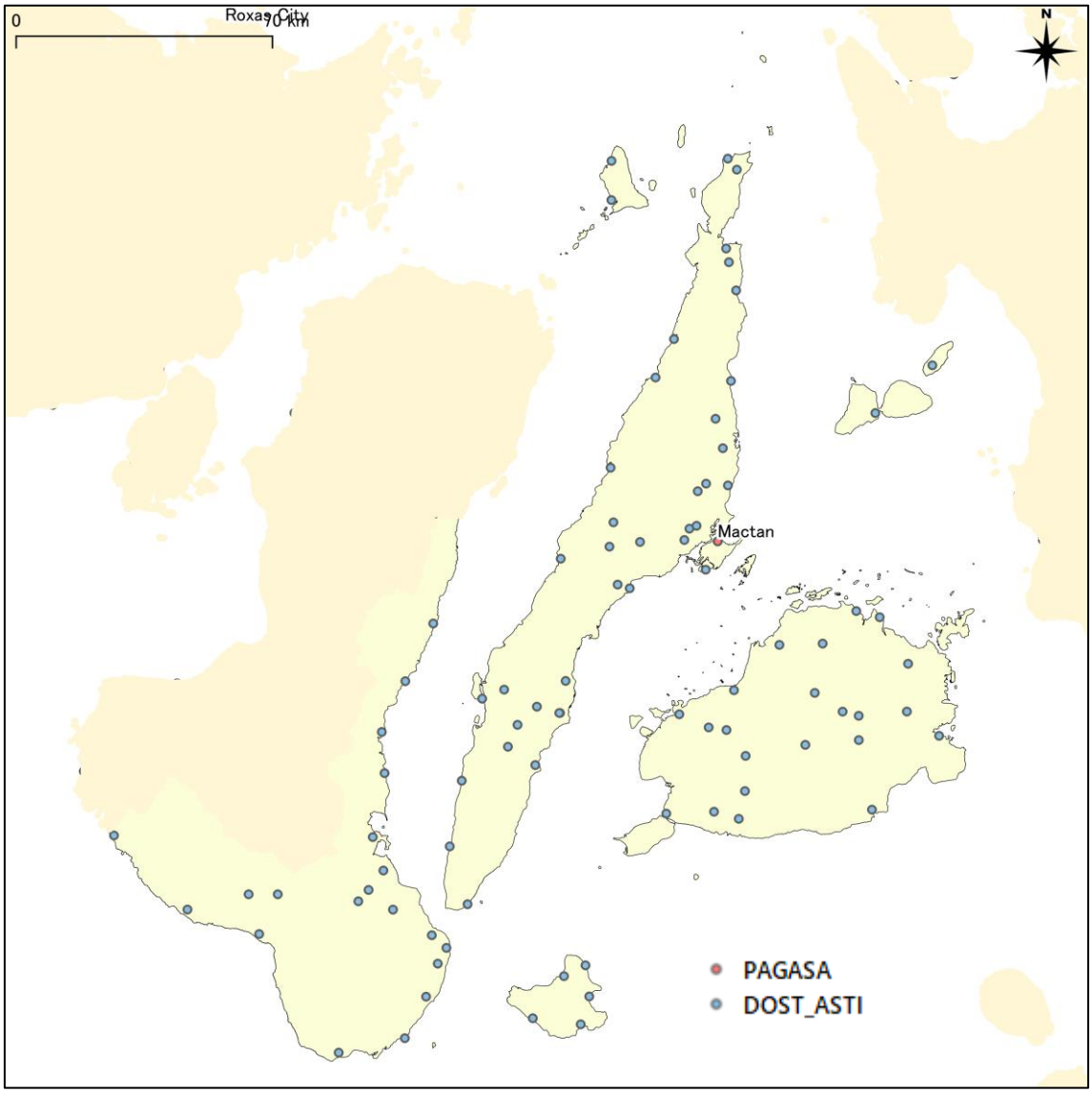
Figure A-16 WRR VII: Land cover/Land use map (2020, 10m)



Source: JICA Survey Team

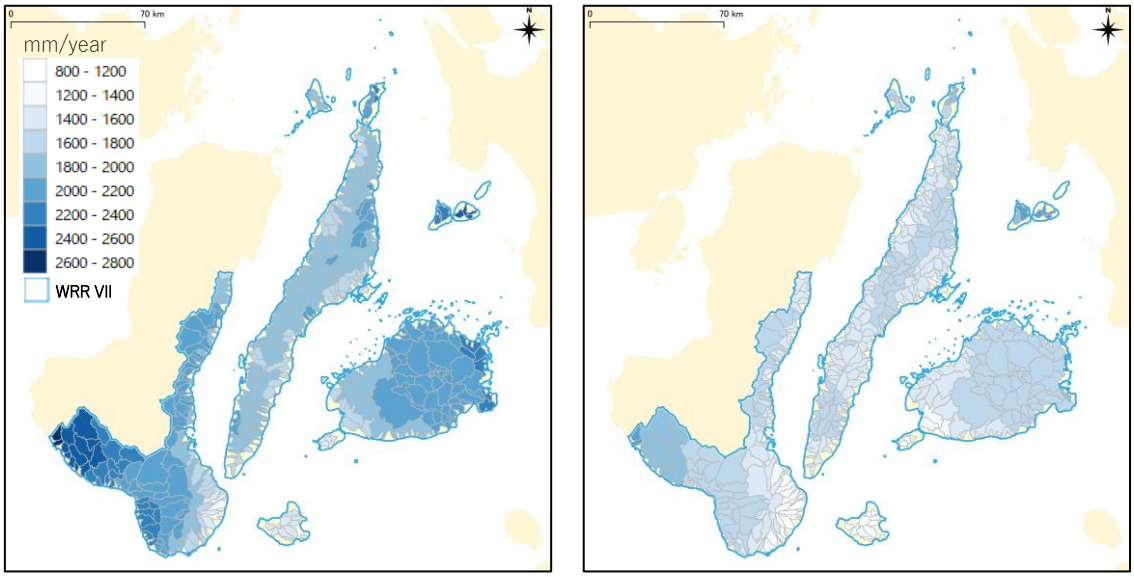
Figure A-17 WRR VII: Population Map (Left 2015, Right 2050)

(Figures are for municipalities with more than 100,000 people)



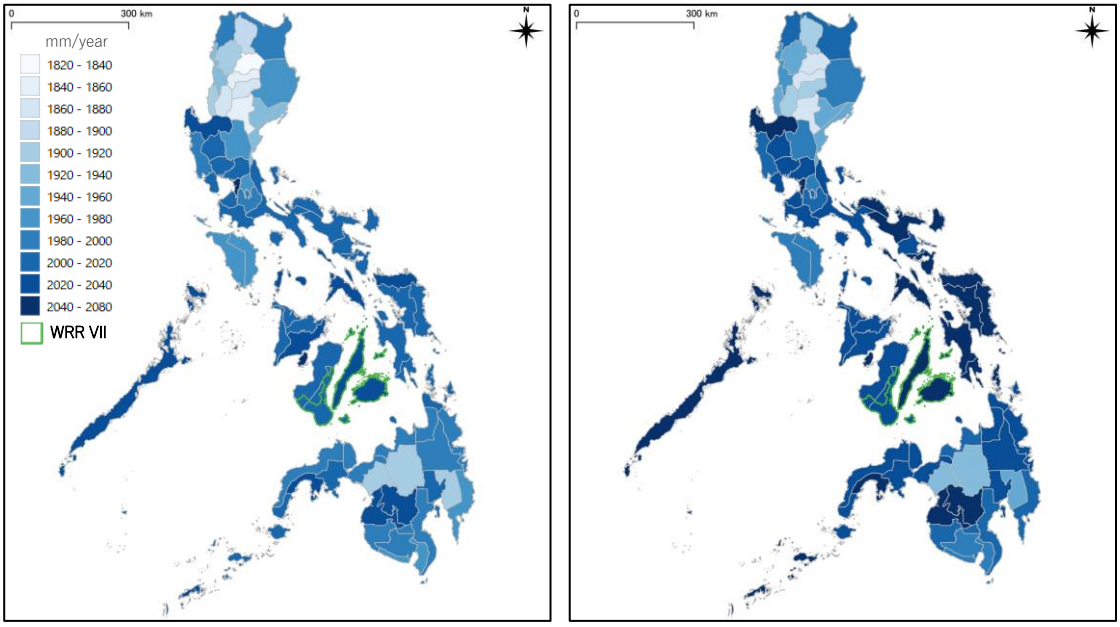
Source: PAGASA/DOST-ASTI

Figure A-18 WRR VII: Rainfall Station



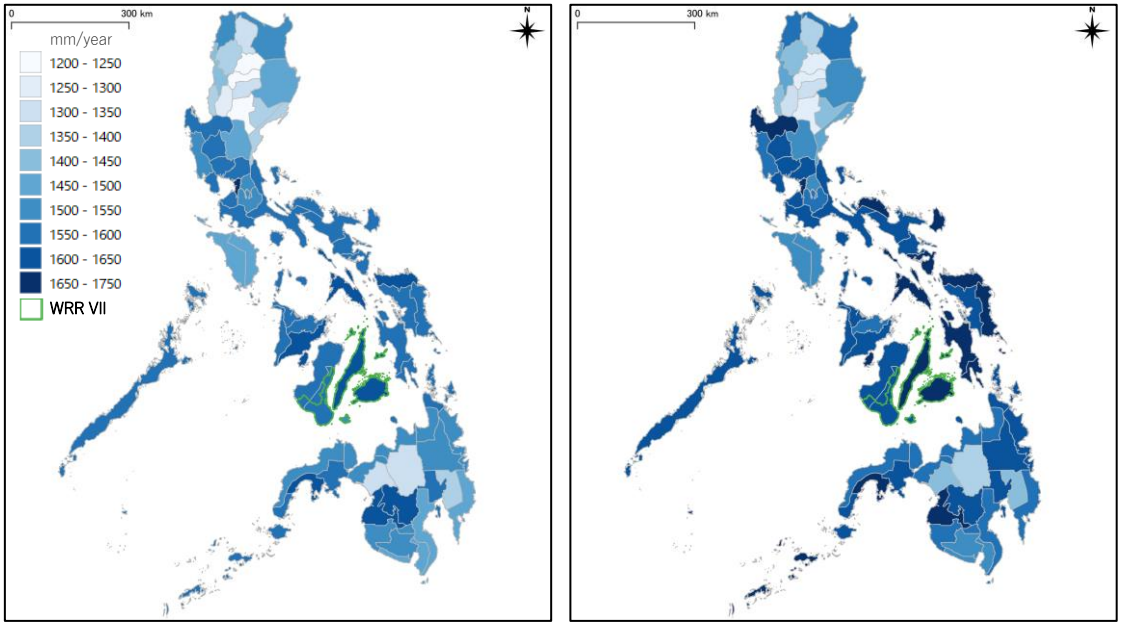
Source: JICA Survey Team

Figure A-19 WRR VII: Precipitation (mm/year) (Left: 2020, Right: 2050 (RCP8.5 Low))



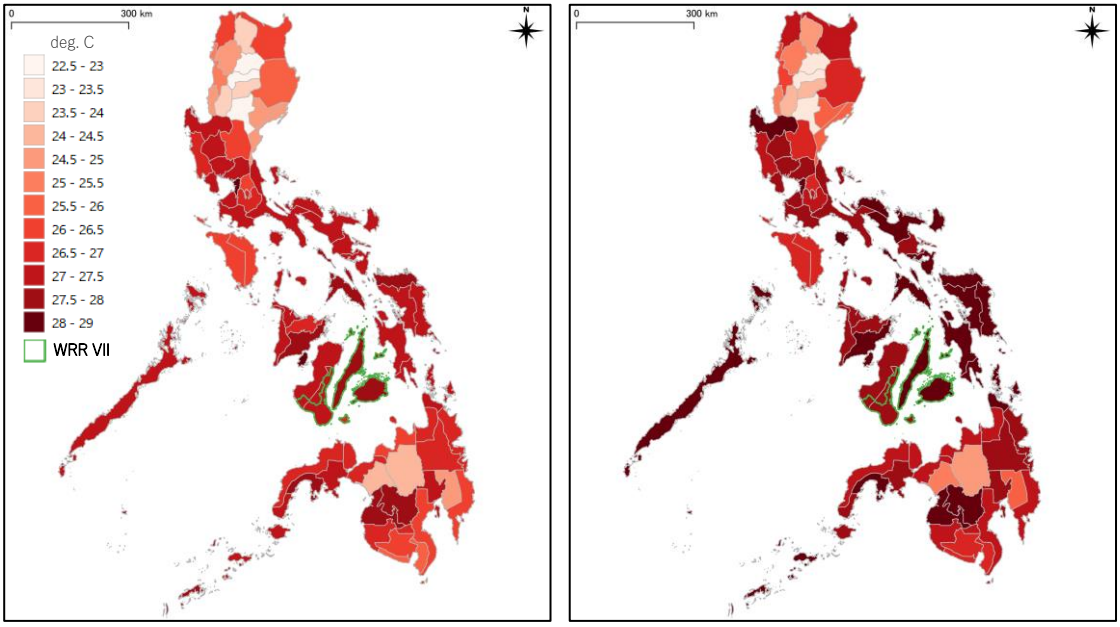
Source: JICA Survey Team, based on ERA5 and CHIRPS data

Figure A-20 WRR VII: Yearly potential evapotranspiration by FAO Penman-Monteith Method (Left: 2020, Right: 2050 (RCP8.5 Low))



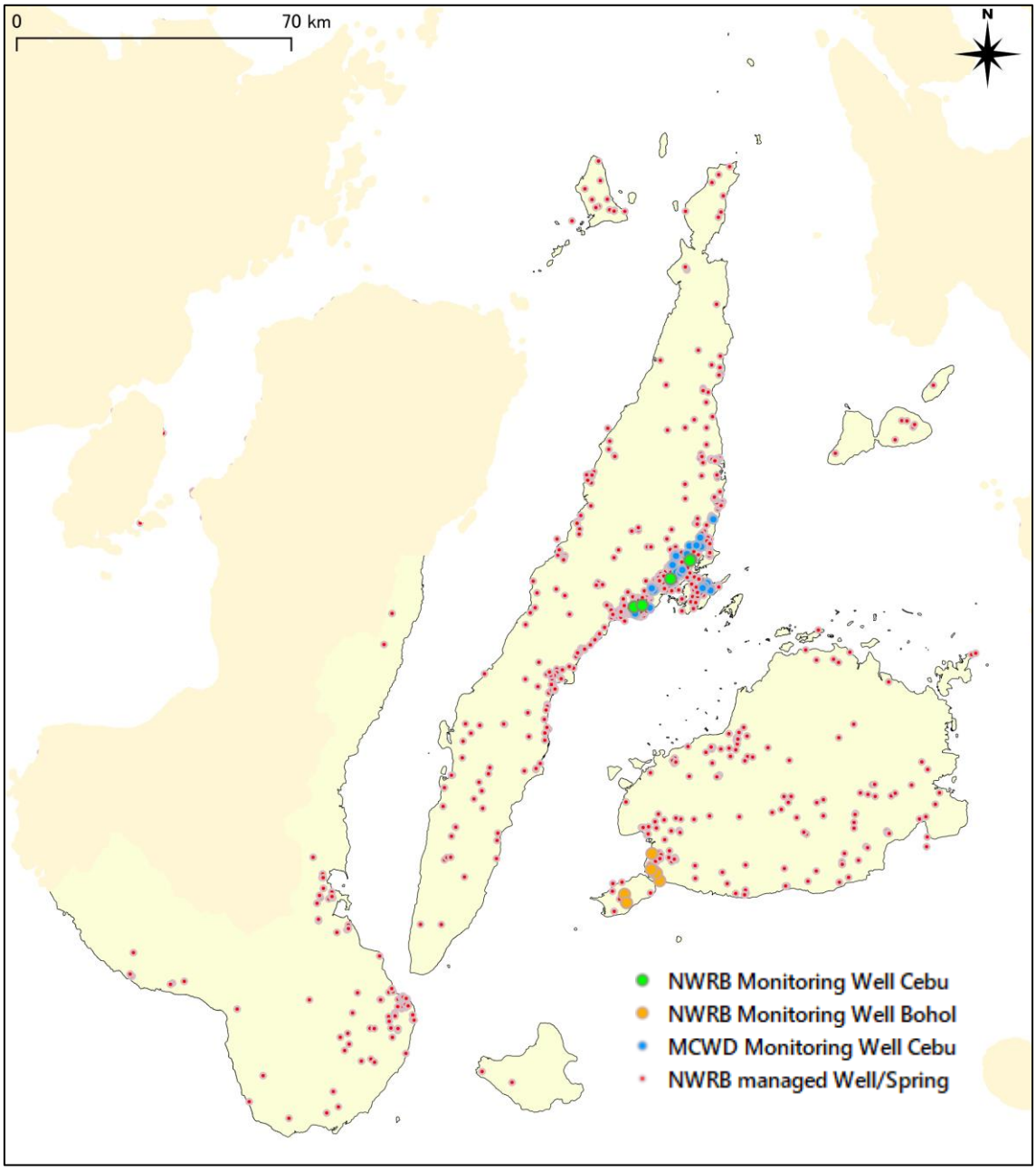
Source: JICA Survey Team, based on ERA5 and CHIRPS data

Figure A-21 WRR VII: Yearly potential evapotranspiration by Hamon Method (Left: 2020, Right: 2050 (RCP8.5 Low))



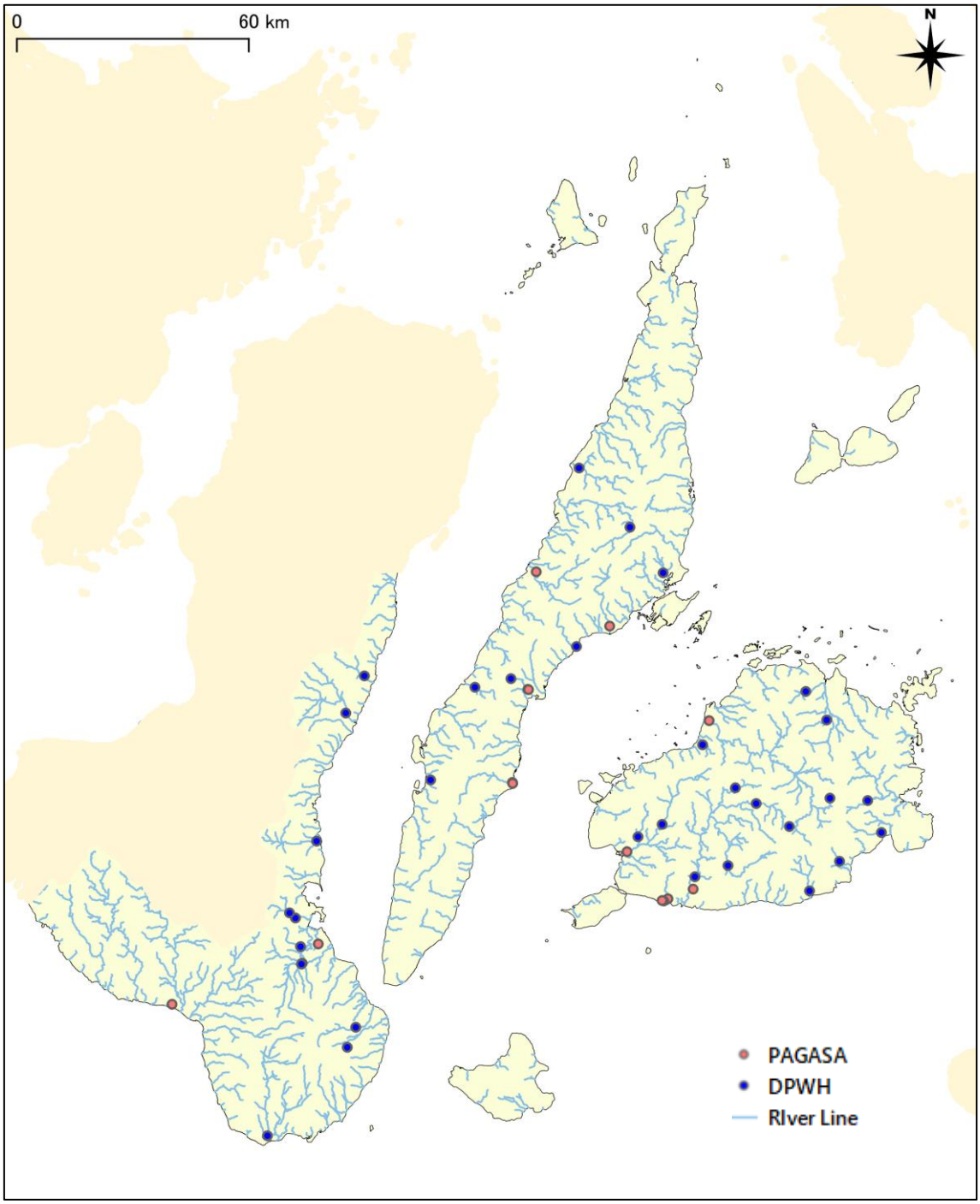
Source: JICA Survey Team, based on ERA5 and CHIRPS data

Figure A-22 WRR VII: Yearly temperature (Left: 2020, Right: 2050 (RCP8.5 Low))



Source: NWRB/MCWD

Figure A-23 WRR VII: Location of Monitoring Well /Location of well and spring managed by NWRB

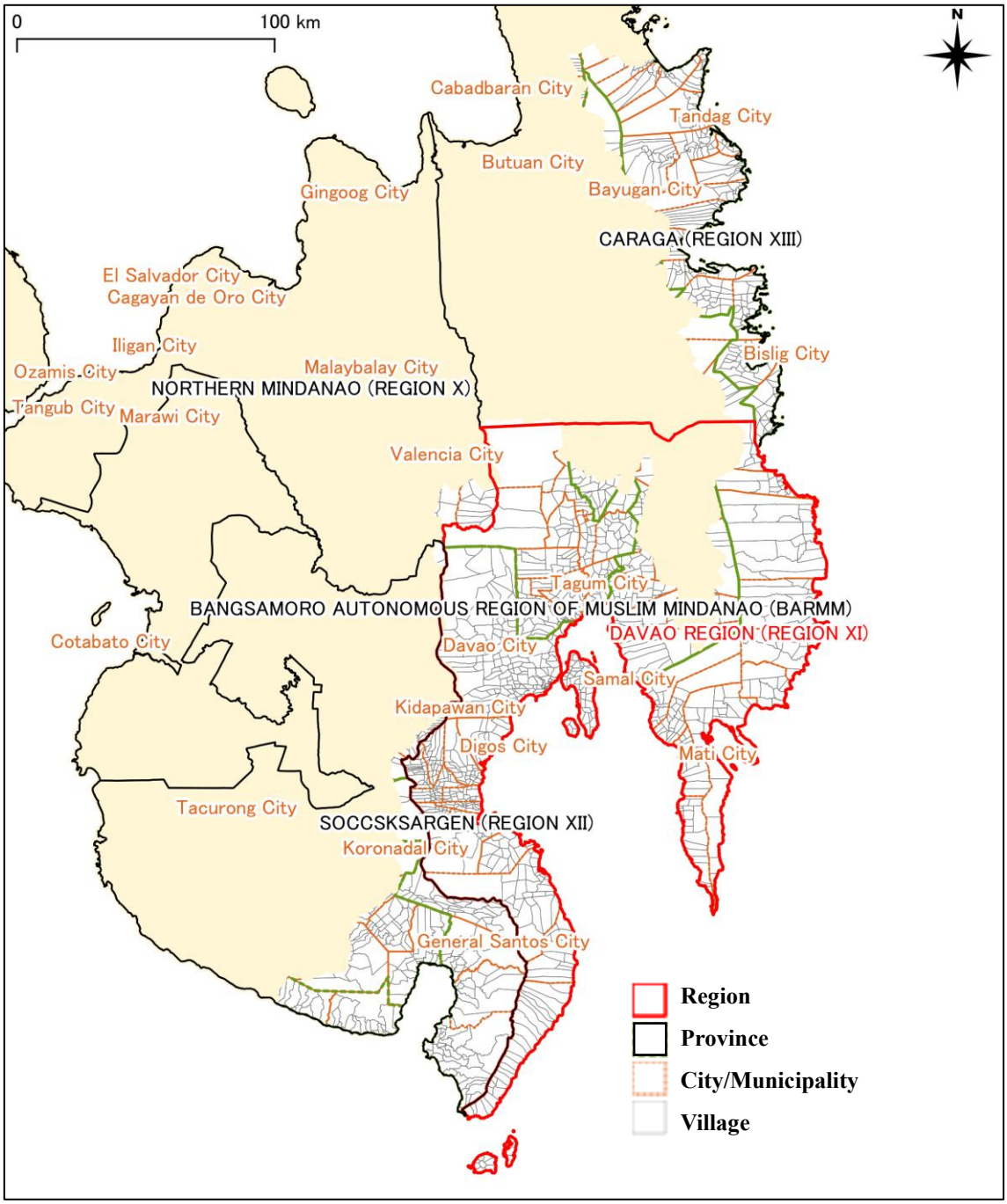


Source: PAGASA/DPWH

Figure A-24 WRR VII: Location of River Water Level Observatory Station

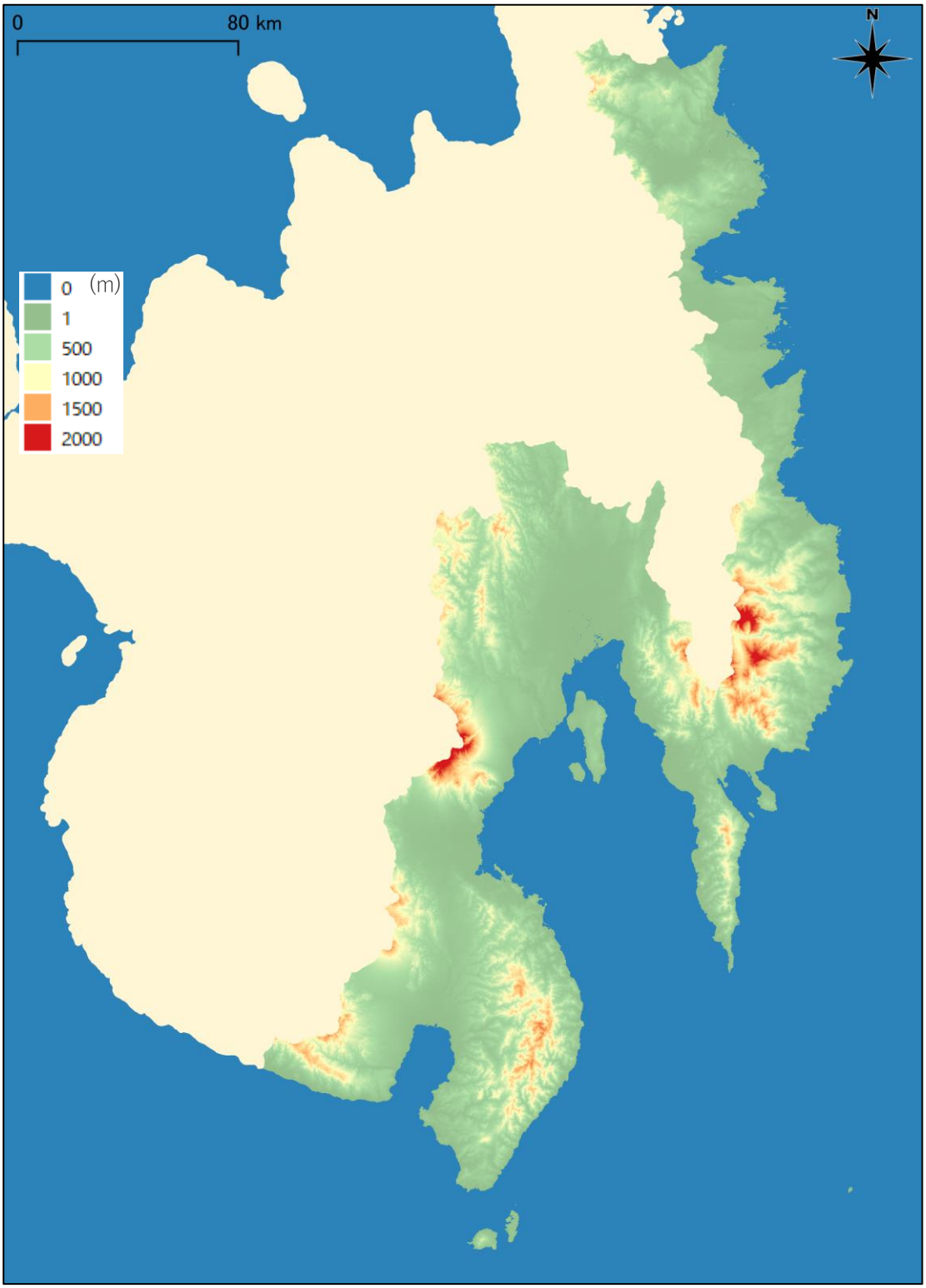
Source: JICA Survey Team based on Biodiversity Management Bureau

Figure A-25 WRR VII: Protected Area



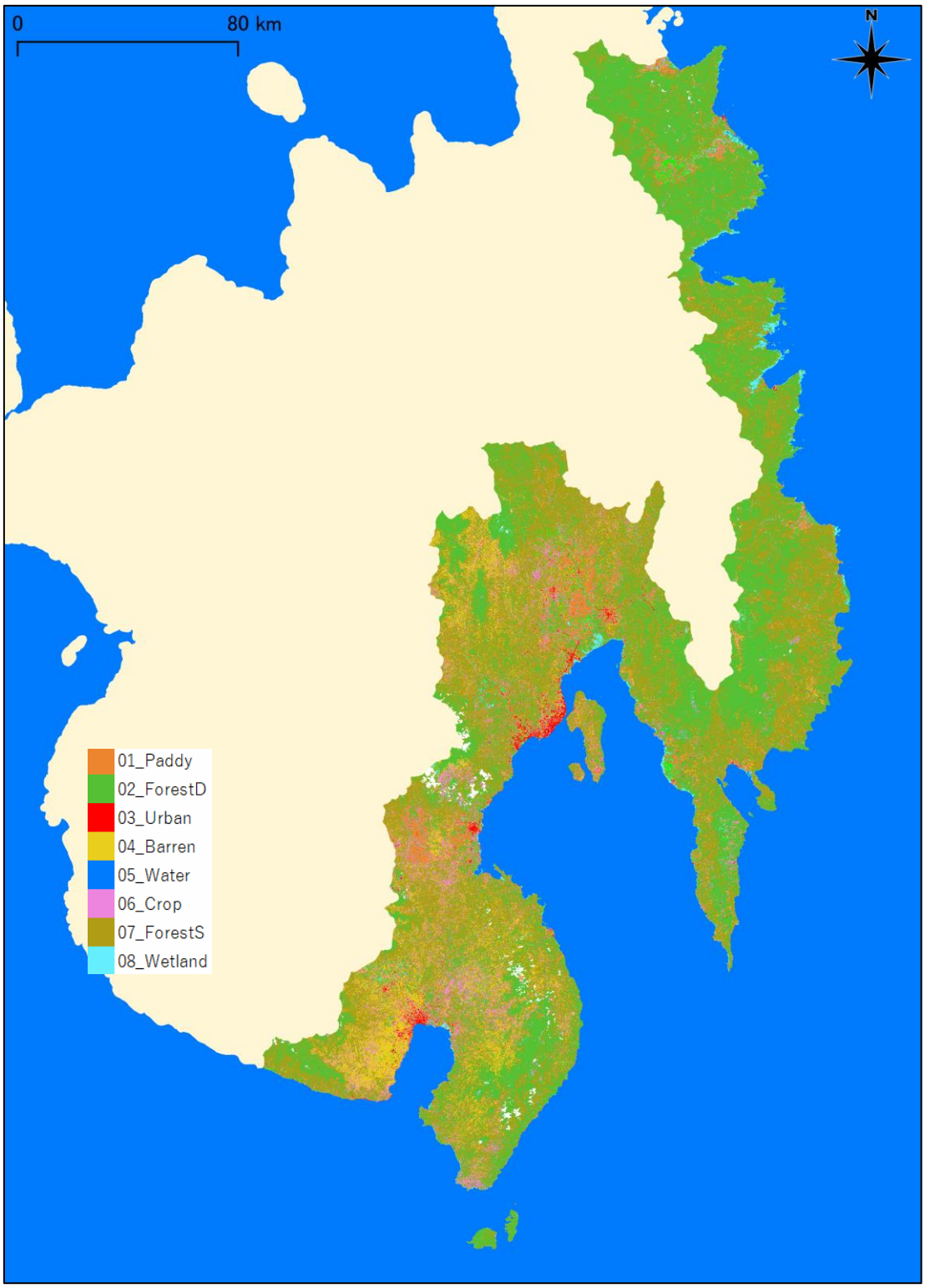
Source: https://www.philatlas.com/regions.html

Figure A-26 WRR XI: Administrative Boundaries



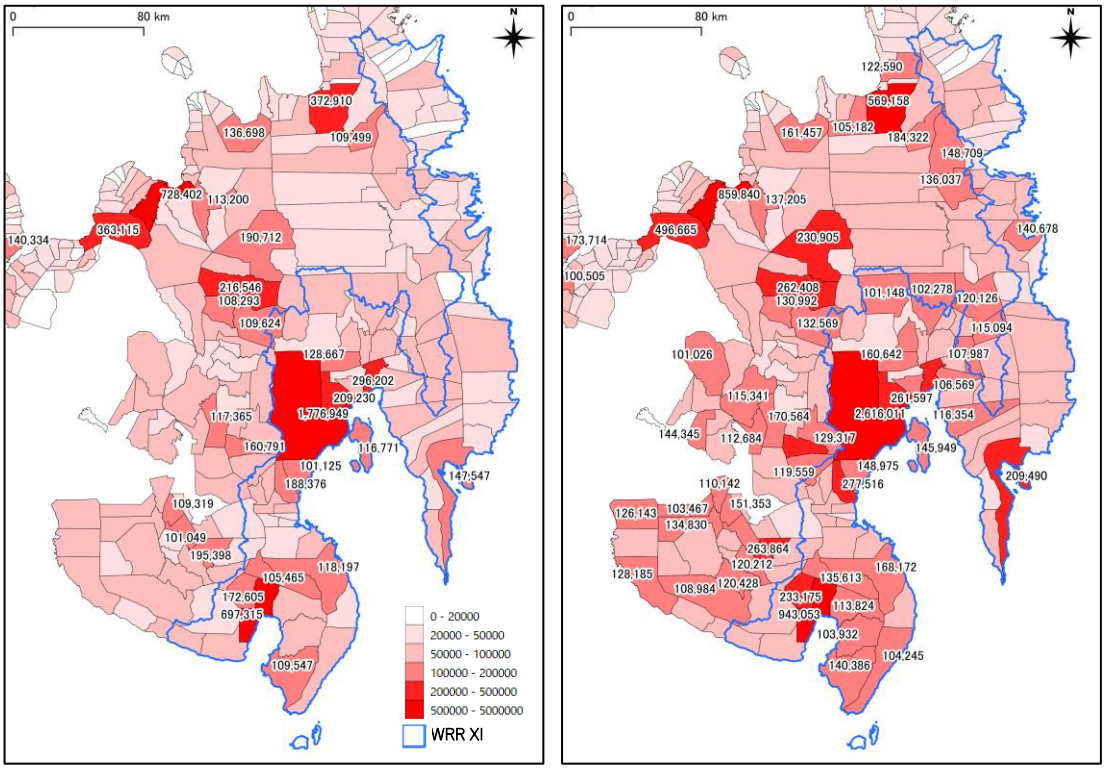
Source: NASA/USGS

Figure A-27 WRR XI: Digital Elevation/Terrain Model (SRTM)



Source: JICA Survey Team using Landsat series data

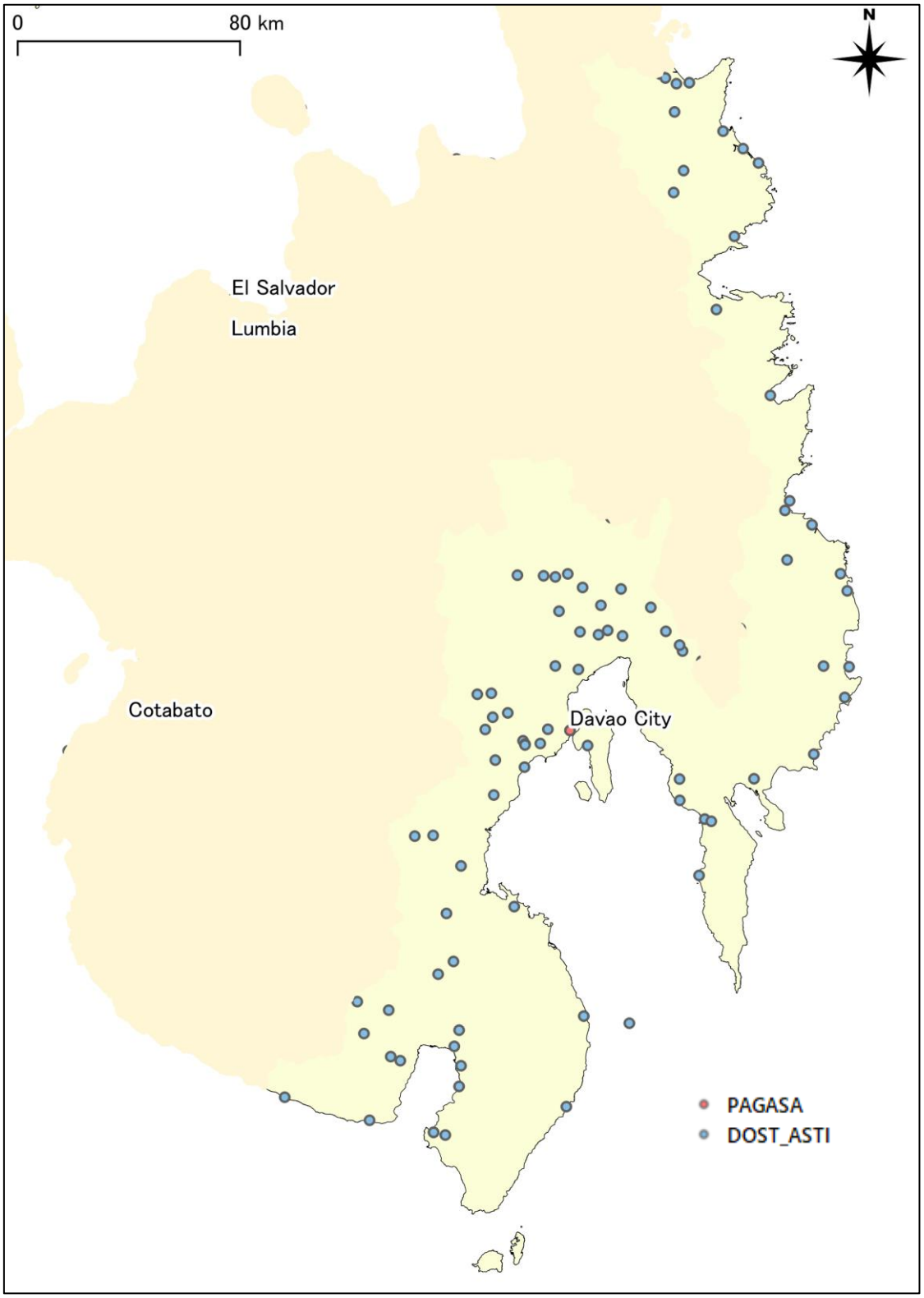
Figure A-28 WRR XI: Land cover/Land use map (2020, 10m)



Source: JICA Survey Team

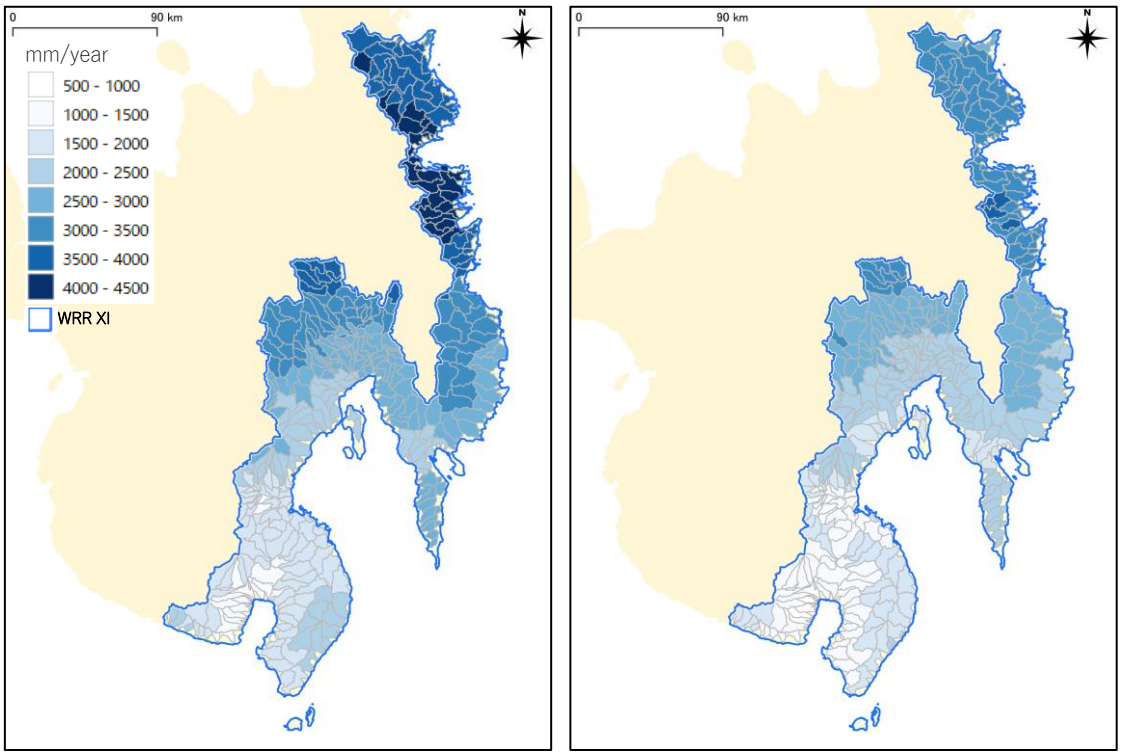
Figure A-29 WRR XI: Population Map (Left 2015, Right 2050)

(Figures are for municipalities with more than 100,000 people)



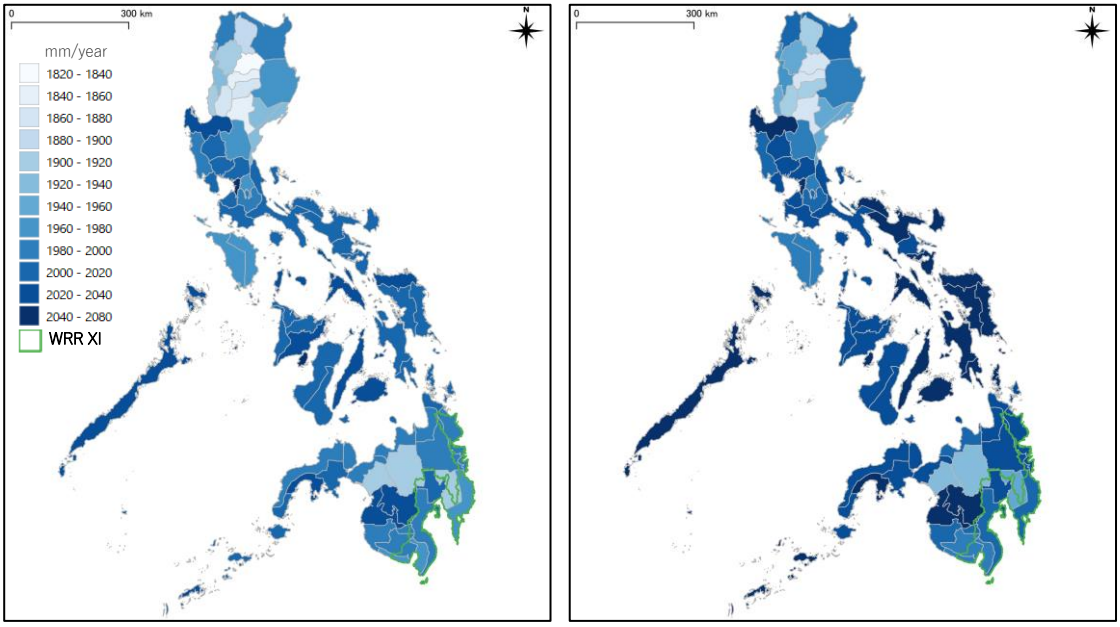
Source: PAGASA/DOST-ASTI

Figure A-30 WRR XI: Rainfall Station



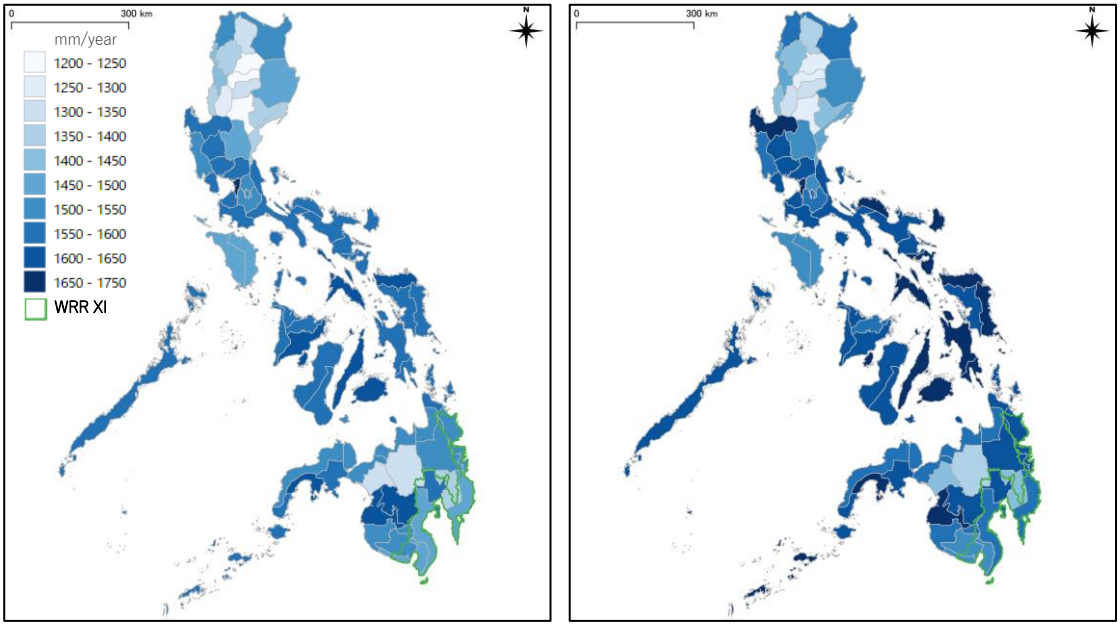
Source: JICA Survey Team

Figure A-31 WRR XI: Precipitation (mm/year) (Left: 2020, Right: 2050 (RCP8.5 Low))



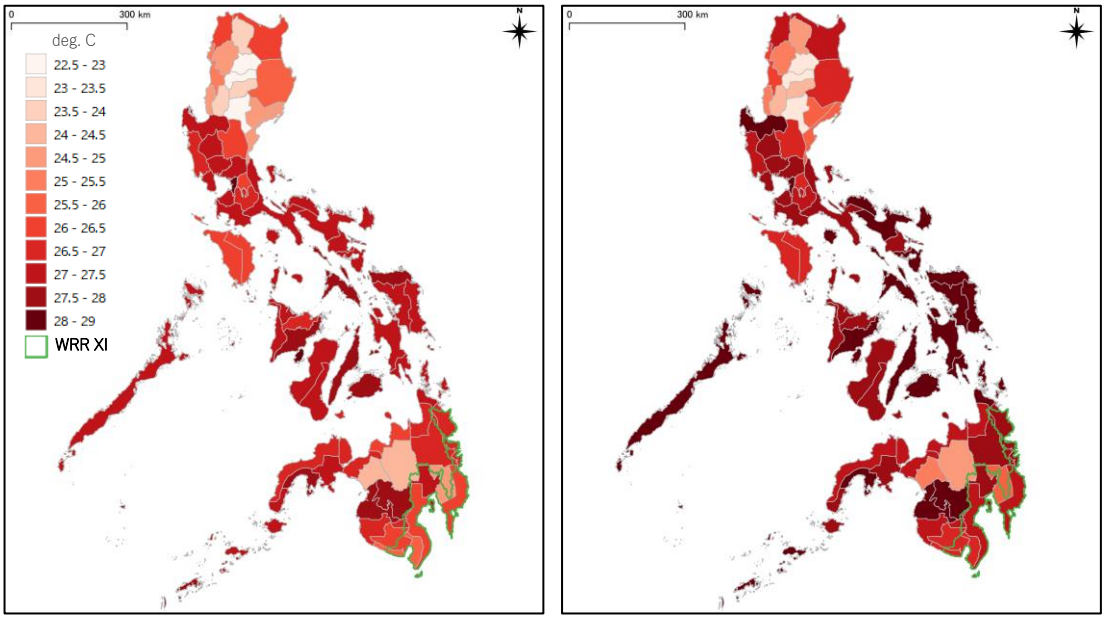
Source: JICA Survey Team, based on ERA5 and CHIRPS data

Figure A-32 WRR XI: Yearly potential evapotranspiration by FAO Penman-Monteith Method (Left: 2020, Right: 2050 (RCP8.5 Low))



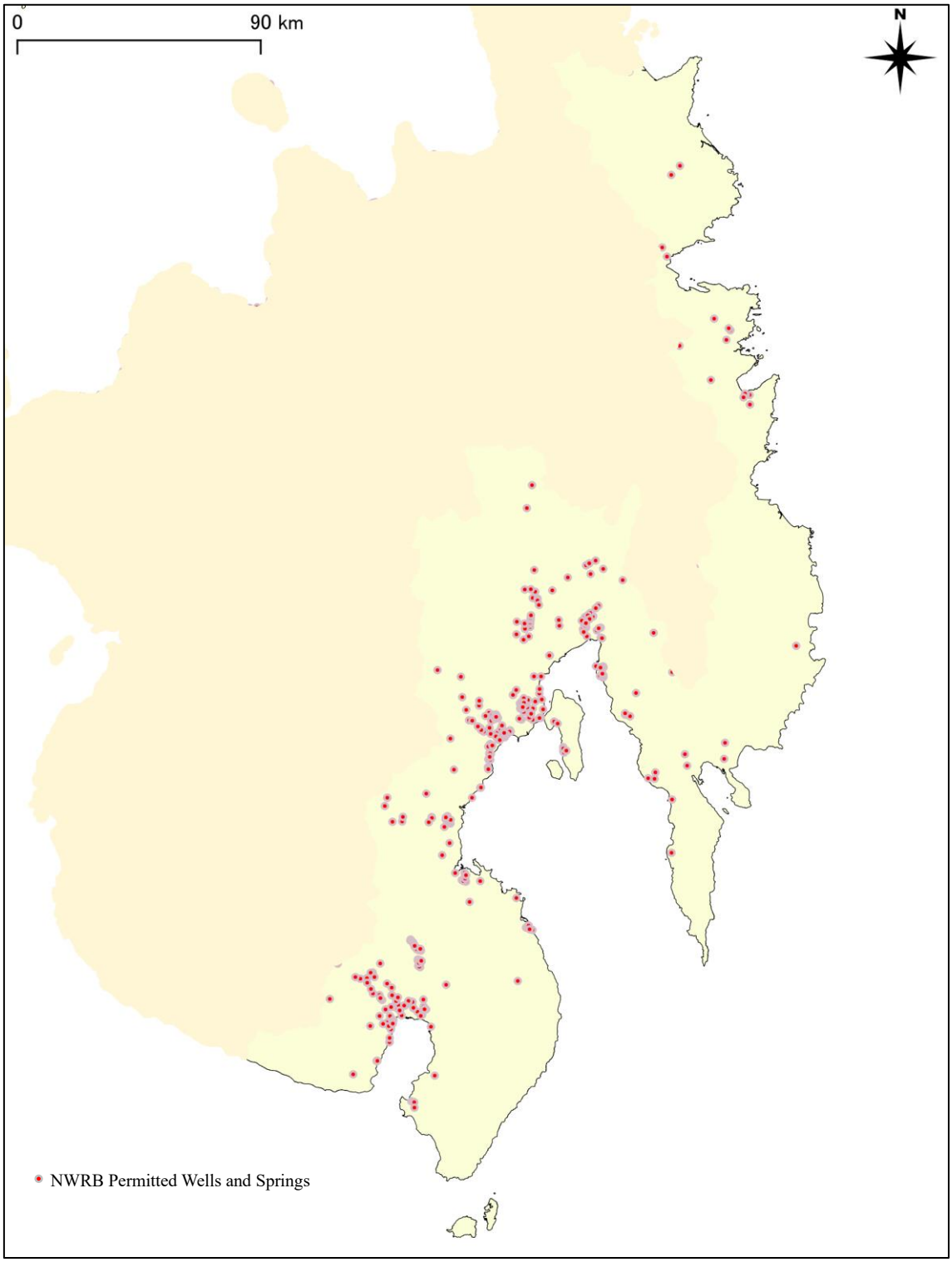
Source: JICA Survey Team, based on ERA5 and CHIRPS data

Figure A-33 WRR XI: Yearly potential evapotranspiration by Hamon Method (Left: 2020, Right: 2050 (RCP8.5 Low))



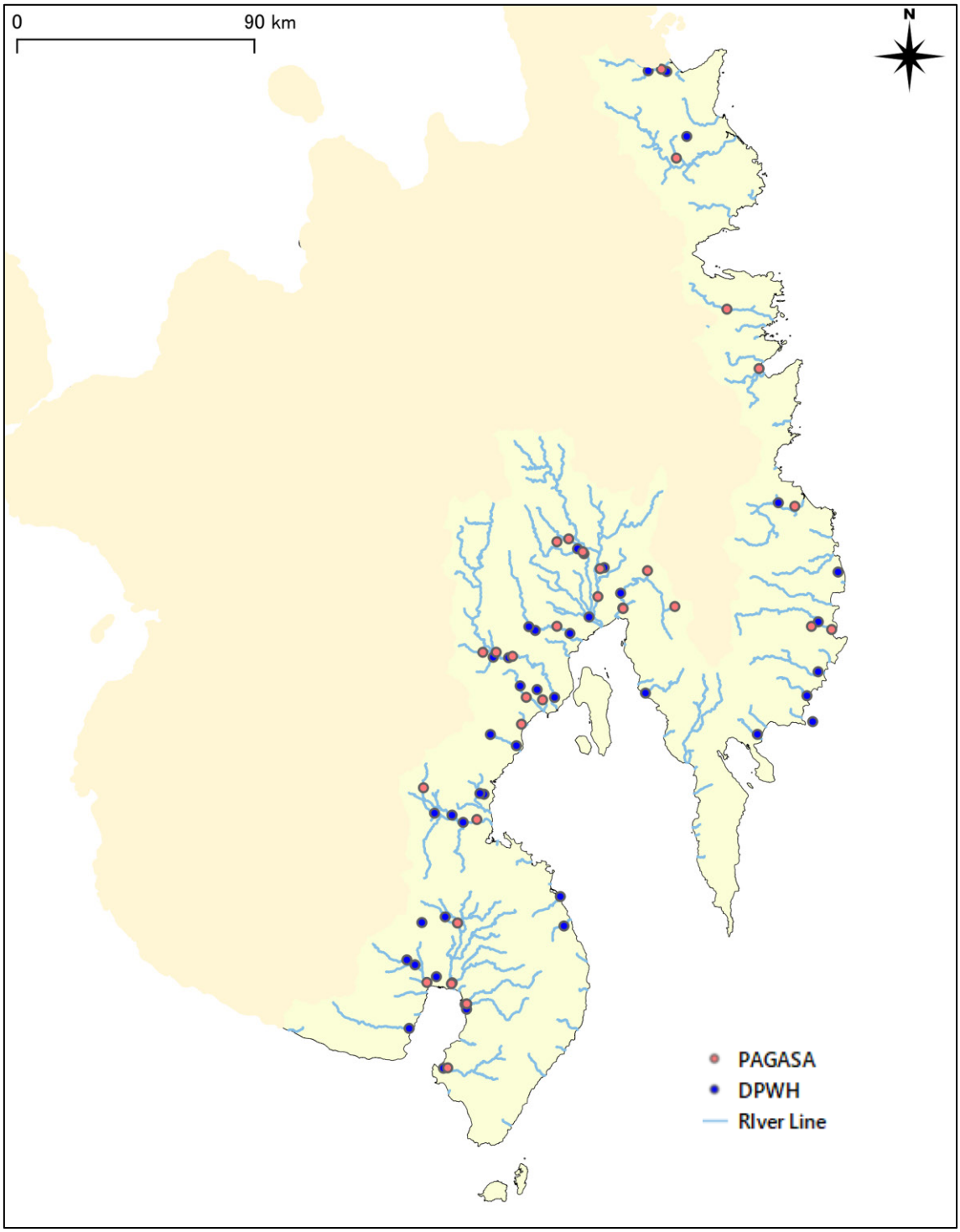
Source: JICA Survey Team, based on ERA5 and CHIRPS data

Figure A-34 WRR XI: Yearly temperature (Left: 2020, Right: 2050 (RCP8.5 Low))



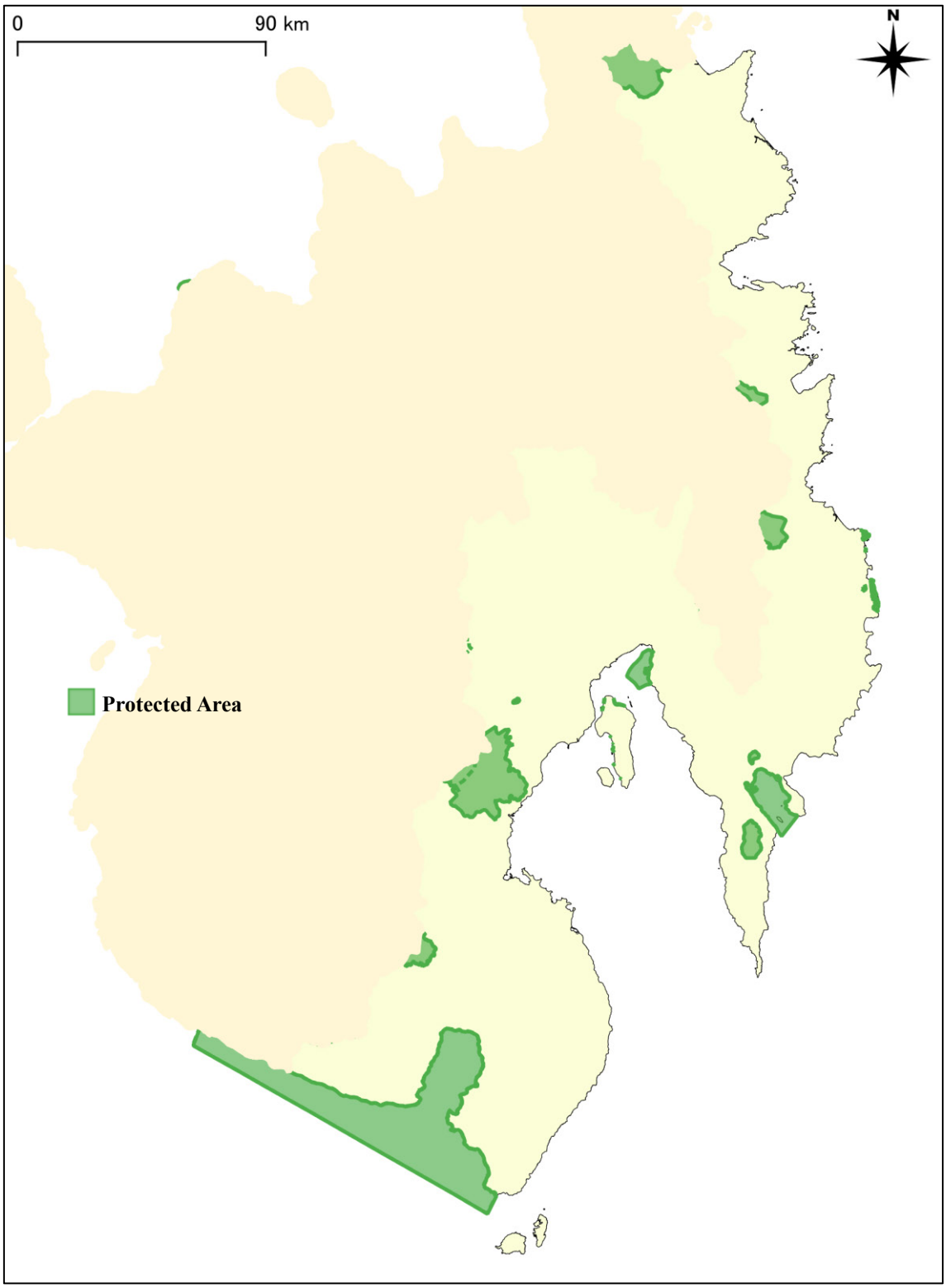
Source: NWRB

Figure A-35 WRR XI: Location of well and spring managed by NWRB



Source: PAGASA/DPWH

Figure A-36 WRR XI: Location of River Water Level Observatory Station



Source: JICA Survey Team based on Biodiversity Management Bureau

Figure A-37 WRR XI: Protected Area

ANNEX B

Socio-Economic Conditions

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Table B-1 Population by Province in Philippines

Region/Year	Province	Population			Average Annual Growth Rate	
		2010	2015	2020 (updated by 2020 census)	2010-2015	2015-2020
National Capital Region (NCR)		**11,855,975**	**12,877,253**	**13,484,462**	**1.7%**	**0.9%**
Cordillera Administrative Region (CAR)	Abra	234,733	241,160	250,985	0.5%	0.8%
	Apayao	112,636	119,184	124,366	1.1%	0.9%
	Benguet	722,620	791,590	827,041	1.8%	0.9%
	Ifugao	191,078	202,802	207,498	1.2%	0.5%
	Kalinga	201,613	212,680	229,570	1.1%	1.5%
	Mountain Province	154,187	154,590	158,200	0.1%	0.5%
	Sub-total	**1,616,867**	**1,722,006**	**1,797,660**	**1.3%**	**0.9%**
Region I - Ilocos Region	Ilocos Norte	568,017	593,081	609,588	0.9%	0.6%
	Ilocos Sur	658,587	689,668	706,009	0.9%	0.5%
	La Union	741,906	786,653	822,352	1.2%	0.9%
	Pangasinan	2,779,862	2,956,726	3,163,190	1.2%	1.4%
	Sub-total	**4,748,372**	**5,026,128**	**5,301,139**	**1.1%**	**1.1%**
Region II - Cagayan Valley	Batanes	16,604	17,246	18,831	0.8%	1.8%
	Cagayan	1,124,773	1,199,320	1,268,603	1.3%	1.1%
	Isabela	1,489,645	1,593,566	1,697,050	1.4%	1.3%
	Nueva Vizcaya	421,355	452,287	497,432	1.4%	1.9%
	Quirino	176,786	188,991	203,828	1.3%	1.5%
	Sub-total	**3,229,163**	**3,451,410**	**3,685,744**	**1.3%**	**1.3%**
Region III - Central Luzon	Aurora	201,233	214,336	235,750	1.3%	1.9%
	Bataan	687,482	760,650	853,373	2.0%	2.3%
	Bulacan	2,924,433	3,292,071	3,708,890	2.4%	2.4%
	Nueva Ecija	1,955,373	2,151,461	2,310,134	1.9%	1.4%
	Pampanga	2,340,355	2,609,744	2,900,637	2.2%	2.1%
	Tarlac	1,273,240	1,366,027	1,503,456	1.4%	1.9%
	Zambales	755,621	823,888	909,932	1.7%	2.0%
	Sub-total	**10,137,737**	**11,218,177**	**12,422,172**	**2.0%**	**2.1%**
Region IV-A - Calabarzon	Batangas	2,377,395	2,694,335	2,908,494	2.5%	1.5%
	Cavite	3,090,691	3,678,301	4,344,829	3.5%	3.4%
	Laguna	2,669,847	3,035,081	3,382,193	2.6%	2.2%
	Quezon	1,987,030	2,122,830	2,229,383	1.3%	1.0%
	Rizal	2,484,840	2,884,227	3,330,143	3.0%	2.9%
	Sub-total	**12,609,803**	**14,414,774**	**16,195,042**	**2.7%**	**2.4%**
Region IV-B - Mimaropa	Marinduque	227,828	234,521	239,207	0.6%	0.4%
	Occidental Mindoro	452,971	487,414	525,354	1.5%	1.5%
	Oriental Mindoro	785,602	844,059	908,339	1.4%	1.5%
	Palawan	994,340	1,104,585	1,246,673	2.1%	2.4%
	Romblon	283,930	292,781	308,985	0.6%	1.1%
	Sub-total	**2,744,671**	**2,963,360**	**3,228,558**	**1.5%**	**1.7%**

Region/Year	Province	Population			Average Annual Growth Rate	
		2010	2015	2020 (updated by 2020 census)	2010-2015	2015-2020
Region V - Bicol Region	Albay	1,233,432	1,314,826	1,374,768	1.3%	0.9%
	Camarines Norte	542,915	583,313	629,699	1.4%	1.5%
	Camarines Sur	1,822,371	1,952,544	2,068,244	1.4%	1.2%
	Catanduanes	246,300	260,964	271,879	1.2%	0.8%
	Masbate	834,650	892,393	908,920	1.3%	0.4%
	Sorsogon	740,743	792,949	828,655	1.4%	0.9%
	Sub-total	**5,420,411**	**5,796,989**	**6,082,165**	**1.4%**	**1.0%**
Region VI - Western Visayas	Aklan	535,725	574,823	615,475	1.4%	1.4%
	Antique	546,031	582,012	612,974	1.3%	1.0%
	Capiz	719,685	761,384	804,952	1.1%	1.1%
	Guimaras	162,943	174,613	187,842	1.4%	1.5%
	Iloilo	2,230,195	2,384,415	2,509,525	1.3%	1.0%
	Negros Occidental	2,907,859	3,059,136	3,223,955	1.0%	1.1%
	Sub-total	**7,102,438**	**7,536,383**	**7,954,723**	**1.2%**	**1.1%**
Region VII - Central Visayas	Bohol	1,255,128	1,313,560	1,394,329	0.9%	1.2%
	Cebu	4,167,320	4,632,359	5,151,274	2.1%	2.1%
	Negros Oriental	1,286,666	1,354,995	1,432,990	1.0%	1.1%
	Siquijor	91,066	95,984	103,395	1.1%	1.5%
	Sub-total	**6,800,180**	**7,396,898**	**8,081,988**	**1.7%**	**1.8%**
Region VIII - Eastern Visayas	Biliran	161,760	171,612	179,312	1.2%	0.9%
	Eastern Samar	428,877	467,160	477,168	1.7%	0.4%
	Leyte	1,789,158	1,966,768	2,028,728	1.9%	0.6%
	Northern Samar	589,013	632,379	639,186	1.4%	0.2%
	Samar	733,377	780,481	793,183	1.3%	0.3%
	Southern Leyte	399,137	421,750	429,573	1.1%	0.4%
	Sub-total	**4,101,322**	**4,440,150**	**4,547,150**	**1.6%**	**0.5%**
Region IX - Zamboanga Peninsula	Isabela City	97,857	112,788	130,379	2.9%	2.9%
	Zamboanga del Norte	957,997	1,011,393	1,047,455	1.1%	0.7%
	Zamboanga del Sur	1,766,814	1,872,473	2,027,902	1.2%	1.6%
	Zamboanga Sibugay	584,685	633,129	669,840	1.6%	1.1%
	Sub-total	**3,407,353**	**3,629,783**	**3,875,576**	**1.3%**	**1.3%**
Region X - Northern Mindanao	Bukidnon	1,299,192	1,415,226	1,541,308	1.7%	1.7%
	Camiguin	83,807	88,478	92,808	1.1%	1.0%
	Lanao del Norte	930,738	1,019,013	1,086,017	1.8%	1.3%
	Misamis Occidental	567,642	602,126	617,333	1.2%	0.5%
	Misamis Oriental	1,415,944	1,564,459	1,685,302	2.0%	1.5%
	Sub-total	**4,297,323**	**4,689,302**	**5,022,768**	**1.8%**	**1.4%**

Region/Year	Province	Population			Average Annual Growth Rate	
		2010	2015	2020 (updated by 2020 census)	2010-2015	2015-2020
Region XI - Davao Region	Davao de Oro	687,195	736,107	767,547	1.4%	0.8%
	Davao del Norte	945,764	1,016,332	1,125,057	1.4%	2.1%
	Davao del Sur	2,024,206	2,265,579	2,457,430	2.3%	1.6%
	Davao Occidental	293,780	316,342	317,159	1.5%	0.1%
	Davao Oriental	517,618	558,958	576,343	1.5%	0.6%
	Sub-total	**4,468,563**	**4,893,318**	**5,243,536**	**1.8%**	**1.4%**
Region XII - SOCCSKSARGEN	Cotabato (North Cotabato)	1,226,508	1,379,747	1,275,185	2.4%	-1.6%
	Cotabato City	271,786	299,438	-	2.0%	-
	Sarangani	498,904	544,261	558,946	1.8%	0.5%
	South Cotabato	1,365,286	1,509,735	1,672,791	2.0%	2.1%
	Sultan Kudarat	747,087	812,095	854,052	1.7%	1.0%
	Sub-total	**4,109,571**	**4,545,276**	**4,360,974**	**2.0%**	**-0.8%**
Region XIII - Caraga	Agusan del Norte	642,196	691,566	760,413	1.5%	1.9%
	Agusan del Sur	656,418	700,653	739,367	1.3%	1.1%
	Dinagat Islands	126,803	127,152	128,117	0.1%	0.2%
	Surigao del Norte	442,588	485,088	534,636	1.9%	2.0%
	Surigao del Sur	561,219	592,250	642,255	1.1%	1.6%
	Sub-total	**2,429,224**	**2,596,709**	**2,804,788**	**1.3%**	**1.6%**
Bangsamoro Autonomous Region in Muslim Mindanao (BARMM)	Basilan	293,322	346,579	426,207	3.4%	4.2%
	Lanao del Sur	933,260	1,045,429	1,195,518	2.3%	2.7%
	Maguindanao	944,718	1,173,933	1,667,258	4.4%	7.3%
	Sulu	718,290	824,731	1,000,108	2.8%	3.9%
	Tawi-Tawi	366,550	390,715	440,276	1.3%	2.4%
	Interim Province	-	-	215,433	-	-
	Sub-total	**3,256,140**	**3,781,387**	**4,944,800**	**3.0%**	**5.5%**
Total*		**92,337,852**	**100,981,437**	**109,035,343**	**1.8%**	**1.5%**

*2010: Population counts for the regions do not add up to the national total. Includes 2,739 Filipinos in Philippine embassies, consulates, and missions abroad.

*2015: Population counts for the regions do not add up to the national total. Includes 2,134 Filipinos in Philippine embassies, consulates, and missions abroad.

*2020: Population counts for the regions do not add up to the national total. Includes 2,098 Filipinos in Philippine embassies, consulates and missions abroad.

Source: PSA "2010 Census of Population and Housing" and "2015 Census of Population"

Table B-2 Population Projection (Medium) by Province

Region/Year	Province	Population			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
		2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
National Capital Region (NCR)		**11,855,975**	**12,877,253**	**13,484,462**	**14,207,245**	**14,587,873**	**14,859,435**	**15,017,450**	**15,029,180**	**14,887,900**	**1.6%**	**0.9%**	**1.0%**	**0.5%**	**0.4%**	**0.2%**	**0.0%**	**-0.2%**
Cordillera Administrative Region (CAR)	Abra	234,733	241,160	250,985	256,072	268,768	279,840	289,928	298,408	304,884	0.5%	0.8%	0.4%	1.0%	0.8%	0.7%	0.6%	0.4%
	Apayao	112,636	119,184	124,366	128,267	138,339	147,332	155,922	163,186	169,223	1.1%	0.9%	0.6%	1.5%	1.3%	1.1%	0.9%	0.7%
	Benguet	722,620	791,590	827,041	871,281	929,612	981,744	1,029,057	1,068,908	1,099,009	1.8%	0.9%	1.0%	1.3%	1.1%	0.9%	0.8%	0.6%
	Ifugao	191,078	202,802	207,498	213,794	231,991	249,326	266,291	282,660	298,163	1.2%	0.5%	0.6%	1.6%	1.5%	1.3%	1.2%	1.1%
	Kalinga	201,613	212,680	229,570	236,392	254,102	270,271	284,802	297,716	308,063	1.1%	1.5%	0.6%	1.5%	1.2%	1.1%	0.9%	0.7%
	Mountain Province	154,187	154,590	158,200	160,291	173,618	186,282	198,591	210,247	221,198	0.1%	0.5%	0.3%	1.6%	1.4%	1.3%	1.1%	1.0%
	Sub-total	**1,616,867**	**1,722,006**	**1,797,660**	**1,866,097**	**1,996,430**	**2,114,795**	**2,224,591**	**2,321,125**	**2,400,540**	**1.2%**	**0.9%**	**0.8%**	**1.4%**	**1.2%**	**1.0%**	**0.9%**	**0.7%**
Region I - Ilocos Region	Ilocos Norte	568,017	593,081	609,588	624,867	625,699	619,427	603,580	580,824	553,154	0.9%	0.6%	0.5%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
	Ilocos Sur	658,587	689,668	706,009	725,576	739,608	746,205	745,581	737,538	720,735	0.9%	0.5%	0.5%	0.4%	0.2%	0.0%	-0.2%	-0.5%
	La Union	741,906	786,653	822,352	854,799	876,565	888,976	889,337	878,642	855,783	1.2%	0.9%	0.8%	0.5%	0.3%	0.0%	-0.2%	-0.5%
	Pangasinan	2,779,862	2,956,726	3,163,190	3,294,535	3,467,269	3,608,310	3,717,644	3,800,252	3,854,052	1.2%	1.4%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
	Sub-total	**4,748,372**	**5,026,128**	**5,301,139**	**5,499,777**	**5,709,141**	**5,862,918**	**5,956,142**	**5,997,256**	**5,983,724**	**1.1%**	**1.1%**	**0.7%**	**0.8%**	**0.5%**	**0.3%**	**0.1%**	**0.0%**
Region II - Cagayan Valley	Batanes	16,604	17,246	18,831	19,622	20,915	22,576	23,874	25,176	26,235	0.8%	1.8%	0.8%	1.3%	1.5%	1.1%	1.1%	0.8%
	Cagayan	1,124,773	1,199,320	1,268,603	1,328,012	1,384,457	1,427,931	1,459,217	1,478,200	1,484,837	1.3%	1.1%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
	Isabela	1,489,645	1,593,566	1,697,050	1,772,235	1,841,177	1,889,212	1,915,004	1,920,418	1,905,655	1.4%	1.3%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%
	Nueva Vizcaya	421,355	452,287	497,432	523,633	551,050	573,689	590,518	601,966	607,904	1.4%	1.9%	1.0%	1.0%	0.8%	0.6%	0.4%	0.2%
	Quirino	176,786	188,991	203,828	211,453	228,495	244,331	258,410	271,463	283,944	1.3%	1.5%	0.7%	1.6%	1.3%	1.1%	1.0%	0.9%
	Sub-total	**3,229,163**	**3,451,410**	**3,685,744**	**3,854,955**	**4,026,094**	**4,157,739**	**4,247,023**	**4,297,223**	**4,308,575**	**1.3%**	**1.3%**	**0.9%**	**0.9%**	**0.6%**	**0.4%**	**0.2%**	**0.1%**

Region/Year	Province	Population			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
		2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
Region III - Central Luzon	Aurora	201,233	214,336	235,750	247,214	279,152	314,993	353,889	396,400	442,697	1.3%	1.9%	1.0%	2.5%	2.4%	2.4%	2.3%	2.2%
	Bataan	687,482	760,650	853,373	918,723	957,862	988,088	1,007,813	1,013,790	1,005,060	2.0%	2.3%	1.5%	0.8%	0.6%	0.4%	0.1%	-0.2%
	Bulacan	2,924,433	3,292,071	3,708,890	4,006,499	4,250,096	4,459,661	4,624,530	4,738,930	4,806,393	2.4%	2.4%	1.6%	1.2%	1.0%	0.7%	0.5%	0.3%
	Nueva Ecija	1,955,373	2,151,461	2,310,134	2,539,148	2,644,167	2,731,405	2,796,403	2,835,713	2,848,595	1.9%	1.4%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
	Pampanga	2,340,355	2,609,744	2,900,637	3,134,327	3,272,650	3,334,904	3,423,893	3,481,639	3,510,778	2.2%	2.1%	1.6%	0.9%	0.4%	0.5%	0.3%	0.2%
	Tarlac	1,273,240	1,366,027	1,503,456	1,583,674	1,644,807	1,750,259	1,788,514	1,809,856	1,814,245	1.4%	1.9%	1.0%	0.8%	1.3%	0.4%	0.2%	0.0%
	Zambales	755,621	823,888	909,932	969,575	1,024,547	1,074,336	1,118,283	1,154,900	1,186,393	1.7%	2.0%	1.3%	1.1%	1.0%	0.8%	0.6%	0.5%
	Sub-total	**10,137,737**	**11,218,177**	**12,422,172**	**13,399,160**	**14,073,281**	**14,653,646**	**15,113,325**	**15,431,228**	**15,614,161**	**2.0%**	**2.1%**	**1.5%**	**1.0%**	**0.8%**	**0.6%**	**0.4%**	**0.2%**
Region IV-A - Calabarzon	Batangas	2,377,395	2,694,335	2,908,494	3,290,211	3,460,189	3,592,222	3,690,012	3,743,402	3,745,928	2.5%	1.5%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
	Cavite	3,090,691	3,678,301	4,344,829	4,812,855	5,161,406	5,470,036	5,740,796	5,961,907	6,109,039	3.5%	3.4%	2.1%	1.4%	1.2%	1.0%	0.8%	0.5%
	Laguna	2,669,847	3,035,081	3,382,193	3,637,898	3,888,919	4,110,041	4,303,157	4,461,368	4,581,509	2.6%	2.2%	1.5%	1.3%	1.1%	0.9%	0.7%	0.5%
	Quezon	1,987,030	2,122,830	2,229,383	2,339,027	2,467,638	2,569,175	2,644,640	2,690,285	2,704,971	1.3%	1.0%	1.0%	1.1%	0.8%	0.6%	0.3%	0.1%
	Rizal	2,484,840	2,884,227	3,330,143	3,611,938	3,896,069	4,154,247	4,387,255	4,586,823	4,741,110	3.0%	2.9%	1.6%	1.5%	1.3%	1.1%	0.9%	0.7%
	Sub-total	**12,609,803**	**14,414,774**	**16,195,042**	**17,691,929**	**18,874,221**	**19,895,721**	**20,765,860**	**21,443,785**	**21,882,557**	**2.6%**	**2.4%**	**1.8%**	**1.3%**	**1.1%**	**0.9%**	**0.6%**	**0.4%**
Region IV-B - Mimaropa	Marinduque	227,828	234,521	239,207	246,454	265,819	284,562	302,524	319,130	334,065	0.6%	0.4%	0.6%	1.5%	1.4%	1.2%	1.1%	0.9%
	Occidental Mindoro	452,971	487,414	525,354	548,804	592,557	632,671	668,889	699,796	724,377	1.5%	1.5%	0.9%	1.5%	1.3%	1.1%	0.9%	0.7%
	Oriental Mindoro	785,602	844,059	908,339	955,963	1,034,297	1,108,478	1,178,342	1,242,747	1,300,619	1.4%	1.5%	1.0%	1.6%	1.4%	1.2%	1.1%	0.9%
	Palawan	994,340	1,104,585	1,246,673	1,341,802	1,455,182	1,560,218	1,653,013	1,731,639	1,793,084	2.1%	2.4%	1.5%	1.6%	1.4%	1.2%	0.9%	0.7%
	Romblon	283,930	292,781	308,985	316,463	342,910	368,911	394,052	417,842	439,268	0.6%	1.1%	0.5%	1.6%	1.5%	1.3%	1.2%	1.0%
	Sub-total	**2,744,671**	**2,963,360**	**3,228,558**	**3,409,486**	**3,690,765**	**3,954,840**	**4,196,820**	**4,411,154**	**4,591,413**	**1.5%**	**1.7%**	**1.1%**	**1.6%**	**1.4%**	**1.2%**	**1.0%**	**0.8%**
Region V - Bicol Region	Albay	1,233,432	1,314,826	1,374,768	1,439,284	1,547,316	1,646,173	1,733,552	1,808,497	1,867,573	1.3%	0.9%	0.9%	1.5%	1.2%	1.0%	0.9%	0.6%
	Camarines Norte	542,915	583,313	629,699	662,572	729,246	795,689	861,257	924,277	983,975	1.4%	1.5%	1.0%	1.9%	1.8%	1.6%	1.4%	1.3%
	Camarines Sur	1,822,371	1,952,544	2,068,244	2,156,438	2,354,372	2,544,477	2,721,266	2,881,057	3,016,879	1.4%	1.2%	0.8%	1.8%	1.6%	1.4%	1.1%	0.9%
	Catanduanes	246,300	260,964	271,879	281,615	312,171	343,200	374,947	406,849	439,191	1.2%	0.8%	0.7%	2.1%	1.9%	1.8%	1.6%	1.5%
	Masbate	834,650	892,393	908,920	943,602	1,037,595	1,130,077	1,215,693	1,294,644	1,366,323	1.3%	0.4%	0.8%	1.9%	1.7%	1.5%	1.3%	1.1%
	Sorsogon	740,743	792,949	828,655	870,765	955,943	1,039,064	1,118,477	1,192,510	1,258,826	1.4%	0.9%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%
	Sub-total	**5,420,411**	**5,796,989**	**6,082,165**	**6,354,276**	**6,936,643**	**7,498,680**	**8,025,192**	**8,507,834**	**8,932,767**	**1.3%**	**1.0%**	**0.9%**	**1.8%**	**1.6%**	**1.4%**	**1.2%**	**1.0%**

Region/Year	Province	Population			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
		2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
Region VI - Western Visayas	Aklan	535,725	574,823	615,475	641,083	681,533	719,225	752,401	781,338	806,430	1.4%	1.4%	0.8%	1.2%	1.1%	0.9%	0.8%	0.6%
	Antique	546,031	582,012	612,974	637,891	702,383	768,166	835,482	904,452	976,121	1.3%	1.0%	0.8%	1.9%	1.8%	1.7%	1.6%	1.5%
	Capiz	719,685	761,384	804,952	852,312	891,686	926,265	952,990	971,461	978,272	1.1%	1.1%	1.1%	0.9%	0.8%	0.6%	0.4%	0.1%
	Guimaras	162,943	174,613	187,842	196,592	207,150	216,083	223,278	228,270	231,237	1.4%	1.5%	0.9%	1.1%	0.8%	0.7%	0.4%	0.3%
	Iloilo	2,230,195	2,384,415	2,509,525	2,620,799	2,744,531	2,847,552	2,930,764	2,989,506	3,021,431	1.3%	1.0%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
	Negros Occidental	2,907,859	3,059,136	3,223,955	3,319,461	3,516,262	3,690,450	3,829,393	3,948,228	4,057,542	1.0%	1.1%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
	Sub-total	**7,102,438**	**7,536,383**	**7,954,723**	**8,268,138**	**8,743,545**	**9,167,741**	**9,524,308**	**9,823,255**	**10,071,033**	**1.3%**	**1.1%**	**0.8%**	**1.1%**	**1.0%**	**0.8%**	**0.6%**	**0.5%**
Region VII - Central Visayas	Bohol	1,255,128	1,313,560	1,394,329	1,438,218	1,559,490	1,681,300	1,800,377	1,918,009	2,035,348	0.9%	1.2%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
	Cebu	4,167,320	4,632,359	5,151,274	5,526,934	5,829,595	6,073,515	6,252,664	6,369,545	6,429,612	2.1%	2.1%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
	Negros Oriental	1,286,666	1,354,995	1,432,990	1,476,065	1,580,984	1,681,625	1,773,436	1,862,360	1,955,428	1.0%	1.1%	0.6%	1.4%	1.2%	1.1%	1.0%	1.0%
	Siquijor	91,066	95,984	103,395	107,176	119,938	133,997	149,538	166,245	183,807	1.1%	1.5%	0.7%	2.3%	2.2%	2.2%	2.1%	2.0%
	Sub-total	**6,800,180**	**7,396,898**	**8,081,988**	**8,548,393**	**9,090,007**	**9,570,437**	**9,976,015**	**10,316,159**	**10,604,195**	**1.8%**	**1.8%**	**1.1%**	**1.2%**	**1.0%**	**0.8%**	**0.7%**	**0.6%**
Region VIII - Eastern Visayas	Biliran	161,760	171,612	179,312	185,616	212,252	241,738	274,025	307,786	342,640	1.2%	0.9%	0.7%	2.7%	2.6%	2.5%	2.4%	2.2%
	Eastern Samar	428,877	467,160	477,168	515,782	561,955	606,141	647,012	685,002	719,081	1.7%	0.4%	1.6%	1.7%	1.5%	1.3%	1.1%	1.0%
	Leyte	1,789,158	1,966,768	2,028,728	2,197,357	2,356,812	2,503,744	2,632,553	2,742,667	2,832,789	1.9%	0.6%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
	Northern Samar	589,013	632,379	639,186	667,053	736,293	802,753	866,540	926,412	982,114	1.4%	0.2%	0.9%	2.0%	1.7%	1.5%	1.3%	1.2%
	Samar	733,377	780,481	793,183	825,275	902,297	976,316	1,045,593	1,110,025	1,168,473	1.3%	0.3%	0.8%	1.8%	1.6%	1.4%	1.2%	1.0%
	Southern Leyte	399,137	421,750	429,573	453,773	484,643	511,638	534,407	551,507	560,892	1.1%	0.4%	1.1%	1.3%	1.1%	0.9%	0.6%	0.3%
	Sub-total	**4,101,322**	**4,440,150**	**4,547,150**	**4,844,856**	**5,254,252**	**5,642,330**	**6,000,130**	**6,323,399**	**6,605,989**	**1.5%**	**0.5%**	**1.3%**	**1.6%**	**1.4%**	**1.2%**	**1.1%**	**0.9%**
Region IX - Zamboanga Peninsula	City of Isabela	97,857	112,788	130,379	143,295	153,869	164,118	172,949	181,020	189,426	2.9%	2.9%	1.9%	1.4%	1.3%	1.1%	0.9%	0.9%
	Zamboanga del Norte	957,997	1,011,393	1,047,455	1,076,328	1,151,155	1,219,237	1,278,022	1,324,948	1,357,363	1.1%	0.7%	0.5%	1.4%	1.2%	0.9%	0.7%	0.5%
	Zamboanga del Sur	1,766,814	1,872,473	2,027,902	2,078,407	2,228,257	2,364,816	2,484,392	2,585,818	2,670,068	1.2%	1.6%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
	Zamboanga Sibugay	584,685	633,129	669,840	707,166	770,003	830,322	885,553	934,635	977,805	1.6%	1.1%	1.1%	1.7%	1.5%	1.3%	1.1%	0.9%
	Sub-total	**3,407,353**	**3,629,783**	**3,875,576**	**4,005,196**	**4,303,284**	**4,578,493**	**4,820,916**	**5,026,421**	**5,194,662**	**1.2%**	**1.3%**	**0.7%**	**1.4%**	**1.2%**	**1.0%**	**0.8%**	**0.7%**

Region/Year	Province	Population			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
		2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
Region X - Northern Mindanao	Bukidnon	1,299,192	1,415,226	1,541,308	1,621,532	1,740,750	1,807,483	1,849,891	1,870,330	1,865,983	1.7%	1.7%	1.0%	1.4%	0.8%	0.5%	0.2%	0.0%
	Camiguin	83,807	88,478	92,808	96,021	104,505	109,959	114,057	116,983	118,767	1.1%	1.0%	0.7%	1.7%	1.0%	0.7%	0.5%	0.3%
	Lanao del Norte	930,738	1,019,013	1,086,017	1,148,123	1,255,585	1,332,223	1,395,821	1,447,348	1,485,712	1.8%	1.3%	1.1%	1.8%	1.2%	0.9%	0.7%	0.5%
	Misamis Occidental	567,642	602,126	617,333	636,736	684,425	714,165	738,181	755,374	765,119	1.2%	0.5%	0.6%	1.5%	0.9%	0.7%	0.5%	0.3%
	Misamis Oriental	1,415,944	1,564,459	1,685,302	1,689,542	1,816,594	1,889,754	1,944,097	1,976,735	1,989,397	2.0%	1.5%	0.1%	1.5%	0.8%	0.6%	0.3%	0.1%
	Sub-total	**4,297,323**	**4,689,302**	**5,022,768**	**5,191,954**	**5,601,859**	**5,853,584**	**6,042,047**	**6,166,770**	**6,224,978**	**1.7%**	**1.4%**	**0.7%**	**1.5%**	**0.9%**	**0.6%**	**0.4%**	**0.2%**
Region XI - Davao Region	Davao de Oro	687,195	736,107	767,547	797,914	853,733	901,451	940,629	968,713	983,299	1.4%	0.8%	0.8%	1.4%	1.1%	0.9%	0.6%	0.3%
	Davao del Norte	945,764	1,016,332	1,125,057	1,161,619	1,231,189	1,290,836	1,339,889	1,377,585	1,405,605	1.4%	2.1%	0.6%	1.2%	1.0%	0.7%	0.6%	0.4%
	Davao del Sur	2,024,206	2,265,579	2,457,430	2,747,370	2,955,408	3,150,789	3,327,273	3,482,277	3,617,435	2.3%	1.6%	2.3%	1.5%	1.3%	1.1%	0.9%	0.8%
	Davao Occidental	293,780	316,342	317,159	333,653	361,517	387,724	411,593	432,770	451,241	1.5%	0.1%	1.0%	1.6%	1.4%	1.2%	1.0%	0.8%
	Davao Oriental	517,618	558,958	576,343	608,542	657,392	704,469	748,443	786,831	817,927	1.5%	0.6%	1.1%	1.6%	1.4%	1.2%	1.0%	0.8%
	Sub-total	**4,468,563**	**4,893,318**	**5,243,536**	**5,649,098**	**6,059,239**	**6,435,269**	**6,767,827**	**7,048,176**	**7,275,507**	**1.7%**	**1.4%**	**1.5%**	**1.4%**	**1.2%**	**1.0%**	**0.8%**	**0.6%**
Region XII - SOCCSKSARGEN	Cotabato (North Cotabato)	1,226,508	1,379,747	1,275,185	1,368,248	1,483,258	1,594,766	1,698,333	1,790,253	1,867,021	2.4%	-1.6%	1.4%	1.6%	1.5%	1.3%	1.1%	0.8%
	Cotabato City	271,786	299,438	-	-	-	-	-	-	-	2.0%	-	-	-	-	-	-	-
	Sarangani	498,904	544,261	558,946	589,300	631,344	666,559	694,947	713,230	718,959	1.8%	0.5%	1.1%	1.4%	1.1%	0.8%	0.5%	0.2%
	South Cotabato	1,365,286	1,509,735	1,672,791	1,787,285	1,915,082	2,028,851	2,126,518	2,204,516	2,258,352	2.0%	2.1%	1.3%	1.4%	1.2%	0.9%	0.7%	0.5%
	Sultan Kudarat	747,087	812,095	854,052	888,933	958,083	1,022,050	1,079,774	1,131,757	1,180,312	1.7%	1.0%	0.8%	1.5%	1.3%	1.1%	0.9%	0.8%
	Sub-total	**4,109,571**	**4,545,276**	**4,360,974**	**4,633,766**	**4,987,767**	**5,312,226**	**5,599,572**	**5,839,756**	**6,024,644**	**1.9%**	**-0.8%**	**1.2%**	**1.5%**	**1.3%**	**1.1%**	**0.8%**	**0.6%**
Region XIII - Caraga	Agusan del Norte	642,196	691,566	760,413	800,995	874,950	949,705	1,023,468	1,094,245	1,160,366	1.5%	1.9%	1.0%	1.8%	1.7%	1.5%	1.3%	1.2%
	Agusan del Sur	656,418	700,653	739,367	768,027	861,098	956,614	1,053,336	1,149,466	1,244,364	1.3%	1.1%	0.8%	2.3%	2.1%	1.9%	1.8%	1.6%
	Dinagat Islands	126,803	127,152	128,117	130,765	142,439	154,013	165,635	177,005	187,966	0.1%	0.2%	0.4%	1.7%	1.6%	1.5%	1.3%	1.2%
	Surigao del Norte	442,588	485,088	534,636	585,012	620,305	650,906	677,069	697,560	711,849	1.9%	2.0%	1.8%	1.2%	1.0%	0.8%	0.6%	0.4%
	Surigao del Sur	561,219	592,250	642,255	666,812	720,516	772,293	822,008	868,514	910,926	1.1%	1.6%	0.8%	1.6%	1.4%	1.3%	1.1%	1.0%
	Sub-total	**2,429,224**	**2,596,709**	**2,804,788**	**2,951,611**	**3,219,308**	**3,483,531**	**3,741,516**	**3,986,790**	**4,215,471**	**1.3%**	**1.6%**	**1.0%**	**1.8%**	**1.6%**	**1.4%**	**1.3%**	**1.1%**

Region/Year	Province	Population			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
		2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
Bangsamoro Autonomous Region in Muslim Mindanao (BARMM)	Basilan	293,322	346,579	426,207	480,153	543,215	609,354	677,417	747,364	817,590	3.4%	4.2%	2.4%	2.5%	2.3%	2.1%	2.0%	1.8%
	Lanao del Sur	933,260	1,045,429	1,195,518	1,320,290	1,487,774	1,658,195	1,830,978	2,006,115	2,179,373	2.3%	2.7%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
	Maguindanao	944,718	1,173,933	1,667,258	1,904,421	2,102,488	2,292,116	2,468,536	2,628,617	2,769,422	4.4%	7.3%	2.7%	2.0%	1.7%	1.5%	1.3%	1.0%
	Sulu	718,290	824,731	1,000,108	1,117,796	1,231,738	1,342,082	1,448,874	1,550,244	1,645,869	2.8%	3.9%	2.2%	2.0%	1.7%	1.5%	1.4%	1.2%
	Tawi-Tawi	366,550	390,715	440,276	461,332	514,895	569,805	625,832	682,689	740,422	1.3%	2.4%	0.9%	2.2%	2.0%	1.9%	1.8%	1.6%
	Interim Province	-	-	215,433	231,154	250,585	269,423	286,920	302,449	315,419	-	-	1.4%	1.6%	1.5%	1.3%	1.1%	0.8%
	Sub-total	**3,256,140**	**3,781,387**	**4,944,800**	**5,515,146**	**6,130,695**	**6,740,975**	**7,338,557**	**7,917,478**	**8,468,095**	**2.9%**	**5.5%**	**2.2%**	**2.1%**	**1.9%**	**1.7%**	**1.5%**	**1.4%**
Total*		**92,337,852**	**100,981,437**	**109,035,343**	**115,891,083**	**123,284,404**	**129,782,360**	**135,357,291**	**139,886,989**	**143,286,211**	**1.7%**	**1.5%**	**1.2%**	**1.2%**	**1.0%**	**0.8%**	**0.7%**	**0.5%**

Source: Philippine Statistics Authority (PSA), “2010 Census of Population and Housing”, “2015 Census of Population”, “2020 Census of Population”, Population projection by JICA Study Team based on PSA "2010 Census-based Population Projections in collaboration with the Inter-Agency Working Group on Population Projections" and "Updated Projected Mid-Year Population Based on 2015 POPCEN by Five- Year Age Group, Sex, Single-Calendar Year and by Province: 2015 - 2025"

Table B-3 Population Projection (Low) by Province

Region/Year	Province	Population			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
		2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
National Capital Region (NCR)		**11,855,975**	**12,877,253**	**13,484,462**	**13,896,336**	**14,268,635**	**14,534,254**	**14,688,811**	**14,700,284**	**14,562,096**	**1.6%**	**0.9%**	**0.6%**	**0.5%**	**0.4%**	**0.2%**	**0.0%**	**-0.2%**
Cordillera Administrative Region (CAR)	Abra	234,733	241,160	250,985	250,468	262,886	273,716	283,583	291,878	298,212	0.5%	0.8%	0.0%	1.0%	0.8%	0.7%	0.6%	0.4%
	Apayao	112,636	119,184	124,366	125,460	135,312	144,108	152,510	159,615	165,520	1.1%	0.9%	0.2%	1.5%	1.3%	1.1%	0.9%	0.7%
	Benguet	722,620	791,590	827,041	852,214	909,269	960,260	1,006,537	1,045,516	1,074,959	1.8%	0.9%	0.6%	1.3%	1.1%	0.9%	0.8%	0.6%
	Ifugao	191,078	202,802	207,498	209,115	226,914	243,870	260,464	276,474	291,638	1.2%	0.5%	0.2%	1.6%	1.5%	1.3%	1.2%	1.1%
	Kalinga	201,613	212,680	229,570	231,219	248,541	264,356	278,569	291,201	301,321	1.1%	1.5%	0.1%	1.5%	1.2%	1.1%	0.9%	0.7%
	Mountain Province	154,187	154,590	158,200	156,783	169,819	182,205	194,245	205,646	216,357	0.1%	0.5%	-0.2%	1.6%	1.4%	1.3%	1.1%	1.0%
	Sub-total	**1,616,867**	**1,722,006**	**1,797,660**	**1,825,259**	**1,952,741**	**2,068,515**	**2,175,908**	**2,270,330**	**2,348,007**	**1.2%**	**0.9%**	**0.3%**	**1.4%**	**1.2%**	**1.0%**	**0.9%**	**0.7%**
Region I - Ilocos Region	Ilocos Norte	568,017	593,081	609,588	611,193	612,006	605,872	590,371	568,113	541,049	0.9%	0.6%	0.1%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
	Ilocos Sur	658,587	689,668	706,009	709,698	723,423	729,875	729,265	721,398	704,963	0.9%	0.5%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
	La Union	741,906	786,653	822,352	836,093	857,382	869,522	869,875	859,414	837,055	1.2%	0.9%	0.3%	0.5%	0.3%	0.0%	-0.2%	-0.5%
	Pangasinan	2,779,862	2,956,726	3,163,190	3,222,438	3,391,392	3,529,346	3,636,288	3,717,088	3,769,711	1.2%	1.4%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
	Sub-total	**4,748,372**	**5,026,128**	**5,301,139**	**5,379,422**	**5,584,203**	**5,734,615**	**5,825,799**	**5,866,013**	**5,852,778**	**1.1%**	**1.1%**	**0.3%**	**0.8%**	**0.5%**	**0.3%**	**0.1%**	**0.0%**
Region II - Cagayan Valley	Batanes	16,604	17,246	18,831	19,193	20,457	22,082	23,352	24,625	25,661	0.8%	1.8%	0.4%	1.3%	1.5%	1.1%	1.1%	0.8%
	Cagayan	1,124,773	1,199,320	1,268,603	1,298,950	1,354,160	1,396,682	1,427,284	1,445,851	1,452,343	1.3%	1.1%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%
	Isabela	1,489,645	1,593,566	1,697,050	1,733,452	1,800,885	1,847,869	1,873,096	1,878,392	1,863,952	1.4%	1.3%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
	Nueva Vizcaya	421,355	452,287	497,432	512,174	538,991	561,135	577,595	588,793	594,601	1.4%	1.9%	0.6%	1.0%	0.8%	0.6%	0.4%	0.2%
	Quirino	176,786	188,991	203,828	206,826	223,495	238,984	252,755	265,522	277,730	1.3%	1.5%	0.3%	1.6%	1.3%	1.1%	1.0%	0.9%
	Sub-total	**3,229,163**	**3,451,410**	**3,685,744**	**3,770,595**	**3,937,988**	**4,066,752**	**4,154,082**	**4,203,183**	**4,214,287**	**1.3%**	**1.3%**	**0.5%**	**0.9%**	**0.6%**	**0.4%**	**0.2%**	**0.1%**
Region III - Central Luzon	Aurora	201,233	214,336	235,750	241,804	273,043	308,100	346,145	387,725	433,009	1.3%	1.9%	0.5%	2.5%	2.4%	2.4%	2.3%	2.2%
	Bataan	687,482	760,650	853,373	898,618	936,900	966,465	985,758	991,604	983,065	2.0%	2.3%	1.0%	0.8%	0.6%	0.4%	0.1%	-0.2%
	Bulacan	2,924,433	3,292,071	3,708,890	3,918,822	4,157,088	4,362,067	4,523,328	4,635,224	4,701,211	2.4%	2.4%	1.1%	1.2%	1.0%	0.7%	0.5%	0.3%
	Nueva Ecija	1,955,373	2,151,461	2,310,134	2,483,582	2,586,303	2,671,631	2,735,207	2,773,657	2,786,257	1.9%	1.4%	1.5%	0.8%	0.7%	0.5%	0.3%	0.1%
	Pampanga	2,340,355	2,609,744	2,900,637	3,065,736	3,201,032	3,261,924	3,348,965	3,405,448	3,433,949	2.2%	2.1%	1.1%	0.9%	0.4%	0.5%	0.3%	0.2%
	Tarlac	1,273,240	1,366,027	1,503,456	1,549,017	1,608,812	1,711,957	1,749,375	1,770,249	1,774,542	1.4%	1.9%	0.6%	0.8%	1.3%	0.4%	0.2%	0.0%
	Zambales	755,621	823,888	909,932	948,357	1,002,126	1,050,825	1,093,811	1,129,626	1,160,430	1.7%	2.0%	0.8%	1.1%	1.0%	0.8%	0.6%	0.5%
	Sub-total	**10,137,737**	**11,218,177**	**12,422,172**	**13,105,936**	**13,765,304**	**14,332,969**	**14,782,589**	**15,093,533**	**15,272,463**	**2.0%**	**2.1%**	**1.1%**	**1.0%**	**0.8%**	**0.6%**	**0.4%**	**0.2%**

Region/Year	Province	Population			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
		2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
Region IV-A - Calabarzon	Batangas	2,377,395	2,694,335	2,908,494	3,218,213	3,384,468	3,513,615	3,609,262	3,661,485	3,663,955	2.5%	1.5%	2.0%	1.0%	0.8%	0.5%	0.3%	0.0%
	Cavite	3,090,691	3,678,301	4,344,829	4,707,531	5,048,457	5,350,328	5,615,162	5,831,439	5,975,353	3.5%	3.4%	1.6%	1.4%	1.2%	1.0%	0.8%	0.5%
	Laguna	2,669,847	3,035,081	3,382,193	3,558,288	3,803,813	4,020,100	4,208,988	4,363,736	4,481,244	2.6%	2.2%	1.0%	1.3%	1.1%	0.9%	0.7%	0.5%
	Quezon	1,987,030	2,122,830	2,229,383	2,287,843	2,413,637	2,512,948	2,586,762	2,631,415	2,645,780	1.3%	1.0%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
	Rizal	2,484,840	2,884,227	3,330,143	3,532,892	3,810,808	4,063,337	4,291,246	4,486,446	4,637,356	3.0%	2.9%	1.2%	1.5%	1.3%	1.1%	0.9%	0.7%
	Sub-total	**12,609,803**	**14,414,774**	**16,195,042**	**17,304,767**	**18,461,183**	**19,460,328**	**20,311,420**	**20,974,521**	**21,403,688**	**2.6%**	**2.4%**	**1.3%**	**1.3%**	**1.1%**	**0.9%**	**0.6%**	**0.4%**
Region IV-B - Mimaropa	Marinduque	227,828	234,521	239,207	241,061	260,002	278,335	295,904	312,146	326,754	0.6%	0.4%	0.2%	1.5%	1.4%	1.2%	1.1%	0.9%
	Occidental Mindoro	452,971	487,414	525,354	536,794	579,590	618,826	654,251	684,482	708,525	1.5%	1.5%	0.4%	1.5%	1.3%	1.1%	0.9%	0.7%
	Oriental Mindoro	785,602	844,059	908,339	935,043	1,011,663	1,084,220	1,152,555	1,215,551	1,272,157	1.4%	1.5%	0.6%	1.6%	1.4%	1.2%	1.1%	0.9%
	Palawan	994,340	1,104,585	1,246,673	1,312,438	1,423,337	1,526,075	1,616,839	1,693,744	1,753,845	2.1%	2.4%	1.0%	1.6%	1.4%	1.2%	0.9%	0.7%
	Romblon	283,930	292,781	308,985	309,538	335,406	360,838	385,429	408,698	429,655	0.6%	1.1%	0.0%	1.6%	1.5%	1.3%	1.2%	1.0%
	Sub-total	**2,744,671**	**2,963,360**	**3,228,558**	**3,334,874**	**3,609,998**	**3,868,294**	**4,104,978**	**4,314,621**	**4,490,936**	**1.5%**	**1.7%**	**0.7%**	**1.6%**	**1.4%**	**1.2%**	**1.0%**	**0.8%**
Region V - Bicol Region	Albay	1,233,432	1,314,826	1,374,768	1,407,788	1,513,456	1,610,146	1,695,617	1,768,923	1,826,702	1.3%	0.9%	0.5%	1.5%	1.2%	1.0%	0.9%	0.6%
	Camarines Norte	542,915	583,313	629,699	648,072	713,284	778,275	842,407	904,049	962,441	1.4%	1.5%	0.6%	1.9%	1.8%	1.6%	1.4%	1.3%
	Camarines Sur	1,822,371	1,952,544	2,068,244	2,109,244	2,302,850	2,488,795	2,661,717	2,818,012	2,950,863	1.4%	1.2%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
	Catanduanes	246,300	260,964	271,879	275,453	305,339	335,692	366,743	397,946	429,583	1.2%	0.8%	0.3%	2.1%	1.9%	1.8%	1.6%	1.5%
	Masbate	834,650	892,393	908,920	922,953	1,014,886	1,105,346	1,189,089	1,266,312	1,336,420	1.3%	0.4%	0.3%	1.9%	1.7%	1.5%	1.3%	1.1%
	Sorsogon	740,743	792,949	828,655	851,709	935,024	1,016,323	1,094,001	1,166,413	1,231,277	1.4%	0.9%	0.6%	1.9%	1.7%	1.5%	1.3%	1.1%
	Sub-total	**5,420,411**	**5,796,989**	**6,082,165**	**6,215,219**	**6,784,839**	**7,334,577**	**7,849,574**	**8,321,655**	**8,737,286**	**1.3%**	**1.0%**	**0.4%**	**1.8%**	**1.6%**	**1.4%**	**1.2%**	**1.0%**
Region VI - Western Visayas	Aklan	535,725	574,823	615,475	627,053	666,619	703,487	735,936	764,236	788,780	1.4%	1.4%	0.4%	1.2%	1.1%	0.9%	0.8%	0.6%
	Antique	546,031	582,012	612,974	623,933	687,014	751,360	817,200	884,662	954,761	1.3%	1.0%	0.4%	1.9%	1.8%	1.7%	1.6%	1.5%
	Capiz	719,685	761,384	804,952	833,659	872,175	905,996	932,136	950,205	956,864	1.1%	1.1%	0.7%	0.9%	0.8%	0.6%	0.4%	0.1%
	Guimaras	162,943	174,613	187,842	192,289	202,618	211,354	218,391	223,274	226,176	1.4%	1.5%	0.5%	1.1%	0.8%	0.7%	0.4%	0.3%
	Iloilo	2,230,195	2,384,415	2,509,525	2,563,443	2,684,469	2,785,232	2,866,627	2,924,081	2,955,307	1.3%	1.0%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
	Negros Occidental	2,907,859	3,059,136	3,223,955	3,246,820	3,439,309	3,609,684	3,745,591	3,861,823	3,968,742	1.0%	1.1%	0.1%	1.2%	1.0%	0.7%	0.6%	0.5%
	Sub-total	**7,102,438**	**7,536,383**	**7,954,723**	**8,087,197**	**8,552,204**	**8,967,113**	**9,315,881**	**9,608,281**	**9,850,630**	**1.3%**	**1.1%**	**0.3%**	**1.1%**	**1.0%**	**0.8%**	**0.6%**	**0.5%**

Region/Year	Province	Population			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
		2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
Region VII - Central Visayas	Bohol	1,255,128	1,313,560	1,394,329	1,406,734	1,525,353	1,644,497	1,760,972	1,876,020	1,990,801	0.9%	1.2%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
	Cebu	4,167,320	4,632,359	5,151,274	5,405,982	5,702,017	5,940,603	6,115,829	6,230,155	6,288,906	2.1%	2.1%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
	Negros Oriental	1,286,666	1,354,995	1,432,990	1,443,763	1,546,384	1,644,824	1,734,626	1,821,607	1,912,634	1.0%	1.1%	0.1%	1.4%	1.2%	1.1%	1.0%	1.0%
	Siquijor	91,066	95,984	103,395	104,831	117,311	131,066	146,266	162,607	179,785	1.1%	1.5%	0.3%	2.3%	2.2%	2.2%	2.1%	2.0%
	Sub-total	**6,800,180**	**7,396,898**	**8,081,988**	**8,361,310**	**8,891,065**	**9,360,990**	**9,757,693**	**10,090,389**	**10,372,126**	**1.8%**	**1.8%**	**0.7%**	**1.2%**	**1.0%**	**0.8%**	**0.7%**	**0.6%**
Region VIII - Eastern Visayas	Biliran	161,760	171,612	179,312	181,554	207,607	236,448	268,028	301,050	335,142	1.2%	0.9%	0.2%	2.7%	2.6%	2.5%	2.4%	2.2%
	Eastern Samar	428,877	467,160	477,168	504,495	549,657	592,876	632,853	670,012	703,345	1.7%	0.4%	1.1%	1.7%	1.5%	1.3%	1.1%	1.0%
	Leyte	1,789,158	1,966,768	2,028,728	2,149,270	2,305,236	2,448,953	2,574,943	2,682,647	2,770,797	1.9%	0.6%	1.2%	1.4%	1.2%	1.0%	0.8%	0.6%
	Northern Samar	589,013	632,379	639,186	652,455	720,180	785,186	847,577	906,139	960,622	1.4%	0.2%	0.4%	2.0%	1.7%	1.5%	1.3%	1.2%
	Samar	733,377	780,481	793,183	807,215	882,551	954,950	1,022,711	1,085,733	1,142,902	1.3%	0.3%	0.4%	1.8%	1.6%	1.4%	1.2%	1.0%
	Southern Leyte	399,137	421,750	429,573	443,843	474,037	500,441	522,712	539,438	548,618	1.1%	0.4%	0.7%	1.3%	1.1%	0.9%	0.6%	0.3%
	Sub-total	**4,101,322**	**4,440,150**	**4,547,150**	**4,738,832**	**5,139,268**	**5,518,854**	**5,868,824**	**6,185,019**	**6,461,426**	**1.5%**	**0.5%**	**0.8%**	**1.6%**	**1.4%**	**1.2%**	**1.1%**	**0.9%**
Region IX - Zamboanga Peninsula	City of Isabela	97,857	112,788	130,379	140,159	150,502	160,526	169,164	177,059	185,281	2.9%	2.9%	1.5%	1.4%	1.3%	1.1%	0.9%	0.9%
	Zamboanga del Norte	957,997	1,011,393	1,047,455	1,052,774	1,125,963	1,192,555	1,250,054	1,295,953	1,327,659	1.1%	0.7%	0.1%	1.4%	1.2%	0.9%	0.7%	0.5%
	Zamboanga del Sur	1,766,814	1,872,473	2,027,902	2,032,924	2,179,494	2,313,065	2,430,024	2,529,230	2,611,637	1.2%	1.6%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%
	Zamboanga Sibugay	584,685	633,129	669,840	691,691	753,152	812,151	866,174	914,182	956,407	1.6%	1.1%	0.6%	1.7%	1.5%	1.3%	1.1%	0.9%
	Sub-total	**3,407,353**	**3,629,783**	**3,875,576**	**3,917,548**	**4,209,111**	**4,478,297**	**4,715,416**	**4,916,424**	**5,080,984**	**1.2%**	**1.3%**	**0.2%**	**1.4%**	**1.2%**	**1.0%**	**0.8%**	**0.7%**
Region X - Northern Mindanao	Bukidnon	1,299,192	1,415,226	1,541,308	1,586,044	1,702,651	1,767,928	1,809,408	1,829,394	1,825,144	1.7%	1.7%	0.6%	1.4%	0.8%	0.5%	0.2%	0.0%
	Camiguin	83,807	88,478	92,808	93,921	102,217	107,554	111,561	114,422	116,167	1.1%	1.0%	0.2%	1.7%	1.0%	0.7%	0.5%	0.3%
	Lanao del Norte	930,738	1,019,013	1,086,017	1,122,996	1,228,105	1,303,068	1,365,273	1,415,674	1,453,196	1.8%	1.3%	0.7%	1.8%	1.2%	0.9%	0.7%	0.5%
	Misamis Occidental	567,642	602,126	617,333	622,800	669,445	698,537	722,026	738,844	748,374	1.2%	0.5%	0.2%	1.5%	0.9%	0.7%	0.5%	0.3%
	Misamis Oriental	1,415,944	1,564,459	1,685,302	1,652,570	1,776,843	1,848,400	1,901,552	1,933,476	1,945,865	2.0%	1.5%	-0.4%	1.5%	0.8%	0.6%	0.3%	0.1%
	Sub-total	**4,297,323**	**4,689,302**	**5,022,768**	**5,078,331**	**5,479,261**	**5,725,487**	**5,909,820**	**6,031,810**	**6,088,746**	**1.7%**	**1.4%**	**0.2%**	**1.5%**	**0.9%**	**0.6%**	**0.4%**	**0.2%**
Region XI - Davao Region	Davao de Oro	687,195	736,107	767,547	780,455	835,049	881,726	920,043	947,512	961,781	1.4%	0.8%	0.3%	1.4%	1.1%	0.9%	0.6%	0.3%
	Davao del Norte	945,764	1,016,332	1,125,057	1,136,197	1,204,247	1,262,588	1,310,567	1,347,441	1,374,843	1.4%	2.1%	0.2%	1.2%	1.0%	0.7%	0.6%	0.4%
	Davao del Sur	2,024,206	2,265,579	2,457,430	2,687,247	2,890,730	3,081,837	3,254,461	3,406,071	3,538,272	2.3%	1.6%	2.3%	1.5%	1.3%	1.1%	0.9%	0.8%
	Davao Occidental	293,780	316,342	317,159	326,352	353,607	379,240	402,586	423,298	441,367	1.5%	0.1%	0.6%	1.6%	1.4%	1.2%	1.0%	0.8%
	Davao Oriental	517,618	558,958	576,343	595,227	643,010	689,053	732,069	769,615	800,030	1.5%	0.6%	0.6%	1.6%	1.4%	1.2%	1.0%	0.8%
	Sub-total	**4,468,563**	**4,893,318**	**5,243,536**	**5,525,478**	**5,926,643**	**6,294,444**	**6,619,726**	**6,893,937**	**7,116,293**	**1.7%**	**1.4%**	**1.1%**	**1.4%**	**1.2%**	**1.0%**	**0.8%**	**0.6%**

Region/Year	Province	Population			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
		2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
Region XII - SOCCSKSARGEN	Cotabato (North Cotabato)	1,226,508	1,379,747	1,275,185	1,338,305	1,450,799	1,559,868	1,661,171	1,751,076	1,826,166	2.4%	-1.6%	1.0%	1.6%	1.5%	1.3%	1.1%	0.8%
	Cotabato City	271,786	299,438	-	-	-	-	-	-	-	2.0%	-	-	-	-	-	-	-
	Sarangani	498,904	544,261	558,946	576,404	617,527	651,971	679,736	697,620	703,224	1.8%	0.5%	0.6%	1.4%	1.1%	0.8%	0.5%	0.2%
	South Cotabato	1,365,286	1,509,735	1,672,791	1,748,172	1,873,172	1,984,451	2,079,980	2,156,272	2,208,928	2.0%	2.1%	0.9%	1.4%	1.2%	0.9%	0.7%	0.5%
	Sultan Kudarat	747,087	812,095	854,052	869,481	937,115	999,683	1,056,145	1,106,991	1,154,481	1.7%	1.0%	0.4%	1.5%	1.3%	1.1%	0.9%	0.8%
	Sub-total	**4,109,571**	**4,545,276**	**4,360,974**	**4,532,362**	**4,878,613**	**5,195,973**	**5,477,032**	**5,711,959**	**5,892,799**	**1.9%**	**-0.8%**	**0.8%**	**1.5%**	**1.3%**	**1.1%**	**0.8%**	**0.6%**
Region XIII - Caraga	Agusan del Norte	642,196	691,566	760,413	783,467	855,803	928,921	1,001,071	1,070,297	1,134,974	1.5%	1.9%	0.6%	1.8%	1.7%	1.5%	1.3%	1.2%
	Agusan del Sur	656,418	700,653	739,367	751,222	842,256	935,683	1,030,289	1,124,316	1,217,137	1.3%	1.1%	0.3%	2.3%	2.1%	1.9%	1.8%	1.6%
	Dinagat Islands	126,803	127,152	128,117	127,903	139,321	150,640	162,010	173,131	183,852	0.1%	0.2%	0.0%	1.7%	1.6%	1.5%	1.3%	1.2%
	Surigao del Norte	442,588	485,088	534,636	572,209	606,729	636,661	662,251	682,289	696,266	1.9%	2.0%	1.4%	1.2%	1.0%	0.8%	0.6%	0.4%
	Surigao del Sur	561,219	592,250	642,255	652,222	704,746	755,394	804,020	849,508	890,991	1.1%	1.6%	0.3%	1.6%	1.4%	1.3%	1.1%	1.0%
	Sub-total	**2,429,224**	**2,596,709**	**2,804,788**	**2,887,023**	**3,148,855**	**3,407,299**	**3,659,641**	**3,899,541**	**4,123,220**	**1.3%**	**1.6%**	**0.6%**	**1.8%**	**1.6%**	**1.4%**	**1.3%**	**1.1%**
Bangsamoro Autonomous Region in Muslim Mindanao (BARMM)	Basilan	293,322	346,579	426,207	469,645	531,327	596,019	662,593	731,009	799,698	3.4%	4.2%	2.0%	2.5%	2.3%	2.1%	2.0%	1.8%
	Lanao del Sur	933,260	1,045,429	1,195,518	1,291,397	1,455,216	1,621,907	1,790,909	1,962,214	2,131,680	2.3%	2.7%	1.6%	2.4%	2.2%	2.0%	1.8%	1.7%
	Maguindanao	944,718	1,173,933	1,667,258	1,862,745	2,056,478	2,241,956	2,414,515	2,571,093	2,708,817	4.4%	7.3%	2.2%	2.0%	1.7%	1.5%	1.3%	1.0%
	Sulu	718,290	824,731	1,000,108	1,093,334	1,204,783	1,312,712	1,417,167	1,516,319	1,609,851	2.8%	3.9%	1.8%	2.0%	1.7%	1.5%	1.4%	1.2%
	Tawi-Tawi	366,550	390,715	440,276	451,236	503,627	557,336	612,136	667,749	724,219	1.3%	2.4%	0.5%	2.2%	2.0%	1.9%	1.8%	1.6%
	Interim Province	-	-	215,433	226,096	245,102	263,527	280,641	295,831	308,516	-	-	1.0%	1.6%	1.5%	1.3%	1.1%	0.8%
	Sub-total	**3,256,140**	**3,781,387**	**4,944,800**	**5,394,453**	**5,996,533**	**6,593,457**	**7,177,961**	**7,744,215**	**8,282,781**	**2.9%**	**5.5%**	**1.8%**	**2.1%**	**1.9%**	**1.7%**	**1.5%**	**1.4%**
Total		**92,337,852**	**100,981,437**	**109,035,343**	**113,354,942**	**120,586,444**	**126,942,218**	**132,395,155**	**136,825,715**	**140,150,546**	**1.7%**	**1.5%**	**0.8%**	**1.2%**	**1.0%**	**0.8%**	**0.7%**	**0.5%**

Table B-4 Population Projection (High) by Province

Region/Year	Province	Population			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
		2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
National Capital Region (NCR)		**11,855,975**	**12,877,253**	**13,484,462**	**14,350,763**	**14,735,236**	**15,009,542**	**15,169,153**	**15,181,001**	**15,038,294**	**1.6%**	**0.9%**	**1.3%**	**0.5%**	**0.4%**	**0.2%**	**0.0%**	**-0.2%**
Cordillera Administrative Region (CAR)	Abra	234,733	241,160	250,985	258,659	271,483	282,667	292,857	301,422	307,964	0.5%	0.8%	0.6%	1.0%	0.8%	0.7%	0.6%	0.4%
	Apayao	112,636	119,184	124,366	129,563	139,736	148,820	157,497	164,834	170,932	1.1%	0.9%	0.8%	1.5%	1.3%	1.1%	0.9%	0.7%
	Benguet	722,620	791,590	827,041	880,082	939,003	991,661	1,039,452	1,079,706	1,110,111	1.8%	0.9%	1.3%	1.3%	1.1%	0.9%	0.8%	0.6%
	Ifugao	191,078	202,802	207,498	215,954	234,335	251,845	268,981	285,515	301,175	1.2%	0.5%	0.8%	1.6%	1.5%	1.3%	1.2%	1.1%
	Kalinga	201,613	212,680	229,570	238,780	256,669	273,001	287,679	300,723	311,175	1.1%	1.5%	0.8%	1.5%	1.2%	1.1%	0.9%	0.7%
	Mountain Province	154,187	154,590	158,200	161,910	175,372	188,164	200,597	212,371	223,432	0.1%	0.5%	0.5%	1.6%	1.4%	1.3%	1.1%	1.0%
	Sub-total	**1,616,867**	**1,722,006**	**1,797,660**	**1,884,948**	**2,016,598**	**2,136,158**	**2,247,063**	**2,344,571**	**2,424,789**	**1.2%**	**0.9%**	**1.0%**	**1.4%**	**1.2%**	**1.0%**	**0.9%**	**0.7%**
Region I - Ilocos Region	Ilocos Norte	568,017	593,081	609,588	631,179	632,020	625,684	609,677	586,691	558,742	0.9%	0.6%	0.7%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
	Ilocos Sur	658,587	689,668	706,009	732,906	747,079	753,743	753,113	744,988	728,016	0.9%	0.5%	0.8%	0.4%	0.2%	0.0%	-0.2%	-0.5%
	La Union	741,906	786,653	822,352	863,434	885,420	897,956	898,321	887,518	864,428	1.2%	0.9%	1.0%	0.5%	0.3%	0.0%	-0.2%	-0.5%
	Pangasinan	2,779,862	2,956,726	3,163,190	3,327,816	3,502,295	3,644,760	3,755,199	3,838,641	3,892,985	1.2%	1.4%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
	Sub-total	**4,748,372**	**5,026,128**	**5,301,139**	**5,555,335**	**5,766,814**	**5,922,143**	**6,016,310**	**6,057,838**	**6,044,171**	**1.1%**	**1.1%**	**0.9%**	**0.8%**	**0.5%**	**0.3%**	**0.1%**	**0.0%**
Region II - Cagayan Valley	Batanes	16,604	17,246	18,831	19,820	21,126	22,804	24,115	25,430	26,500	0.8%	1.8%	1.0%	1.3%	1.5%	1.1%	1.1%	0.8%
	Cagayan	1,124,773	1,199,320	1,268,603	1,341,427	1,398,442	1,442,356	1,473,958	1,493,132	1,499,836	1.3%	1.1%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
	Isabela	1,489,645	1,593,566	1,697,050	1,790,138	1,859,776	1,908,296	1,934,349	1,939,818	1,924,906	1.4%	1.3%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%
	Nueva Vizcaya	421,355	452,287	497,432	528,923	556,617	579,484	596,483	608,047	614,045	1.4%	1.9%	1.2%	1.0%	0.8%	0.6%	0.4%	0.2%
	Quirino	176,786	188,991	203,828	213,589	230,803	246,799	261,020	274,205	286,812	1.3%	1.5%	0.9%	1.6%	1.3%	1.1%	1.0%	0.9%
	Sub-total	**3,229,163**	**3,451,410**	**3,685,744**	**3,893,897**	**4,066,764**	**4,199,739**	**4,289,925**	**4,340,632**	**4,352,099**	**1.3%**	**1.3%**	**1.1%**	**0.9%**	**0.6%**	**0.4%**	**0.2%**	**0.1%**
Region III - Central Luzon	Aurora	201,233	214,336	235,750	249,711	281,972	318,175	357,464	400,404	447,169	1.3%	1.9%	1.2%	2.5%	2.4%	2.4%	2.3%	2.2%
	Bataan	687,482	760,650	853,373	928,004	967,538	998,069	1,017,994	1,024,031	1,015,213	2.0%	2.3%	1.7%	0.8%	0.6%	0.4%	0.1%	-0.2%
	Bulacan	2,924,433	3,292,071	3,708,890	4,046,972	4,293,030	4,504,712	4,671,246	4,786,802	4,854,946	2.4%	2.4%	1.8%	1.2%	1.0%	0.7%	0.5%	0.3%
	Nueva Ecija	1,955,373	2,151,461	2,310,134	2,564,798	2,670,878	2,758,997	2,824,652	2,864,359	2,877,371	1.9%	1.4%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
	Pampanga	2,340,355	2,609,744	2,900,637	3,165,989	3,305,710	3,368,592	3,458,480	3,516,810	3,546,243	2.2%	2.1%	1.8%	0.9%	0.4%	0.5%	0.3%	0.2%
	Tarlac	1,273,240	1,366,027	1,503,456	1,599,672	1,661,422	1,767,940	1,806,581	1,828,139	1,832,572	1.4%	1.9%	1.2%	0.8%	1.3%	0.4%	0.2%	0.0%
	Zambales	755,621	823,888	909,932	979,369	1,034,897	1,085,189	1,129,580	1,166,567	1,198,378	1.7%	2.0%	1.5%	1.1%	1.0%	0.8%	0.6%	0.5%
	Sub-total	**10,137,737**	**11,218,177**	**12,422,172**	**13,534,515**	**14,215,447**	**14,801,674**	**15,265,997**	**15,587,112**	**15,771,892**	**2.0%**	**2.1%**	**1.7%**	**1.0%**	**0.8%**	**0.6%**	**0.4%**	**0.2%**

Region/Year	Province	Population			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
		2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
Region IV-A - Calabarzon	Batangas	2,377,395	2,694,335	2,908,494	3,323,453	3,495,147	3,628,515	3,727,287	3,781,224	3,783,770	2.5%	1.5%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
	Cavite	3,090,691	3,678,301	4,344,829	4,861,473	5,213,547	5,525,292	5,798,783	6,022,135	6,170,753	3.5%	3.4%	2.3%	1.4%	1.2%	1.0%	0.8%	0.5%
	Laguna	2,669,847	3,035,081	3,382,193	3,674,647	3,928,205	4,151,560	4,346,625	4,506,434	4,627,787	2.6%	2.2%	1.7%	1.3%	1.1%	0.9%	0.7%	0.5%
	Quezon	1,987,030	2,122,830	2,229,383	2,362,655	2,492,566	2,595,125	2,671,350	2,717,461	2,732,300	1.3%	1.0%	1.2%	1.1%	0.8%	0.6%	0.3%	0.1%
	Rizal	2,484,840	2,884,227	3,330,143	3,648,424	3,935,424	4,196,211	4,431,576	4,633,160	4,789,004	3.0%	2.9%	1.8%	1.5%	1.3%	1.1%	0.9%	0.7%
	Sub-total	**12,609,803**	**14,414,774**	**16,195,042**	**17,870,652**	**19,064,889**	**20,096,703**	**20,975,621**	**21,660,414**	**22,103,614**	**2.6%**	**2.4%**	**2.0%**	**1.3%**	**1.1%**	**0.9%**	**0.6%**	**0.4%**
Region IV-B - Mimaropa	Marinduque	227,828	234,521	239,207	248,944	268,504	287,437	305,580	322,354	337,440	0.6%	0.4%	0.8%	1.5%	1.4%	1.2%	1.1%	0.9%
	Occidental Mindoro	452,971	487,414	525,354	554,348	598,543	639,062	675,646	706,865	731,694	1.5%	1.5%	1.1%	1.5%	1.3%	1.1%	0.9%	0.7%
	Oriental Mindoro	785,602	844,059	908,339	965,620	1,044,745	1,119,676	1,190,245	1,255,301	1,313,758	1.4%	1.5%	1.2%	1.6%	1.4%	1.2%	1.1%	0.9%
	Palawan	994,340	1,104,585	1,246,673	1,355,357	1,469,882	1,575,979	1,669,711	1,749,132	1,811,197	2.1%	2.4%	1.7%	1.6%	1.4%	1.2%	0.9%	0.7%
	Romblon	283,930	292,781	308,985	319,660	346,374	372,638	398,033	422,063	443,705	0.6%	1.1%	0.7%	1.6%	1.5%	1.3%	1.2%	1.0%
	Sub-total	**2,744,671**	**2,963,360**	**3,228,558**	**3,443,929**	**3,728,048**	**3,994,792**	**4,239,215**	**4,455,715**	**4,637,794**	**1.5%**	**1.7%**	**1.3%**	**1.6%**	**1.4%**	**1.2%**	**1.0%**	**0.8%**
Region V - Bicol Region	Albay	1,233,432	1,314,826	1,374,768	1,453,824	1,562,947	1,662,800	1,751,067	1,826,768	1,886,437	1.3%	0.9%	1.1%	1.5%	1.2%	1.0%	0.9%	0.6%
	Camarines Norte	542,915	583,313	629,699	669,264	736,612	803,724	869,956	933,613	993,914	1.4%	1.5%	1.2%	1.9%	1.8%	1.6%	1.4%	1.3%
	Camarines Sur	1,822,371	1,952,544	2,068,244	2,178,220	2,378,157	2,570,182	2,748,759	2,910,165	3,047,361	1.4%	1.2%	1.0%	1.8%	1.6%	1.4%	1.1%	0.9%
	Catanduanes	246,300	260,964	271,879	284,461	315,324	346,670	378,735	410,962	443,629	1.2%	0.8%	0.9%	2.1%	1.9%	1.8%	1.6%	1.5%
	Masbate	834,650	892,393	908,920	953,135	1,048,074	1,141,490	1,227,974	1,307,723	1,380,121	1.3%	0.4%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%
	Sorsogon	740,743	792,949	828,655	879,560	965,599	1,049,556	1,129,776	1,204,558	1,271,543	1.4%	0.9%	1.2%	1.9%	1.7%	1.5%	1.3%	1.1%
	Sub-total	**5,420,411**	**5,796,989**	**6,082,165**	**6,418,464**	**7,006,713**	**7,574,422**	**8,106,267**	**8,593,789**	**9,023,005**	**1.3%**	**1.0%**	**1.1%**	**1.8%**	**1.6%**	**1.4%**	**1.2%**	**1.0%**
Region VI - Western Visayas	Aklan	535,725	574,823	615,475	647,559	688,417	726,489	760,000	789,229	814,579	1.4%	1.4%	1.0%	1.2%	1.1%	0.9%	0.8%	0.6%
	Antique	546,031	582,012	612,974	644,336	709,478	775,930	843,921	913,597	985,981	1.3%	1.0%	1.0%	1.9%	1.8%	1.7%	1.6%	1.5%
	Capiz	719,685	761,384	804,952	860,923	900,698	935,622	962,618	981,278	988,156	1.1%	1.1%	1.4%	0.9%	0.8%	0.6%	0.4%	0.1%
	Guimaras	162,943	174,613	187,842	198,579	209,243	218,267	225,534	230,575	233,572	1.4%	1.5%	1.1%	1.1%	0.8%	0.7%	0.4%	0.3%
	Iloilo	2,230,195	2,384,415	2,509,525	2,647,271	2,772,256	2,876,314	2,960,365	3,019,703	3,051,951	1.3%	1.0%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
	Negros Occidental	2,907,859	3,059,136	3,223,955	3,352,993	3,551,781	3,727,730	3,868,079	3,988,110	4,098,527	1.0%	1.1%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
	Sub-total	**7,102,438**	**7,536,383**	**7,954,723**	**8,351,661**	**8,831,873**	**9,260,352**	**9,620,517**	**9,922,492**	**10,172,766**	**1.3%**	**1.1%**	**1.0%**	**1.1%**	**1.0%**	**0.8%**	**0.6%**	**0.5%**

Region/Year	Province	Population			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
		2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
Region VII - Central Visayas	Bohol	1,255,128	1,313,560	1,394,329	1,452,736	1,575,233	1,698,276	1,818,554	1,937,373	2,055,897	0.9%	1.2%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
	Cebu	4,167,320	4,632,359	5,151,274	5,582,761	5,888,482	6,134,869	6,315,823	6,433,889	6,494,564	2.1%	2.1%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
	Negros Oriental	1,286,666	1,354,995	1,432,990	1,490,976	1,596,953	1,698,611	1,791,353	1,881,173	1,975,181	1.0%	1.1%	0.8%	1.4%	1.2%	1.1%	1.0%	1.0%
	Siquijor	91,066	95,984	103,395	108,258	121,149	135,352	151,048	167,924	185,663	1.1%	1.5%	0.9%	2.3%	2.2%	2.2%	2.1%	2.0%
	Sub-total	**6,800,180**	**7,396,898**	**8,081,988**	**8,634,731**	**9,181,817**	**9,667,108**	**10,076,778**	**10,420,359**	**10,711,305**	**1.8%**	**1.8%**	**1.3%**	**1.2%**	**1.0%**	**0.8%**	**0.7%**	**0.6%**
Region VIII - Eastern Visayas	Biliran	161,760	171,612	179,312	187,491	214,396	244,180	276,793	310,895	346,101	1.2%	0.9%	0.9%	2.7%	2.6%	2.5%	2.4%	2.2%
	Eastern Samar	428,877	467,160	477,168	520,992	567,632	612,264	653,548	691,922	726,345	1.7%	0.4%	1.8%	1.7%	1.5%	1.3%	1.1%	1.0%
	Leyte	1,789,158	1,966,768	2,028,728	2,219,554	2,380,620	2,529,036	2,659,146	2,770,373	2,861,405	1.9%	0.6%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
	Northern Samar	589,013	632,379	639,186	673,791	743,731	810,862	875,294	935,770	992,035	1.4%	0.2%	1.1%	2.0%	1.7%	1.5%	1.3%	1.2%
	Samar	733,377	780,481	793,183	833,612	911,412	986,179	1,056,155	1,121,238	1,180,277	1.3%	0.3%	1.0%	1.8%	1.6%	1.4%	1.2%	1.0%
	Southern Leyte	399,137	421,750	429,573	458,357	489,539	516,806	539,805	557,078	566,558	1.1%	0.4%	1.3%	1.3%	1.1%	0.9%	0.6%	0.3%
	Sub-total	**4,101,322**	**4,440,150**	**4,547,150**	**4,893,797**	**5,307,330**	**5,699,327**	**6,060,741**	**6,387,276**	**6,672,721**	**1.5%**	**0.5%**	**1.5%**	**1.6%**	**1.4%**	**1.2%**	**1.1%**	**0.9%**
Region IX - Zamboanga Peninsula	City of Isabela	97,857	112,788	130,379	144,743	155,423	165,776	174,696	182,849	191,340	2.9%	2.9%	2.1%	1.4%	1.3%	1.1%	0.9%	0.9%
	Zamboanga del Norte	957,997	1,011,393	1,047,455	1,087,201	1,162,784	1,231,553	1,290,932	1,338,332	1,371,075	1.1%	0.7%	0.7%	1.4%	1.2%	0.9%	0.7%	0.5%
	Zamboanga del Sur	1,766,814	1,872,473	2,027,902	2,099,403	2,250,766	2,388,705	2,509,489	2,611,939	2,697,040	1.2%	1.6%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
	Zamboanga Sibugay	584,685	633,129	669,840	714,310	777,781	838,710	894,499	944,076	987,683	1.6%	1.1%	1.3%	1.7%	1.5%	1.3%	1.1%	0.9%
	Sub-total	**3,407,353**	**3,629,783**	**3,875,576**	**4,045,657**	**4,346,754**	**4,624,744**	**4,869,616**	**5,077,196**	**5,247,138**	**1.2%**	**1.3%**	**0.9%**	**1.4%**	**1.2%**	**1.0%**	**0.8%**	**0.7%**
Region X - Northern Mindanao	Bukidnon	1,299,192	1,415,226	1,541,308	1,637,909	1,758,329	1,825,740	1,868,575	1,889,219	1,884,828	1.7%	1.7%	1.2%	1.4%	0.8%	0.5%	0.2%	0.0%
	Camiguin	83,807	88,478	92,808	96,993	105,561	111,069	115,209	118,163	119,965	1.1%	1.0%	0.9%	1.7%	1.0%	0.7%	0.5%	0.3%
	Lanao del Norte	930,738	1,019,013	1,086,017	1,159,722	1,268,266	1,345,678	1,409,920	1,461,967	1,500,720	1.8%	1.3%	1.3%	1.8%	1.2%	0.9%	0.7%	0.5%
	Misamis Occidental	567,642	602,126	617,333	643,168	691,340	721,380	745,637	763,008	772,849	1.2%	0.5%	0.8%	1.5%	0.9%	0.7%	0.5%	0.3%
	Misamis Oriental	1,415,944	1,564,459	1,685,302	1,706,610	1,834,946	1,908,843	1,963,736	1,996,701	2,009,493	2.0%	1.5%	0.3%	1.5%	0.8%	0.6%	0.3%	0.1%
	Sub-total	**4,297,323**	**4,689,302**	**5,022,768**	**5,244,402**	**5,658,442**	**5,912,710**	**6,103,077**	**6,229,058**	**6,287,855**	**1.7%**	**1.4%**	**0.9%**	**1.5%**	**0.9%**	**0.6%**	**0.4%**	**0.2%**
Region XI - Davao Region	Davao de Oro	687,195	736,107	767,547	805,976	862,358	910,558	950,131	978,499	993,232	1.4%	0.8%	1.0%	1.4%	1.1%	0.9%	0.6%	0.3%
	Davao del Norte	945,764	1,016,332	1,125,057	1,173,351	1,243,625	1,303,875	1,353,424	1,391,501	1,419,805	1.4%	2.1%	0.8%	1.2%	1.0%	0.7%	0.6%	0.4%
	Davao del Sur	2,024,206	2,265,579	2,457,430	2,775,124	2,985,258	3,182,616	3,360,886	3,517,454	3,653,979	2.3%	1.6%	2.3%	1.5%	1.3%	1.1%	0.9%	0.8%
	Davao Occidental	293,780	316,342	317,159	337,024	365,171	391,641	415,751	437,142	455,800	1.5%	0.1%	1.2%	1.6%	1.4%	1.2%	1.0%	0.8%
	Davao Oriental	517,618	558,958	576,343	614,691	664,036	711,587	756,006	794,782	826,190	1.5%	0.6%	1.3%	1.6%	1.4%	1.2%	1.0%	0.8%
	Sub-total	**4,468,563**	**4,893,318**	**5,243,536**	**5,706,166**	**6,120,448**	**6,500,277**	**6,836,198**	**7,119,378**	**7,349,006**	**1.7%**	**1.4%**	**1.7%**	**1.4%**	**1.2%**	**1.0%**	**0.8%**	**0.6%**

Region/Year	Province	Population			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
		2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
Region XII - SOCCSKSARGEN	Cotabato (North Cotabato)	1,226,508	1,379,747	1,275,185	1,382,069	1,498,245	1,610,877	1,715,490	1,808,341	1,885,885	2.4%	-1.6%	1.6%	1.6%	1.5%	1.3%	1.1%	0.8%
	Cotabato City	271,786	299,438	-	-	-	-	-	-	-	2.0%	-	-	-	-	-	-	-
	Sarangani	498,904	544,261	558,946	595,253	637,720	673,291	701,964	720,434	726,220	1.8%	0.5%	1.3%	1.4%	1.1%	0.8%	0.5%	0.2%
	South Cotabato	1,365,286	1,509,735	1,672,791	1,805,341	1,934,426	2,049,344	2,148,000	2,226,784	2,281,161	2.0%	2.1%	1.5%	1.4%	1.2%	0.9%	0.7%	0.5%
	Sultan Kudarat	747,087	812,095	854,052	897,914	967,760	1,032,372	1,090,683	1,143,190	1,192,234	1.7%	1.0%	1.0%	1.5%	1.3%	1.1%	0.9%	0.8%
	Sub-total	**4,109,571**	**4,545,276**	**4,360,974**	**4,680,577**	**5,038,151**	**5,365,884**	**5,656,137**	**5,898,749**	**6,085,500**	**1.9%**	**-0.8%**	**1.4%**	**1.5%**	**1.3%**	**1.1%**	**0.8%**	**0.6%**
Region XIII - Caraga	Agusan del Norte	642,196	691,566	760,413	809,086	883,791	959,299	1,033,808	1,105,298	1,172,088	1.5%	1.9%	1.2%	1.8%	1.7%	1.5%	1.3%	1.2%
	Agusan del Sur	656,418	700,653	739,367	775,788	869,801	966,281	1,063,981	1,161,081	1,256,937	1.3%	1.1%	1.0%	2.3%	2.1%	1.9%	1.8%	1.6%
	Dinagat Islands	126,803	127,152	128,117	132,084	143,877	155,566	167,308	178,791	189,864	0.1%	0.2%	0.6%	1.7%	1.6%	1.5%	1.3%	1.2%
	Surigao del Norte	442,588	485,088	534,636	590,918	626,571	657,480	683,905	704,604	719,036	1.9%	2.0%	2.0%	1.2%	1.0%	0.8%	0.6%	0.4%
	Surigao del Sur	561,219	592,250	642,255	673,550	727,795	780,095	830,314	877,288	920,129	1.1%	1.6%	1.0%	1.6%	1.4%	1.3%	1.1%	1.0%
	Sub-total	**2,429,224**	**2,596,709**	**2,804,788**	**2,981,426**	**3,251,835**	**3,518,721**	**3,779,316**	**4,027,062**	**4,258,054**	**1.3%**	**1.6%**	**1.2%**	**1.8%**	**1.6%**	**1.4%**	**1.3%**	**1.1%**
Bangsamoro Autonomous Region in Muslim Mindanao (BARMM)	Basilan	293,322	346,579	426,207	485,003	548,702	615,510	684,260	754,914	825,849	3.4%	4.2%	2.6%	2.5%	2.3%	2.1%	2.0%	1.8%
	Lanao del Sur	933,260	1,045,429	1,195,518	1,333,627	1,502,803	1,674,946	1,849,474	2,026,380	2,201,389	2.3%	2.7%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
	Maguindanao	944,718	1,173,933	1,667,258	1,923,659	2,123,727	2,315,270	2,493,473	2,655,171	2,797,398	4.4%	7.3%	2.9%	2.0%	1.7%	1.5%	1.3%	1.0%
	Sulu	718,290	824,731	1,000,108	1,129,088	1,244,181	1,355,639	1,463,510	1,565,904	1,662,495	2.8%	3.9%	2.5%	2.0%	1.7%	1.5%	1.4%	1.2%
	Tawi-Tawi	366,550	390,715	440,276	465,992	520,096	575,561	632,154	689,585	747,902	1.3%	2.4%	1.1%	2.2%	2.0%	1.9%	1.8%	1.6%
	Interim Province	-	-	215,433	233,490	253,117	272,145	289,819	305,505	318,605	-	-	1.6%	1.6%	1.5%	1.3%	1.1%	0.8%
	Sub-total	**3,256,140**	**3,781,387**	**4,944,800**	**5,570,859**	**6,192,626**	**6,809,071**	**7,412,690**	**7,997,459**	**8,553,638**	**2.9%**	**5.5%**	**2.4%**	**2.1%**	**1.9%**	**1.7%**	**1.5%**	**1.4%**
Total		**92,337,852**	**100,981,437**	**109,035,343**	**117,061,779**	**124,529,785**	**131,093,367**	**136,724,621**	**141,300,101**	**144,733,641**	**1.7%**	**1.5%**	**1.4%**	**1.2%**	**1.0%**	**0.8%**	**0.7%**	**0.5%**

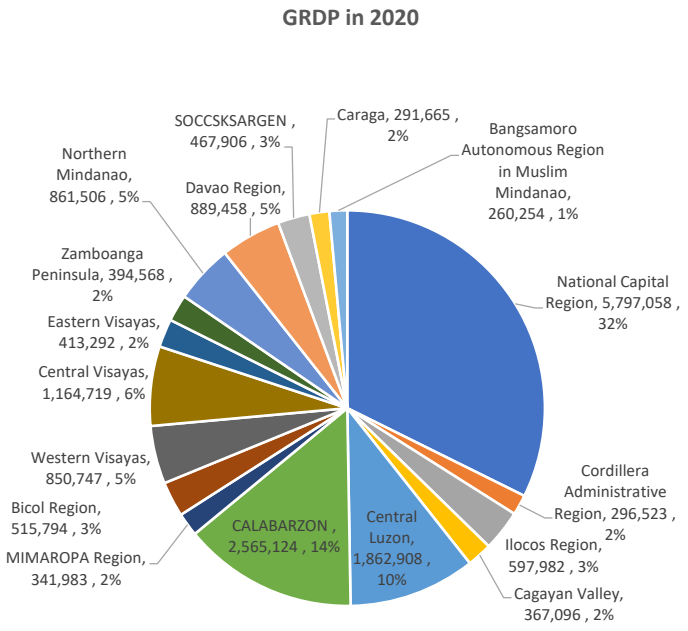
Table B-5 GRDP Projection (Medium)

At Current Prices (Unit: Mil. PHP)

GRDP	2021	2022	2023	2024	2025
National Capital Region	6,159,696	6,494,982	7,117,129	7,795,638	8,535,297
Cordillera Administrative Region	312,832	330,976	355,800	382,485	411,171
Ilocos Region	643,428	692,329	747,715	807,532	872,135
Cagayan Valley	392,792	420,288	462,317	508,548	559,403
Central Luzon	1,980,271	2,114,930	2,311,618	2,526,599	2,761,572
CALABARZON	2,734,423	2,917,629	3,197,721	3,504,702	3,841,154
MIMAROPA Region	355,663	366,332	388,312	411,611	436,308
Bicol Region	563,857	627,009	697,234	775,324	862,161
Western Visayas	926,744	1,028,686	1,141,841	1,267,444	1,406,863
Central Visayas	1,261,391	1,369,870	1,497,268	1,636,514	1,788,710
Eastern Visayas	440,982	471,410	512,423	557,003	605,463
Zamboanga Peninsula	425,344	458,521	508,041	562,909	623,704
Northern Mindanao	926,119	1,000,209	1,115,233	1,243,485	1,386,486
Davao Region	987,298	1,095,901	1,231,792	1,384,535	1,556,217
SOCCSKSARGEN	508,145	554,895	613,714	678,767	750,717
Caraga	303,332	312,432	329,303	347,085	365,828
Bangsamoro Autonomous Region in Muslim Mindanao	271,965	281,484	302,596	325,290	349,687
Total	19,194,283	20,537,883	22,530,058	24,715,473	27,112,874
GRDP	2026	2027	2028	2029	2030
National Capital Region	9,341,265	10,180,574	11,093,128	12,085,100	13,163,156
Cordillera Administrative Region	442,009	476,927	514,605	555,258	599,124
Ilocos Region	941,906	1,017,258	1,098,639	1,186,530	1,281,452
Cagayan Valley	615,344	673,186	736,465	805,693	881,428
Central Luzon	3,018,399	3,290,054	3,586,159	3,908,914	4,260,716
CALABARZON	4,209,905	4,601,426	5,029,358	5,497,089	6,008,318
MIMAROPA Region	462,486	494,860	529,501	566,566	606,225
Bicol Region	958,723	1,059,389	1,170,624	1,293,540	1,429,362
Western Visayas	1,561,618	1,720,903	1,896,435	2,089,871	2,303,038
Central Visayas	1,955,060	2,132,971	2,327,071	2,538,835	2,769,869
Eastern Visayas	658,138	716,054	779,067	847,625	922,216
Zamboanga Peninsula	691,064	760,861	837,708	922,317	1,015,470
Northern Mindanao	1,545,931	1,708,254	1,887,621	2,085,821	2,304,832
Davao Region	1,749,188	1,945,097	2,162,948	2,405,198	2,674,580
SOCCSKSARGEN	830,293	913,322	1,004,654	1,105,119	1,215,631
Caraga	385,583	411,031	438,159	467,078	497,905
Bangsamoro Autonomous Region in Muslim Mindanao	375,914	406,738	440,091	476,178	515,225
Total	29,742,823	32,508,906	35,532,234	38,836,731	42,448,547
GRDP	2031	2032	2033	2034	2035
National Capital Region	14,334,494	15,554,783	16,877,757	18,311,937	19,866,539
Cordillera Administrative Region	646,455	700,110	758,220	821,152	889,307
Ilocos Region	1,383,968	1,494,686	1,614,261	1,743,402	1,882,874
Cagayan Valley	964,282	1,049,139	1,141,463	1,241,912	1,351,201
Central Luzon	4,644,180	5,048,224	5,487,420	5,964,825	6,483,765
CALABARZON	6,567,092	7,158,130	7,802,361	8,504,574	9,269,986
MIMAROPA Region	648,661	700,554	756,598	817,126	882,496
Bicol Region	1,579,445	1,734,230	1,904,185	2,090,795	2,295,693
Western Visayas	2,537,948	2,776,515	3,037,507	3,323,033	3,635,398
Central Visayas	3,021,927	3,290,878	3,583,766	3,902,721	4,250,064
Eastern Visayas	1,003,371	1,092,671	1,189,918	1,295,821	1,411,149
Zamboanga Peninsula	1,118,033	1,223,128	1,338,102	1,463,884	1,601,489
Northern Mindanao	2,546,840	2,788,790	3,053,725	3,343,828	3,661,492
Davao Region	2,974,133	3,271,547	3,598,701	3,958,571	4,354,428
SOCCSKSARGEN	1,337,195	1,462,891	1,600,403	1,750,840	1,915,419
Caraga	530,766	572,166	616,795	664,905	716,768
Bangsamoro Autonomous Region in Muslim Mindanao	557,474	607,089	661,120	719,959	784,036
Total	46,396,262	50,525,530	55,022,302	59,919,287	65,252,103

GRDP	2036	2037	2038	2039	2040
National Capital Region	21,551,528	23,318,812	25,230,421	27,298,084	29,534,480
Cordillera Administrative Region	963,120	1,046,911	1,137,993	1,236,998	1,344,617
Ilocos Region	2,033,504	2,198,217	2,376,273	2,568,751	2,776,820
Cagayan Valley	1,470,106	1,590,655	1,721,089	1,862,218	2,014,920
Central Luzon	7,047,852	7,639,872	8,281,621	8,977,277	9,731,369
CALABARZON	10,104,284	10,983,357	11,938,909	12,977,594	14,106,645
MIMAROPA Region	953,096	1,037,921	1,130,296	1,230,893	1,340,442
Bicol Region	2,520,671	2,747,531	2,994,809	3,264,342	3,558,133
Western Visayas	3,977,126	4,315,181	4,681,972	5,079,939	5,511,734
Central Visayas	4,628,319	5,026,355	5,458,621	5,928,063	6,437,876
Eastern Visayas	1,536,741	1,675,048	1,825,802	1,990,124	2,169,236
Zamboanga Peninsula	1,752,029	1,904,455	2,070,143	2,250,245	2,446,017
Northern Mindanao	4,009,334	4,346,118	4,711,192	5,106,932	5,535,914
Davao Region	4,789,871	5,211,380	5,669,981	6,168,940	6,711,806
SOCCSKSARGEN	2,095,469	2,279,870	2,480,499	2,698,782	2,936,275
Caraga	772,676	842,989	919,701	1,003,394	1,094,703
Bangsamoro Autonomous Region in Muslim Mindanao	853,815	934,927	1,023,745	1,121,001	1,227,496
Total	71,059,540	77,099,601	83,653,068	90,763,578	98,478,482
GRDP	2041	2042	2043	2044	2045
National Capital Region	31,953,311	34,441,575	37,122,671	40,011,461	43,123,942
Cordillera Administrative Region	1,461,598	1,582,911	1,714,293	1,856,579	2,010,675
Ilocos Region	3,001,742	3,232,877	3,481,808	3,749,907	4,038,650
Cagayan Valley	2,180,143	2,350,194	2,533,509	2,731,123	2,944,151
Central Luzon	10,548,804	11,392,708	12,304,125	13,288,455	14,351,531
CALABARZON	15,333,923	16,606,639	17,984,990	19,477,744	21,094,397
MIMAROPA Region	1,459,741	1,583,819	1,718,444	1,864,512	2,022,995
Bicol Region	3,878,364	4,211,904	4,574,128	4,967,503	5,394,708
Western Visayas	5,980,231	6,464,630	6,988,265	7,554,315	8,166,214
Central Visayas	6,991,533	7,564,839	8,185,156	8,856,339	9,582,559
Eastern Visayas	2,364,467	2,567,811	2,788,643	3,028,466	3,288,914
Zamboanga Peninsula	2,658,820	2,879,502	3,118,501	3,377,336	3,657,655
Northern Mindanao	6,000,931	6,481,006	6,999,486	7,559,445	8,164,200
Davao Region	7,302,445	7,915,851	8,580,782	9,301,568	10,082,900
SOCCSKSARGEN	3,194,668	3,463,020	3,753,913	4,069,242	4,411,058
Caraga	1,194,321	1,298,227	1,411,173	1,533,945	1,667,398
Bangsamoro Autonomous Region in Muslim Mindanao	1,344,108	1,466,422	1,599,867	1,745,455	1,904,291
Total	106,849,153	115,503,935	124,859,754	134,973,394	145,906,238
GRDP	2046	2047	2048	2049	2050
National Capital Region	46,477,337	49,904,275	53,582,464	57,530,202	61,767,108
Cordillera Administrative Region	2,177,561	2,349,588	2,535,206	2,735,487	2,951,591
Ilocos Region	4,349,626	4,667,149	5,007,851	5,373,424	5,765,684
Cagayan Valley	3,173,795	3,408,655	3,660,896	3,931,802	4,222,756
Central Luzon	15,499,653	16,677,627	17,945,127	19,308,956	20,776,437
CALABARZON	22,845,232	24,650,005	26,597,355	28,698,546	30,965,731
MIMAROPA Region	2,194,950	2,372,741	2,564,933	2,772,693	2,997,281
Bicol Region	5,858,653	6,339,062	6,858,865	7,421,292	8,029,838
Western Visayas	8,827,678	9,507,409	10,239,479	11,027,919	11,877,069
Central Visayas	10,368,328	11,177,058	12,048,868	12,988,680	14,001,797
Eastern Visayas	3,571,761	3,864,645	4,181,546	4,524,433	4,895,436
Zamboanga Peninsula	3,961,241	4,274,179	4,611,839	4,976,174	5,369,292
Northern Mindanao	8,817,337	9,487,454	10,208,501	10,984,347	11,819,157
Davao Region	10,929,863	11,804,252	12,748,593	13,768,480	14,869,958
SOCCSKSARGEN	4,781,587	5,164,114	5,577,243	6,023,423	6,505,297
Caraga	1,812,461	1,962,896	2,125,816	2,302,259	2,493,346
Bangsamoro Autonomous Region in Muslim Mindanao	2,077,581	2,258,331	2,454,806	2,668,374	2,900,522
Total	157,724,644	169,869,441	182,949,388	197,036,491	212,208,301

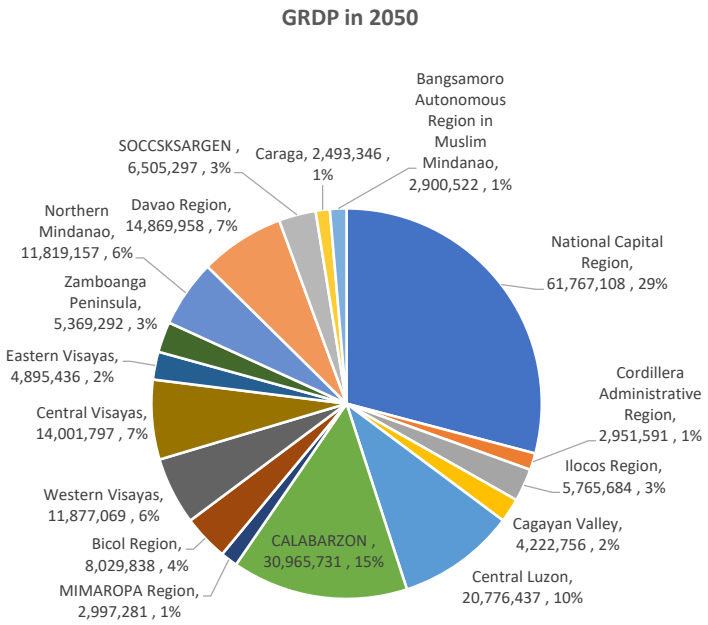
Source: 1. PSA (2021) "Regional Accounts of the Philippines" for data from 2017 to 2020, 2. Regional Development Plan (2017) for Data in 2021 and 2022, 3. JICA Study Team's projection from 2023 to 2050



at Current Prices (Unit: Mil. PHP)

Source: PSA (2021) "Regional Accounts of the Philippines" for data from 2017 to 2020

Figure B-1 Composition of GRDP Projection in 2020 (Medium)



at Current Prices (Unit: Mil. PHP)

Source: JICA Study Team's projection

Figure B-2 Composition of GRDP Projection in 2050 (Medium)

Table B-6 GRDP Projection (Low)

Current Prices, Unit: Mil. Philippine Pesos

GRDP	2021	2022	2023	2024	2025
National Capital Region	6,130,912	6,434,423	7,018,633	7,652,711	8,340,620
Cordillera Administrative Region	311,370	327,890	350,876	375,472	401,793
Ilocos Region	640,422	685,874	737,367	792,727	852,243
Cagayan Valley	390,957	416,369	455,919	499,225	546,644
Central Luzon	1,971,018	2,095,210	2,279,627	2,480,276	2,698,585
CALABARZON	2,721,645	2,890,425	3,153,467	3,440,447	3,753,543
MIMAROPA Region	354,001	362,917	382,938	404,065	426,356
Bicol Region	561,222	621,163	687,585	761,110	842,496
Western Visayas	922,414	1,019,095	1,126,039	1,244,206	1,374,774
Central Visayas	1,255,497	1,357,098	1,476,547	1,606,510	1,747,913
Eastern Visayas	438,921	467,014	505,331	546,791	591,653
Zamboanga Peninsula	423,356	454,246	501,010	552,589	609,478
Northern Mindanao	921,792	990,883	1,099,799	1,220,687	1,354,862
Davao Region	982,684	1,085,683	1,214,745	1,359,150	1,520,722
SOCCSKSARGEN	505,771	549,721	605,220	666,323	733,594
Caraga	301,914	309,519	324,746	340,722	357,484
Bangsamoro Autonomous Region in Muslim Mindanao	270,695	278,860	298,408	319,326	341,711
Total	19,104,590	20,346,389	22,218,256	24,262,336	26,494,471
GRDP	2026	2027	2028	2029	2030
National Capital Region	9,086,600	9,857,725	10,692,203	11,595,038	12,571,603
Cordillera Administrative Region	429,959	461,803	496,006	532,742	572,199
Ilocos Region	916,227	984,999	1,058,932	1,138,415	1,223,864
Cagayan Valley	598,568	651,838	709,848	773,021	841,817
Central Luzon	2,936,110	3,185,719	3,456,549	3,750,403	4,069,239
CALABARZON	4,095,133	4,455,504	4,847,589	5,274,176	5,738,304
MIMAROPA Region	449,878	479,167	510,363	543,591	578,981
Bicol Region	932,586	1,025,793	1,128,316	1,241,086	1,365,126
Western Visayas	1,519,044	1,666,329	1,827,894	2,005,125	2,199,539
Central Visayas	1,901,761	2,065,329	2,242,967	2,435,882	2,645,391
Eastern Visayas	640,195	693,346	750,910	813,253	880,771
Zamboanga Peninsula	672,224	736,732	807,432	884,916	969,835
Northern Mindanao	1,503,786	1,654,082	1,819,399	2,001,239	2,201,253
Davao Region	1,701,501	1,883,414	2,084,775	2,307,665	2,554,384
SOCCSKSARGEN	807,657	884,358	968,344	1,060,306	1,161,001
Caraga	375,071	397,996	422,323	448,137	475,529
Bangsamoro Autonomous Region in Muslim Mindanao	365,665	393,840	424,185	456,869	492,071
Total	28,931,962	31,477,975	34,248,037	37,261,864	40,540,908
GRDP	2031	2032	2033	2034	2035
National Capital Region	13,627,674	14,719,895	15,898,527	17,170,299	18,542,453
Cordillera Administrative Region	614,579	662,533	714,228	769,958	830,036
Ilocos Region	1,315,726	1,414,460	1,520,603	1,634,711	1,757,382
Cagayan Valley	916,735	992,828	1,075,237	1,164,487	1,261,144
Central Luzon	4,415,180	4,777,266	5,169,045	5,592,955	6,051,628
CALABARZON	6,243,275	6,773,924	7,349,677	7,974,366	8,652,150
MIMAROPA Region	616,676	662,952	712,701	766,183	823,679
Bicol Region	1,501,564	1,641,147	1,793,706	1,960,447	2,142,687
Western Visayas	2,412,804	2,627,488	2,861,274	3,115,862	3,393,102
Central Visayas	2,872,918	3,114,243	3,375,840	3,659,411	3,966,801
Eastern Visayas	953,895	1,034,023	1,120,880	1,215,034	1,317,097
Zamboanga Peninsula	1,062,904	1,157,478	1,260,467	1,372,620	1,494,751
Northern Mindanao	2,421,258	2,639,104	2,876,551	3,135,361	3,417,457
Davao Region	2,827,482	3,095,950	3,389,908	3,711,778	4,064,210
SOCCSKSARGEN	1,271,259	1,384,372	1,507,549	1,641,686	1,787,759
Caraga	504,595	541,456	581,009	623,452	668,996
Bangsamoro Autonomous Region in Muslim Mindanao	529,985	574,504	622,762	675,074	731,780
Total	44,108,508	47,813,623	51,829,967	56,183,684	60,903,113

GRDP	2036	2037	2038	2039	2040
National Capital Region	20,022,783	21,564,869	23,225,171	25,012,701	26,937,158
Cordillera Administrative Region	894,802	968,167	1,047,548	1,133,437	1,226,368
Ilocos Region	1,889,258	2,032,877	2,187,413	2,353,697	2,532,621
Cagayan Valley	1,365,825	1,471,013	1,584,301	1,706,314	1,837,724
Central Luzon	6,547,917	7,065,233	7,623,419	8,225,704	8,875,573
CALABARZON	9,387,543	10,157,235	10,990,035	11,891,116	12,866,078
MIMAROPA Region	885,488	959,853	1,040,463	1,127,843	1,222,561
Bicol Region	2,341,869	2,540,873	2,756,789	2,991,053	3,245,223
Western Visayas	3,695,011	3,990,611	4,309,860	4,654,649	5,027,021
Central Visayas	4,300,012	4,648,293	5,024,784	5,431,768	5,871,716
Eastern Visayas	1,427,733	1,549,058	1,680,692	1,823,512	1,978,469
Zamboanga Peninsula	1,627,750	1,761,210	1,905,613	2,061,856	2,230,909
Northern Mindanao	3,724,934	4,019,221	4,336,758	4,679,382	5,049,075
Davao Region	4,450,105	4,819,402	5,219,346	5,652,479	6,121,557
SOCCSKSARGEN	1,946,828	2,108,388	2,283,355	2,472,842	2,678,053
Caraga	717,866	779,583	846,606	919,390	998,433
Bangsamoro Autonomous Region in Muslim Mindanao	793,250	864,606	942,381	1,027,151	1,119,548
Total	66,018,975	71,300,493	77,004,532	83,164,895	89,818,087
GRDP	2041	2042	2043	2044	2045
National Capital Region	29,008,972	31,123,329	33,390,955	35,822,889	38,430,960
Cordillera Administrative Region	1,326,919	1,430,407	1,541,965	1,662,224	1,791,862
Ilocos Region	2,725,147	2,921,408	3,131,803	3,357,351	3,599,142
Cagayan Valley	1,979,254	2,123,767	2,278,831	2,445,217	2,623,752
Central Luzon	9,576,784	10,295,087	11,067,266	11,897,362	12,789,719
CALABARZON	13,920,978	15,006,686	16,177,068	17,438,730	18,798,790
MIMAROPA Region	1,325,234	1,431,228	1,545,699	1,669,327	1,802,842
Bicol Region	3,520,992	3,806,111	4,114,318	4,447,483	4,807,626
Western Visayas	5,429,183	5,841,801	6,285,778	6,763,497	7,277,522
Central Visayas	6,347,298	6,836,011	7,362,352	7,929,219	8,539,732
Eastern Visayas	2,146,593	2,320,417	2,508,318	2,711,433	2,930,997
Zamboanga Peninsula	2,413,823	2,602,079	2,805,017	3,023,782	3,259,609
Northern Mindanao	5,447,975	5,856,598	6,295,870	6,768,090	7,275,728
Davao Region	6,629,561	7,153,205	7,718,209	8,327,840	8,985,624
SOCCSKSARGEN	2,900,295	3,129,378	3,376,555	3,643,256	3,931,023
Caraga	1,084,270	1,173,150	1,269,316	1,373,365	1,485,943
Bangsamoro Autonomous Region in Muslim Mindanao	1,220,255	1,325,141	1,439,042	1,562,733	1,697,056
Total	97,003,534	104,375,802	112,308,363	120,843,799	130,027,927
GRDP	2046	2047	2048	2049	2050
National Capital Region	41,227,841	44,062,202	47,090,164	50,324,851	53,780,267
Cordillera Administrative Region	1,931,611	2,074,532	2,228,029	2,392,882	2,569,933
Ilocos Region	3,858,347	4,120,786	4,401,076	4,700,431	5,020,148
Cagayan Valley	2,815,323	3,009,619	3,217,325	3,439,365	3,676,729
Central Luzon	13,749,007	14,725,251	15,770,812	16,890,613	18,089,925
CALABARZON	20,264,921	21,764,337	23,374,696	25,104,207	26,961,685
MIMAROPA Region	1,947,036	2,094,975	2,254,154	2,425,428	2,609,715
Bicol Region	5,196,933	5,596,976	6,027,813	6,491,815	6,991,534
Western Visayas	7,830,614	8,394,418	8,998,816	9,646,731	10,341,296
Central Visayas	9,197,252	9,868,609	10,588,972	11,361,917	12,191,285
Eastern Visayas	3,168,340	3,412,228	3,674,891	3,957,772	4,262,428
Zamboanga Peninsula	3,513,829	3,773,819	4,053,047	4,352,935	4,675,012
Northern Mindanao	7,821,441	8,376,800	8,971,591	9,608,616	10,290,872
Davao Region	9,695,363	10,422,381	11,203,914	12,044,051	12,947,188
SOCCSKSARGEN	4,241,519	4,559,574	4,901,479	5,269,021	5,664,124
Caraga	1,607,749	1,733,108	1,868,242	2,013,913	2,170,942
Bangsamoro Autonomous Region in Muslim Mindanao	1,842,924	1,993,958	2,157,370	2,334,174	2,525,468
Total	139,910,050	149,983,573	160,782,391	172,358,723	184,768,551

Source: 1. PSA (2021) "Regional Accounts of the Philippines" for data from 2017 to 2020, 2. Regional Development Plan (2017) for Data in 2021 and 2022, 3. JICA Study Team's projection from 2023 to 2050

Table B-7 GRDP Projection (High)

At Current Prices (Unit: Mil. PHP)

GRDP	2021	2022	2023	2024	2025
National Capital Region	6,188,479	6,555,825	7,216,543	7,940,557	8,733,592
Cordillera Administrative Region	314,294	334,077	360,769	389,595	420,723
Ilocos Region	646,435	698,814	758,159	822,544	892,397
Cagayan Valley	394,628	424,225	468,774	518,002	572,399
Central Luzon	1,989,525	2,134,742	2,343,907	2,573,568	2,825,730
CALABARZON	2,747,200	2,944,960	3,242,388	3,569,854	3,930,393
MIMAROPA Region	357,325	369,764	393,736	419,263	446,444
Bicol Region	566,492	632,883	706,973	789,738	882,191
Western Visayas	931,075	1,038,322	1,157,791	1,291,005	1,439,548
Central Visayas	1,267,285	1,382,703	1,518,183	1,666,937	1,830,266
Eastern Visayas	443,043	475,826	519,580	567,358	619,529
Zamboanga Peninsula	427,332	462,816	515,137	573,374	638,194
Northern Mindanao	930,447	1,009,579	1,130,811	1,266,601	1,418,697
Davao Region	991,912	1,106,167	1,248,998	1,410,273	1,592,372
SOCCSKSARGEN	510,520	560,093	622,286	691,385	768,158
Caraga	304,749	315,358	333,903	353,538	374,327
Bangsamoro Autonomous Region in Muslim Mindanao	273,236	284,121	306,822	331,337	357,811
Total	19,283,976	20,730,274	22,844,762	25,174,928	27,742,771
GRDP	2026	2027	2028	2029	2030
National Capital Region	9,601,850	10,512,443	11,507,146	12,593,488	13,779,643
Cordillera Administrative Region	454,339	492,474	533,811	578,617	627,183
Ilocos Region	968,181	1,050,419	1,139,642	1,236,444	1,341,468
Cagayan Valley	632,509	695,131	763,952	839,586	922,709
Central Luzon	3,102,600	3,397,305	3,720,002	4,073,351	4,460,264
CALABARZON	4,327,345	4,751,425	5,217,064	5,728,337	6,289,713
MIMAROPA Region	475,388	510,992	549,263	590,400	634,617
Bicol Region	985,467	1,093,923	1,214,315	1,347,956	1,496,305
Western Visayas	1,605,181	1,777,001	1,967,214	2,177,786	2,410,899
Central Visayas	2,009,599	2,202,502	2,413,922	2,645,637	2,899,593
Eastern Visayas	676,497	739,396	808,143	883,282	965,407
Zamboanga Peninsula	710,342	785,664	868,973	961,116	1,063,029
Northern Mindanao	1,589,057	1,763,941	1,958,071	2,173,566	2,412,778
Davao Region	1,797,984	2,008,504	2,243,673	2,506,378	2,799,842
SOCCSKSARGEN	853,455	943,095	1,042,150	1,151,609	1,272,565
Caraga	396,339	424,430	454,512	486,726	521,224
Bangsamoro Autonomous Region in Muslim Mindanao	386,400	419,997	456,516	496,210	539,355
Total	30,572,533	33,568,642	36,858,368	40,470,489	44,436,596
GRDP	2031	2032	2033	2034	2035
National Capital Region	15,074,485	16,432,874	17,912,399	19,523,728	21,278,456
Cordillera Administrative Region	679,827	739,633	804,700	875,491	952,511
Ilocos Region	1,455,413	1,579,063	1,713,218	1,858,771	2,016,690
Cagayan Valley	1,014,062	1,108,365	1,211,438	1,324,096	1,447,231
Central Luzon	4,883,928	5,333,204	5,823,810	6,359,547	6,944,567
CALABARZON	6,906,105	7,562,217	8,280,662	9,067,363	9,928,805
MIMAROPA Region	682,147	740,101	802,979	871,199	945,215
Bicol Region	1,660,981	1,832,130	2,020,915	2,229,153	2,458,848
Western Visayas	2,668,965	2,933,253	3,223,713	3,542,934	3,893,766
Central Visayas	3,177,928	3,476,653	3,803,459	4,160,984	4,552,116
Eastern Visayas	1,055,168	1,154,353	1,262,863	1,381,572	1,511,439
Zamboanga Peninsula	1,175,749	1,292,176	1,420,131	1,560,756	1,715,307
Northern Mindanao	2,678,316	2,946,221	3,240,924	3,565,106	3,921,715
Davao Region	3,127,667	3,456,230	3,819,309	4,220,529	4,663,898
SOCCSKSARGEN	1,406,225	1,545,473	1,698,511	1,866,702	2,051,548
Caraga	558,166	604,466	654,606	708,905	767,709
Bangsamoro Autonomous Region in Muslim Mindanao	586,252	641,360	701,648	767,603	839,757
Total	48,791,383	53,377,773	58,395,284	63,884,440	69,889,578

GRDP	2036	2037	2038	2039	2040
National Capital Region	23,189,181	25,206,383	27,398,410	29,780,349	32,368,584
Cordillera Administrative Region	1,036,305	1,131,655	1,235,778	1,349,480	1,473,645
Ilocos Region	2,188,025	2,376,155	2,580,460	2,802,332	3,043,281
Cagayan Valley	1,581,816	1,719,412	1,868,978	2,031,553	2,208,270
Central Luzon	7,583,403	8,258,291	8,993,241	9,793,598	10,665,183
CALABARZON	10,872,087	11,872,419	12,964,791	14,157,671	15,460,307
MIMAROPA Region	1,025,519	1,121,937	1,227,420	1,342,820	1,469,070
Bicol Region	2,712,211	2,969,934	3,252,146	3,561,174	3,899,568
Western Visayas	4,279,339	4,664,479	5,084,282	5,541,868	6,040,636
Central Visayas	4,980,015	5,433,219	5,927,667	6,467,112	7,055,649
Eastern Visayas	1,653,515	1,810,637	1,982,689	2,171,090	2,377,394
Zamboanga Peninsula	1,885,162	2,058,614	2,248,025	2,454,864	2,680,734
Northern Mindanao	4,313,994	4,697,920	5,116,013	5,571,315	6,067,136
Davao Region	5,153,843	5,633,222	6,157,189	6,729,893	7,355,866
SOCCSKSARGEN	2,254,699	2,464,417	2,693,642	2,944,188	3,218,038
Caraga	831,390	911,226	998,729	1,094,635	1,199,750
Bangsamoro Autonomous Region in Muslim Mindanao	918,694	1,010,606	1,111,713	1,222,936	1,345,286
Total	76,459,198	83,340,526	90,841,173	99,016,879	107,928,398
GRDP	2041	2042	2043	2044	2045
National Capital Region	35,180,905	38,095,903	41,251,394	44,667,119	48,364,435
Cordillera Administrative Region	1,609,234	1,750,862	1,904,954	2,072,607	2,255,016
Ilocos Region	3,304,948	3,575,892	3,869,049	4,186,239	4,529,434
Cagayan Valley	2,400,359	2,599,555	2,815,282	3,048,912	3,301,929
Central Luzon	11,614,335	12,601,500	13,672,569	14,834,674	16,095,553
CALABARZON	16,882,798	18,368,640	19,985,251	21,744,138	23,657,823
MIMAROPA Region	1,607,189	1,751,866	1,909,567	2,081,463	2,268,833
Bicol Region	4,270,117	4,658,796	5,082,854	5,545,512	6,050,282
Western Visayas	6,584,293	7,150,542	7,765,489	8,433,321	9,158,586
Central Visayas	7,697,746	8,367,486	9,095,496	9,886,846	10,747,047
Eastern Visayas	2,603,301	2,840,262	3,098,791	3,380,853	3,688,588
Zamboanga Peninsula	2,927,387	3,185,024	3,465,335	3,770,317	4,102,140
Northern Mindanao	6,607,083	7,168,655	7,777,957	8,439,048	9,156,328
Davao Region	8,040,063	8,755,740	9,535,123	10,383,881	11,308,190
SOCCSKSARGEN	3,517,360	3,830,454	4,171,417	4,542,731	4,947,097
Caraga	1,314,959	1,435,972	1,568,121	1,712,432	1,870,023
Bangsamoro Autonomous Region in Muslim Mindanao	1,479,876	1,622,013	1,777,801	1,948,552	2,135,704
Total	117,641,953	127,759,161	138,746,449	150,678,644	163,637,007
GRDP	2046	2047	2048	2049	2050
National Capital Region	52,366,438	56,488,639	60,933,707	65,726,782	70,894,950
Cordillera Administrative Region	2,453,478	2,659,593	2,883,023	3,125,224	3,387,772
Ilocos Region	4,900,763	5,282,932	5,694,903	6,138,999	6,617,727
Cagayan Valley	3,575,943	3,858,393	4,163,152	4,491,983	4,846,787
Central Luzon	17,463,600	18,878,071	20,407,107	22,059,988	23,846,745
CALABARZON	25,739,930	27,902,323	30,246,377	32,787,354	35,541,796
MIMAROPA Region	2,473,070	2,685,800	2,916,829	3,167,730	3,440,214
Bicol Region	6,600,997	7,175,437	7,799,867	8,478,636	9,216,474
Western Visayas	9,946,225	10,761,815	11,644,284	12,599,115	13,632,243
Central Visayas	11,682,090	12,651,758	13,701,912	14,839,234	16,070,960
Eastern Visayas	4,024,335	4,374,546	4,755,233	5,169,049	5,618,876
Zamboanga Peninsula	4,463,166	4,838,113	5,244,560	5,685,152	6,162,757
Northern Mindanao	9,934,573	10,739,228	11,609,055	12,549,335	13,565,773
Davao Region	12,314,776	13,361,704	14,497,635	15,730,136	17,067,416
SOCCSKSARGEN	5,387,458	5,845,467	6,342,413	6,881,606	7,466,639
Caraga	2,042,117	2,221,880	2,417,467	2,630,272	2,861,809
Bangsamoro Autonomous Region in Muslim Mindanao	2,340,830	2,556,295	2,791,593	3,048,549	3,329,157
Total	177,709,790	192,281,993	208,049,116	225,109,144	243,568,093

Source: 1. PSA (2021) "Regional Accounts of the Philippines" for data from 2017 to 2020, 2. Regional Development Plan (2017) for Data in 2021 and 2022, 3. JICA Study Team's projection from 2023 to 2050

Table B-8 GDP by Major Industries Projection (Medium)

At Current Prices (Unit: Mil. PHP)

Major Industries	2021	2022	2023	2024	2025
Agriculture, Forestry and Fishing	1,765,874	1,827,872	1,960,115	2,076,100	2,169,030
Industry	5,470,371	5,853,297	6,398,536	7,019,194	7,672,943
Services	11,958,038	12,856,715	14,171,406	15,620,179	17,270,901
Gross Domestic Product	19,194,283	20,537,883	22,530,058	24,715,473	27,112,874
Major Industries	2026	2027	2028	2029	2030
Agriculture, Forestry and Fishing	2,319,940	2,438,168	2,629,385	2,835,081	2,971,398
Industry	8,179,276	8,874,931	9,558,171	10,330,571	11,206,417
Services	19,243,606	21,195,806	23,344,678	25,671,079	28,270,733
Gross Domestic Product	29,742,823	32,508,906	35,532,234	38,836,731	42,448,547
Major Industries	2031	2032	2033	2034	2035
Agriculture, Forestry and Fishing	3,108,550	3,284,159	3,466,405	3,595,157	3,719,370
Industry	12,063,028	13,035,587	13,975,665	15,039,741	16,247,774
Services	31,224,685	34,205,784	37,580,232	41,284,389	45,284,960
Gross Domestic Product	46,396,262	50,525,530	55,022,302	59,919,287	65,252,103
Major Industries	2036	2037	2038	2039	2040
Agriculture, Forestry and Fishing	3,908,275	4,009,179	4,182,653	4,356,652	4,431,532
Industry	17,409,587	18,735,203	20,076,736	21,329,441	22,748,529
Services	49,741,678	54,355,219	59,393,678	65,077,486	71,298,421
Gross Domestic Product	71,059,540	77,099,601	83,653,068	90,763,578	98,478,482
Major Industries	2041	2042	2043	2044	2045
Agriculture, Forestry and Fishing	4,594,514	4,735,661	4,994,390	5,128,989	5,398,531
Industry	24,575,305	26,450,401	28,592,884	30,773,934	33,266,622
Services	77,679,335	84,317,872	91,272,480	99,070,471	107,241,085
Gross Domestic Product	106,849,153	115,503,935	124,859,754	134,973,394	145,906,238
Major Industries	2046	2047	2048	2049	2050
Agriculture, Forestry and Fishing	5,520,363	5,435,822	5,488,482	5,517,022	5,517,416
Industry	35,330,320	37,541,147	40,065,916	42,756,919	45,624,785
Services	116,873,961	126,892,473	137,394,991	148,762,551	161,066,101
Gross Domestic Product	157,724,644	169,869,441	182,949,388	197,036,491	212,208,301

Source: JICA Study Team

Table B-9 GDP by Major Industries Projection (Low)

At Current Prices (Unit: Mil. PHP)

Major Industries	2021	2022	2023	2024	2025
Agriculture, Forestry and Fishing	1,757,622	1,810,829	1,932,988	2,038,036	2,119,558
Industry	5,444,808	5,798,721	6,309,985	6,890,503	7,497,935
Services	11,902,160	12,736,839	13,975,283	15,333,796	16,876,978
Gross Domestic Product	19,104,590	20,346,389	22,218,256	24,262,336	26,494,471
Major Industries	2026	2027	2028	2029	2030
Agriculture, Forestry and Fishing	2,256,693	2,360,848	2,534,355	2,720,116	2,837,864
Industry	7,956,290	8,593,487	9,212,722	9,911,656	10,702,800
Services	18,718,980	20,523,640	22,500,960	24,630,092	27,000,245
Gross Domestic Product	28,931,962	31,477,975	34,248,037	37,261,864	40,540,908
Major Industries	2031	2032	2033	2034	2035
Agriculture, Forestry and Fishing	2,955,270	3,107,885	3,265,288	3,371,021	3,471,477
Industry	11,468,212	12,335,915	13,164,812	14,102,105	15,164,875
Services	29,685,026	32,369,822	35,399,867	38,710,558	42,266,761
Gross Domestic Product	44,108,508	47,813,623	51,829,967	56,183,684	60,903,113
Major Industries	2036	2037	2038	2039	2040
Agriculture, Forestry and Fishing	3,631,044	3,707,626	3,850,227	3,991,915	4,041,814
Industry	16,174,649	17,326,020	18,481,088	19,543,750	20,747,978
Services	46,213,283	50,266,848	54,673,218	59,629,230	65,028,295
Gross Domestic Product	66,018,975	71,300,493	77,004,532	83,164,895	89,818,087
Major Industries	2041	2042	2043	2044	2045
Agriculture, Forestry and Fishing	4,171,152	4,279,408	4,492,335	4,592,064	4,811,033
Industry	22,310,813	23,902,059	25,718,615	27,552,386	29,646,367
Services	70,521,569	76,194,336	82,097,413	88,699,348	95,570,527
Gross Domestic Product	97,003,534	104,375,802	112,308,363	120,843,799	130,027,927
Major Industries	2046	2047	2048	2049	2050
Agriculture, Forestry and Fishing	4,896,852	4,799,474	4,823,472	4,826,044	4,803,982
Industry	31,339,851	33,146,370	35,211,344	37,401,843	39,725,238
Services	103,673,347	112,037,729	120,747,575	130,130,836	140,239,330
Gross Domestic Product	139,910,050	149,983,573	160,782,391	172,358,723	184,768,551

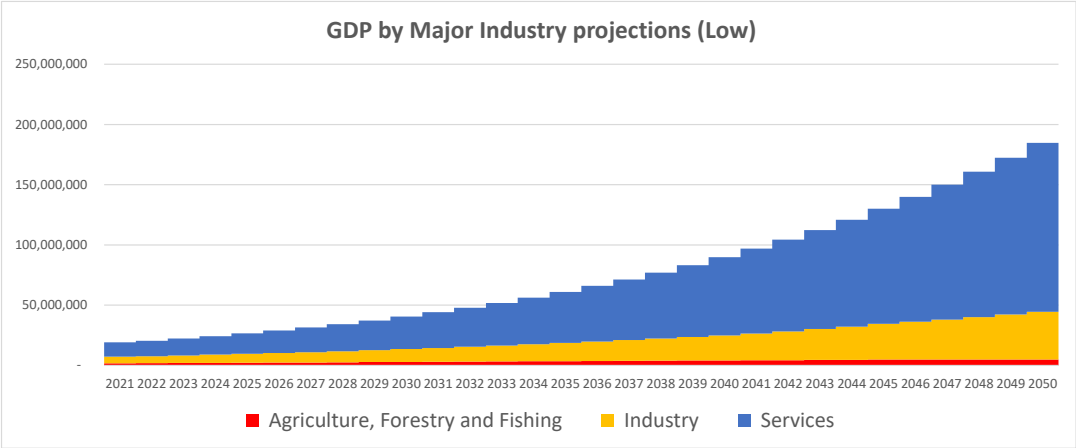
Source: JICA Study Team

Table B-10 GDP by Major Industries Projection (High)

At Current Prices (Unit: Mil. PHP)

Major Industries	2021	2022	2023	2024	2025
Agriculture, Forestry and Fishing	1,774,126	1,844,994	1,987,494	2,114,694	2,219,422
Industry	5,495,933	5,908,128	6,487,912	7,149,680	7,851,204
Services	12,013,917	12,977,152	14,369,355	15,910,555	17,672,145
Gross Domestic Product	19,283,976	20,730,274	22,844,762	25,174,928	27,742,771
Major Industries	2026	2027	2028	2029	2030
Agriculture, Forestry and Fishing	2,384,658	2,517,648	2,727,519	2,954,346	3,110,562
Industry	8,407,447	9,164,239	9,914,901	10,765,150	11,731,261
Services	19,780,429	21,886,754	24,215,948	26,750,993	29,594,773
Gross Domestic Product	30,572,533	33,568,642	36,858,368	40,470,489	44,436,596
Major Industries	2031	2032	2033	2034	2035
Agriculture, Forestry and Fishing	3,269,023	3,469,555	3,678,903	3,833,066	3,983,706
Industry	12,685,760	13,771,465	14,832,402	16,034,994	17,402,505
Services	32,836,601	36,136,752	39,883,979	44,016,379	48,503,367
Gross Domestic Product	48,791,383	53,377,773	58,395,284	63,884,440	69,889,578
Major Industries	2036	2037	2038	2039	2040
Agriculture, Forestry and Fishing	4,205,256	4,333,707	4,542,059	4,752,810	4,856,778
Industry	18,732,503	20,251,748	21,801,882	23,268,966	24,931,460
Services	53,521,439	58,755,071	64,497,233	70,995,102	78,140,160
Gross Domestic Product	76,459,198	83,340,526	90,841,173	99,016,879	107,928,398
Major Industries	2041	2042	2043	2044	2045
Agriculture, Forestry and Fishing	5,058,604	5,238,126	5,549,858	5,725,788	6,054,569
Industry	27,057,649	29,256,848	31,772,937	34,354,731	37,309,238
Services	85,525,700	93,264,188	101,423,654	110,598,125	120,273,200
Gross Domestic Product	117,641,953	127,759,161	138,746,449	150,678,644	163,637,007
Major Industries	2046	2047	2048	2049	2050
Agriculture, Forestry and Fishing	6,219,843	6,153,024	6,241,473	6,303,056	6,332,770
Industry	39,806,993	42,494,320	45,562,756	48,848,684	52,367,140
Services	131,682,954	143,634,649	156,244,886	169,957,403	184,868,183
Gross Domestic Product	177,709,790	192,281,993	208,049,116	225,109,144	243,568,093

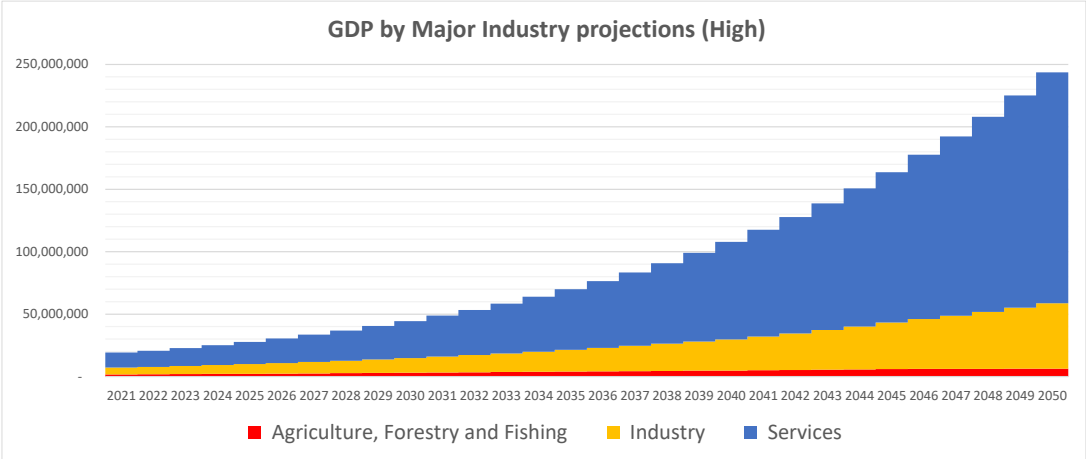
Source: JICA Study Team



At Current Prices (Unit: Mil. PHP)

Source: JICA Study Team

Figure B-3 GDP by Major Industries Projection (Low)



At Current Prices (Unit: Mil. PHP)

Source: JICA Study Team

Figure B-4 GDP by Major Industries Projection (High)

A. Ilocos Region

Physical Characteristics

According to RDP[1], Ilocos Region is located at the northwestern tip of the island of Luzon. It is bounded in the east by CAR and Cagayan Valley and in the south by Central Luzon. Ilocos Region has a total land area of 1,284,019 hectares. Out of the total land area, 810,062 hectares were classified as Alienable and Disposable (A&D). Table B-11 shows the status of land classification in the region.

[1] Source: NEDA (2020) "Ilocos Regional Development Plan 2017-2022 Midterm Update"

Table B-11 Status of Land Classification by Province (in hectares), Ilocos Region

Province	A&D Land	Unclassified Forest Lands	Classified Forest Lands	Established Forest Reserves	Established Timberland	National Parks/GRBS /WA	Military/Naval Reservation	Civil Reservation	Fishpond Development
Total	810,062	33,155	440,802	217,846	208,140	12,999	288	923	606
Ilocos Norte	144,948	0	194,986	193,272	1,374	340	0	0	0
Ilocos Sur	138,412	26,176	93,370	1,609	90,141	1,620	0	0	0
La Union	120,307	4,132	24,870	90	13,833	10,947	0	0	0
Pangasinan	406,395	2,847	127,576	22,875	102,792	92	288	923	606

Note: GRBS-Game Refuge and Bird Sanctuaries; WA-Wilderness Area

Source: Department of Environment and Natural Resources (DENR)

The Spatial Strategy[2]

The region's spatial strategy was anchored on the National Spatial Strategy (NSS) with three core strategies, namely: concentration, connectivity, and vulnerability reduction. It was formulated within the context of the Luzon Spatial Development Framework (LSDF)[3], which serves as the integrating framework of the various regional physical plans in Luzon. It supports the development vision of inclusive growth and the spatial distribution of the region's population and related economic characteristics, growth scenarios and corresponding growth issues. Programs and projects to be implemented during the period 2017-2022 shall consider the NSS core strategies in support of the attainment of the region's development vision.

The region's settlements are situated on narrow coastal lowlands and are economically close to larger markets in Manila with access via Central Luzon.

The objective of the concentration strategy is to enhance the ability of settlements to absorb as much growth as possible in and around existing built-up areas to increase the scale and efficiency of urban-based production, services and markets in general as well as to minimize land conversion. The adoption of this strategy will also provide opportunities to improve existing urban environments.

The aim of the connectivity strategy, on the other hand, is to fully integrate settlements and production centers by strengthening communication and transportation linkages, and other infrastructure systems. It will put people and places closer to each other resulting in increased access to employment opportunities and higher level of services.

The objective of the vulnerability reduction strategy is to ensure the safety of settlements and the sustainable operation of production and value-chain processes from the threats of

[2] Source: NEDA (2020) "Ilocos Regional Development Plan 2017-2022 Midterm Update"

[3] Source: Luzon Regional Development Committee and NEDA (2015) "Luzon Spatial Development Framework 2015-2045"

hazards. At the same time, it shall ensure that development activities and interventions will not result in increased vulnerability of communities.

Information about Abra and Benguet in CAR is mentioned in "B-2. Cordillera Administrative Region".

B. Cagayan Valley

B-1. Cagayan Valley

Physical Characteristics

According to RPFP[4], Cagayan Valley is the fourth largest region in the country with a total land area of 2,683,758 hectares. Based on land use classification in Table B-12, about 1,669,590 hectares (62%) of the total land area is best suited for classified forestland. About 965,965 hectares (36%) is suitable for certified A & D and 45,105 hectares for unclassified forestland. Of its total classified forestland, about 1,423,482 hectares (85%) is suitable for established timberland; 209,288 hectares (13%) for established for residence; and 26,388 hectares (2%) for national parks and GRBS/WA.

Table B-12 Status of Land Classification by Province (in hectares), Cagayan Valley

Province	Certified A & D	Classified Forestland	Unclassified Forestland	Total	Classified Forestland					
					Established for residence	Established Timberland	National Parks and GRBS/WA	Military and Naval Reservation	Civil Reservation	Fishpond
Total	965,965	1,669,590	45,105	2,680,660	209,288	1,423,482	26,388	412	8,931	1,089
Batane	7,432	13,496	0	20,928	0	13,496	0	0	0	0
Cagayan	353,193	543,976	0	897,169	39,378	497,314	6,195	0	0	1,089
Isabela	459,666	606,790	0	1,066,456	31,260	546,005	20,193	412	8,920	0
Nueva Vizcaya	88,921	256,361	45,105	390,387	95,838	160,512	0	0	11	0
Quirino	56,753	248,967	0	305,720	42,812	206,155	0	0	0	0

Source: PSA (2021) "2021 Regional Social and Economic Trends (RSET) for Cagayan Valley

The Spatial Strategy[5]

The "Parallel Spatial Development Strategy" serves as the overall framework for the utilization and allocation of the region's physical resources and development requirements consistent with the overall development vision and objectives. In concept, "parallel development' stands for a harmonized relationship between the region's desire to facilitate and attain agri-industrial development and the need to enhance the region's environmental integrity. In terms of the regional distribution and direction of growth, "Parallel Development" also implies that the specific sub-regional areas will be accorded

[4] Source: NEDA (2001) "Cagayan Valley Regional Physical Framework Plan (2001–2030)"

[5] Source: NEDA (2001) "Cagayan Valley Regional Physical Framework Plan (2001–2030)"

with the necessary interventions to enhance their respective development potentials as well as to complement the development of the other areas.

While revolutionizing agri-industrial development in the region, equal attention will be accorded to the protection and sustainability of land utilization. Ground delineation will be pursued to properly establish permanent forest line boundaries and identify protection and production areas, hazard prone areas and other environmentally critical areas such as watershed and bio-diversity-rich areas. This is in support of comprehensive planning, zoning preparation and environmental protection advocacy.

Settlement will be closely monitored and regulated to safeguard protection of critical areas and influence the pattern of development to further strengthen urban-rural complementation. Metropolitan arrangement of cities and municipalities will be encouraged to promote sharing of resources and services and boost the distinct potentials of local government unit (LGU). Outward-looking policies particularly on the complementation of Region II to the Northern Luzon Growth Area (NLGA) and the rest of the world will be supported. Infrastructure will focus on the provision of support facilities and utilities of the economic and social sector.

Being a predominantly agricultural region, Cagayan Valley will be the primary supplier of agricultural products and a major producer of power. Owing to its vast agricultural potential, the region will be promoted as an investment area for agriculture, forestry and fishing industries and with its strategic position along the northeast coast of Luzon, Port Irene in Sta. Ana, Cagayan will be developed as a transhipment point in Northeastern Luzon.

B-2. Cordillera Administrative Region (CAR)

Physical Characteristics

According to RDP[6], only about 15 % of the region's land area are classified as A&D, and 85 % are classified as forest land including those within protected areas in Table B-13. Such land classification, along with the steep terrain of the region, limits areas suitable for agriculture and settlements such that farms and built-up areas encroach into forest areas. This is alongside the problems of congestion in the urban and urbanizing areas specifically the Baguio-La Trinidad area and provincial capital towns.

Land cover considers major land use categories. Closed and open forest including forest plantations constitute about 42.9 % of the region's land cover. Built-up areas that are included under other land covers an area of 15,956.6 hectares or less than 0.86% of the region's total land cover.

[6] Source: NEDA (2017) "the Cordillera Regional Development Plan 2017-2022"

Table B-13 Status of Land Classification by Province (in hectares), CAR

Province	Land Area	Certified A&D	% Share to Total	Forest Land	% Share to Total
Total	1,865,660	282,543	15.1	1,583,117	84.9
Abra	385,692	97,259	25.2	288,433	74.8
Apayao	423,613	44,079	10.4	379,534	89.6
Benguet	305,117	59,601	19.5	245,515	80.5
Ifugao	258,282	24,974	9.7	233,307	90.3
Kalinga	264,892	41,183	15.5	223,710	84.5
Mountain Province	228,064	15,447	6.8	212,617	93.2

Source: PSA (2016) "Regional Social and Economic Trends"

The Spatial Strategy[7]

The region adopts a "North and South Clusters Plus" regional spatial strategy. Elements of this strategy are: (1) the establishment of two primary or regional growth centers located in the southern and northern portions of the region; and (2) designation of secondary and tertiary growth centers dispersed across the region. The regional spatial strategy adopts the three component strategies of the NSS as adopted in the LSDF 2014-2045 namely: (1) concentration; (2) connectivity; and (3) vulnerability reduction.

The proposed regional hierarchy of settlements in the region follows the principle of concentration. That is, larger settlements in terms of population are positioned in the upper tier while smaller population centers are positioned in the lower tiers. However, the special case of smaller settlements identified to have strategic roles are also placed in the upper levels of the hierarchy. Likewise, settlements strategically located in clusters of settlement and whose aggregate population satisfy the population threshold are also placed in the upper tiers.

The two primary and regional, growth centers in the region are the BLISTT (Baguio City-La Trinidad-Itogon-Sablan-Tuba-Tublay) metro area as the southern growth node and Eastern Kalinga (Tabuk-Pinukpuk-Rizal) as the northern growth node. Meanwhile, the dispersed spatial strategy is represented by secondary (provincial) and tertiary (sub-provincial) growth centers spread across the region that shall act as service centers and as catalysts of growth for the more remote parts of the Cordillera.

[7] Source: NEDA (2017) "the Cordillera Regional Development Plan 2017-2022"

C. Central Luzon

Physical Characteristics

According to RDP [8] ,Central Luzon consists of seven provinces. It's regional administrative center – the City of San Fernado, Pampanga – is about 65 km north of Metro Manila. Central Luzon has a total land area of about 2.15 million hectares; some 1.2 million hectares (56.1%) are A&D lands while the 915 thousand hectares (42.6%) are classified forest land as shown in Table B-14.

Table B-14 Status of Land Classification by Province (in hectares), Central Luzon

Province	Certified A & D	Classified Forestland	Unclassified Forestland	Total	Classified Forestland					
					Established Forest Reserve	Established Timberland	National Parks and GRBS/WA	Military and Naval Reservations	Civil Reservation	Fishpond
Total	1,204,649	915,119	27,268	2,147,036	250,902	493,882	36,970	112,819	804	19,742
Aurora	132,008	165,308	26,638	323,954	84,803	76,315	4,190	0	0	0
Bataan	69,975	67,316	0	137,291	9,279	32,370	25,188	479	0	0
Bulacan	185,333	76,542	630	262,505	8,019	64,679	368	0	0	3,476
Nueva Ecija	343,257	185,176	0	528,433	84,500	37,333	3,504	59,700	139	0
Pampanga	172,616	45,452	0	218,068	12,484	6,929	3,709	7,452	0	14,878
Tarlac	184,975	120,370	0	305,345	0	83,115	2	36,588	665	0
Zambales	116,485	254,955	0	371,440	51,817	183,141	9	8,600	0	1,388

Source: PSA (2020) "2020: Regional Social and Economic Trends (RSET) Central Luzon"

Spatial Strategy[9]

LSDF provides the overarching framework on which land use and development activities in the Luzon Island group will be anchored. LSDF adopted the following strategies:

- Concentration: Distribution of population in existing urban areas and metropolitan center. This is according to urban hierarchy, and follows the principles of densification, compaction, and smart growth. The proposed spatial structure of settlements in Central Luzon is a five-tiered hierarchy that follows the principle of concentration. Larger settlements in terms of population are positioned in the upper tiers while centers with smaller populations occupy the lower tiers of urban hierarchy according to this principle.
- Connectivity: Seamless integration of urban centers, production areas, and protection areas through infrastructure development. The connectivity framework for Central Luzon aims to enhance the linkages of communication, transportation and economic infrastructure systems to: a) increase access and to improve the efficiency of markets, b) manage the growth and development of settlements according to specific urban and regional plans, and c) reduce vulnerability during

[8] Source: NEDA (2017) "Central Luzon Regional Development Plan 2017-2022"

[9] Source: NEDA (2017) "Central Luzon Regional Development Plan 2017-2022"

emergency situations by increasing redundancy of transportation routes, communication, and other infrastructure facilities.

- Vulnerability Reduction: Hazard mitigation, exposure minimization, protection of elements at risk, and enhancement of adaptive capacity. Securing the safety of settlements and ensuring the sustainable operation of production and value-chain processes during geologic and hydro meteorologic threats may be straight forward but not necessarily easy to achieve.

Information about Pangasinan in Ilocos Region is mentioned in "A. Ilocos Region".

D. Southern Tagalog

D-1. NCR

Physical Characteristics

The NCR is a highly urbanized region in the country. According to RDP[10], majority (42.6 %) of NCR's land area is classified as residential. Commercial lands account to 10.2 % while road is 7.8 % of total land area.

Table B-15 Status of Land Classification (in hectares), NCR

Residential	Socialized Housing	Commercial	Industrial	Institutional	Special Urban Development	Utility	Parks and Open Space	
27,414	363	6,556	4,819	3,269	1,609	1,302	3,845	
Cemetery	Road	Waterways	Buffer zone	Fishponds	Cultural	Golf Courses	Heritage Preservation Zone	
483	5,037	837	3	1,010	26	60	3	
Riverside Development Zone	Planned Unit Development	Special Mixed-Use Zone	Special Precincts for Urban Development	Disaster Resiliency Initiatives	Government Center Zone	Recreational	Vacant	
25	1,201	417	85	23	7	104	969	
Others	Mixed Use	Tourism Site	Urban Core Zone	Entertainment Zone	Military Zone	Waste Disposal	Idle Land	Roads, Rivers, Creeks
469	249	18	344	301	100	5	3,015	413

Source: NEDA (2017) "NCR Regional Development Plan 2017-2022"

The Spatial Strategy[11]

NCR as a premier region requires strategic investments for support infrastructure to further promote growth and development in consonance with the 0-10 Socioeconomic Agenda and the country's Long-Term Vision, *Ambisyon Natin 2040* consistent with the massive Build Build Build Program of the current Administration.

Infrastructure development is one of the foremost priorities of the government, particularly in Metro Manila over the past five years. This is very evident since the

[10] Source: NEDA (2017) "NCR Regional Development Plan 2017-2022"

[11] Source: NEDA (2017) "NCR Regional Development Plan 2017-2022"

government is continuously increasing its spending in infrastructure within this period, though the government fell short of the target in 2012 and 2014.

The government has also sought private sectors participation through the creation of Public-Private Partnership (PPP) Center in 2011 to address the gaps in infrastructure; fast track and ensure efficient and effective implementation; financing; and operations and maintenance of major infrastructure projects such as elevated expressways, rail expansion and extension, integrated bus terminal, modernization of flood control facilities, school and health facilities, disaster resilient housing, boosting energy efficiency among others.

D-2. Calabarzon

Physical Characteristics

According to RSET[12], A&D lands constitute 64.8% of the total land area of Calabarzon while 35.2% is forestland. As Quezon has the biggest land area among the provinces, it also has the largest A&D land with 45.1% of the region's A&D and 69.4% of the region's forestland. A&D lands can be used for residential, agriculture, commercial, industrial, institutional, and other similar purposes.

Table B-16 Status of Land Classification by Province (in hectares), Calabarzon

Provinces	Certified A & D	Classified Forestland	Unclassified Forestland	Total	Classified Forestland					
					Established Forest Reserve	Established Timberland	National Parks and GRBS/WA	Military and Naval Reservations	Civil Reservation	Fishpond
Total	1,051,948	549,881	21,032	1,622,861	98,825	424,751	20,832	3,688	28	1,757
Cavite	107,733	16,875	4,147	128,755	0	14,076	0	2,799	0	0
Laguna	134,720	38,978	2,275	175,973	3,637	32,313	2,754	274	0	0
Batangas	271,167	37,691	7,723	316,581	0	28,784	8,537	51	0	319
Rizal	63,889	67,003	0	130,892	22,582	43,857	0	564	0	0
Quezon	474,439	389,334	6,887	870,660	72,606	305,721	9,541	0	28	1,438

Source: PSA (2021) "2021 Calabarzon Regional Social and Economic Trends (RSET)

The Spatial Strategy[13]

The four policy areas of the physical framework plan are the following:

- Settlements are areas where concentrations of population engage in economic, political, cultural and other social activities.
- Production areas are capable of sustaining intensive and multiple uses, primarily geared to the production of food and cash crops or the extraction of commodities for their economic value.

[12] Source: PSA (2021) "2021 Calabarzon Regional Social and Economic Trends (RSET)"
[13] Source: Calabarazon Regional Development Council (2017) "Regional Physical Framework Plan of Calabarzon 2017-2046"

- Protection areas are those that need to be protected because of their special values which include the National Integrated Protected Areas System (NIPAS) and non-NIPAS areas, areas prone to natural hazards, environmentally critical areas, tourism areas and SAFDZs.
- Infrastructure and utilities development encompass the provision of basic services that will provide economic and other forms of integration as well as the development of an efficient, responsive, safe, and ecologically friendly built environment.

D-3. Mimaropa

Physical Characteristics

According to RSET[14], 36.4 % of the total land area of the region are certified A&D lands. 63.6% are forest lands which are divided into classified and unclassified forest lands. Palawan has the largest area devoted to National Parks and GRBS/WA with a total of 767,320 hectares (Table B-17). This was followed by the provinces of Occidental Mindoro with 192,811 hectares and Oriental Mindoro with 44,289. Other areas are utilized as established forest reserve, established timberland, military reservations, civil reservation and fishpond.

Table B-17 Status of Land Classification by Province (in hectares), Mimapora

Provinces	Certified A & D	Classified Forestland	Unclassified Forestland	Total	Classified Forestland					
					Established Forest Reserve	Established Timberland	National Parks and GRBS/WA	Military and Naval Reservations	Civil Reservation	Fishpond
Total	998,563	1,691,899	55,139	2,745,601	268,894	369,269	1,004,420	147	45,250	3,919
Marinduque	73,720	22,205	0	95,925	17,901	4,304	0	0	0	0
Occidental Mindoro	156,004	405,032	26,949	587,985	91,270	101,365	192,811	147	16,190	3,249
Oriental Mindoro	222,895	213,429	148	436,472	85,659	79,299	44,289	0	3,680	502
Palawan	453,700	1,035,926	0	1,489,626	71,394	171,832	767,320	0	25,380	0
Romblon	92,244	15,307	28,042	135,593	2,670	12,469	0	0	0	168

Source: PSA (2018) "2018 Regional Social and Economic Trends (RSET) Mimapora Region"

Spatial Strategy[15]

Mimaropa shall adopt island development as overall spatial strategy. The four major islands namely: Mindoro, Marinque, Romblon, and Palawan shall be developed based on their distinctive economic and physical attributes and unique resource endowments. Each island or province shall have particular area of product and industry specialization based on its comparative advantages. Each province shall be further developed according to

[14] Source: PSA (2018) "2018 Regional Social and Economic Trends (RSET) Mimapora Region"

[15] Source: NEDA (2017) "MIMAROPA Regional Development Plan 2017-2022"

distinct roles and emerging industries/ business opportunities. Each island or province has its own agritourism destinations which are mostly located in rural areas. Transportation infrastructure in the region shall be improved to eliminate physical constraints in mobility and accessibility of both tourism and production areas.

Island development as the overall spatial strategy shall be coupled with the 3 land use strategies of the Luzon spatial development framework and the national spatial strategy.

E. Bicol Region

Physical Characteristics

According to Bicol region[16], majority (69.3 %) of Bicol's land area is classified as certified A&D. Forest lands account to 29.0% while unclassified forest land is 1.7% of total land area.

Based on Regional Social and Economic Trends (RSET) for Bicol Region, the province of Albay has a total area of 255,257 hectares of which 81% are classified as A&D while 19% are classified as forestland. For the province of Camarines Norte, 66% of its total land area of 211,249 hectares are classified as A&D while 34% are classified as forestland. The total land area of the province of Camarines Sur is 526,682 hectares, of which, 69% are classified as A&D and 31% classified as forestland. The province of Catanduanes has a total land area of 151,148 hectares. Of this, 49% are classified as A&D while 51% are classified as forestland. The province of Masbate has a total land area of 404,769 hectares of which 65% are classified as A&D, while 35% are classified as forestland. The province of Sorsogon has a total land area of 214,144 hectares of which 81% are classified as A&D, while 19% are classified as forestland.

Table B-18 Status of Land Classification by Province (in hectares), Bicol

Province	Certified A & D	Classified Forestland	Unclassified Forestland	Total	Classified Forestland				
					Established Forest Reserves	Established Timberland	National Parks and GRBS/WA	Civil Reservation	Fishpond
Total	1,222,060	511,316	29,873	1,763,249	69,939	412,996	25,276	63	3,042
Albay	206,205	49,052	0	255,257	5,026	38,517	5,459	0	50
Camarines Norte	140,030	58,347	12,872	211,249	796	54,638	2,840	0	73
Camarines Sur	365,551	156,777	4,354	526,682	15,027	127,471	13,145	0	1,134
Catanduanes	73,325	77,274	549	151,148	6,725	70,486	0	63	0
Masbate	263,384	139,539	1,846	404,769	34,298	104,121	159	0	961
Sorsogon	173,565	30,327	10,252	214,144	8,067	17,763	3,673	0	824

[16] Source: Philippine Statistics Authority (PSA) (2021) "2021 Regional Social and Economic Trends (RSET) for Bicol Region"

Source: PSA (2021) "2021 Regional Social and Economic Trends (RSET) for Bicol Region"

Spatial Strategy[17]

The Regional Spatial Development Framework (RSDF) adopts the LSDF formulated in accordance with the NSS. It focuses on three core strategies of the NSS and LSDF on (a) concentration; (b) connectivity; and (c) vulnerability reduction, taking into consideration the region's role in the LSDF as a primary tourist destination for ecological, agricultural, educational, and medical tourism in the country. The region shall also serve as: (a) geothermal energy supplier to the Luzon Grid with its aggregate generating capacity of 365.5 megawatts; (b) producer of agricultural commodities and agri-based products using abaca, pili, pineapple, coconut, marine products, and cattle as the prime commodities; (c) an ecotourism destination; (d) gateway to the Visayas, Mindanao and the Pacific; and (e) international gateway through the Bicol International Airport.

F. Western Visayas

Physical Characteristics

According to RSET (2020)[18], Region VI has a total land area of 2,022,311 hectares. It is classified into forestland covering 30% of the total area and A&D lands covering around 70%.

The province of Aklan has a total area of 181,789 hectares of which 57% are classified as A&D while 43% are classified as forestland. For the province of Antique, 57% of its total land area of 252,201 hectares are classified as A&D while 43% are classified as forestland. The total land area of the province of Capiz is 263,317 hectares, of which, 68% are classified as A&D and 32% classified as forestland. The province of Guimaras has a total land area of 60,457 hectares of which 95% are classified as A&D, while 5% are classified as forestland. The province of Iloilo has a total land area of 471,940 hectares. Of this, 72% are classified as A&D while 28% are classified as forestland. The province of Negros Occidental has a total land area of 792,607 hectares of which 75% are classified as A&D, while 25% are classified as forestland.

[17] Source: Bicol Region (2000) "Regional Physical Framework Plan of Bicol 2000-2030"

[18] Source: PSA (2020) "2020 Regional Social and Economic Trends (RSET) Western Visayas"

Table B-19 Status of Land Classification (in hectares), Western Visayas

Province	Certified A & D	Total Forest Land	Total
Total	1,417,978	604,333	2,022,311
Aklan	102,799	78,990	181,789
Antique	144,728	107,473	252,201
Capiz	178,711	84,606	263,317
Guimaras	57,621	2,836	60,457
Iloilo	338,528	133,412	471,940
Negros Occidental	595,591	197,016	792,607

Source: PSA (2020) "2020 Regional Social and Economic Trends (RSET) Western Visayas"

Spatial Strategy[19]

Western Visayas envisions a society where people are progressive, secure, healthy, and happy, manifested by empowered people and a progressive economy. To attain this vision, the region's spatial strategy will adopt the main strategies of concentration, connectivity, and vulnerability reduction – the same strategies adopted nationwide under the National Spatial Strategy or NSS.

Strategy 1: Concentration

The strategy of concentration will maximize the potentials of urban areas to foster sustainable growth, generate jobs, and increase incomes. It seeks to absorb growth of population to achieve economies of scale and efficiency. It will ensure that encroachment into prime agricultural and environmentally sensitive or protected areas will be minimized if not totally prevented. Identified areas and locations for industrial, agricultural, business, tourism and service-related activities will be developed with government partnering with private developers and investors to generate new jobs, attract foreign direct investments and create forward and backward linkages in the economy.

Strategy 2: Connectivity

The strategy on connectivity seeks to increase and improve mobility by land, air, or sea across settlements and key production and tourism areas. It will increase access to and improve efficiency of markets and encourage growth and concentration through transportation alignments that would support the regional development objectives. Redundancy of transport links will be increased to reduce vulnerability during emergency situations.

The needed infrastructure facilities and their respective locations are identified. The infrastructure facilities will support, expand, and stimulate economic and productive

[19] Source: NEDA (2017) "Western Visayas Regional Development Plan 2017-2022"

activities by connecting urban systems and settlements as well as improving mobility of cargo and people within and between the communities, islands, the provinces and with the rest of the country and beyond.

Strategy 3: Vulnerability Reduction

Under this strategy, population, production areas, and protected zones that are at-risk to hazards will be identified. It includes appropriate measures to reduce or mitigate risks and vulnerabilities. Areas delineated for ecological and productive values shall be protected from destructive human and economic activities.

G. Central Visayas

Physical Characteristics

According to RDP[20], Central Visayas (Region VII) is situated at the geographical center of the Philippines, between the major islands of Luzon and Mindanao. Four island provinces compose the region: Bohol, Cebu, Negros Oriental, and Siquijor. Metro Cebu, the premier urban center in Central Visayas, is located in the central eastern seaboard of Cebu. Central Visayas is the third smallest region in the country with a total land area of 1,489,077 hectares, which constitutes about 5% of the country's land area. Negros Oriental accounts for the largest share of the regional land (36.3%), followed by Cebu (34.2%), Bohol (27.6%), and Siquijor (1.9%).

The use of the land is constrained by physical, environmental and/or man-made factors. The man-made factors can include government policies that restrict or limit the use of the land. Deforestation of forest and mangrove areas data from DENR shows that although 35 % of the region's area is classified as forestland, much of the area is denuded based on RSET[21].

Table B-20 Status of Land Classification (in hectares), Central Visayas

Province	Certified A & D	Classified Forestland	Unclassified Forestland	Total	Classified Forestland					
					Established Forest Reserves	Established Timberland	National Parks and GRBS/WA	Military and Naval Reservations	Civil Reservation	Fishpond
Total	964,169	459,270	65,638	1,489,077	49,619	390,151	15,054	4	114	4,328
Bohol	310,455	101,271	0	411,726	19,410	78,454	0	0	0	3,407
Cebu	368,146	141,091	0	509,237	21,427	105,578	13,148	4	114	820
Negros Oriental	258,841	215,748	65,638	540,227	8,570	205,171	1,906	0	0	101
Siquijor	26,727	1,160	0	27,887	212	948	0	0	0	0

Source: PSA (2020) "2020 Regional Social and Economic Trends (RSET) Region VII Central Visayas"

[20] Source: NEDA (2017) "Central Visayas Regional Development Plan 2017-2022"

[21] Source: PSA (2020) "2020 Regional Social and Economic Trends (RSET) Region VII Central Visayas"

Spatial Strategy[22]

The spatial development goals of the region are: the rational distribution of population, settlements, and economic activities; the economic integration of the provincial economies; the equitable access of economic opportunities and resources, and; the protection of the environment and reduction of vulnerability to hazards and climate change.

The regional spatial strategy consists of three components: agglomeration by directing growth to key urban centers, connectivity, and vulnerability reduction. The strategy on agglomeration will tap into the potential of major urban centers in the provinces to foster local economic growth, generate jobs, and increase incomes. It involves planning for and guiding increases in densities of settlements to achieve economies of scale and efficiency.

The strategy on connectivity seeks to increase and improve linkages among major urban centers, settlements, key production areas, and market centers through the provision of infrastructure and related services. It also seeks to facilitate agglomeration by supporting the growth of sub-regional urban centers.

The strategy on vulnerability reduction aims to minimize the impacts of hazards by building resilience, which can be defined as the ability of settlements and the population to immediately bounce back following the occurrence of disasters. The concern on vulnerability reduction stems from the realization that disasters can negate previous gains and even push back development, thereby increasing poverty.

H. Eastern Visayas

Physical Characteristics

According to RSET[23], Eastern Visayas is basically a classified forest land area with 50% of its total land area. Its A&D area covers about 48% while2% of its total land area is considered idle as unclassified forestland (Table B-21).

Among the provinces, Samar has the biggest area devoted to classified forest land (34%) followed by Eastern Samar (27%). The provinces of Leyte have the biggest area of A&D (37%) followed by Samar (19%)

[22] Source: NEDA (2017) “Central Visayas Regional Development Plan 2017-2022”

[23] Source: PSA (2022) "2021 Regional Social and Economic Trends (RSET) Eastern Visayas Region"

Table B-21 Status of Land Classification by Province (in hectares), Eastern Visayas

Province	A & D	Classified Forestland	Unclassified Forestland	Total	Classified Forestland					
					Forest Reserves	Timberland	National Parks	Military Reservation	Civil Reservation	Fishpond Development
Total	1,024,955	1,076,442	41,772	2,143,169	51,508	1,014,151	4,108	176	862	5,637
Biliran	28,650	26,900	0	55,550	0	26,900	0	0	0	0
Eastern Samar	144,222	289,743	0	433,965	1,890	287,227	0	0	0	626
Leyte	381,532	167,547	22,197	571,276	19,782	143,500	3,268	48	862	87
Northern Samar	148,134	201,664	0	349,798	11,864	188,160	0	128	0	1,512
Southern Leyte	125,961	27,944	19,575	173,480	17,804	10,140	0	0	0	0
Samar	196,456	362,644	0	559,100	168	358,224	840	0	0	3,412

Source: PSA (2022) "2021 Regional Social and Economic Trends (RSET) Eastern Visayas Region"

Spatial Strategy[24]

The spatial development strategy proposed for Eastern Visayas is an Integrated Area for Development (IAD) approach.

It follows the polycentric concept of development, which means connecting a number of urban and rural growth areas to build strong and competitive development clusters that can grow and sustain business and provide efficient basic social services. The strategy corrects the current trend where development is concentrated and dominated following reasons:

- It will discourage and avoid rapid economic and demographic concentration in major urban centers beyond their carrying capacity, e.g. Tacloban, Ormoc, Catbalogan, Maasin City and Calbayog City.
- It will harness the full economic potentials of all areas in the region, and
- It will effectively establish complementation of economic activities and services between rural and urban areas.

The modified IAD cluster concept basically combines two spatial strategies considered for the region, namely: IAD and hierarchy of centers. Thus, the cities and municipalities were grouped into clusters according to the common resources and resource based economic activities of each group and the natural movement of people and their linkages with each other through existing transportation and communication networks.

The combination of urban centers and IAD clusters basically responds to two of the desired development directions prescribed in the National Framework for Physical Planning (NFPP) namely: strengthening of urban rural linkages and resource area-based development.

[24] Source: Regional Land Use Committee Regional Development Council, National Economic and Development Authority (2005) "Eastern Visayas Physical Framework Plan 2005-2030"

I. Southwestern Mindanao

I-1. The Zamboanga Peninsula

Physical Characteristics

According to RDA[25], the Zamboanga Peninsula has a land area of 1,413,754 hectares, 54% of which is classified forest land. This portion is retained as part of public domain mainly for ecological reasons. On the other hand, 46% have been released as A&D to accommodate needs for food production, settlement, infrastructure and other purposes. Of the total forest cover in the region, almost 19% can be found in Zamboanga City, 16% in Zamboanga del Norte, 15% in Isabela City, 9% in Zamboanga del Sur, and 7% in Zamboanga Sibugay. Land use cover consists of 9% forest, 5% brushland, and 87% consists of open areas, natural open areas, cultivated areas, built up areas and inland waters. With its long coastline stretching to 1,330 km, the peninsula has access to five of the richest fishing grounds in the country, namely, Sulu sea, Moro Gulf, Pilas Channel, Sindangan Bay, and Celebes Sea.

The region's coastal and marine resources provide livelihood to thousands of artisan fishermen. Irrigated land totaled 40,314 hectares as of December 2008, which is 60% of the 67,757 hectares of potential irrigable areas in the region. Zamboanga del Sur developed the most areas at 69%. There are about 89,000 hectares of grasslands/shrub lands which can be utilized for agricultural and other agri-related activities. An estimated 29,000 hectares of land have the potential for irrigation and thus, can open the way to self-sufficiency in rice. The region is also a vast reservoir of mineral resources which remain largely untapped. With the advent of the new Mining Act, the mining industry is seen to take a more significant role in economic growth.

Table B-22 Status of Land Classification by Province (in hectares), Zamboanga Peninsula

Province	A&D	Forest	Total
Total	655,670	758,084	1,413,754
Zamboanga del Norte	265,795	358,649	624,444
Zamboanga del Sur	215,648	157,380	373,028
Zamboanga Sibugay	95,755	155,704	251,459
Zamboanga City	64,474	76,996	141,470
Isabela City	13,998	9,376	23,373

Source: DENR

[25] Source: The Zamboanga Peninsula (2013) "Regional Development Agenda"

Spatial Strategy[26]

The region has adopted Concentric Y strategy as its overall spatial strategy, which is anchored on the region's peninsular topography and areas of economic concentration. The areas located at the upper left point of letter "Y" are the twin cities of Dipolog and Dapitan, while the place at the right side of "Y" is the regional administrative center of Pagadian City. The midpoint is Ipil, Zamboanga Sibugay as the convergence area, and the bottom part of "Y" is Zamboanga City, the commercial, industrial, financial and educational center of the region.

This strategy takes off from recognizing existing growth centers, which are within the corridor, the peninsula itself, and identifying the measures to be taken to enhance the growth of these centers. This entails the improvement in economic linkages and physical connectivity to facilitate exchange of goods, people, and services between and among growth centers. This also denotes the expansion of manufacturing and industrial activities to raise the degree of concentration in the sub-regional, provincial and local centers, thus spurring creation of jobs, increase income levels and reduce poverty incidence. Hence, to ensure sustainable growth, resilience and competitiveness, the region shall pursue building efficient and green growth centers.

The spatial strategy shall ensure ecological integrity through effective natural resource management by balancing the different demands for land vis-a-vis preservation of ecosystems. Disputes on land use are expected because a burgeoning population will lead more encroachments into previously unoccupied or underutilized land. Thus, the strategy encourages sustainable growth of existing built-up areas like cities and provincial centers, while complementing the growth of rural areas through the adoption of corresponding development approaches as contained in the regional and local development plans.

Consistent with NSS and MSS/DF, 2016-2045, the region aims to: (a) build efficient, productive and green urban areas for inclusive development; (b) improve connectivity within and beyond the borders of Zamboanga Peninsula; (c) reduce vulnerability of communities from risks due to natural hazards; (d) reduce poverty; and (e) ensure peace, security and safety.

Information about Misamis Occidental in Northern Mindanao is mentioned in "J-2 Northern Mindanao". Information about Basilan, Sulu, Tawi-Tawi in BARMM is mentioned in "L-2. Bangsamoro Autonomous Region in Muslim Mindanao (BARMM)".

[26] Source: Regional Land Use Committee Regional Development Council, National Economic and Development Authority (2005) "Eastern Visayas Physical Framework Plan 2005-2030"

J. Northern Mindanao

J-1. Caraga

Physical Characteristics

According to RSET[27], the region has a total land area of 1,949,201 hectares classified as 30% A&D lands and 70% forestland. About 97% of the region's classified forestland, which comprise of 24% established forest reserve and 73% established timberland.

Table B-23 Status of Land Classification by Province (in hectares), Caraga

Province	Certified A & D	Classified Forestland	Unclassified Forestland	Total	Classified Forestland					
					Established Forest Reserve	Established Timberland	National Parks and GRBS/WA	Civil Reservation	Fishpond	Mangrove
Total	582,351	1,359,061	7,789	1,949,201	329,022	992,131	2,415	6,206	2,237	27,050
Agusan del Norte	84,134	193,621	0	277,755	47,595	143,792	0	1,012	0	1,222
Agusan del Sur	216,043	673,797	1,125	890,965	164,794	503,809	0	5,194	0	0
Dinagat Islands	17,661	13,913	0	31,574	0	0	0	0	0	13,913
Surigao del Norte	95,969	155,349	6,664	257,982	43,675	98,818	2,415	0	757	9,684
Surigao del Sur	168,544	322,380	0	490,924	72,958	245,712	0	0	1,480	2,230

Source: PSA (2020) "2020 Regional Social and Economic Trends (RSET) Region XIII (Caraga)"

Spatial Strategy[28]

The Caraga Regional Spatial Development Framework (CRSDF) 2015-2045 provides spatial and development directions to transform Caraga Region into a dynamic and sustainable economy, where everyone equitably benefits from the fruits of progress. It adopts the National Spatial Strategy that advocates development through regional agglomeration, connectivity, and vulnerability reduction.

The functional roles of Caraga in the Mindanao Spatial Strategy/ Development Framework 2015-2045 (MSS/DF) are consistent with its long-term goal of becoming the Fishery, Agroforestry, Mineral and Ecotourism (FAME) Center of the Philippines by 2022. In pursuing this goal, the region is adopting a polycentric network of development anchored on strong interaction between neighboring cities or urban areas to develop specialized and complementary assets while avoiding large-scale urban sprawls and territorial competition.

To attain FAME, the provinces and cities are assuming functional roles that are based on their natural endowments and consistent with their own development aspirations:

- Butuan City: The regional center and the major trading, processing. commercial and service center. It is also the show window of history and culture in Mindanao.

[27] Source: PSA (2020) "2020 Regional Social and Economic Trends (RSET) Region XIII (Caraga)"

[28] Source: NEDA (2017) "Caraga Regional Development Plan 2017-2022"

- Surigao City: The commercial and trading center in the northeastern seaboard and the major processing center for minerals and fishery.
- Bislig City: The center of organic high value crops and aquamarine products.
- Tadag City: The institutional, tourism, and trading hub.
- Cabadbaran City: The agri-production and processing zone for high value crops and aquaculture products.
- Bayugan City: The agro-industrial and processing zone.
- Agusan del Nortle: The agri-processing and industrial estates zone.
- Agusan del Sur: The agri-forestry center and food basket of the region.
- Surigo del Norte: The major ecotourism destination, fishery producer, and mineral-based processing industrial center of the region.
- Surigao del Sur: The agro-industrial, fishery, forestry, and tourism zone.
- Dinagat Islands: The ecotourism and fishery center of the region.

J-2. Northern Mindanao

Physical Characteristics

According to RSET[29], areas allocated for forestland account for about 54% of the region's total land area. Some marginal non-NIPAS areas suitable for agro-forestry shall be utilized for production based on RDP[30].

The region shall develop new industrial centers and economic zones to support the establishment and operation of agri-based industries including manufacturing and emerging industries. More tourism development areas shall offer nature and adventure tourism services. Conservation of the region's biodiversity shall be strictly observed.

Regarding protection land use, there are two categories under the protection land use, the NIPAS and non-NIPAS area. The decrease in non-NIPAS areas due to utilization to agro-forestry and production forest resulted to a decrease in protection land use and a corresponding increase in production land use. Areas devoted to protection land use comprised 41.4% of the region's total land area. However, NIPAS areas shall increase due to additional proposed sites in the region. Areas with productive activities and settlements encroaching the existing and proposed NIPAS areas shall be reverted to protection areas.

Given the national geographic context, Northern Mindanao is potentially at risk to hydro meteorologic and geologic hazards. The potential geohazard types and distribution map indicates the risk of the region to flooding, tsunami, landslides, and other hazards. Thus, environmentally constrained areas shall be properly determined and buffered; and an

[29] Source: PSA (2021) "2021 Regional Social and Economic Trends (RSET) Northern Mindanao"

[30] Source: NEDA (2017) "Northern Mindanao Regional Development Plan 2017-2022"

ecosystem-based approach in disaster mitigation and vulnerability reduction shall be implemented. Status of land classification is shown in Table B-24.

Table B-24 Status of Land Classification (in hectares), Northern Mindanao

Region	A&D	Forestland	Total
Total	935,297	1,083,319	2,018,617
Bukidnon	380,333	669,526	1,049,859
Camiguin	23,723	5,464	29,187
Lanao del Norte	187,737	194,742	382,479
Misamis Occidental	106,534	98,988	205,522
Misamis Oriental	236,971	114,599	351,570

Source: PSA (2021) "2021 Regional Social and Economic Trends (RSET) Northern Mindanao"

Spatial Strategy[31]

Likewise, the Strategic Development Areas (SDAs) operationalizes the Mindanao Spatial Strategy/ Development Framework (MSS/DF), 2015-2045 to ensure the full optimization of resources and potentials by physically and economically integrating the various areas in the region, as well their links to the other regions in Mindanao.

- SDA 1: Realizing the Cagayan-Iligan Industrial and Trade Corridor

This cluster includes most of Misamis Oriental, eastern part of Lanao del Norte and northern part of Bukindon. The expanded Cagayan-Iligan Corridor, which shall be the center of industrial development, stands to fully realize its potentials of becoming a rapidly industrializing area with a large export base.

- SDA 2: Capitalizing on the Agri-Fishery and Eco-Cultural Tourism Endowments of Lanao del Norte and Misamis Occidental

This cluster which covers the western part of the region radiates its influence on Lanao del Norte and Misamis Occidental, capitalizes on the Agri-Fishery and Eco-Cultural Tourism endowments of the two provinces covered. Improving physical accessibility and the utilization of productive resources shall be the focus of development to hasten economic growth and eventually make the area self-reliant and productive.

- SDA 3: Boosting Agri-Business Ventures and Eco-Tourism in Bukindon

Cluster 3 mainly covers the province of Bukindon. The central part of Bukindon shall continue to be the main source of agricultural products and raw materials for the processing plants in the region. Potentials along eco-tourism and recreation, and agri-business shall also be developed especially with the opening of major roads linking the province to Iligan City, Davao, and Cotabato.

[31] Source: NEDA (2017) "Northern Mindanao Regional Development Plan 2017-2022"

- SDA 4: Harnessing the Gingoog-Camiguin Tourism Adventure Loop

For Camiguin to become a major tourist destination in the country, the primary strategy is to create an integrated adventure-type coastal and/or expanded tourism highway. While working on the improvement of access tourism sites and facilities, tour packages shall be designed to connect tourists in Cagayan de Oro passing the tourism sites in Misamis Oriental, such as Mantangale in Balingoan and Duka Bay in Medina to Camiguin, and then to Bohol and Cebu and vice versa, through the nautical highway. This would complement the development of adventure tourism in Bukindon and other areas.

K. Southeastern Mindanao

K-1. Davao

Physical Characteristics

Table B-25 presents the summary of the existing land use of the region. According to RSET[32], 34% of Davao de Oro is classified as certified A&D while 66% is classified as forestland. 52% of Davao del Norte is classified as certified A&D while 48% is classified as forestland. 46% of Davao del Sur is classified as certified A&D while 54% is classified as forestland. 21% of Davao Occidental is classified as certified A&D while 79% is classified as forestland. Finally, 29% of Davao Oriental is classified as certified A&D while 71% is classified as forestland.

Table B-25 Status of Land Classification by Province (in hectares), Davao

Province	Certified A & D	Classified Forestland	Total
Total	729,074	1,240,102	1,969,176
Davao de Oro	132,922	259,655	392,577
Davao del Norte	173,734	162,500	336,234
Davao del Sur	218,992	259,329	478,321
Davao Occidental	42,751	160,677	203,428
Davao Oriental	160,675	397,941	558,616

Source: Regional Development Council, Davao Region (2014) "Updated Davao Regional Physical Framework Plan 2015-2045"

Spatial Strategy[33]

Davao Region's main spatial strategy involves the expansion of Metropolitan Davao into a Comprehensive Outcomes for Rural Empowerment (C.O.R.E.) Growth Triangle that

[32] Source: PSA (2021) "2021 Regional Social and Economic Trends (RSET) Davao Region"

[33] Source: Regional Development Council, Davao Region (2014) "Updated Davao Regional Physical Framework Plan 2015-2045"

focuses on the agri-industrial centers along the Davao Gulf. The left side of the Triangle shall be bounded by the Region's Linear Urban Corridor and extending up to the Municipality of Malita in Davao Occidental; the right side by the agri-production strip from Tagum City to the Municipality of Governor Generoso in Davao Oriental, and the base of the Triangle will be the Davao Gulf waterway between the municipalities of Malita and Governor Generoso.

The C.O.R.E. Growth Triangle strategy shall mobilize the Region's resources to enhance its connectivity in order to achieve ease and mobility of access of people, goods and services through integrated multi-modal transport linkages and digital infrastructure; pursue an overall outward-looking policy that entails the adoption of both national and global perspectives in all development initiatives, defining Davao Region's role as Mindanao's metropolitan center and linking Mindanao to other islands and beyond the Philippines; achieve Rural-Urban Integration by harnessing the synergy between rural empowerment and urban renewal, thereby creating equitable opportunities for holistic regional development; and finally, abide by Ecological/ Environmental Sustainability principles so as to allow the present use of the region's resources for the benefit/enjoyment of the future generation and build more resilient communities through disaster risk reduction and climate change adaptation (DRR/CCA).

This strategy does not only integrate the region physically but economically as well, since the key production areas and market centers are connected directly to the processing centers along the Linear Urban Corridor. The Davao Gulf, with an integrated inter-modal transport system, shall serve as the gateway to other regions in Mindanao, the ASEAN and to the rest of the world in pursuit of its vision.

Information about Sarangani in SOCCSKSARGEN is mentioned in "L-1. SOCCSKSARGEN". Information about Surigao del Sur in Cagara is mentioned in "J-1. Caraga".

L. Southern Mindanao

L-1. SOCCSKSARGEN

Physical Characteristics

According to RDP[34], the SOCCSKSARGEN RSDF defines the region's desired spatial structure based on the trends on population, economic activities, and services. It is anchored on the NSS that shows the development direction and recognizes the increasing role of cities and the benefits of agglomeration economies, particularly the urban areas,

[34] NEDA (2017) "SOCCSKSARGEN Regional Development Plan 2017-2022"

as drivers and venues for growth and poverty reduction. It also promotes spatial integration through a well-connected network of settlements.

Region XII shall continue to adopt the Sustainable Agri-Industrial Development Strategy (SAIDS) to realize its vision as an agri-industrial hub and ecotourism center in southern Philippines. The spatial strategy shall encourage the establishment of ecozones that will support the region's industry clusters. Specifically, the spatial strategy focuses on Tri-Corridor Development that shall develop main and potential corridors involving the establishment of small- to medium-scale processing centers, agriculture and commercial hubs, ecotourism spokes, centers for social opportunities, housing, connected by infrastructure support facilities, and made resilient by mainstreaming disaster risk reduction and climate change adaptation at all stages of the planning process. There shall be three main corridors.

- The Cotabato City-Kidapawan City (CK) Agri-Industrial and Eco-Tourism Corridor:

The first corridor is the CK Agri-Industrial and Eco-Tourism Corridor. The primary growth node in this corridor is Cotabato City with Kidapawan City and Midsayap as intermediate urban centers. The major industries that shall be promoted in this corridor are agri-industrial and eco-tourism development. The economic activities in this corridor could be influenced by the development of Regions XI, X and BARMM. Cotabato City as the primary urban center in this corridor shall serve as the institutional, financial, and service center, the center for public health with the existence of the Cotabato Regional and Medical Center, and the provisional seat of BARMM. The city as a special economic zone is expected to diversify its economic base and will facilitate the creation of more investments and job opportunities. Cotabato province ranks first in the region in rice and rubber production, second in corn, and produces organic coco sugar and delicious tropical fruits. It hosts processing plants for oil palm, rubber and sugar cane. It also produces freshwater fish. It has the longest zipline (2.2 km) and boasts beautiful tourism sites. The Mt. Apo Geothermal Power plant in Kidapawan City generates 52 MW and another 50 MW plant is being worked out as expansion.

- The Isulan-General Santos (IGS) Agri-Industrial and Eco-Tourism Corridor:

The second corridor is the IGS Agri-Industrial and Eco-Tourism Corridor. General Santos City shall be the primary growth node in this corridor with the cities of Koronadal, Isulan and Tacurong as intermediate urban centers. Koronadal City shall be the regional administrative center of Region XII by virtue of Executive Order 304 series of 2004. The major industries that shall be promoted in this corridor are high value commercial crops, corn and other agri-based products, fishery-based products, and information communication technology (ICT). Trade linkage in this corridor with Region XI is

flourishing due to the natural flow of goods and services between General Santos City and Davao City.

- The Lebak-Maasim-Alabel-Glan (LMAG) Coastal Development Zone:

The third corridor shall be along the coastal area of the region called the LMAG Coastal Development Zone. The primary growth nodes in this corridor are Lebak, Kalamansig, Alabel and Glan with Kiamba and Maasim as the intermediate urban centers. Maitum shall be an ecotourism destination. The major industries to be promoted along this corridor are marine fishing, coconut, cement, marble, coffee, and nature, dive, sun, and beach tourism.

Spatial Strategy[35]

The SOCCSKSARGEN Regional Development Plan (RDP) 2017-2022 supports the country's long-term vision that is anchored on *Ambisyon Nation 2040*, President Duterte's 0 to 10-point Socioeconomic Agenda, and the objectives of the 2030 Sustainable Development Goals. By 2022, SOCCSKSARGEN Region seeks to create a strong foundation for a more inclusive growth, a high-trust society, and a globally competitive knowledge economy. This vision will be achieved by adopting the key strategies of enhancing the social fabric (Malasakit), reducing inequality (Pagbabago), and increasing the potential growth (Kaunlaran) of the economy. These strategies will be sustained by a strong foundation in regional security and growth that will sustain peace, accelerate strategic infrastructure build-up, maintain a clean and healthy environment towards ecological integrity, and build resiliency from calamity and depravation.

In support of the country's *Ambisyon Natin 2040*, the SOCCSKSARGEN RDP will focus on translating President Duterte's 0 to 10-point socioeconomic agenda and the 2030 Sustainable Development Goals into strategies, policies, programs, and activities for the period 2017-2022. It will lay down a solid foundation for a more inclusive growth, a high trust society and a globally competitive knowledge economy, through its emphasis on "Malasakit, Pagbabago para sa Patuloy na Pag-unlad".

The overall strategies will include enhancing the social fabric, pursuing inequality reducing transformation, increasing growth potential, enabling and supporting economic environment, and laying the foundations for sustainable development. These strategies will be supported by the cross-cutting themes based on a strong foundation in sustaining peace and security, accelerating infrastructure development, ensuring ecological integrity, clean and healthy environment, and building resiliency.

The strategies and desired outcomes shall be consistent with the principles of good governance by adhering to the: (a) rule of law and fairness; (b) inclusiveness and non-

[35] NEDA (2017) "SOCCSKSARGEN Regional Development Plan 2017-2022"

discrimination; (c) participation, openness and transparency; (d) performance orientation and accountability; (e) leadership and stewardship; (f) ethics and probity; and (g) service orientation and responsiveness. The plan shall also adhere to the government's commitment to promote human rights and equal access to services for all.

L-2. Bangsamoro Autonomous Region in Muslim Mindanao (BARMM)

Physical Characteristics

In BARMM, about 48.6% of land were classified as A&D in 2019. Another large part of the region was classified as timberland, with approximately 37.4% of land area.

Table B-26 Status of Land Classification by Province (in hectares), BARMM

Category	Area
Certified alienable and disposable land	628,400
Established timberland	483,840
Unclassified forestland	100,630
Established forest reserves	42,760
National parks and GRBS/WA*	34,540
Fishpond	3,390
Total	1,293,560

Source: Forest Management Bureau (Philippines) (2020) "Philippine forestry statistics 2019", page 1-02

Spatial Strategy[36]

The Bangsamoro Regional Spatial Strategy (BRSS) guides the direction of development in the region as envisioned and is in support to the attainment of *the Ambisyon Natin 2040*. This strategy aims to strengthen the socioeconomic development of the region by managing and optimizing its geographic space potentials that stimulate growth, while ensuring ecological integrity. It will ensure connectivity among regional growth centers and between urban and production areas to increase access to services, markets, and employment opportunities; and strengthen connectivity of areas suitable for agriculture, industry, and tourism development.

This spatial strategy seeks to address socioeconomic inequalities by linking lagging areas in BARMM with the more progressive ones. Moreover, it aims to protect ecologically fragile areas and provide appropriate measures to reduce vulnerability to disasters.

Regional agglomeration is a strategy that aims to build and maximize the benefits of scale and agglomeration economies by decongesting metropolitan centers and spreading

[36] The Bangsamoro Planning and Development Authority (2020) "1st Bangsamoro Development Plan 2020-2022" (https://iag.org.ph/images/pdf/1st-BDP-Final.pdf) accessed on April 28, 2021.

development on the outlying area in the region. The different of the identified centers are kept in balance to ensure a rational arrangement of activities and linkages between and among these centers.

The hierarchy of settlements or potential growth centers in BARMM was identified based on population trends, economic activities, and services as well as strategic locations.

Information about Bukidnon and Lanao del Norte in Northern Mindanao is mentioned in "J-2 Northern Mindanao".

M. Estimation of Economic Benefit of Irrigation and Willingness to Pay in Priority WRR

M-1. Estimation of Economic Benefit of Irrigation

Economic benefit of irrigation is estimated in this section. Economic benefit of paddy is calculated by the following formula.

Economic benefit of paddy (PHP/ton) = Paddy price – Paddy production cost

Table B-27 Paddy Price, Production Cost and Economic Benefit of Paddy

Paddy price (PHP/ton)*1, 3	Production Cost (PHP/ton)*2	Economic Benefit of Paddy (PHP/ton)
18,860	8,864	9,996

Source: 1. PSA (2022) "Selected Statistics on Agriculture 2022", 2. JICA Survey Team (2023), 3. International Monetary Fund, World Economic Outlook Database, April 2023

Average Yield of Paddy (ton/ha) will be 5.4 ton/ha from 2025 to 2050[37]. Rice field (Wet and Dry) in 2050 (ha) in priority WRR are shown in Table B-28.

[37] Source: 1. NIMP 2020-2030, 2. JICA Survey Team (2023)

Table B-28 Rice field (Wet and Dry) in 2050 (ha) in Priority WRR

Region	Province	Rice field (Wet and Dry) in 2050 (ha)
V - Bicol Region	Albay	89,332
	Camarines Norte	37,017
	Camarines Sur	170,175
	Catanduanes	6,219
	Masbate	32,790
	Sorsogon	24,965
VII Central Visayas	Bohol	47,230
	Cebu	12,978
	Negros Oriental	21,613
	Siquijor	986
XI Davao	Davao de Oro (Compostela Valley)	160,830
	Davao del Norte	48,756
	Davao del Sur	27,113
	Davao Occidental	27,106
	Davao Oriental	29,744

Source: JICA Survey Team (2023)

Unit economic benefit of irrigation is calculated by the following formula. The calculation results are shown in Table B-29.

Unit economic benefit of irrigation (PHP/m^3) = Rice field (Wet and Dry) in 2050 in priority WRR (ha)* Average yield of paddy (ton/ha) * Economic benefit of paddy (PHP/ton) / Irrigation water demand in 2050 (MCM/year)

Table B-29 Unit Economic Benefit of Irrigation in Priority WRR

Region	Province	Economic Benefit (PHP/year)	Unit Economic Benefit (PHP/m3)	Irrigation Water Demand in 2050 (MCM/year)
V - Bicol Region	Albay	4,821,770,509	4.34	1,111
	Camarines Norte	1,998,024,411	4.73	422
	Camarines Sur	9,185,336,297	3.94	2,332
	Catanduanes	335,657,592	4.05	83
	Masbate	1,769,884,158	4.17	425
	Sorsogon	1,347,487,339	4.57	295
VII Central Visayas	Bohol	2,549,305,297	4.56	560
	Cebu	700,488,461	4.17	168
	Negros Oriental	1,166,595,571	3.21	363
	Siquijor	53,220,239	3.96	13
XI Davao	Davao de Oro (Compostela Valley)	8,680,941,703	5.97	1,454
	Davao del Norte	2,631,645,734	6.12	430
	Davao del Sur	1,463,449,039	4.40	333
	Davao Occidental	1,463,090,613	4.40	333
	Davao Oriental	1,605,441,884	4.91	327

Source: JICA Survey Team (2023)

M-2. Estimation of Willingness to Pay

Average Willingness to Pay (WTP) in Cebu is estimated to be 25.98 PHP/m^3 [38]. WTP in other provinces of WRR VII, WRR V and XI are estimated based on WTP of Cebu and the differences of average income of them, and it is shown in Table B-30. WTP of each province in WRR V and XI could not be calculated due to lack of data.

Table B-30 WTP of Priority WRR

WRR	Province	WTP (PHP/m3)
WRR V	-	28
WRR VII	Cebu	26
	Bohol	18
	Negros Oriental	17
	Siquijor	17
WRR XI	-	23

Source: 1. JICA Survey Team (2023), 2. Philippine Statistics Authority, 2015 and 2018 Family Income and Expenditure Survey

[38] Source: 1. JICA (2015) "The Roadmap Study for Sustainable Urban Development in Metro Cebu", 2. International Monetary Fund, World Economic Outlook Database, April 2023

DATABOOK OF POPULATION BY MUNICIPALITY

Results of the population projection by municipality (Medium, Low and High) are shown below.

Population Projection by Municipality (Medium)

Region	City	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
		2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
NCR	CITY OF MANILA	1,652,171	1,780,148	1,846,513	1,944,869	1,996,975	2,034,149	2,055,780	2,057,386	2,038,047	1.5%	0.7%	1.0%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF MANDALUYONG	328,699	386,276	425,758	449,329	461,366	469,955	474,952	475,324	470,855	3.3%	2.0%	1.1%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF MARIKINA	424,150	450,741	456,059	479,943	492,801	501,975	507,313	507,709	502,936	1.2%	0.2%	1.0%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF PASIG	669,773	755,300	803,159	846,641	869,323	885,506	894,922	895,621	887,202	2.4%	1.2%	1.1%	0.5%	0.4%	0.2%	0.0%	-0.2%
	QUEZON CITY	2,761,720	2,936,116	2,960,048	3,114,674	3,198,120	3,257,655	3,292,297	3,294,869	3,263,895	1.2%	0.2%	1.0%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF SAN JUAN	121,430	122,180	126,347	133,063	136,628	139,171	140,651	140,761	139,438	0.1%	0.7%	1.0%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CALOOCAN CITY	1,489,040	1,583,978	1,661,584	1,750,749	1,797,654	1,831,119	1,850,591	1,852,036	1,834,626	1.2%	1.0%	1.1%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF MALABON	353,337	365,525	380,522	400,839	411,578	419,239	423,698	424,029	420,043	0.7%	0.8%	1.0%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF NAVOTAS	249,131	249,463	247,543	260,330	267,304	272,280	275,176	275,390	272,801	0.0%	-0.2%	1.0%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF VALENZUELA	575,356	620,422	714,978	755,604	775,847	790,289	798,694	799,318	791,805	1.5%	2.9%	1.1%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF LAS PIÑAS	552,573	588,894	606,293	638,425	655,529	667,732	674,833	675,360	669,011	1.3%	0.6%	1.0%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF MAKATI	529,039	582,602	629,616	664,053	681,844	694,537	701,923	702,470	695,867	1.9%	1.6%	1.1%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF MUNTINLUPA	459,941	504,509	543,445	573,108	588,462	599,417	605,791	606,265	600,565	1.9%	1.5%	1.1%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF PARAÑAQUE	588,126	665,822	689,992	726,722	746,191	760,082	768,165	768,765	761,538	2.5%	0.7%	1.0%	0.5%	0.4%	0.2%	0.0%	-0.2%
	PASAY CITY	392,869	416,522	440,656	464,434	476,877	485,754	490,920	491,303	486,685	1.2%	1.1%	1.1%	0.5%	0.4%	0.2%	0.0%	-0.2%
	PATEROS	64,147	63,840	65,227	68,667	70,507	71,819	72,583	72,639	71,956	-0.1%	0.4%	1.0%	0.5%	0.4%	0.2%	0.0%	-0.2%
	TAGUIG CITY	644,473	804,915	886,722	935,796	960,867	978,754	989,162	989,935	980,629	4.5%	2.0%	1.1%	0.5%	0.4%	0.2%	0.0%	-0.2%
	Total	11,855,975	12,877,253	13,484,462	14,207,246	14,587,873	14,859,433	15,017,451	15,029,180	14,887,899	1.7%	0.9%	1.0%	0.5%	0.4%	0.2%	0.0%	-0.2%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CAR	Abra	BANGUED (Capital)	43,936	48,163	50,382	51,413	53,962	56,185	58,210	59,914	61,213	1.9%	0.9%	0.4%	1.0%	0.8%	0.7%	0.6%	0.4%
		BOLINEY	4,063	3,573	4,551	4,671	4,903	5,104	5,288	5,443	5,561	-2.5%	5.0%	0.5%	1.0%	0.8%	0.7%	0.6%	0.4%
		BUCAY	17,126	17,115	17,953	18,321	19,229	20,021	20,743	21,349	21,812	0.0%	1.0%	0.4%	1.0%	0.8%	0.7%	0.6%	0.4%
		BUCLOC	2,176	2,501	2,395	2,436	2,557	2,662	2,758	2,839	2,901	2.8%	-0.9%	0.3%	1.0%	0.8%	0.7%	0.6%	0.4%
		DAGUIOMAN	1,715	2,088	2,019	2,055	2,156	2,245	2,326	2,394	2,445	4.0%	-0.7%	0.4%	1.0%	0.8%	0.7%	0.6%	0.4%
		DANGLAS	4,734	4,192	4,074	4,147	4,352	4,531	4,695	4,832	4,937	-2.4%	-0.6%	0.4%	1.0%	0.8%	0.7%	0.6%	0.4%
		DOLORES	11,499	11,315	11,512	11,736	12,318	12,825	13,287	13,676	13,973	-0.3%	0.3%	0.4%	1.0%	0.8%	0.7%	0.6%	0.4%
		LA PAZ	14,882	15,437	16,493	16,842	17,677	18,406	19,069	19,627	20,053	0.7%	1.3%	0.4%	1.0%	0.8%	0.7%	0.6%	0.4%
		LACUB	2,977	3,403	3,612	3,687	3,870	4,030	4,175	4,297	4,390	2.7%	1.2%	0.4%	1.0%	0.8%	0.7%	0.6%	0.4%
		LAGANGILANG	13,824	14,255	14,914	15,219	15,974	16,632	17,231	17,735	18,120	0.6%	0.9%	0.4%	1.0%	0.8%	0.7%	0.6%	0.4%
		LAGAYAN	4,477	4,499	4,488	4,573	4,799	4,997	5,177	5,328	5,444	0.1%	0.0%	0.4%	1.0%	0.8%	0.7%	0.6%	0.4%
		LANGIDEN	3,170	3,198	3,576	3,657	3,838	3,997	4,141	4,263	4,356	0.2%	2.3%	0.4%	1.0%	0.8%	0.7%	0.6%	0.4%
		LICUAN-BAAY (LICUAN)	4,864	4,689	4,566	4,648	4,879	5,080	5,263	5,417	5,534	-0.7%	-0.5%	0.4%	1.0%	0.8%	0.7%	0.6%	0.4%
		LUBA	6,391	6,339	6,518	6,647	6,977	7,265	7,527	7,747	7,915	-0.2%	0.6%	0.4%	1.0%	0.8%	0.7%	0.6%	0.4%
		MALIBCONG	3,807	3,428	4,027	4,124	4,329	4,507	4,670	4,806	4,911	-2.1%	3.3%	0.5%	1.0%	0.8%	0.7%	0.6%	0.4%
		MANABO	10,756	10,761	11,611	11,860	12,449	12,961	13,428	13,821	14,120	0.0%	1.5%	0.4%	1.0%	0.8%	0.7%	0.6%	0.4%
		PEÑARRUBIA	6,544	6,640	6,951	7,094	7,445	7,752	8,031	8,266	8,446	0.3%	0.9%	0.4%	1.0%	0.8%	0.7%	0.6%	0.4%
		PIDIGAN	11,528	12,185	12,475	12,721	13,351	13,901	14,403	14,824	15,146	1.1%	0.5%	0.4%	1.0%	0.8%	0.7%	0.6%	0.4%
		PILAR	9,908	10,223	10,146	10,334	10,847	11,294	11,701	12,043	12,304	0.6%	-0.2%	0.4%	1.0%	0.8%	0.7%	0.6%	0.4%
		SALLAPADAN	5,985	6,622	6,389	6,501	6,823	7,104	7,361	7,576	7,740	2.0%	-0.7%	0.3%	1.0%	0.8%	0.7%	0.6%	0.4%
		SAN ISIDRO	4,888	4,574	4,745	4,841	5,081	5,291	5,481	5,641	5,764	-1.3%	0.7%	0.4%	1.0%	0.8%	0.7%	0.6%	0.4%
		SAN JUAN	10,546	9,867	10,688	10,919	11,460	11,932	12,362	12,723	13,000	-1.3%	1.6%	0.4%	1.0%	0.8%	0.7%	0.6%	0.4%
		SAN QUINTIN	5,233	5,438	5,705	5,822	6,110	6,362	6,592	6,784	6,932	0.8%	1.0%	0.4%	1.0%	0.8%	0.7%	0.6%	0.4%
		TAYUM	13,940	14,467	14,869	15,164	15,916	16,572	17,169	17,672	18,055	0.7%	0.5%	0.4%	1.0%	0.8%	0.7%	0.6%	0.4%
		TINEG	4,668	5,097	4,977	5,067	5,318	5,537	5,737	5,904	6,032	1.8%	-0.5%	0.4%	1.0%	0.8%	0.7%	0.6%	0.4%
		TUBO	5,719	5,699	5,674	5,780	6,066	6,316	6,544	6,735	6,882	-0.1%	-0.1%	0.4%	1.0%	0.8%	0.7%	0.6%	0.4%
		VILLAVICIOSA	5,377	5,392	5,675	5,792	6,079	6,329	6,557	6,750	6,897	0.1%	1.0%	0.4%	1.0%	0.8%	0.7%	0.6%	0.4%
		Sub-total	234,733	241,160	250,985	256,072	268,768	279,840	289,928	298,408	304,884	0.5%	0.8%	0.4%	1.0%	0.8%	0.7%	0.6%	0.4%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CAR	Apayao	CALANASAN (BAYAG)	11,568	12,604	12,550	12,922	13,937	14,843	15,708	16,441	17,049	1.7%	-0.1%	0.6%	1.5%	1.3%	1.1%	0.9%	0.7%
		CONNER	24,811	26,051	27,552	28,430	30,662	32,655	34,559	36,169	37,507	1.0%	1.1%	0.6%	1.5%	1.3%	1.1%	0.9%	0.7%
		FLORA	16,743	17,391	17,944	18,500	19,952	21,249	22,488	23,535	24,405	0.8%	0.6%	0.6%	1.5%	1.3%	1.1%	0.9%	0.7%
		KABUGAO (Capital)	16,170	15,537	16,215	16,724	18,037	19,209	20,329	21,276	22,063	-0.8%	0.9%	0.6%	1.5%	1.3%	1.1%	0.9%	0.7%
		LUNA	18,029	19,063	21,297	22,014	23,743	25,286	26,761	28,007	29,044	1.1%	2.2%	0.7%	1.5%	1.3%	1.1%	0.9%	0.7%
		PUDTOL	13,305	14,925	15,491	15,974	17,229	18,348	19,418	20,323	21,075	2.3%	0.7%	0.6%	1.5%	1.3%	1.1%	0.9%	0.7%
		SANTA MARCELA	12,010	13,613	13,317	13,705	14,781	15,742	16,659	17,435	18,080	2.5%	-0.4%	0.6%	1.5%	1.3%	1.1%	0.9%	0.7%
		Sub-total	112,636	119,184	124,366	128,267	138,339	147,332	155,922	163,186	169,223	1.1%	0.9%	0.6%	1.5%	1.3%	1.1%	0.9%	0.7%
	Benguet	ATOK	19,242	19,668	19,218	20,197	21,551	22,759	23,855	24,779	25,478	0.4%	-0.5%	1.0%	1.3%	1.1%	0.9%	0.8%	0.6%
		BAKUN	13,587	15,357	14,535	15,259	16,281	17,193	18,022	18,720	19,247	2.5%	-1.1%	1.0%	1.3%	1.1%	0.9%	0.8%	0.6%
		BOKOD	12,648	13,756	14,435	15,209	16,227	17,137	17,962	18,658	19,183	1.7%	1.0%	1.1%	1.3%	1.1%	0.9%	0.8%	0.6%
		BUGUIAS	39,271	43,627	44,877	47,253	50,416	53,243	55,809	57,970	59,602	2.1%	0.6%	1.0%	1.3%	1.1%	0.9%	0.8%	0.6%
		ITOGON	55,960	59,820	61,498	64,753	69,088	72,962	76,479	79,440	81,677	1.3%	0.6%	1.0%	1.3%	1.1%	0.9%	0.8%	0.6%
		KABAYAN	13,588	15,260	15,806	16,646	17,761	18,757	19,661	20,422	20,997	2.3%	0.7%	1.0%	1.3%	1.1%	0.9%	0.8%	0.6%
		KAPANGAN	20,084	19,361	19,297	20,296	21,656	22,870	23,972	24,901	25,602	-0.7%	-0.1%	1.0%	1.3%	1.1%	0.9%	0.8%	0.6%
		KIBUNGAN	16,850	17,292	17,051	17,928	19,127	20,200	21,174	21,994	22,614	0.5%	-0.3%	1.0%	1.3%	1.1%	0.9%	0.8%	0.6%
		LA TRINIDAD (Capital)	107,188	129,133	137,404	144,842	154,539	163,205	171,070	177,695	182,698	3.8%	1.2%	1.1%	1.3%	1.1%	0.9%	0.8%	0.6%
		MANKAYAN	35,586	35,953	37,233	39,213	41,839	44,185	46,315	48,108	49,463	0.2%	0.7%	1.0%	1.3%	1.1%	0.9%	0.8%	0.6%
		SABLAN	10,511	11,457	11,588	12,195	13,012	13,741	14,404	14,962	15,383	1.7%	0.2%	1.0%	1.3%	1.1%	0.9%	0.8%	0.6%
		TUBA	42,874	47,648	48,312	50,844	54,248	57,290	60,051	62,376	64,133	2.1%	0.3%	1.0%	1.3%	1.1%	0.9%	0.8%	0.6%
		TUBLAY	16,555	17,892	19,429	20,495	21,867	23,093	24,207	25,144	25,852	1.6%	1.7%	1.1%	1.3%	1.1%	0.9%	0.8%	0.6%
		BAGUIO CITY	318,676	345,366	366,358	386,151	412,003	435,108	456,078	473,740	487,080	1.6%	1.2%	1.1%	1.3%	1.1%	0.9%	0.8%	0.6%
		Sub-total	722,620	791,590	827,041	871,281	929,612	981,744	1,029,057	1,068,908	1,099,009	1.8%	0.9%	1.0%	1.3%	1.1%	0.9%	0.8%	0.6%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CAR	Ifugao	BANAUE	22,365	21,837	20,652	21,219	23,024	24,746	26,429	28,053	29,592	-0.5%	-1.1%	0.5%	1.6%	1.5%	1.3%	1.2%	1.1%
		HUNGDUAN	9,933	9,400	8,866	9,108	9,883	10,621	11,344	12,042	12,702	-1.1%	-1.2%	0.5%	1.6%	1.5%	1.3%	1.2%	1.1%
		KIANGAN	15,837	17,048	17,691	18,237	19,790	21,268	22,715	24,112	25,434	1.5%	0.7%	0.6%	1.6%	1.5%	1.3%	1.2%	1.1%
		LAGAWE (Capital)	18,077	19,333	18,876	19,417	21,070	22,644	24,185	25,671	27,079	1.4%	-0.5%	0.6%	1.6%	1.5%	1.3%	1.2%	1.1%
		LAMUT	23,088	25,279	26,235	27,044	29,346	31,539	33,685	35,755	37,716	1.8%	0.7%	0.6%	1.6%	1.5%	1.3%	1.2%	1.1%
		MAYOYAO	16,413	17,331	15,621	16,021	17,385	18,684	19,955	21,182	22,344	1.1%	-2.1%	0.5%	1.6%	1.5%	1.3%	1.2%	1.1%
		ALFONSO LISTA (POTIA)	28,410	32,119	34,061	35,137	38,128	40,976	43,765	46,455	49,003	2.5%	1.2%	0.6%	1.6%	1.5%	1.3%	1.2%	1.1%
		AGUINALDO	18,610	19,408	21,128	21,813	23,670	25,439	27,170	28,840	30,422	0.8%	1.7%	0.6%	1.6%	1.5%	1.3%	1.2%	1.1%
		HINGYON	9,795	9,227	9,930	10,249	11,121	11,952	12,765	13,551	14,294	-1.2%	1.5%	0.6%	1.6%	1.5%	1.3%	1.2%	1.1%
		TINOC	14,147	16,559	18,475	19,090	20,714	22,262	23,777	25,238	26,622	3.2%	2.2%	0.7%	1.6%	1.5%	1.3%	1.2%	1.1%
		ASIPULO	14,403	15,261	15,963	16,460	17,861	19,195	20,501	21,762	22,955	1.2%	0.9%	0.6%	1.6%	1.5%	1.3%	1.2%	1.1%
		Sub-total	191,078	202,802	207,498	213,794	231,991	249,326	266,291	282,660	298,163	1.2%	0.5%	0.6%	1.6%	1.5%	1.3%	1.2%	1.1%
	Kalinga	BALBALAN	12,082	12,195	12,914	13,289	14,284	15,194	16,012	16,737	17,318	0.2%	1.2%	0.6%	1.5%	1.2%	1.1%	0.9%	0.7%
		LUBUAGAN	9,369	8,733	9,323	9,597	10,316	10,972	11,562	12,086	12,507	-1.4%	1.3%	0.6%	1.5%	1.2%	1.1%	0.9%	0.7%
		PASIL	9,626	9,644	10,577	10,897	11,713	12,458	13,127	13,722	14,199	0.0%	1.9%	0.6%	1.5%	1.2%	1.1%	0.9%	0.7%
		PINUKPUK	29,596	32,026	34,275	35,283	37,927	40,341	42,510	44,438	45,982	1.6%	1.4%	0.6%	1.5%	1.2%	1.1%	0.9%	0.7%
		RIZAL (LIWAN)	15,942	17,038	19,554	20,173	21,685	23,064	24,305	25,407	26,290	1.3%	2.8%	0.6%	1.5%	1.2%	1.1%	0.9%	0.7%
		CITY OF TABUK (Capital)	103,912	110,642	121,033	124,684	134,025	142,553	150,217	157,028	162,486	1.3%	1.8%	0.6%	1.5%	1.2%	1.1%	0.9%	0.7%
		TANUDAN	8,529	9,534	8,746	8,954	9,625	10,238	10,788	11,277	11,669	2.3%	-1.7%	0.5%	1.5%	1.2%	1.1%	0.9%	0.7%
		TINGLAYAN	12,557	12,868	13,148	13,514	14,527	15,451	16,281	17,020	17,611	0.5%	0.4%	0.6%	1.5%	1.2%	1.1%	0.9%	0.7%
		Sub-total	201,613	212,680	229,570	236,392	254,102	270,271	284,802	297,716	308,063	1.1%	1.5%	0.6%	1.5%	1.2%	1.1%	0.9%	0.7%
	Mountain Province	BARLIG	5,838	4,819	4,796	4,856	5,259	5,642	6,016	6,369	6,701	-3.8%	-0.1%	0.2%	1.6%	1.4%	1.3%	1.1%	1.0%
		BAUKO	30,172	31,065	32,021	32,452	35,151	37,715	40,206	42,567	44,784	0.6%	0.6%	0.3%	1.6%	1.4%	1.3%	1.1%	1.0%
		BESAO	7,818	7,040	6,873	6,952	7,531	8,080	8,614	9,119	9,594	-2.1%	-0.5%	0.2%	1.6%	1.4%	1.3%	1.1%	1.0%
		BONTOC (Capital)	23,980	24,643	24,104	24,383	26,411	28,338	30,210	31,983	33,649	0.5%	-0.4%	0.2%	1.6%	1.4%	1.3%	1.1%	1.0%
		NATONIN	10,048	10,272	10,339	10,469	11,339	12,166	12,970	13,731	14,446	0.4%	0.1%	0.3%	1.6%	1.4%	1.3%	1.1%	1.0%
		PARACELIS	26,476	28,121	31,168	31,663	34,296	36,797	39,228	41,530	43,693	1.2%	2.1%	0.3%	1.6%	1.4%	1.3%	1.1%	1.0%
		SABANGAN	8,741	9,315	9,621	9,751	10,562	11,333	12,081	12,790	13,456	1.3%	0.6%	0.3%	1.6%	1.4%	1.3%	1.1%	1.0%
		SADANGA	9,181	8,799	8,427	8,519	9,227	9,900	10,554	11,174	11,756	-0.8%	-0.9%	0.2%	1.6%	1.4%	1.3%	1.1%	1.0%
		SAGADA	11,244	11,127	11,510	11,666	12,636	13,557	14,453	15,301	16,099	-0.2%	0.7%	0.3%	1.6%	1.4%	1.3%	1.1%	1.0%
		TADIAN	20,689	19,389	19,341	19,579	21,206	22,753	24,257	25,681	27,019	-1.3%	0.0%	0.2%	1.6%	1.4%	1.3%	1.1%	1.0%
		Sub-total	154,187	154,590	158,200	160,291	173,618	186,282	198,591	210,247	221,198	0.1%	0.5%	0.3%	1.6%	1.4%	1.3%	1.1%	1.0%
		Total	1,616,867	1,722,006	1,797,660	1,866,097	1,996,430	2,114,795	2,224,591	2,321,125	2,400,540	1.3%	0.9%	0.8%	1.4%	1.2%	1.0%	0.9%	0.7%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
ILOCOS	Ilocos Norte	ADAMS	1,785	1,792	2,189	2,255	2,260	2,240	2,182	2,101	2,001	0.1%	4.1%	0.6%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		BACARRA	31,648	32,215	33,496	34,349	34,395	34,049	33,178	31,926	30,405	0.4%	0.8%	0.5%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		BADOC	30,708	31,616	32,530	33,347	33,391	33,057	32,211	30,997	29,520	0.6%	0.6%	0.5%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		BANGUI	14,227	14,672	15,019	15,394	15,414	15,260	14,870	14,309	13,627	0.6%	0.5%	0.5%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		CITY OF BATAC	53,542	55,201	55,484	56,830	56,906	56,336	54,894	52,825	50,309	0.6%	0.1%	0.5%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		BURGOS	9,687	9,777	10,759	11,053	11,068	10,957	10,677	10,274	9,784	0.2%	1.9%	0.5%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		CARASI	1,473	1,567	1,607	1,647	1,649	1,632	1,590	1,531	1,457	1.2%	0.5%	0.5%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		CURRIMAO	11,970	12,184	12,215	12,511	12,527	12,401	12,084	11,629	11,075	0.4%	0.1%	0.5%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		DINGRAS	37,021	38,562	40,127	41,150	41,205	40,792	39,748	38,249	36,426	0.8%	0.8%	0.5%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		DUMALNEG	2,612	2,947	3,087	3,166	3,170	3,139	3,059	2,943	2,803	2.4%	0.9%	0.5%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		BANNA (ESPIRITU)	19,051	19,438	19,297	19,756	19,782	19,584	19,083	18,363	17,488	0.4%	-0.1%	0.5%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		LAOAG CITY (Capital)	104,904	111,125	111,651	114,359	114,512	113,363	110,463	106,298	101,234	1.2%	0.1%	0.5%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		MARCOS	16,984	17,777	18,010	18,452	18,477	18,291	17,823	17,151	16,333	0.9%	0.3%	0.5%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		NUEVA ERA	7,837	9,506	11,968	12,345	12,360	12,237	11,924	11,474	10,927	3.9%	4.7%	0.6%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		PAGUDPUD	21,877	23,770	25,098	25,750	25,785	25,526	24,874	23,936	22,796	1.7%	1.1%	0.5%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		PAOAY	23,956	24,866	25,001	25,609	25,643	25,386	24,737	23,804	22,671	0.7%	0.1%	0.5%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		PASUQUIN	27,952	28,980	29,678	30,417	30,458	30,153	29,382	28,274	26,927	0.7%	0.5%	0.5%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		PIDDIG	20,606	21,497	22,475	23,052	23,082	22,850	22,266	21,427	20,406	0.9%	0.9%	0.5%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		PINILI	16,732	17,300	17,626	18,062	18,085	17,904	17,446	16,788	15,989	0.7%	0.4%	0.5%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		SAN NICOLAS	34,237	36,736	38,895	39,909	39,963	39,562	38,549	37,096	35,329	1.4%	1.1%	0.5%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		SARRAT	24,770	25,212	25,186	25,792	25,826	25,567	24,914	23,974	22,831	0.4%	0.0%	0.5%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		SOLSONA	22,990	24,121	24,851	25,476	25,510	25,255	24,609	23,681	22,554	1.0%	0.6%	0.5%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		VINTAR	31,448	32,220	33,339	34,182	34,227	33,884	33,017	31,772	30,259	0.5%	0.7%	0.5%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		Sub-total	568,017	593,081	609,588	624,867	625,699	619,427	603,580	580,824	553,154	0.9%	0.6%	0.5%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
ILOCOS	Ilocos Sur	ALILEM	6,640	6,695	7,361	7,584	7,729	7,799	7,793	7,710	7,535	0.2%	1.9%	0.6%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		BANAYOYO	7,694	7,748	7,931	8,150	8,307	8,382	8,375	8,284	8,096	0.1%	0.5%	0.5%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		BANTAY	34,323	35,731	37,118	38,166	38,904	39,252	39,219	38,796	37,912	0.8%	0.8%	0.6%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		BURGOS	11,679	12,224	12,793	13,157	13,412	13,531	13,520	13,375	13,070	0.9%	0.9%	0.6%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		CABUGAO	35,706	37,501	38,884	39,979	40,752	41,116	41,082	40,638	39,712	1.0%	0.7%	0.6%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		CITY OF CANDON	57,884	60,623	61,432	63,112	64,333	64,907	64,852	64,153	62,692	0.9%	0.3%	0.5%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		CAOAYAN	18,551	19,861	19,574	20,090	20,478	20,660	20,643	20,420	19,955	1.4%	-0.3%	0.5%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		CERVANTES	16,573	17,211	19,449	20,053	20,441	20,623	20,606	20,384	19,919	0.8%	2.5%	0.6%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		GALIMUYOD	10,011	10,748	10,244	10,501	10,705	10,800	10,791	10,674	10,431	1.4%	-1.0%	0.5%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		GREGORIO DEL PILAR (CONCEPCION)	4,219	4,875	4,472	4,578	4,666	4,707	4,704	4,653	4,547	2.9%	-1.7%	0.5%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		LIDLIDDA	4,398	4,647	4,705	4,834	4,928	4,971	4,968	4,914	4,802	1.1%	0.2%	0.5%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		MAGSINGAL	28,302	30,792	31,308	32,168	32,790	33,083	33,055	32,698	31,953	1.7%	0.3%	0.5%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		NAGBUKEL	4,938	5,259	5,465	5,619	5,728	5,779	5,774	5,712	5,581	1.3%	0.8%	0.6%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		NARVACAN	42,803	44,006	46,234	47,557	48,477	48,909	48,868	48,341	47,240	0.6%	1.0%	0.6%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		QUIRINO (ANGKAKI)	8,535	8,573	9,306	9,583	9,768	9,855	9,847	9,741	9,519	0.1%	1.7%	0.6%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SALCEDO (BAUGEN)	10,935	11,288	11,110	11,403	11,623	11,727	11,717	11,591	11,327	0.6%	-0.3%	0.5%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SAN EMILIO	7,427	7,407	7,206	7,393	7,536	7,604	7,597	7,515	7,343	-0.1%	-0.5%	0.5%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SAN ESTEBAN	8,072	8,349	8,381	8,607	8,774	8,852	8,844	8,749	8,549	0.7%	0.1%	0.5%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SAN ILDEFONSO	7,075	7,787	8,190	8,424	8,587	8,663	8,656	8,562	8,367	1.9%	1.0%	0.6%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SAN JUAN (LAPOG)	25,199	26,411	26,674	27,400	27,930	28,179	28,156	27,852	27,217	0.9%	0.2%	0.5%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SAN VICENTE	11,720	12,758	13,118	13,484	13,745	13,868	13,856	13,706	13,394	1.7%	0.6%	0.6%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SANTA	15,106	15,340	14,992	15,383	15,680	15,820	15,807	15,637	15,280	0.3%	-0.5%	0.5%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SANTA CATALINA	13,597	13,945	14,493	14,902	15,190	15,325	15,312	15,147	14,802	0.5%	0.8%	0.6%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SANTA CRUZ	37,911	39,868	41,366	42,532	43,355	43,741	43,704	43,233	42,248	1.0%	0.7%	0.6%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SANTA LUCIA	24,981	25,402	25,966	26,685	27,201	27,444	27,421	27,125	26,507	0.3%	0.4%	0.5%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SANTA MARIA	28,597	30,321	30,006	30,801	31,397	31,677	31,651	31,309	30,596	1.2%	-0.2%	0.5%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SANTIAGO	17,958	18,759	19,471	20,020	20,407	20,589	20,572	20,350	19,887	0.9%	0.7%	0.6%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SANTO DOMINGO	27,596	27,975	29,041	29,860	30,438	30,709	30,683	30,352	29,661	0.3%	0.8%	0.6%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SIGAY	2,419	2,737	2,552	2,614	2,664	2,688	2,686	2,657	2,596	2.5%	-1.4%	0.5%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SINAIT	25,427	25,640	25,998	26,710	27,226	27,468	27,445	27,149	26,530	0.2%	0.3%	0.5%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SUGPON	3,820	4,585	4,930	5,075	5,174	5,219	5,215	5,159	5,042	3.7%	1.5%	0.6%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SUYO	10,622	11,446	10,766	11,030	11,244	11,344	11,334	11,212	10,957	1.5%	-1.2%	0.5%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		TAGUDIN	38,122	39,277	41,538	42,736	43,563	43,952	43,915	43,441	42,452	0.6%	1.1%	0.6%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		CITY OF VIGAN (Capital)	49,747	53,879	53,935	55,387	56,458	56,962	56,914	56,300	55,017	1.6%	0.0%	0.5%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		Sub-total	658,587	689,668	706,009	725,576	739,608	746,205	745,581	737,538	720,735	0.9%	0.5%	0.5%	0.4%	0.2%	0.0%	-0.2%	-0.5%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
ILOCOS	La Union	AGOO	60,596	63,692	66,028	68,613	70,360	71,357	71,386	70,526	68,690	1.0%	0.7%	0.8%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		ARINGAY	44,949	47,458	50,380	52,395	53,728	54,489	54,511	53,855	52,453	1.1%	1.2%	0.8%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		BACNOTAN	40,307	42,078	44,388	46,153	47,329	47,999	48,018	47,441	46,207	0.9%	1.1%	0.8%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		BAGULIN	12,590	13,456	14,428	15,010	15,392	15,609	15,616	15,428	15,027	1.3%	1.4%	0.8%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		BALAOAN	37,910	39,188	40,339	41,909	42,976	43,584	43,602	43,077	41,957	0.7%	0.6%	0.8%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		BANGAR	34,522	35,947	38,041	39,557	40,564	41,138	41,155	40,661	39,604	0.8%	1.1%	0.8%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		BAUANG	70,735	75,032	78,449	81,545	83,622	84,805	84,840	83,820	81,638	1.2%	0.9%	0.8%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		BURGOS	7,850	8,067	9,006	9,382	9,620	9,756	9,761	9,644	9,392	0.5%	2.2%	0.8%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		CABA	21,244	22,039	23,119	24,034	24,646	24,995	25,005	24,705	24,062	0.7%	1.0%	0.8%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		LUNA	35,380	35,802	37,318	38,787	39,774	40,337	40,354	39,869	38,832	0.2%	0.8%	0.8%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		NAGUILIAN	48,407	54,221	52,189	54,092	55,470	56,255	56,278	55,601	54,155	2.3%	-0.8%	0.7%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		PUGO	16,518	19,690	19,337	20,057	20,568	20,859	20,867	20,616	20,080	3.6%	-0.4%	0.7%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		ROSARIO	52,679	55,458	60,278	62,736	64,333	65,244	65,271	64,487	62,808	1.0%	1.7%	0.8%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		CITY OF SAN FERNANDO (Capital)	114,963	121,812	125,640	130,537	133,861	135,756	135,811	134,178	130,688	1.2%	0.6%	0.8%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		SAN GABRIEL	16,628	18,172	18,943	19,689	20,191	20,476	20,484	20,238	19,712	1.8%	0.8%	0.8%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		SAN JUAN	35,098	37,188	40,507	42,162	43,236	43,848	43,865	43,338	42,210	1.2%	1.7%	0.8%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		SANTO TOMAS	35,999	39,092	40,846	42,458	43,539	44,155	44,173	43,642	42,507	1.7%	0.9%	0.8%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		SANTOL	12,007	12,476	14,166	14,763	15,139	15,353	15,360	15,175	14,779	0.8%	2.6%	0.8%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		SUDIPEN	16,531	17,056	17,187	17,843	18,298	18,557	18,565	18,342	17,865	0.6%	0.2%	0.8%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		TUBAO	26,993	28,729	31,763	33,076	33,918	34,399	34,413	33,998	33,114	1.3%	2.0%	0.8%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		Sub-total	741,906	786,653	822,352	854,799	876,565	888,976	889,337	878,642	855,783	1.2%	0.9%	0.8%	0.5%	0.3%	0.0%	-0.2%	-0.5%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
ILOCOS	Pangasinan	AGNO	27,508	28,052	29,947	31,189	32,824	34,161	35,195	35,976	36,485	0.4%	1.3%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		AGUILAR	39,529	41,463	45,100	46,998	49,463	51,475	53,034	54,212	54,980	1.0%	1.7%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		CITY OF ALAMINOS	85,025	89,708	99,397	103,642	109,076	113,513	116,952	119,550	121,243	1.1%	2.1%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		ALCALA	41,077	43,402	48,908	51,023	53,698	55,882	57,576	58,855	59,689	1.1%	2.4%	0.9%	1.0%	0.8%	0.6%	0.4%	0.3%
		ANDA	37,011	39,504	41,548	43,249	45,516	47,367	48,802	49,887	50,593	1.3%	1.0%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		ASINGAN	56,353	57,355	57,811	60,091	63,241	65,813	67,808	69,315	70,296	0.4%	0.2%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		BALUNGAO	26,678	31,106	30,004	31,138	32,771	34,104	35,138	35,918	36,427	3.1%	-0.7%	0.7%	1.0%	0.8%	0.6%	0.4%	0.3%
		BANI	45,758	50,306	52,603	54,746	57,616	59,959	61,776	63,149	64,043	1.9%	0.9%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		BASISTA	30,385	32,959	37,679	39,326	41,388	43,072	44,377	45,363	46,005	1.6%	2.7%	0.9%	1.0%	0.8%	0.6%	0.4%	0.3%
		BAUTISTA	30,193	32,307	35,398	36,896	38,830	40,409	41,634	42,558	43,161	1.4%	1.8%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		BAYAMBANG	111,521	118,205	129,011	134,455	141,504	147,260	151,721	155,093	157,288	1.2%	1.8%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		BINALONAN	52,832	54,555	56,382	58,656	61,731	64,243	66,190	67,661	68,619	0.6%	0.7%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		BINMALEY	78,702	83,052	86,881	90,421	95,162	99,033	102,034	104,301	105,778	1.1%	0.9%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		BOLINAO	74,545	82,084	83,979	87,335	91,913	95,652	98,551	100,741	102,167	1.9%	0.5%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		BUGALLON	64,253	67,348	74,962	78,174	82,273	85,620	88,214	90,175	91,451	0.9%	2.2%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		BURGOS	18,315	21,637	23,749	24,756	26,053	27,114	27,936	28,557	28,961	3.4%	1.9%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		CALASIAO	91,109	95,154	100,471	104,598	110,082	114,560	118,031	120,654	122,362	0.9%	1.1%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		DAGUPAN CITY	163,676	171,271	174,302	181,235	190,737	198,496	204,510	209,055	212,014	0.9%	0.4%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		DASOL	26,991	29,110	31,355	32,665	34,377	35,776	36,860	37,679	38,213	1.5%	1.5%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		INFANTA	23,455	24,584	26,242	27,329	28,762	29,932	30,839	31,525	31,971	0.9%	1.3%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		LABRADOR	21,149	23,201	26,811	27,992	29,460	30,658	31,587	32,289	32,747	1.9%	2.9%	0.9%	1.0%	0.8%	0.6%	0.4%	0.3%
		LINGAYEN (Capital)	98,740	103,278	107,728	112,107	117,985	122,784	126,505	129,316	131,146	0.9%	0.8%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		MABINI	24,011	24,765	26,454	27,551	28,996	30,175	31,089	31,780	32,230	0.6%	1.3%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		MALASIQUI	123,566	130,275	143,094	149,163	156,984	163,370	168,321	172,061	174,497	1.1%	1.9%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		MANAOAG	64,578	69,497	76,045	79,260	83,416	86,809	89,439	91,427	92,722	1.5%	1.8%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		MANGALDAN	98,905	106,331	113,185	117,865	124,045	129,091	133,002	135,957	137,882	1.5%	1.3%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		MANGATAREM	69,969	73,241	79,323	82,650	86,983	90,522	93,265	95,337	96,687	0.9%	1.6%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
ILOCOS	Pangasinan	MAPANDAN	34,439	37,059	38,058	39,584	41,659	43,354	44,668	45,660	46,307	1.5%	0.5%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		NATIVIDAD	22,713	24,299	25,771	26,834	28,241	29,390	30,280	30,953	31,391	1.4%	1.2%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		POZORRUBIO	66,111	69,555	74,729	77,843	81,924	85,257	87,840	89,792	91,063	1.0%	1.4%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		ROSALES	59,687	63,081	66,711	69,454	73,096	76,069	78,375	80,116	81,250	1.1%	1.1%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		SAN CARLOS CITY	175,103	188,571	205,424	214,079	225,303	234,467	241,572	246,941	250,436	1.5%	1.7%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		SAN FABIAN	77,899	83,025	87,428	91,010	95,782	99,678	102,698	104,980	106,467	1.3%	1.0%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		SAN JACINTO	37,737	40,848	44,351	46,215	48,638	50,616	52,149	53,308	54,063	1.6%	1.7%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		SAN MANUEL	46,875	52,939	54,271	56,444	59,403	61,820	63,693	65,108	66,030	2.5%	0.5%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		SAN NICOLAS	34,108	35,574	39,778	41,489	43,664	45,440	46,817	47,857	48,535	0.8%	2.3%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		SAN QUINTIN	32,626	32,945	33,980	35,348	37,201	38,714	39,887	40,773	41,350	0.2%	0.6%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		SANTA BARBARA	76,637	82,012	92,187	96,166	101,208	105,326	108,517	110,928	112,498	1.4%	2.4%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		SANTA MARIA	31,091	33,038	34,220	35,602	37,469	38,993	40,175	41,067	41,648	1.2%	0.7%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		SANTO TOMAS	14,406	15,022	14,878	15,455	16,266	16,927	17,441	17,828	18,080	0.8%	-0.2%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		SISON	43,979	47,518	52,320	54,543	57,403	59,738	61,548	62,916	63,807	1.6%	1.9%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		SUAL	31,216	34,149	39,091	40,801	42,941	44,688	46,042	47,065	47,731	1.8%	2.7%	0.9%	1.0%	0.8%	0.6%	0.4%	0.3%
		TAYUG	40,018	43,149	45,241	47,087	49,556	51,571	53,134	54,315	55,084	1.5%	1.0%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		UMINGAN	67,534	73,252	77,074	80,230	84,436	87,870	90,533	92,545	93,855	1.6%	1.0%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		URBIZTONDO	47,831	50,170	55,557	57,928	60,965	63,445	65,368	66,820	67,765	1.0%	2.1%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		CITY OF URDANETA	125,451	132,940	144,577	150,660	158,559	165,009	170,008	173,785	176,245	1.2%	1.7%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		VILLASIS	59,111	62,333	65,047	67,692	71,241	74,139	76,385	78,082	79,187	1.1%	0.9%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		LAOAC	29,456	31,497	34,128	35,559	37,424	38,946	40,126	41,017	41,598	1.3%	1.6%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		Sub-total	2,779,862	2,956,726	3,163,190	3,294,533	3,467,265	3,608,307	3,717,642	3,800,247	3,854,047	1.2%	1.4%	0.8%	1.0%	0.8%	0.6%	0.4%	0.3%
		Total	4,748,372	5,026,128	5,301,139	5,499,775	5,709,137	5,862,915	5,956,140	5,997,251	5,983,719	1.1%	1.1%	0.7%	0.8%	0.5%	0.3%	0.1%	0.0%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CAGAYAN VALLEY	Batanes	BASCO (Capital)	7,907	8,579	9,517	9,922	10,576	11,416	12,072	12,729	13,265	1.6%	2.1%	0.8%	1.3%	1.5%	1.1%	1.1%	0.8%
		ITBAYAT	2,988	2,867	3,128	3,259	3,474	3,749	3,965	4,181	4,357	-0.8%	1.8%	0.8%	1.3%	1.5%	1.1%	1.1%	0.8%
		IVANA	1,249	1,327	1,407	1,465	1,562	1,686	1,783	1,881	1,960	1.2%	1.2%	0.8%	1.3%	1.5%	1.1%	1.1%	0.8%
		MAHATAO	1,583	1,555	1,703	1,775	1,891	2,042	2,159	2,277	2,372	-0.4%	1.8%	0.8%	1.3%	1.5%	1.1%	1.1%	0.8%
		SABTANG	1,637	1,621	1,696	1,765	1,881	2,031	2,148	2,265	2,360	-0.2%	0.9%	0.8%	1.3%	1.5%	1.1%	1.1%	0.8%
		UYUGAN	1,240	1,297	1,380	1,437	1,531	1,653	1,747	1,843	1,920	0.9%	1.2%	0.8%	1.3%	1.5%	1.1%	1.1%	0.8%
		Sub-total	16,604	17,246	18,831	19,622	20,915	22,576	23,874	25,176	26,235	0.8%	1.8%	0.8%	1.3%	1.5%	1.1%	1.1%	0.8%
	Cagayan	ABULUG	30,675	32,497	34,579	36,206	37,743	38,929	39,781	40,298	40,479	1.2%	1.2%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		ALCALA	37,773	38,883	41,295	43,235	45,072	46,487	47,506	48,124	48,340	0.6%	1.2%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		ALLACAPAN	31,662	33,571	35,234	36,874	38,442	39,649	40,517	41,044	41,228	1.2%	1.0%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		AMULUNG	45,182	47,860	50,336	52,684	54,923	56,648	57,889	58,642	58,905	1.2%	1.0%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		APARRI	61,199	65,649	68,839	72,041	75,103	77,462	79,159	80,189	80,549	1.4%	1.0%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		BAGGAO	78,188	82,782	87,753	91,869	95,773	98,781	100,944	102,258	102,717	1.1%	1.2%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		BALLESTEROS	32,215	34,299	34,488	36,041	37,573	38,753	39,602	40,117	40,297	1.3%	0.1%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		BUGUEY	28,455	30,175	32,148	33,661	35,092	36,194	36,988	37,468	37,636	1.2%	1.3%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		CALAYAN	16,200	16,702	17,410	18,217	18,991	19,588	20,018	20,278	20,370	0.6%	0.8%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		CAMALANIUGAN	23,404	24,923	25,236	26,379	27,500	28,363	28,984	29,361	29,493	1.3%	0.2%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		CLAVERIA	30,482	29,921	31,900	33,402	34,822	35,916	36,703	37,180	37,347	-0.4%	1.3%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		ENRILE	32,553	35,834	36,705	38,382	40,014	41,270	42,174	42,723	42,915	1.9%	0.5%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		GATTARAN	54,848	56,661	58,874	61,595	64,213	66,230	67,682	68,562	68,869	0.7%	0.8%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		GONZAGA	36,303	38,892	41,680	43,651	45,506	46,935	47,963	48,587	48,806	1.4%	1.4%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		IGUIG	25,559	27,862	30,060	31,488	32,827	33,858	34,599	35,050	35,207	1.7%	1.5%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		LAL-LO	41,388	44,506	48,733	51,072	53,242	54,914	56,117	56,847	57,103	1.5%	1.8%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		LASAM	36,994	39,135	41,225	43,150	44,984	46,396	47,413	48,030	48,246	1.1%	1.0%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		PAMPLONA	23,236	23,596	24,781	25,936	27,039	27,888	28,499	28,870	28,999	0.3%	1.0%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		PEÑABLANCA	42,736	48,584	50,300	52,617	54,854	56,576	57,816	58,568	58,830	2.6%	0.7%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		PIAT	22,961	23,597	24,805	25,961	27,065	27,915	28,526	28,897	29,027	0.5%	1.0%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		RIZAL	18,592	17,994	19,077	19,971	20,820	21,473	21,944	22,229	22,329	-0.7%	1.2%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		SANCHEZ-MIRA	23,257	24,541	26,164	27,396	28,561	29,457	30,103	30,494	30,631	1.1%	1.3%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		SANTA ANA	30,458	32,906	35,688	37,390	38,979	40,203	41,084	41,619	41,805	1.6%	1.6%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		SANTA PRAXEDES	3,646	4,154	4,434	4,644	4,841	4,993	5,103	5,170	5,193	2.6%	1.3%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		SANTA TERESITA	17,600	19,038	19,573	20,470	21,341	22,010	22,493	22,786	22,889	1.6%	0.6%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		SANTO NIÑO (FAIRE)	26,126	27,219	28,537	29,864	31,133	32,110	32,813	33,241	33,390	0.8%	1.0%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		SOLANA	76,596	82,502	88,445	92,629	96,566	99,598	101,780	103,104	103,567	1.5%	1.4%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		TUAO	57,620	61,535	63,970	66,927	69,771	71,962	73,539	74,496	74,830	1.3%	0.8%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		TUGUEGARAO CITY (Capital)	138,865	153,502	166,334	174,261	181,668	187,372	191,477	193,968	194,839	2.0%	1.6%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%
		Sub-total	1,124,773	1,199,320	1,268,603	1,328,012	1,384,457	1,427,931	1,459,217	1,478,200	1,484,837	1.3%	1.1%	0.9%	0.8%	0.6%	0.4%	0.3%	0.1%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CAGAYAN VALLEY	Isabela	ALICIA	64,687	71,504	73,874	77,069	80,067	82,157	83,278	83,515	82,871	2.0%	0.7%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%
		ANGADANAN	40,143	43,061	44,977	46,940	48,766	50,039	50,722	50,865	50,474	1.4%	0.9%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%
		AURORA	33,045	35,017	36,621	38,220	39,707	40,743	41,299	41,416	41,096	1.2%	0.9%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%
		BENITO SOLIVEN	27,337	29,624	29,752	31,008	32,213	33,054	33,505	33,600	33,341	1.6%	0.1%	0.8%	0.8%	0.5%	0.3%	0.1%	-0.2%
		BURGOS	22,521	23,784	26,040	27,218	28,277	29,015	29,412	29,495	29,269	1.1%	1.8%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%
		CABAGAN	45,732	50,174	53,897	56,301	58,492	60,018	60,837	61,009	60,540	1.9%	1.4%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%
		CABATUAN	37,299	39,413	39,990	41,693	43,315	44,445	45,052	45,180	44,832	1.1%	0.3%	0.8%	0.8%	0.5%	0.3%	0.1%	-0.2%
		CITY OF CAUAYAN	122,335	129,523	143,403	149,944	155,777	159,841	162,024	162,481	161,233	1.1%	2.1%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%
		CORDON	40,877	42,926	46,477	48,563	50,453	51,769	52,476	52,625	52,221	1.0%	1.6%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%
		DINAPIGUE	5,484	5,005	5,821	6,096	6,334	6,500	6,588	6,607	6,556	-1.8%	3.1%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%
		DIVILACAN	5,034	5,687	5,827	6,077	6,314	6,479	6,567	6,585	6,535	2.5%	0.5%	0.8%	0.8%	0.5%	0.3%	0.1%	-0.2%
		ECHAGUE	74,680	79,094	88,410	92,470	96,068	98,574	99,920	100,202	99,432	1.2%	2.3%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%
		GAMU	28,657	29,904	30,655	31,972	33,215	34,081	34,547	34,645	34,378	0.9%	0.5%	0.8%	0.8%	0.5%	0.3%	0.1%	-0.2%
		ILAGAN CITY (Capital) 1	135,174	145,568	158,218	165,338	171,769	176,250	178,656	179,161	177,783	1.5%	1.7%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%
		JONES	44,218	45,666	45,628	47,546	49,396	50,684	51,376	51,522	51,126	0.6%	0.0%	0.8%	0.8%	0.5%	0.3%	0.1%	-0.2%
		LUNA	18,091	19,326	20,697	21,618	22,459	23,044	23,359	23,425	23,245	1.3%	1.4%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%
		MACONACON	3,615	4,253	3,977	4,134	4,294	4,406	4,466	4,478	4,444	3.3%	-1.3%	0.8%	0.8%	0.5%	0.3%	0.1%	-0.2%
		DELFIN ALBANO (MAGSAYSAY)	25,422	26,614	29,928	31,308	32,525	33,374	33,829	33,925	33,665	0.9%	2.4%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%
		MALLIG	28,345	30,459	32,208	33,627	34,935	35,846	36,336	36,439	36,159	1.4%	1.1%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%
		NAGUILIAN	29,491	31,902	33,788	35,279	36,651	37,607	38,120	38,228	37,934	1.6%	1.2%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%
		PALANAN	16,094	17,260	17,684	18,443	19,161	19,661	19,930	19,986	19,833	1.4%	0.5%	0.8%	0.8%	0.5%	0.3%	0.1%	-0.2%
		QUEZON	24,522	25,860	27,037	28,217	29,315	30,080	30,491	30,577	30,342	1.1%	0.9%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%
		QUIRINO	22,285	24,501	25,023	26,094	27,110	27,817	28,196	28,277	28,059	1.9%	0.4%	0.8%	0.8%	0.5%	0.3%	0.1%	-0.2%
		RAMON	49,812	52,707	56,523	59,041	61,337	62,938	63,798	63,977	63,486	1.1%	1.4%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%
		REINA MERCEDES	23,497	26,998	27,900	29,108	30,240	31,029	31,453	31,542	31,299	2.8%	0.7%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%
		ROXAS	57,699	61,773	65,839	68,758	71,433	73,297	74,297	74,507	73,935	1.4%	1.3%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%
		SAN AGUSTIN	21,797	22,880	22,096	22,996	23,891	24,514	24,849	24,919	24,728	1.0%	-0.7%	0.8%	0.8%	0.5%	0.3%	0.1%	-0.2%
		SAN GUILLERMO	18,423	20,200	20,915	21,821	22,670	23,262	23,579	23,646	23,464	1.9%	0.7%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%
		SAN ISIDRO	22,758	24,861	27,044	28,262	29,361	30,127	30,539	30,625	30,390	1.8%	1.7%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%
		SAN MANUEL	30,407	31,896	34,085	35,600	36,985	37,950	38,468	38,576	38,280	1.0%	1.3%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%
		SAN MARIANO	51,438	55,370	60,124	62,827	65,271	66,973	67,887	68,079	67,556	1.5%	1.7%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%
		SAN MATEO	60,792	64,505	66,663	69,547	72,252	74,137	75,149	75,362	74,783	1.2%	0.7%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%
		SAN PABLO	22,040	25,384	26,320	27,462	28,531	29,275	29,674	29,758	29,529	2.9%	0.7%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%
		SANTA MARIA	22,939	25,382	25,758	26,856	27,900	28,627	29,018	29,100	28,876	2.0%	0.3%	0.8%	0.8%	0.5%	0.3%	0.1%	-0.2%
		CITY OF SANTIAGO	132,804	134,830	148,580	155,334	161,377	165,586	167,847	168,321	167,027	0.3%	2.0%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%
		SANTO TOMAS	21,688	23,005	24,528	25,615	26,612	27,306	27,679	27,757	27,544	1.2%	1.3%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%
		TUMAUINI	58,463	67,650	70,743	73,833	76,705	78,706	79,780	80,006	79,391	3.0%	0.9%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%
		Sub-total	1,489,645	1,593,566	1,697,050	1,772,235	1,841,177	1,889,212	1,915,004	1,920,418	1,905,655	1.4%	1.3%	0.9%	0.8%	0.5%	0.3%	0.1%	-0.2%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CAGAYAN VALLEY	Nueva Vizcaya	AMBAGUIO	13,452	15,250	15,472	16,243	17,094	17,796	18,318	18,672	18,856	2.5%	0.3%	1.0%	1.0%	0.8%	0.6%	0.4%	0.2%
		ARITAO	37,115	37,225	42,197	44,462	46,790	48,711	50,139	51,111	51,615	0.1%	2.5%	1.1%	1.0%	0.8%	0.6%	0.4%	0.2%
		BAGABAG	35,462	35,501	37,985	39,950	42,042	43,769	45,053	45,927	46,380	0.0%	1.4%	1.0%	1.0%	0.8%	0.6%	0.4%	0.2%
		BAMBANG	47,657	53,433	55,789	58,628	61,697	64,232	66,116	67,398	68,063	2.3%	0.9%	1.0%	1.0%	0.8%	0.6%	0.4%	0.2%
		BAYOMBONG (Capital)	57,416	61,512	67,714	71,283	75,015	78,097	80,388	81,947	82,755	1.4%	1.9%	1.0%	1.0%	0.8%	0.6%	0.4%	0.2%
		DIADI	16,484	18,122	19,236	20,225	21,284	22,159	22,810	23,252	23,481	1.9%	1.2%	1.0%	1.0%	0.8%	0.6%	0.4%	0.2%
		DUPAX DEL NORTE	25,697	27,514	33,295	35,150	36,991	38,511	39,641	40,409	40,809	1.4%	3.9%	1.1%	1.0%	0.8%	0.6%	0.4%	0.2%
		DUPAX DEL SUR	18,146	19,111	21,224	22,349	23,519	24,486	25,204	25,692	25,946	1.0%	2.1%	1.0%	1.0%	0.8%	0.6%	0.4%	0.2%
		KASIBU	33,379	37,705	41,776	43,987	46,290	48,192	49,606	50,568	51,067	2.5%	2.1%	1.0%	1.0%	0.8%	0.6%	0.4%	0.2%
		KAYAPA	21,453	23,714	26,469	27,877	29,336	30,542	31,438	32,047	32,363	2.0%	2.2%	1.0%	1.0%	0.8%	0.6%	0.4%	0.2%
		QUEZON	19,385	21,056	24,055	25,352	26,679	27,775	28,590	29,144	29,432	1.7%	2.7%	1.1%	1.0%	0.8%	0.6%	0.4%	0.2%
		SANTA FE	14,427	16,180	18,276	19,255	20,263	21,096	21,715	22,136	22,355	2.3%	2.5%	1.0%	1.0%	0.8%	0.6%	0.4%	0.2%
		SOLANO	56,134	59,517	65,287	68,720	72,318	75,289	77,498	79,000	79,779	1.2%	1.9%	1.0%	1.0%	0.8%	0.6%	0.4%	0.2%
		VILLAVERDE	17,720	18,507	20,118	21,171	22,279	23,194	23,874	24,337	24,577	0.9%	1.7%	1.0%	1.0%	0.8%	0.6%	0.4%	0.2%
		ALFONSO CASTANEDA	7,428	7,940	8,539	8,982	9,453	9,841	10,130	10,326	10,428	1.3%	1.5%	1.0%	1.0%	0.8%	0.6%	0.4%	0.2%
		Sub-total	421,355	452,287	497,432	523,633	551,050	573,689	590,518	601,966	607,904	1.4%	1.9%	1.0%	1.0%	0.8%	0.6%	0.4%	0.2%
	Quirino	AGLIPAY	26,187	27,787	30,714	31,888	34,458	36,846	38,969	40,938	42,821	1.2%	2.0%	0.8%	1.6%	1.3%	1.1%	1.0%	0.9%
		CABARROGUIS (Capital)	29,395	30,582	33,533	34,806	37,611	40,218	42,536	44,685	46,739	0.8%	1.9%	0.7%	1.6%	1.3%	1.1%	1.0%	0.9%
		DIFFUN	48,501	52,569	56,102	58,181	62,870	67,227	71,101	74,692	78,125	1.6%	1.3%	0.7%	1.6%	1.3%	1.1%	1.0%	0.9%
		MADDELA	35,634	38,499	40,943	42,456	45,877	49,057	51,884	54,505	57,010	1.6%	1.2%	0.7%	1.6%	1.3%	1.1%	1.0%	0.9%
		SAGUDAY	14,596	16,070	17,137	17,771	19,204	20,535	21,717	22,814	23,863	1.9%	1.3%	0.7%	1.6%	1.3%	1.1%	1.0%	0.9%
		NAGTIPUNAN	22,473	23,484	25,399	26,351	28,475	30,449	32,203	33,830	35,385	0.9%	1.6%	0.7%	1.6%	1.3%	1.1%	1.0%	0.9%
		Sub-total	176,786	188,991	203,828	211,453	228,495	244,331	258,410	271,463	283,944	1.3%	1.5%	0.7%	1.6%	1.3%	1.1%	1.0%	0.9%
		Total	3,229,163	3,451,410	3,685,744	3,854,955	4,026,094	4,157,739	4,247,023	4,297,223	4,308,575	1.3%	1.3%	0.9%	0.9%	0.6%	0.4%	0.2%	0.1%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL LUZON	Aurora	BALER (Capital)	36,010	39,562	43,785	45,924	51,856	58,515	65,741	73,639	82,240	1.9%	2.0%	1.0%	2.5%	2.4%	2.4%	2.3%	2.2%
		CASIGURAN	23,865	24,313	26,564	27,851	31,449	35,488	39,870	44,659	49,875	0.4%	1.8%	1.0%	2.5%	2.4%	2.4%	2.3%	2.2%
		DILASAG	15,683	15,835	17,102	17,922	20,238	22,835	25,655	28,736	32,092	0.2%	1.6%	0.9%	2.5%	2.4%	2.4%	2.3%	2.2%
		DINALUNGAN	10,988	11,322	12,508	13,118	14,813	16,714	18,779	21,034	23,491	0.6%	2.0%	1.0%	2.5%	2.4%	2.4%	2.3%	2.2%
		DINGALAN	23,554	25,482	27,878	29,228	33,004	37,242	41,841	46,867	52,340	1.6%	1.8%	1.0%	2.5%	2.4%	2.4%	2.3%	2.2%
		DIPACULAO	27,729	29,736	33,131	34,756	39,247	44,286	49,754	55,731	62,239	1.4%	2.2%	1.0%	2.5%	2.4%	2.4%	2.3%	2.2%
		MARIA AURORA	38,128	40,734	44,958	47,149	53,240	60,076	67,494	75,602	84,432	1.3%	2.0%	1.0%	2.5%	2.4%	2.4%	2.3%	2.2%
		SAN LUIS	25,276	27,352	29,824	31,266	35,305	39,837	44,756	50,133	55,988	1.6%	1.7%	0.9%	2.5%	2.4%	2.4%	2.3%	2.2%
		Sub-total	201,233	214,336	235,750	247,214	279,152	314,993	353,889	396,400	442,697	1.3%	1.9%	1.0%	2.5%	2.4%	2.4%	2.3%	2.2%
	Bataan	ABUCAY	37,719	39,880	42,984	46,218	48,187	49,707	50,700	51,000	50,562	1.1%	1.5%	1.5%	0.8%	0.6%	0.4%	0.1%	-0.2%
		BAGAC	25,568	26,936	31,365	33,805	35,245	36,358	37,084	37,304	36,984	1.0%	3.1%	1.5%	0.8%	0.6%	0.4%	0.1%	-0.2%
		CITY OF BALANGA (Capital)	87,920	96,061	104,173	112,030	116,803	120,489	122,894	123,623	122,558	1.8%	1.6%	1.5%	0.8%	0.6%	0.4%	0.1%	-0.2%
		DINALUPIHAN	97,275	106,371	118,209	127,223	132,642	136,828	139,559	140,387	139,177	1.8%	2.1%	1.5%	0.8%	0.6%	0.4%	0.1%	-0.2%
		HERMOSA	56,997	65,862	77,443	83,493	87,050	89,796	91,589	92,132	91,338	2.9%	3.3%	1.5%	0.8%	0.6%	0.4%	0.1%	-0.2%
		LIMAY	57,207	68,071	78,272	84,330	87,923	90,698	92,508	93,057	92,255	3.5%	2.8%	1.5%	0.8%	0.6%	0.4%	0.1%	-0.2%
		MARIVELES	112,707	127,536	149,879	161,585	168,469	173,784	177,254	178,305	176,769	2.5%	3.3%	1.5%	0.8%	0.6%	0.4%	0.1%	-0.2%
		MORONG	26,171	29,901	35,394	38,166	39,793	41,049	41,868	42,116	41,753	2.7%	3.4%	1.5%	0.8%	0.6%	0.4%	0.1%	-0.2%
		ORANI	61,099	66,909	70,342	75,570	78,789	81,275	82,897	83,389	82,670	1.8%	1.0%	1.4%	0.8%	0.6%	0.4%	0.1%	-0.2%
		ORION	51,454	56,002	60,771	65,355	68,139	70,289	71,692	72,118	71,497	1.7%	1.6%	1.5%	0.8%	0.6%	0.4%	0.1%	-0.2%
		PILAR	39,787	41,823	46,239	49,757	51,876	53,513	54,582	54,906	54,432	1.0%	2.0%	1.5%	0.8%	0.6%	0.4%	0.1%	-0.2%
		SAMAL	33,578	35,298	38,302	41,191	42,946	44,301	45,185	45,453	45,062	1.0%	1.6%	1.5%	0.8%	0.6%	0.4%	0.1%	-0.2%
		Sub-total	687,482	760,650	853,373	918,723	957,862	988,088	1,007,813	1,013,790	1,005,060	2.0%	2.3%	1.5%	0.8%	0.6%	0.4%	0.1%	-0.2%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL LUZON	Bulacan	ANGAT	55,332	59,237	65,617	70,844	75,153	78,859	81,773	83,797	84,989	1.4%	2.1%	1.5%	1.2%	1.0%	0.7%	0.5%	0.3%
		BALAGTAS (BIGAA)	65,440	73,929	77,018	82,987	88,032	92,373	95,788	98,157	99,554	2.5%	0.8%	1.5%	1.2%	1.0%	0.7%	0.5%	0.3%
		BALIUAG	143,565	149,954	168,470	181,972	193,036	202,555	210,043	215,239	218,302	0.9%	2.4%	1.6%	1.2%	1.0%	0.7%	0.5%	0.3%
		BOCAUE	106,407	119,675	141,412	152,980	162,282	170,284	176,579	180,947	183,524	2.4%	3.4%	1.6%	1.2%	1.0%	0.7%	0.5%	0.3%
		BULACAN	71,751	76,565	81,232	87,582	92,908	97,489	101,092	103,593	105,069	1.3%	1.2%	1.5%	1.2%	1.0%	0.7%	0.5%	0.3%
		BUSTOS	62,415	67,039	77,199	83,449	88,523	92,887	96,321	98,705	100,109	1.4%	2.9%	1.6%	1.2%	1.0%	0.7%	0.5%	0.3%
		CALUMPIT	101,068	108,757	118,471	127,842	135,614	142,301	147,561	151,211	153,364	1.5%	1.7%	1.5%	1.2%	1.0%	0.7%	0.5%	0.3%
		GUIGUINTO	90,507	99,730	113,415	122,551	130,002	136,413	141,456	144,955	147,019	2.0%	2.6%	1.6%	1.2%	1.0%	0.7%	0.5%	0.3%
		HAGONOY	125,689	129,807	133,448	143,728	152,467	159,985	165,900	170,004	172,424	0.6%	0.6%	1.5%	1.2%	1.0%	0.7%	0.5%	0.3%
		CITY OF MALOLOS (Capital)	234,945	252,074	261,189	281,383	298,491	313,209	324,789	332,823	337,561	1.4%	0.7%	1.5%	1.2%	1.0%	0.7%	0.5%	0.3%
		MARILAO	185,624	221,965	254,453	275,018	291,738	306,123	317,441	325,293	329,924	3.6%	2.8%	1.6%	1.2%	1.0%	0.7%	0.5%	0.3%
		CITY OF MEYCAUAYAN	199,154	209,083	225,673	243,450	258,252	270,986	281,004	287,956	292,055	1.0%	1.5%	1.5%	1.2%	1.0%	0.7%	0.5%	0.3%
		NORZAGARAY	103,095	111,348	136,064	147,338	156,296	164,003	170,065	174,272	176,753	1.6%	4.1%	1.6%	1.2%	1.0%	0.7%	0.5%	0.3%
		OBANDO	58,009	59,197	59,978	64,565	68,491	71,868	74,525	76,369	77,456	0.4%	0.3%	1.5%	1.2%	1.0%	0.7%	0.5%	0.3%
		PANDI	66,650	89,075	155,115	169,397	179,696	188,556	195,527	200,363	203,216	6.0%	11.7%	1.8%	1.2%	1.0%	0.7%	0.5%	0.3%
		PAOMBONG	50,940	53,294	55,696	60,020	63,669	66,808	69,278	70,992	72,003	0.9%	0.9%	1.5%	1.2%	1.0%	0.7%	0.5%	0.3%
		PLARIDEL	101,441	107,805	114,432	123,380	130,881	137,335	142,412	145,935	148,013	1.2%	1.2%	1.5%	1.2%	1.0%	0.7%	0.5%	0.3%
		PULILAN	85,844	97,323	108,836	117,542	124,689	130,836	135,673	139,029	141,008	2.5%	2.3%	1.6%	1.2%	1.0%	0.7%	0.5%	0.3%
		SAN ILDEFONSO	95,000	104,471	115,713	124,931	132,527	139,062	144,203	147,769	149,873	1.9%	2.1%	1.5%	1.2%	1.0%	0.7%	0.5%	0.3%
		CITY OF SAN JOSE DEL MONTE	454,553	574,089	651,813	704,284	747,105	783,944	812,925	833,035	844,894	4.8%	2.6%	1.6%	1.2%	1.0%	0.7%	0.5%	0.3%
		SAN MIGUEL	142,854	153,882	172,073	185,837	197,137	206,857	214,505	219,811	222,940	1.5%	2.3%	1.6%	1.2%	1.0%	0.7%	0.5%	0.3%
		SAN RAFAEL	85,921	94,655	103,097	111,251	118,015	123,834	128,412	131,588	133,462	2.0%	1.7%	1.5%	1.2%	1.0%	0.7%	0.5%	0.3%
		SANTA MARIA	218,351	256,454	289,820	313,106	332,144	348,521	361,405	370,345	375,617	3.3%	2.5%	1.6%	1.2%	1.0%	0.7%	0.5%	0.3%
		DOÑA REMEDIOS TRINIDAD	19,878	22,663	28,656	31,060	32,948	34,573	35,851	36,738	37,261	2.7%	4.8%	1.6%	1.2%	1.0%	0.7%	0.5%	0.3%
		Sub-total	2,924,433	3,292,071	3,708,890	4,006,499	4,250,096	4,459,661	4,624,530	4,738,930	4,806,393	2.4%	2.4%	1.6%	1.2%	1.0%	0.7%	0.5%	0.3%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL LUZON	Nueva Ecija	ALIAGA	57,805	63,543	70,363	77,414	80,614	83,276	85,257	86,455	86,847	1.9%	2.1%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		BONGABON	59,343	64,173	66,839	73,391	76,427	78,949	80,826	81,962	82,335	1.6%	0.8%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		CABANATUAN CITY	272,676	302,231	327,325	359,874	374,758	387,122	396,333	401,905	403,731	2.1%	1.6%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		CABIAO	72,081	79,007	85,862	94,411	98,316	101,560	103,977	105,439	105,917	1.9%	1.7%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		CARRANGLAN	37,124	41,131	42,420	46,563	48,488	50,088	51,280	52,000	52,236	2.1%	0.6%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		CUYAPO	59,396	65,039	68,066	74,750	77,842	80,410	82,323	83,481	83,860	1.8%	0.9%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		GABALDON (BITULOK & SABANI)	32,246	35,383	38,958	42,854	44,627	46,099	47,196	47,860	48,077	1.9%	1.9%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		CITY OF GAPAN	101,488	110,303	122,968	135,320	140,917	145,566	149,031	151,126	151,812	1.7%	2.2%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		GENERAL MAMERTO NATIVIDAD	36,720	41,656	44,311	48,689	50,703	52,375	53,622	54,375	54,623	2.6%	1.2%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		GENERAL TINIO (PAPAYA)	42,634	47,865	55,925	61,631	64,180	66,297	67,875	68,829	69,143	2.3%	3.2%	2.0%	0.8%	0.7%	0.5%	0.3%	0.1%
		GUIMBA	104,894	118,655	127,653	140,317	146,121	150,942	154,534	156,706	157,418	2.5%	1.5%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		JAEN	67,057	73,184	79,189	87,061	90,663	93,653	95,882	97,230	97,672	1.8%	1.6%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		LAUR	32,205	35,656	38,263	42,055	43,794	45,240	46,316	46,968	47,181	2.1%	1.4%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		LICAB	26,187	28,254	29,269	32,133	33,462	34,566	35,388	35,886	36,049	1.5%	0.7%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		LLANERA	36,200	39,701	42,281	46,461	48,382	49,978	51,167	51,887	52,122	1.9%	1.3%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		LUPAO	40,931	43,788	45,917	50,430	52,516	54,248	55,540	56,321	56,577	1.4%	1.0%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		SCIENCE CITY OF MUÑOZ	75,462	81,483	84,308	92,552	96,380	99,560	101,930	103,362	103,831	1.5%	0.7%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		NAMPICUAN	13,303	14,954	14,471	15,849	16,504	17,049	17,455	17,700	17,781	2.4%	-0.7%	1.8%	0.8%	0.7%	0.5%	0.3%	0.1%
		PALAYAN CITY (Capital)	37,219	41,041	45,383	49,929	51,995	53,710	54,988	55,761	56,015	2.0%	2.0%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		PANTABANGAN	27,353	29,925	31,763	34,898	36,341	37,540	38,434	38,974	39,151	1.8%	1.2%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		PEÑARANDA	27,410	29,882	32,269	35,475	36,943	38,161	39,069	39,618	39,798	1.7%	1.5%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		QUEZON	36,660	40,592	41,845	45,931	47,830	49,408	50,584	51,294	51,527	2.1%	0.6%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		RIZAL	57,145	64,087	70,196	77,204	80,397	83,050	85,025	86,221	86,612	2.3%	1.8%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		SAN ANTONIO	73,074	77,836	83,060	91,276	95,051	98,187	100,524	101,937	102,400	1.3%	1.3%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		SAN ISIDRO	47,800	51,612	54,372	59,725	62,195	64,247	65,776	66,701	67,003	1.5%	1.0%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		SAN JOSE CITY	129,424	139,738	150,917	165,909	172,771	178,471	182,718	185,287	186,128	1.5%	1.6%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		SAN LEONARDO	58,120	65,299	68,536	75,274	78,387	80,973	82,901	84,066	84,449	2.4%	1.0%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		SANTA ROSA	64,503	69,467	75,649	83,186	86,627	89,485	91,614	92,902	93,324	1.5%	1.7%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		SANTO DOMINGO	50,983	57,943	61,092	67,107	69,883	72,189	73,907	74,946	75,287	2.6%	1.1%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		TALAVERA	112,515	124,829	132,338	145,396	151,410	156,405	160,127	162,378	163,115	2.1%	1.2%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		TALUGTUG	21,291	23,817	25,236	27,726	28,873	29,825	30,535	30,965	31,105	2.3%	1.2%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		ZARAGOZA	44,124	49,387	53,090	58,355	60,769	62,774	64,268	65,171	65,468	2.3%	1.5%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%
		Sub-total	1,955,373	2,151,461	2,310,134	2,539,148	2,644,167	2,731,405	2,796,403	2,835,713	2,848,595	1.9%	1.4%	1.9%	0.8%	0.7%	0.5%	0.3%	0.1%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL LUZON	Pampanga	APALIT	101,537	107,965	117,160	126,502	132,085	134,597	138,188	140,517	141,694	1.2%	1.6%	1.5%	0.9%	0.4%	0.5%	0.3%	0.2%
		ARAYAT	121,348	133,492	144,875	156,427	163,330	166,436	170,877	173,760	175,214	1.9%	1.7%	1.5%	0.9%	0.4%	0.5%	0.3%	0.2%
		BACOLOR	31,508	39,460	48,066	52,081	54,380	55,414	56,893	57,852	58,336	4.6%	4.0%	1.6%	0.9%	0.4%	0.5%	0.3%	0.2%
		CANDABA	102,399	111,586	119,497	128,971	134,662	137,225	140,886	143,263	144,462	1.7%	1.4%	1.5%	0.9%	0.4%	0.5%	0.3%	0.2%
		FLORIDABLANCA	110,846	125,163	135,542	146,340	152,799	155,706	159,861	162,557	163,917	2.5%	1.6%	1.5%	0.9%	0.4%	0.5%	0.3%	0.2%
		GUAGUA	111,199	117,430	128,893	139,222	145,366	148,132	152,084	154,649	155,944	1.1%	1.9%	1.6%	0.9%	0.4%	0.5%	0.3%	0.2%
		LUBAO	150,843	160,838	173,502	187,301	195,567	199,287	204,604	208,055	209,796	1.3%	1.5%	1.5%	0.9%	0.4%	0.5%	0.3%	0.2%
		MABALACAT CITY 1	215,610	250,799	293,244	317,362	331,367	337,670	346,680	352,528	355,479	3.1%	3.2%	1.6%	0.9%	0.4%	0.5%	0.3%	0.2%
		MACABEBE	70,777	75,850	78,151	84,238	87,956	89,629	92,021	93,573	94,356	1.4%	0.6%	1.5%	0.9%	0.4%	0.5%	0.3%	0.2%
		MAGALANG	103,597	113,147	124,188	134,139	140,060	142,725	146,533	149,003	150,251	1.8%	1.9%	1.6%	0.9%	0.4%	0.5%	0.3%	0.2%
		MASANTOL	52,407	57,063	57,990	62,478	65,236	66,477	68,250	69,401	69,982	1.7%	0.3%	1.5%	0.9%	0.4%	0.5%	0.3%	0.2%
		MEXICO	146,851	154,624	173,403	187,426	195,697	199,419	204,741	208,194	209,937	1.0%	2.3%	1.6%	0.9%	0.4%	0.5%	0.3%	0.2%
		MINALIN	44,001	47,713	48,380	52,119	54,420	55,455	56,935	57,895	58,380	1.6%	0.3%	1.5%	0.9%	0.4%	0.5%	0.3%	0.2%
		PORAC	111,441	124,381	140,751	152,175	158,891	161,913	166,234	169,037	170,453	2.2%	2.5%	1.6%	0.9%	0.4%	0.5%	0.3%	0.2%
		CITY OF SAN FERNANDO (Capital)	285,912	306,659	354,666	383,709	400,643	408,264	419,159	426,228	429,794	1.4%	3.0%	1.6%	0.9%	0.4%	0.5%	0.3%	0.2%
		SAN LUIS	49,311	54,106	58,551	63,214	66,004	67,260	69,055	70,219	70,806	1.9%	1.6%	1.5%	0.9%	0.4%	0.5%	0.3%	0.2%
		SAN SIMON	48,353	53,198	59,182	63,952	66,775	68,044	69,861	71,039	71,634	1.9%	2.2%	1.6%	0.9%	0.4%	0.5%	0.3%	0.2%
		SANTA ANA	52,001	55,178	61,537	66,502	69,436	70,757	72,646	73,871	74,489	1.2%	2.2%	1.6%	0.9%	0.4%	0.5%	0.3%	0.2%
		SANTA RITA	38,762	40,979	48,209	52,183	54,486	55,523	57,004	57,966	58,451	1.1%	3.3%	1.6%	0.9%	0.4%	0.5%	0.3%	0.2%
		SANTO TOMAS	38,062	40,475	42,846	46,225	48,266	49,184	50,496	51,349	51,778	1.2%	1.1%	1.5%	0.9%	0.4%	0.5%	0.3%	0.2%
		SASMUAN (Sexmoan)	27,254	28,004	29,076	31,349	32,732	33,355	34,246	34,823	35,114	0.5%	0.8%	1.5%	0.9%	0.4%	0.5%	0.3%	0.2%
		ANGELES CITY	326,336	411,634	462,928	500,408	522,492	532,430	546,639	555,858	560,510	4.8%	2.4%	1.6%	0.9%	0.4%	0.5%	0.3%	0.2%
		Sub-total	2,340,355	2,609,744	2,900,637	3,134,327	3,272,650	3,334,904	3,423,893	3,481,639	3,510,778	2.2%	2.1%	1.6%	0.9%	0.4%	0.5%	0.3%	0.2%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL LUZON	Tarlac	ANAO	10,873	11,528	12,208	12,844	13,340	13,530	13,826	13,990	14,024	1.2%	1.2%	1.0%	0.8%	0.3%	0.4%	0.2%	0.0%
		BAMBAN	62,413	69,466	78,260	82,497	85,682	114,787	117,292	118,686	118,969	2.2%	2.4%	1.1%	0.8%	6.0%	0.4%	0.2%	0.0%
		CAMILING	80,241	83,248	87,319	91,834	95,379	96,729	98,844	100,025	100,268	0.7%	1.0%	1.0%	0.8%	0.3%	0.4%	0.2%	0.0%
		CAPAS	125,852	140,202	156,056	164,440	170,788	228,800	233,791	236,571	237,132	2.2%	2.2%	1.1%	0.8%	6.0%	0.4%	0.2%	0.0%
		CONCEPCION	139,832	154,188	169,953	179,029	185,940	188,570	192,693	194,995	195,471	2.0%	2.0%	1.0%	0.8%	0.3%	0.4%	0.2%	0.0%
		GERONA	83,084	87,531	94,485	99,464	103,304	104,765	107,055	108,334	108,598	1.0%	1.5%	1.0%	0.8%	0.3%	0.4%	0.2%	0.0%
		LA PAZ	60,982	64,017	68,952	72,581	75,382	76,449	78,120	79,053	79,245	1.0%	1.5%	1.0%	0.8%	0.3%	0.4%	0.2%	0.0%
		MAYANTOC	29,987	32,232	32,597	34,240	35,561	36,064	36,853	37,293	37,384	1.5%	0.2%	1.0%	0.8%	0.3%	0.4%	0.2%	0.0%
		MONCADA	56,183	57,787	62,819	66,145	68,699	69,671	71,194	72,044	72,220	0.6%	1.7%	1.0%	0.8%	0.3%	0.4%	0.2%	0.0%
		PANIQUI	87,730	92,606	103,003	108,535	112,725	114,319	116,819	118,214	118,503	1.1%	2.2%	1.1%	0.8%	0.3%	0.4%	0.2%	0.0%
		PURA	22,949	23,712	25,781	27,146	28,194	28,593	29,217	29,566	29,638	0.7%	1.7%	1.0%	0.8%	0.3%	0.4%	0.2%	0.0%
		RAMOS	20,249	21,350	22,879	24,080	25,009	25,363	25,917	26,227	26,290	1.1%	1.4%	1.0%	0.8%	0.3%	0.4%	0.2%	0.0%
		SAN CLEMENTE	12,510	12,657	13,181	13,859	14,393	14,597	14,916	15,095	15,131	0.2%	0.8%	1.0%	0.8%	0.3%	0.4%	0.2%	0.0%
		SAN MANUEL	24,289	25,504	28,387	29,912	31,067	31,506	32,196	32,579	32,659	1.0%	2.2%	1.1%	0.8%	0.3%	0.4%	0.2%	0.0%
		SANTA IGNACIA	43,787	47,538	51,626	54,357	56,456	57,254	58,506	59,206	59,350	1.7%	1.7%	1.0%	0.8%	0.3%	0.4%	0.2%	0.0%
		CITY OF TARLAC (Capital)	318,332	342,493	385,398	406,243	421,925	427,895	437,252	442,474	443,552	1.5%	2.4%	1.1%	0.8%	0.3%	0.4%	0.2%	0.0%
		VICTORIA	59,987	63,715	69,370	73,045	75,865	76,938	78,619	79,559	79,753	1.2%	1.7%	1.0%	0.8%	0.3%	0.4%	0.2%	0.0%
		SAN JOSE	33,960	36,253	41,182	43,422	45,099	45,735	46,738	47,294	47,411	1.3%	2.6%	1.1%	0.8%	0.3%	0.4%	0.2%	0.0%
		Sub-total	1,273,240	1,366,027	1,503,456	1,583,674	1,644,807	1,750,259	1,788,514	1,809,856	1,814,245	1.4%	1.9%	1.0%	0.8%	1.3%	0.4%	0.2%	0.0%
	Zambales	BOTOLAN	54,434	57,707	66,739	71,216	75,253	78,910	82,137	84,827	87,140	1.2%	3.0%	1.3%	1.1%	1.0%	0.8%	0.6%	0.5%
		CABANGAN	23,082	25,163	28,118	29,972	31,671	33,210	34,569	35,700	36,674	1.7%	2.2%	1.3%	1.1%	1.0%	0.8%	0.6%	0.5%
		CANDELARIA	25,020	27,174	30,263	32,254	34,083	35,740	37,202	38,420	39,467	1.7%	2.2%	1.3%	1.1%	1.0%	0.8%	0.6%	0.5%
		CASTILLEJOS	48,845	64,841	67,889	72,213	76,308	80,016	83,289	86,016	88,362	5.8%	0.9%	1.2%	1.1%	1.0%	0.8%	0.6%	0.5%
		IBA (Capital)	46,761	50,506	55,581	59,217	62,575	65,616	68,300	70,537	72,460	1.6%	1.9%	1.3%	1.1%	1.0%	0.8%	0.6%	0.5%
		MASINLOC	44,342	47,719	54,529	58,164	61,462	64,450	67,086	69,282	71,171	1.5%	2.7%	1.3%	1.1%	1.0%	0.8%	0.6%	0.5%
		PALAUIG	33,286	34,947	39,784	42,432	44,838	47,017	48,941	50,543	51,922	1.0%	2.6%	1.3%	1.1%	1.0%	0.8%	0.6%	0.5%
		SAN ANTONIO	34,217	34,661	37,450	39,876	42,137	44,185	45,993	47,499	48,794	0.3%	1.6%	1.3%	1.1%	1.0%	0.8%	0.6%	0.5%
		SAN FELIPE	22,020	23,183	25,033	26,655	28,166	29,535	30,742	31,749	32,615	1.0%	1.5%	1.3%	1.1%	1.0%	0.8%	0.6%	0.5%
		SAN MARCELINO	31,879	33,665	37,719	40,209	42,488	44,554	46,376	47,895	49,201	1.1%	2.3%	1.3%	1.1%	1.0%	0.8%	0.6%	0.5%
		SAN NARCISO	26,966	28,360	30,759	32,756	34,613	36,296	37,781	39,018	40,082	1.0%	1.6%	1.3%	1.1%	1.0%	0.8%	0.6%	0.5%
		SANTA CRUZ	53,867	58,151	63,839	68,011	71,868	75,360	78,442	81,011	83,220	1.5%	1.9%	1.3%	1.1%	1.0%	0.8%	0.6%	0.5%
		SUBIC	89,724	104,771	111,912	119,119	125,874	131,991	137,390	141,889	145,758	3.1%	1.3%	1.3%	1.1%	1.0%	0.8%	0.6%	0.5%
		OLONGAPO CITY	221,178	233,040	260,317	277,479	293,211	307,460	320,037	330,516	339,528	1.1%	2.2%	1.3%	1.1%	1.0%	0.8%	0.6%	0.5%
		Sub-total	755,621	823,888	909,932	969,575	1,024,547	1,074,336	1,118,283	1,154,900	1,186,393	1.7%	2.0%	1.3%	1.1%	1.0%	0.8%	0.6%	0.5%
		Total	10,137,737	11,218,177	12,422,172	13,399,160	14,073,281	14,653,646	15,113,325	15,431,228	15,614,161	2.0%	2.1%	1.5%	1.0%	0.8%	0.6%	0.4%	0.2%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CALABARZON	Batangas	AGONCILLO	35,794	38,059	39,101	44,161	46,442	48,212	49,525	50,241	50,276	1.2%	0.5%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		ALITAGTAG	23,649	25,300	26,819	30,321	31,887	33,103	34,004	34,496	34,520	1.4%	1.2%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		BALAYAN	81,805	90,699	95,913	108,427	114,029	118,380	121,603	123,362	123,444	2.1%	1.1%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		BALETE	20,214	22,661	24,055	27,197	28,602	29,693	30,501	30,943	30,964	2.3%	1.2%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		BATANGAS CITY (Capital)	305,607	329,874	351,437	397,390	417,920	433,867	445,678	452,126	452,431	1.5%	1.3%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		BAUAN	79,831	91,297	90,819	102,455	107,747	111,859	114,904	116,566	116,644	2.7%	-0.1%	2.4%	1.0%	0.8%	0.5%	0.3%	0.0%
		CALACA	64,966	81,859	87,361	98,790	103,893	107,857	110,794	112,397	112,473	4.7%	1.3%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		CALATAGAN	51,544	56,449	58,719	66,344	69,772	72,434	74,406	75,483	75,534	1.8%	0.8%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		CUENCA	28,581	32,783	36,235	41,022	43,141	44,787	46,006	46,672	46,703	2.8%	2.0%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		IBAAN	45,649	52,970	58,507	66,234	69,656	72,315	74,283	75,358	75,409	3.0%	2.0%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		LAUREL	34,953	39,444	43,210	48,904	51,430	53,393	54,846	55,639	55,676	2.4%	1.8%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		LEMERY	76,090	93,157	93,186	105,145	110,577	114,796	117,921	119,628	119,709	4.1%	0.0%	2.4%	1.0%	0.8%	0.5%	0.3%	0.0%
		LIAN	44,925	52,660	56,280	63,646	66,933	69,488	71,379	72,412	72,461	3.2%	1.3%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		LIPA CITY	283,468	332,386	372,931	422,394	444,215	461,166	473,720	480,574	480,898	3.2%	2.3%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		LOBO	37,070	41,504	40,736	45,933	48,306	50,149	51,514	52,260	52,295	2.3%	-0.4%	2.4%	1.0%	0.8%	0.5%	0.3%	0.0%
		MABINI	44,391	46,211	50,858	57,568	60,542	62,853	64,564	65,498	65,542	0.8%	1.9%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		MALVAR	45,952	56,270	64,379	72,963	76,732	79,660	81,829	83,013	83,069	4.1%	2.7%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		MATAASNAKAHOY	27,177	29,187	30,621	34,607	36,395	37,783	38,812	39,374	39,400	1.4%	1.0%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		NASUGBU	122,483	134,113	136,524	154,139	162,102	168,287	172,868	175,370	175,488	1.8%	0.4%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		PADRE GARCIA	44,877	48,302	51,853	58,648	61,678	64,032	65,775	66,727	66,772	1.5%	1.4%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		ROSARIO	105,561	116,764	128,352	145,282	152,788	158,618	162,936	165,293	165,405	2.0%	1.9%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		SAN JOSE	68,517	76,971	79,868	90,233	94,894	98,515	101,196	102,661	102,730	2.4%	0.7%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		SAN JUAN	94,291	108,585	114,068	128,923	135,583	140,757	144,589	146,681	146,780	2.9%	1.0%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		SAN LUIS	30,701	33,149	36,172	40,934	43,049	44,691	45,908	46,572	46,603	1.5%	1.8%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		SAN NICOLAS	20,599	22,623	23,908	27,027	28,423	29,508	30,311	30,749	30,769	1.9%	1.1%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		SAN PASCUAL	59,598	65,424	69,009	78,007	82,037	85,167	87,485	88,751	88,811	1.9%	1.1%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		SANTA TERESITA	17,415	21,127	21,559	24,343	25,601	26,578	27,301	27,697	27,716	3.9%	0.4%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		SANTO TOMAS	124,740	179,844	218,500	248,070	260,885	270,840	278,213	282,239	282,429	7.6%	4.0%	2.6%	1.0%	0.8%	0.5%	0.3%	0.0%
		TAAL	51,503	56,327	61,460	69,550	73,143	75,935	78,002	79,130	79,184	1.8%	1.8%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		TALISAY	39,600	45,301	46,238	52,209	54,906	57,002	58,554	59,401	59,441	2.7%	0.4%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		CITY OF TANAUAN	152,393	173,366	193,936	219,638	230,985	239,799	246,327	249,891	250,060	2.6%	2.3%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		TAYSAN	35,357	38,007	40,146	45,383	47,728	49,549	50,898	51,635	51,669	1.5%	1.1%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		TINGLOY	16,870	17,919	19,215	21,731	22,854	23,727	24,373	24,725	24,741	1.2%	1.4%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		TUY	40,734	43,743	46,519	52,598	55,315	57,426	58,989	59,843	59,883	1.4%	1.2%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%
		Sub-total	2,377,395	2,694,335	2,908,494	3,290,211	3,460,189	3,592,222	3,690,012	3,743,402	3,745,928	2.5%	1.5%	2.5%	1.0%	0.8%	0.5%	0.3%	0.0%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CALABARZON	Cavite	ALFONSO	48,567	51,839	59,306	65,633	70,387	74,596	78,287	81,302	83,308	1.3%	2.7%	2.0%	1.4%	1.2%	1.0%	0.8%	0.5%
		AMADEO	33,457	37,649	41,901	46,331	49,686	52,657	55,262	57,391	58,808	2.4%	2.2%	2.0%	1.4%	1.2%	1.0%	0.8%	0.5%
		BACOOR CITY	520,216	600,609	664,625	734,751	787,963	835,079	876,414	910,170	932,631	2.9%	2.0%	2.0%	1.4%	1.2%	1.0%	0.8%	0.5%
		CARMONA	74,986	97,557	106,256	117,408	125,910	133,439	140,045	145,439	149,028	5.4%	1.7%	2.0%	1.4%	1.2%	1.0%	0.8%	0.5%
		CAVITE CITY	101,120	102,806	100,674	110,839	118,866	125,974	132,209	137,301	140,690	0.3%	-0.4%	1.9%	1.4%	1.2%	1.0%	0.8%	0.5%
		CITY OF DASMARIÑAS	575,817	659,019	703,141	776,419	832,648	882,437	926,116	961,786	985,522	2.7%	1.3%	2.0%	1.4%	1.2%	1.0%	0.8%	0.5%
		GENERAL EMILIO AGUINALDO	17,507	22,220	23,973	26,481	28,399	30,097	31,587	32,804	33,614	4.9%	1.5%	2.0%	1.4%	1.2%	1.0%	0.8%	0.5%
		CITY OF GENERAL TRIAS 1	243,322	314,303	450,583	501,717	538,051	570,224	598,450	621,500	636,838	5.3%	7.5%	2.2%	1.4%	1.2%	1.0%	0.8%	0.5%
		IMUS CITY	301,624	403,785	496,794	550,958	590,859	626,189	657,185	682,497	699,340	6.0%	4.2%	2.1%	1.4%	1.2%	1.0%	0.8%	0.5%
		INDANG	62,030	65,599	68,699	75,812	81,302	86,164	90,429	93,912	96,229	1.1%	0.9%	2.0%	1.4%	1.2%	1.0%	0.8%	0.5%
		KAWIT	78,209	83,466	107,535	119,412	128,059	135,717	142,435	147,922	151,572	1.3%	5.2%	2.1%	1.4%	1.2%	1.0%	0.8%	0.5%
		MAGALLANES	21,231	22,727	23,851	26,321	28,228	29,915	31,396	32,606	33,410	1.4%	1.0%	2.0%	1.4%	1.2%	1.0%	0.8%	0.5%
		MARAGONDON	35,289	37,720	40,687	44,943	48,197	51,079	53,607	55,672	57,046	1.3%	1.5%	2.0%	1.4%	1.2%	1.0%	0.8%	0.5%
		MENDEZ (MENDEZ-NUÑEZ)	28,570	31,529	34,879	38,559	41,352	43,824	45,993	47,765	48,944	2.0%	2.0%	2.0%	1.4%	1.2%	1.0%	0.8%	0.5%
		NAIC	88,144	111,454	160,987	179,288	192,273	203,770	213,857	222,093	227,575	4.8%	7.6%	2.2%	1.4%	1.2%	1.0%	0.8%	0.5%
		NOVELETA	41,678	45,846	49,452	54,625	58,582	62,084	65,157	67,667	69,337	1.9%	1.5%	2.0%	1.4%	1.2%	1.0%	0.8%	0.5%
		ROSARIO	92,253	110,706	110,807	122,090	130,932	138,761	145,629	151,238	154,971	3.7%	0.0%	2.0%	1.4%	1.2%	1.0%	0.8%	0.5%
		SILANG	213,490	248,085	295,644	327,577	351,300	372,306	390,735	405,785	415,799	3.0%	3.6%	2.1%	1.4%	1.2%	1.0%	0.8%	0.5%
		TAGAYTAY CITY	62,030	71,181	85,330	94,563	101,411	107,474	112,794	117,139	120,030	2.8%	3.7%	2.1%	1.4%	1.2%	1.0%	0.8%	0.5%
		TANZA	188,755	226,188	312,116	347,208	372,353	394,618	414,151	430,103	440,718	3.7%	6.7%	2.2%	1.4%	1.2%	1.0%	0.8%	0.5%
		TERNATE	19,297	23,157	24,653	27,219	29,190	30,936	32,467	33,718	34,550	3.7%	1.3%	2.0%	1.4%	1.2%	1.0%	0.8%	0.5%
		TRECE MARTIRES CITY (Capital)	104,559	155,713	210,503	234,048	250,998	266,007	279,174	289,927	297,081	8.3%	6.2%	2.1%	1.4%	1.2%	1.0%	0.8%	0.5%
		GEN. MARIANO ALVAREZ	138,540	155,143	172,433	190,653	204,461	216,687	227,413	236,172	242,000	2.3%	2.1%	2.0%	1.4%	1.2%	1.0%	0.8%	0.5%
		Sub-total	3,090,691	3,678,301	4,344,829	4,812,855	5,161,406	5,470,036	5,740,796	5,961,907	6,109,039	3.5%	3.4%	2.1%	1.4%	1.2%	1.0%	0.8%	0.5%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CALABARZON	Laguna	ALAMINOS	43,526	47,859	51,619	55,463	59,290	62,663	65,607	68,020	69,850	1.9%	1.5%	1.4%	1.3%	1.1%	0.9%	0.7%	0.5%
		BAY	55,698	62,143	67,182	72,191	77,172	81,561	85,393	88,533	90,917	2.2%	1.6%	1.4%	1.3%	1.1%	0.9%	0.7%	0.5%
		CITY OF BIÑAN	283,396	333,028	407,437	439,465	469,788	496,501	519,829	538,942	553,455	3.3%	4.1%	1.5%	1.3%	1.1%	0.9%	0.7%	0.5%
		CABUYAO CITY 2	248,436	308,745	355,330	382,575	408,973	432,227	452,537	469,175	481,809	4.4%	2.9%	1.5%	1.3%	1.1%	0.9%	0.7%	0.5%
		CITY OF CALAMBA	389,377	454,486	539,671	581,592	621,723	657,074	687,947	713,241	732,448	3.1%	3.5%	1.5%	1.3%	1.1%	0.9%	0.7%	0.5%
		CALAUAN	74,890	80,453	87,693	94,257	100,761	106,490	111,494	115,593	118,706	1.4%	1.7%	1.5%	1.3%	1.1%	0.9%	0.7%	0.5%
		CAVINTI	20,809	21,702	23,980	25,786	27,565	29,132	30,500	31,621	32,473	0.8%	2.0%	1.5%	1.3%	1.1%	0.9%	0.7%	0.5%
		FAMY	15,021	16,587	16,791	18,003	19,245	20,339	21,295	22,078	22,673	2.0%	0.2%	1.4%	1.3%	1.1%	0.9%	0.7%	0.5%
		KALAYAAN	20,944	23,269	24,755	26,587	28,421	30,037	31,448	32,605	33,482	2.1%	1.2%	1.4%	1.3%	1.1%	0.9%	0.7%	0.5%
		LILIW	33,851	36,582	39,491	42,433	45,361	47,940	50,192	52,037	53,438	1.6%	1.5%	1.4%	1.3%	1.1%	0.9%	0.7%	0.5%
		LOS BAÑOS	101,884	112,008	115,353	123,754	132,294	139,816	146,386	151,769	155,856	1.9%	0.6%	1.4%	1.3%	1.1%	0.9%	0.7%	0.5%
		LUISIANA	20,148	19,720	20,859	22,399	23,945	25,306	26,495	27,469	28,209	-0.4%	1.1%	1.4%	1.3%	1.1%	0.9%	0.7%	0.5%
		LUMBAN	29,470	30,652	32,330	34,713	37,108	39,218	41,061	42,570	43,716	0.8%	1.1%	1.4%	1.3%	1.1%	0.9%	0.7%	0.5%
		MABITAC	18,618	20,530	21,275	22,829	24,405	25,792	27,004	27,997	28,751	2.0%	0.7%	1.4%	1.3%	1.1%	0.9%	0.7%	0.5%
		MAGDALENA	22,976	25,266	27,816	29,907	31,970	33,788	35,376	36,676	37,663	1.9%	1.9%	1.5%	1.3%	1.1%	0.9%	0.7%	0.5%
		MAJAYJAY	26,547	27,792	27,893	29,899	31,962	33,779	35,366	36,667	37,654	0.9%	0.1%	1.4%	1.3%	1.1%	0.9%	0.7%	0.5%
		NAGCARLAN	59,726	63,057	64,866	69,587	74,389	78,618	82,312	85,338	87,636	1.1%	0.6%	1.4%	1.3%	1.1%	0.9%	0.7%	0.5%
		PAETE	23,523	25,096	24,945	26,730	28,574	30,199	31,618	32,781	33,664	1.3%	-0.1%	1.4%	1.3%	1.1%	0.9%	0.7%	0.5%
		PAGSANJAN	39,313	42,164	44,327	47,589	50,873	53,765	56,292	58,361	59,933	1.4%	1.0%	1.4%	1.3%	1.1%	0.9%	0.7%	0.5%
		PAKIL	20,822	20,659	23,495	25,288	27,033	28,570	29,913	31,012	31,848	-0.2%	2.6%	1.5%	1.3%	1.1%	0.9%	0.7%	0.5%
		PANGIL	23,201	24,274	25,026	26,850	28,703	30,335	31,760	32,927	33,814	0.9%	0.6%	1.4%	1.3%	1.1%	0.9%	0.7%	0.5%
		PILA	46,534	50,289	54,613	58,694	62,744	66,311	69,427	71,979	73,918	1.6%	1.7%	1.5%	1.3%	1.1%	0.9%	0.7%	0.5%
		RIZAL	15,518	17,253	18,332	19,688	21,047	22,244	23,288	24,145	24,795	2.1%	1.2%	1.4%	1.3%	1.1%	0.9%	0.7%	0.5%
		SAN PABLO CITY	248,890	266,068	285,348	306,545	327,697	346,329	362,602	375,933	386,057	1.3%	1.4%	1.4%	1.3%	1.1%	0.9%	0.7%	0.5%
		CITY OF SAN PEDRO 3	294,310	325,809	326,001	349,397	373,506	394,744	413,291	428,486	440,025	2.1%	0.0%	1.4%	1.3%	1.1%	0.9%	0.7%	0.5%
		SANTA CRUZ (Capital)	110,943	117,605	123,574	132,663	141,818	149,881	156,923	162,693	167,074	1.2%	1.0%	1.4%	1.3%	1.1%	0.9%	0.7%	0.5%
		SANTA MARIA	26,839	30,830	34,511	37,125	39,687	41,944	43,915	45,529	46,755	2.8%	2.3%	1.5%	1.3%	1.1%	0.9%	0.7%	0.5%
		CITY OF SANTA ROSA	284,670	353,767	414,812	446,868	477,703	504,865	528,586	548,021	562,778	4.4%	3.2%	1.5%	1.3%	1.1%	0.9%	0.7%	0.5%
		SINILOAN	35,363	38,067	39,460	42,344	45,265	47,839	50,087	51,928	53,327	1.5%	0.7%	1.4%	1.3%	1.1%	0.9%	0.7%	0.5%
		VICTORIA	34,604	39,321	43,408	46,676	49,897	52,734	55,212	57,242	58,783	2.6%	2.0%	1.5%	1.3%	1.1%	0.9%	0.7%	0.5%
		Sub-total	2,669,847	3,035,081	3,382,193	3,637,898	3,888,919	4,110,041	4,303,157	4,461,368	4,581,509	2.6%	2.2%	1.5%	1.3%	1.1%	0.9%	0.7%	0.5%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CALABARZON	Quezon	AGDANGAN	11,567	12,851	12,764	13,365	14,101	14,682	15,114	15,375	15,459	2.1%	-0.1%	0.9%	1.1%	0.8%	0.6%	0.3%	0.1%
		ALABAT	16,120	15,630	15,936	16,703	17,622	18,348	18,887	19,212	19,318	-0.6%	0.4%	0.9%	1.1%	0.8%	0.6%	0.3%	0.1%
		ATIMONAN	61,587	63,432	64,260	67,338	71,040	73,964	76,137	77,451	77,875	0.6%	0.3%	0.9%	1.1%	0.8%	0.6%	0.3%	0.1%
		BUENAVISTA	29,053	30,047	31,160	32,679	34,475	35,893	36,948	37,586	37,792	0.7%	0.7%	1.0%	1.1%	0.8%	0.6%	0.3%	0.1%
		BURDEOS	24,166	26,760	24,644	25,735	27,150	28,267	29,098	29,600	29,762	2.1%	-1.6%	0.9%	1.1%	0.8%	0.6%	0.3%	0.1%
		CALAUAG	69,223	73,139	71,809	75,166	79,299	82,562	84,987	86,454	86,926	1.1%	-0.4%	0.9%	1.1%	0.8%	0.6%	0.3%	0.1%
		CANDELARIA	110,570	117,434	137,881	145,171	153,152	159,455	164,138	166,971	167,882	1.2%	3.3%	1.0%	1.1%	0.8%	0.6%	0.3%	0.1%
		CATANAUAN	65,832	71,073	72,752	76,264	80,457	83,767	86,228	87,716	88,196	1.5%	0.5%	0.9%	1.1%	0.8%	0.6%	0.3%	0.1%
		DOLORES	27,702	28,891	32,514	34,189	36,069	37,553	38,656	39,324	39,538	0.8%	2.4%	1.0%	1.1%	0.8%	0.6%	0.3%	0.1%
		GENERAL LUNA	25,373	26,494	24,804	25,919	27,344	28,468	29,304	29,811	29,973	0.9%	-1.3%	0.9%	1.1%	0.8%	0.6%	0.3%	0.1%
		GENERAL NAKAR	25,973	29,705	34,225	36,015	37,995	39,558	40,720	41,423	41,649	2.7%	2.9%	1.0%	1.1%	0.8%	0.6%	0.3%	0.1%
		GUINAYANGAN	41,669	45,155	44,045	46,093	48,628	50,629	52,116	53,016	53,306	1.6%	-0.5%	0.9%	1.1%	0.8%	0.6%	0.3%	0.1%
		GUMACA	69,618	73,877	71,942	75,283	79,422	82,690	85,119	86,588	87,061	1.2%	-0.5%	0.9%	1.1%	0.8%	0.6%	0.3%	0.1%
		INFANTA	64,818	69,079	76,186	80,060	84,463	87,938	90,521	92,083	92,586	1.3%	2.0%	1.0%	1.1%	0.8%	0.6%	0.3%	0.1%
		JOMALIG	6,884	7,417	7,667	8,040	8,482	8,831	9,090	9,247	9,298	1.5%	0.7%	1.0%	1.1%	0.8%	0.6%	0.3%	0.1%
		LOPEZ	91,074	95,167	94,657	99,127	104,578	108,881	112,079	114,014	114,636	0.9%	-0.1%	0.9%	1.1%	0.8%	0.6%	0.3%	0.1%
		LUCBAN	46,698	51,475	53,091	55,669	58,729	61,146	62,942	64,028	64,378	2.0%	0.6%	1.0%	1.1%	0.8%	0.6%	0.3%	0.1%
		MACALELON	26,419	28,188	27,312	28,575	30,145	31,385	32,307	32,864	33,044	1.3%	-0.6%	0.9%	1.1%	0.8%	0.6%	0.3%	0.1%
		MAUBAN	61,141	63,819	71,081	74,719	78,827	82,070	84,481	85,939	86,409	0.9%	2.2%	1.0%	1.1%	0.8%	0.6%	0.3%	0.1%
		MULANAY	50,826	53,123	55,576	58,302	61,507	64,038	65,919	67,057	67,423	0.9%	0.9%	1.0%	1.1%	0.8%	0.6%	0.3%	0.1%
		PADRE BURGOS	20,161	22,460	23,488	24,640	25,994	27,064	27,859	28,340	28,494	2.2%	0.9%	1.0%	1.1%	0.8%	0.6%	0.3%	0.1%
		PAGBILAO	65,996	75,023	78,700	82,568	87,107	90,692	93,356	94,967	95,486	2.6%	1.0%	1.0%	1.1%	0.8%	0.6%	0.3%	0.1%
		PANUKULAN	12,511	13,546	16,376	17,256	18,206	18,955	19,511	19,848	19,957	1.6%	3.9%	1.1%	1.1%	0.8%	0.6%	0.3%	0.1%
		PATNANUNGAN	13,865	14,606	15,052	15,782	16,650	17,335	17,844	18,152	18,251	1.0%	0.6%	1.0%	1.1%	0.8%	0.6%	0.3%	0.1%
		PEREZ	12,039	12,173	12,767	13,395	14,131	14,712	15,144	15,406	15,490	0.2%	1.0%	1.0%	1.1%	0.8%	0.6%	0.3%	0.1%
		PITOGO	21,380	23,019	22,798	23,871	25,183	26,219	26,989	27,455	27,604	1.5%	-0.2%	0.9%	1.1%	0.8%	0.6%	0.3%	0.1%
		PLARIDEL	10,238	10,935	10,129	10,580	11,161	11,620	11,961	12,168	12,235	1.3%	-1.5%	0.9%	1.1%	0.8%	0.6%	0.3%	0.1%
		POLILLO	28,125	30,582	31,908	33,470	35,311	36,763	37,843	38,495	38,705	1.7%	0.9%	1.0%	1.1%	0.8%	0.6%	0.3%	0.1%
		QUEZON	15,142	15,228	15,886	16,664	17,580	18,303	18,841	19,166	19,271	0.1%	0.8%	1.0%	1.1%	0.8%	0.6%	0.3%	0.1%
		REAL	35,189	35,979	38,678	40,612	42,845	44,609	45,918	46,711	46,966	0.4%	1.5%	1.0%	1.1%	0.8%	0.6%	0.3%	0.1%
		SAMPALOC	13,107	13,907	13,629	14,265	15,049	15,668	16,128	16,407	16,496	1.2%	-0.4%	0.9%	1.1%	0.8%	0.6%	0.3%	0.1%
		SAN ANDRES	33,586	35,780	37,454	39,292	41,453	43,159	44,426	45,193	45,440	1.3%	0.9%	1.0%	1.1%	0.8%	0.6%	0.3%	0.1%
		SAN ANTONIO	31,681	33,467	35,891	37,682	39,754	41,390	42,606	43,341	43,577	1.1%	1.4%	1.0%	1.1%	0.8%	0.6%	0.3%	0.1%
		SAN FRANCISCO (AURORA)	57,979	61,473	62,097	65,065	68,643	71,467	73,567	74,837	75,245	1.2%	0.2%	0.9%	1.1%	0.8%	0.6%	0.3%	0.1%
		SAN NARCISO	45,386	48,461	51,058	53,575	56,520	58,846	60,574	61,620	61,956	1.3%	1.0%	1.0%	1.1%	0.8%	0.6%	0.3%	0.1%
		SARIAYA	138,894	148,980	161,868	170,018	179,367	186,747	192,233	195,551	196,618	1.4%	1.7%	1.0%	1.1%	0.8%	0.6%	0.3%	0.1%
		TAGKAWAYAN	50,833	51,832	54,003	56,644	59,758	62,217	64,045	65,150	65,506	0.4%	0.8%	1.0%	1.1%	0.8%	0.6%	0.3%	0.1%
		CITY OF TAYABAS	91,428	99,779	112,658	118,474	124,989	130,132	133,954	136,266	137,010	1.8%	2.5%	1.0%	1.1%	0.8%	0.6%	0.3%	0.1%
		TIAONG	91,599	99,712	106,265	111,545	117,678	122,521	126,119	128,296	128,996	1.7%	1.3%	1.0%	1.1%	0.8%	0.6%	0.3%	0.1%
		UNISAN	25,186	26,884	25,448	26,602	28,065	29,219	30,077	30,596	30,763	1.3%	-1.1%	0.9%	1.1%	0.8%	0.6%	0.3%	0.1%
		LUCENA CITY (Capital)	246,392	266,248	278,924	292,618	308,708	321,410	330,851	336,561	338,398	1.6%	0.9%	1.0%	1.1%	0.8%	0.6%	0.3%	0.1%
		Sub-total	1,987,030	2,122,830	2,229,383	2,339,027	2,467,638	2,569,175	2,644,640	2,690,285	2,704,971	1.3%	1.0%	1.0%	1.1%	0.8%	0.6%	0.3%	0.1%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CALABARZON	Rizal	ANGONO	102,407	113,283	130,494	141,525	152,658	162,774	171,902	179,722	185,767	2.0%	2.9%	1.6%	1.5%	1.3%	1.1%	0.9%	0.7%
		CITY OF ANTIPOLO	677,741	776,386	887,399	962,193	1,037,883	1,106,660	1,168,732	1,221,893	1,262,994	2.8%	2.7%	1.6%	1.5%	1.3%	1.1%	0.9%	0.7%
		BARAS	32,609	69,300	87,637	95,302	102,799	109,612	115,761	121,026	125,098	16.3%	4.8%	1.7%	1.5%	1.3%	1.1%	0.9%	0.7%
		BINANGONAN	249,872	282,474	313,631	339,759	366,486	390,772	412,690	431,462	445,976	2.5%	2.1%	1.6%	1.5%	1.3%	1.1%	0.9%	0.7%
		CAINTA	311,845	322,128	376,933	408,994	441,167	470,402	496,787	519,384	536,855	0.7%	3.2%	1.6%	1.5%	1.3%	1.1%	0.9%	0.7%
		CARDONA	47,414	49,034	50,143	54,174	58,436	62,308	65,803	68,796	71,110	0.7%	0.4%	1.6%	1.5%	1.3%	1.1%	0.9%	0.7%
		JALA-JALA	30,074	32,254	34,017	36,790	39,684	42,314	44,687	46,719	48,291	1.4%	1.1%	1.6%	1.5%	1.3%	1.1%	0.9%	0.7%
		RODRIGUEZ (MONTALBAN)	280,904	369,222	443,954	482,100	520,024	554,484	585,585	612,223	632,816	5.6%	3.8%	1.7%	1.5%	1.3%	1.1%	0.9%	0.7%
		MORONG	52,194	58,118	71,151	77,305	83,386	88,912	93,898	98,170	101,472	2.2%	4.1%	1.7%	1.5%	1.3%	1.1%	0.9%	0.7%
		PILILLA	59,527	64,812	71,535	77,480	83,575	89,113	94,112	98,393	101,702	1.7%	2.0%	1.6%	1.5%	1.3%	1.1%	0.9%	0.7%
		SAN MATEO	205,255	252,527	273,306	295,834	319,106	340,252	359,337	375,683	388,319	4.2%	1.6%	1.6%	1.5%	1.3%	1.1%	0.9%	0.7%
		TANAY	98,879	117,830	139,420	151,328	163,233	174,050	183,812	192,174	198,638	3.6%	3.4%	1.7%	1.5%	1.3%	1.1%	0.9%	0.7%
		TAYTAY	288,956	319,104	386,451	419,743	452,762	482,765	509,843	533,035	550,964	2.0%	3.9%	1.7%	1.5%	1.3%	1.1%	0.9%	0.7%
		TERESA	47,163	57,755	64,072	69,409	74,869	79,831	84,308	88,143	91,108	4.1%	2.1%	1.6%	1.5%	1.3%	1.1%	0.9%	0.7%
		Sub-total	2,484,840	2,884,227	3,330,143	3,611,938	3,896,069	4,154,247	4,387,255	4,586,823	4,741,110	3.0%	2.9%	1.6%	1.5%	1.3%	1.1%	0.9%	0.7%
		Total	12,609,803	14,414,774	16,195,042	17,691,929	18,874,221	19,895,721	20,765,860	21,443,785	21,882,557	2.7%	2.4%	1.8%	1.3%	1.1%	0.9%	0.6%	0.4%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
MIMAROPA	Marinduque	BOAC (Capital)	52,892	54,730	57,283	59,071	63,712	68,204	72,509	76,490	80,071	0.7%	0.9%	0.6%	1.5%	1.4%	1.2%	1.1%	0.9%
		BUENAVISTA	23,111	23,988	26,043	26,888	29,001	31,046	33,005	34,817	36,446	0.7%	1.7%	0.6%	1.5%	1.4%	1.2%	1.1%	0.9%
		GASAN	33,402	34,828	36,197	37,317	40,250	43,088	45,807	48,322	50,583	0.8%	0.8%	0.6%	1.5%	1.4%	1.2%	1.1%	0.9%
		MOGPOG	33,384	34,043	34,516	35,555	38,349	41,053	43,645	46,040	48,195	0.4%	0.3%	0.6%	1.5%	1.4%	1.2%	1.1%	0.9%
		SANTA CRUZ	55,673	56,408	54,692	56,248	60,668	64,946	69,045	72,835	76,244	0.3%	-0.6%	0.6%	1.5%	1.4%	1.2%	1.1%	0.9%
		TORRIJOS	29,366	30,524	30,476	31,375	33,841	36,227	38,514	40,628	42,529	0.8%	0.0%	0.6%	1.5%	1.4%	1.2%	1.1%	0.9%
		Sub-total	227,828	234,521	239,207	246,454	265,819	284,562	302,524	319,130	334,065	0.6%	0.4%	0.6%	1.5%	1.4%	1.2%	1.1%	0.9%
	Occidental Mindoro	ABRA DE ILOG	29,225	31,306	35,176	36,795	39,728	42,418	44,846	46,918	48,566	1.4%	2.4%	0.9%	1.5%	1.3%	1.1%	0.9%	0.7%
		CALINTAAN	28,148	29,826	30,190	31,472	33,981	36,281	38,359	40,131	41,541	1.2%	0.2%	0.8%	1.5%	1.3%	1.1%	0.9%	0.7%
		LOOC	9,758	10,117	7,802	8,045	8,686	9,274	9,805	10,258	10,618	0.7%	-5.1%	0.6%	1.5%	1.3%	1.1%	0.9%	0.7%
		LUBANG	23,068	18,803	17,437	18,120	19,564	20,889	22,085	23,106	23,918	-4.0%	-1.5%	0.8%	1.5%	1.3%	1.1%	0.9%	0.7%
		MAGSAYSAY	31,969	36,016	39,767	41,575	44,890	47,928	50,671	53,013	54,876	2.4%	2.0%	0.9%	1.5%	1.3%	1.1%	0.9%	0.7%
		MAMBURAO (Capital)	39,237	42,975	47,705	49,881	53,858	57,503	60,795	63,604	65,838	1.8%	2.1%	0.9%	1.5%	1.3%	1.1%	0.9%	0.7%
		PALUAN	15,223	16,025	18,566	19,438	20,988	22,409	23,692	24,787	25,657	1.0%	3.0%	0.9%	1.5%	1.3%	1.1%	0.9%	0.7%
		RIZAL	34,458	38,263	40,429	42,206	45,570	48,655	51,441	53,818	55,708	2.1%	1.1%	0.9%	1.5%	1.3%	1.1%	0.9%	0.7%
		SABLAYAN	76,153	83,169	92,598	96,831	104,551	111,629	118,019	123,472	127,809	1.8%	2.2%	0.9%	1.5%	1.3%	1.1%	0.9%	0.7%
		SAN JOSE	131,188	143,430	153,267	160,063	172,824	184,525	195,088	204,102	211,271	1.8%	1.3%	0.9%	1.5%	1.3%	1.1%	0.9%	0.7%
		SANTA CRUZ	34,544	37,484	42,417	44,379	47,917	51,160	54,089	56,588	58,576	1.6%	2.5%	0.9%	1.5%	1.3%	1.1%	0.9%	0.7%
		Sub-total	452,971	487,414	525,354	548,804	592,557	632,671	668,889	699,796	724,377	1.5%	1.5%	0.9%	1.5%	1.3%	1.1%	0.9%	0.7%
	Oriental Mindoro	BACO	35,060	37,215	39,817	41,897	45,332	48,583	51,646	54,468	57,004	1.2%	1.4%	1.0%	1.6%	1.4%	1.2%	1.1%	0.9%
		BANSUD	38,341	40,992	42,671	44,859	48,536	52,017	55,295	58,317	61,033	1.3%	0.8%	1.0%	1.6%	1.4%	1.2%	1.1%	0.9%
		BONGABONG	66,569	72,073	76,973	80,988	87,624	93,909	99,827	105,283	110,186	1.6%	1.3%	1.0%	1.6%	1.4%	1.2%	1.1%	0.9%
		BULALACAO (SAN PEDRO)	33,754	39,107	44,366	46,771	50,603	54,233	57,651	60,803	63,634	3.0%	2.6%	1.1%	1.6%	1.4%	1.2%	1.1%	0.9%
		CITY OF CALAPAN (Capital)	124,173	133,893	145,786	153,487	166,064	177,975	189,192	199,533	208,825	1.5%	1.7%	1.0%	1.6%	1.4%	1.2%	1.1%	0.9%
		GLORIA	42,012	45,073	50,496	53,211	57,571	61,701	65,590	69,175	72,397	1.4%	2.3%	1.1%	1.6%	1.4%	1.2%	1.1%	0.9%
		MANSALAY	51,705	54,533	59,114	62,228	67,327	72,156	76,704	80,896	84,663	1.1%	1.6%	1.0%	1.6%	1.4%	1.2%	1.1%	0.9%
		NAUJAN	94,497	102,998	109,587	115,289	124,736	133,682	142,108	149,875	156,855	1.7%	1.2%	1.0%	1.6%	1.4%	1.2%	1.1%	0.9%
		PINAMALAYAN	81,666	86,172	90,383	95,041	102,829	110,204	117,149	123,552	129,306	1.1%	1.0%	1.0%	1.6%	1.4%	1.2%	1.1%	0.9%
		POLA	32,984	34,701	35,455	37,249	40,300	43,190	45,913	48,423	50,678	1.0%	0.4%	1.0%	1.6%	1.4%	1.2%	1.1%	0.9%
		PUERTO GALERA	32,521	36,606	41,961	44,249	47,874	51,307	54,541	57,523	60,201	2.4%	2.8%	1.1%	1.6%	1.4%	1.2%	1.1%	0.9%
		ROXAS	49,854	53,201	58,849	61,989	67,068	71,879	76,409	80,585	84,337	1.3%	2.0%	1.0%	1.6%	1.4%	1.2%	1.1%	0.9%
		SAN TEODORO	15,810	17,904	19,121	20,119	21,768	23,330	24,801	26,156	27,374	2.5%	1.3%	1.0%	1.6%	1.4%	1.2%	1.1%	0.9%
		SOCORRO	38,348	39,099	41,585	43,748	47,333	50,727	53,924	56,872	59,520	0.4%	1.2%	1.0%	1.6%	1.4%	1.2%	1.1%	0.9%
		VICTORIA	48,308	50,492	52,175	54,836	59,330	63,585	67,592	71,286	74,605	0.9%	0.7%	1.0%	1.6%	1.4%	1.2%	1.1%	0.9%
		Sub-total	785,602	844,059	908,339	955,963	1,034,297	1,108,478	1,178,342	1,242,747	1,300,619	1.4%	1.5%	1.0%	1.6%	1.4%	1.2%	1.1%	0.9%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
MIMAROPA	Palawan	ABORLAN	32,209	35,091	38,736	41,663	45,183	48,444	51,325	53,768	55,676	1.7%	2.0%	1.5%	1.6%	1.4%	1.2%	0.9%	0.7%
		AGUTAYA	11,906	12,545	12,867	13,806	14,972	16,053	17,008	17,817	18,449	1.1%	0.5%	1.4%	1.6%	1.4%	1.2%	0.9%	0.7%
		ARACELI	14,113	14,909	14,434	15,455	16,761	17,971	19,040	19,946	20,654	1.1%	-0.6%	1.4%	1.6%	1.4%	1.2%	0.9%	0.7%
		BALABAC	35,758	40,142	42,527	45,680	49,540	53,115	56,274	58,951	61,043	2.3%	1.2%	1.4%	1.6%	1.4%	1.2%	0.9%	0.7%
		BATARAZA	63,644	75,468	85,439	91,967	99,738	106,938	113,297	118,686	122,898	3.5%	2.5%	1.5%	1.6%	1.4%	1.2%	0.9%	0.7%
		BROOKE'S POINT	61,301	66,374	73,994	79,609	86,336	92,568	98,073	102,738	106,384	1.6%	2.2%	1.5%	1.6%	1.4%	1.2%	0.9%	0.7%
		BUSUANGA	21,358	22,046	25,617	27,596	29,927	32,088	33,996	35,613	36,877	0.6%	3.0%	1.5%	1.6%	1.4%	1.2%	0.9%	0.7%
		CAGAYANCILLO	7,116	6,285	6,884	7,402	8,028	8,608	9,120	9,554	9,893	-2.5%	1.8%	1.5%	1.6%	1.4%	1.2%	0.9%	0.7%
		CORON	42,941	51,803	65,855	71,126	77,136	82,704	87,623	91,791	95,048	3.8%	4.9%	1.6%	1.6%	1.4%	1.2%	0.9%	0.7%
		CUYO	21,847	22,360	23,489	25,224	27,355	29,330	31,074	32,552	33,707	0.5%	1.0%	1.4%	1.6%	1.4%	1.2%	0.9%	0.7%
		DUMARAN	21,397	23,734	23,528	25,215	27,346	29,320	31,064	32,541	33,696	2.1%	-0.2%	1.4%	1.6%	1.4%	1.2%	0.9%	0.7%
		EL NIDO (BACUIT)	36,191	41,606	50,494	54,465	59,068	63,331	67,098	70,290	72,784	2.8%	3.9%	1.5%	1.6%	1.4%	1.2%	0.9%	0.7%
		LINAPACAN	14,180	15,668	16,424	17,636	19,125	20,506	21,725	22,758	23,566	2.0%	0.9%	1.4%	1.6%	1.4%	1.2%	0.9%	0.7%
		MAGSAYSAY	11,965	12,196	12,603	13,526	14,668	15,728	16,663	17,455	18,074	0.4%	0.7%	1.4%	1.6%	1.4%	1.2%	0.9%	0.7%
		NARRA	65,264	73,212	77,948	83,739	90,815	97,370	103,161	108,068	111,903	2.3%	1.3%	1.4%	1.6%	1.4%	1.2%	0.9%	0.7%
		QUEZON	55,142	60,980	65,283	70,147	76,074	81,565	86,416	90,526	93,739	2.0%	1.4%	1.4%	1.6%	1.4%	1.2%	0.9%	0.7%
		ROXAS	61,058	65,358	69,624	74,799	81,120	86,975	92,148	96,531	99,956	1.4%	1.3%	1.4%	1.6%	1.4%	1.2%	0.9%	0.7%
		SAN VICENTE	30,919	31,232	33,507	36,006	39,048	41,866	44,356	46,466	48,115	0.2%	1.4%	1.4%	1.6%	1.4%	1.2%	0.9%	0.7%
		TAYTAY	70,837	75,165	83,357	89,668	97,245	104,264	110,466	115,720	119,826	1.2%	2.1%	1.5%	1.6%	1.4%	1.2%	0.9%	0.7%
		KALAYAAN	222	184	193	207	224	241	255	267	277	-3.7%	1.0%	1.4%	1.6%	1.5%	1.1%	0.9%	0.7%
		CULION	19,543	20,139	23,213	25,001	27,113	29,070	30,799	32,264	33,409	0.6%	2.9%	1.5%	1.6%	1.4%	1.2%	0.9%	0.7%
		RIZAL (MARCOS)	42,759	50,096	56,162	60,435	65,542	70,273	74,453	77,994	80,761	3.2%	2.3%	1.5%	1.6%	1.4%	1.2%	0.9%	0.7%
		SOFRONIO ESPAÑOLA	29,997	32,876	37,416	40,281	43,684	46,837	49,622	51,982	53,826	1.8%	2.6%	1.5%	1.6%	1.4%	1.2%	0.9%	0.7%
		PUERTO PRINCESA CITY (Capital)	222,673	255,116	307,079	331,148	359,130	385,052	407,954	427,358	442,521	2.8%	3.8%	1.5%	1.6%	1.4%	1.2%	0.9%	0.7%
		Sub-total	994,340	1,104,585	1,246,673	1,341,802	1,455,182	1,560,218	1,653,013	1,731,639	1,793,084	2.1%	2.4%	1.5%	1.6%	1.4%	1.2%	0.9%	0.7%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
MIMAROPA	Romblon	ALCANTARA	15,428	16,351	17,171	17,585	19,054	20,499	21,897	23,219	24,409	1.2%	1.0%	0.5%	1.6%	1.5%	1.3%	1.2%	1.0%
		BANTON	5,963	5,536	5,737	5,872	6,363	6,846	7,312	7,754	8,151	-1.5%	0.7%	0.5%	1.6%	1.5%	1.3%	1.2%	1.0%
		CAJIDIOCAN	21,198	21,861	23,259	23,828	25,820	27,777	29,670	31,462	33,076	0.6%	1.2%	0.5%	1.6%	1.5%	1.3%	1.2%	1.0%
		CALATRAVA	9,776	10,275	11,342	11,633	12,605	13,562	14,486	15,360	16,148	1.0%	2.0%	0.5%	1.6%	1.5%	1.3%	1.2%	1.0%
		CONCEPCION	4,445	4,037	3,561	3,623	3,926	4,224	4,512	4,784	5,029	-1.9%	-2.5%	0.3%	1.6%	1.5%	1.3%	1.2%	1.0%
		CORCUERA	9,935	10,283	10,112	10,331	11,194	12,043	12,864	13,641	14,341	0.7%	-0.3%	0.4%	1.6%	1.5%	1.3%	1.2%	1.0%
		LOOC	21,841	22,262	21,799	22,269	24,130	25,959	27,728	29,402	30,909	0.4%	-0.4%	0.4%	1.6%	1.5%	1.3%	1.2%	1.0%
		MAGDIWANG	13,584	14,142	15,385	15,773	17,092	18,388	19,640	20,826	21,895	0.8%	1.7%	0.5%	1.6%	1.5%	1.3%	1.2%	1.0%
		ODIONGAN	43,676	45,367	49,284	50,524	54,746	58,897	62,911	66,708	70,129	0.8%	1.7%	0.5%	1.6%	1.5%	1.3%	1.2%	1.0%
		ROMBLON (Capital)	37,995	38,758	40,554	41,524	44,994	48,405	51,705	54,826	57,637	0.4%	0.9%	0.5%	1.6%	1.5%	1.3%	1.2%	1.0%
		SAN AGUSTIN	22,116	22,598	24,115	24,707	26,772	28,802	30,765	32,622	34,295	0.4%	1.3%	0.5%	1.6%	1.5%	1.3%	1.2%	1.0%
		SAN ANDRES	15,028	15,589	15,940	16,308	17,671	19,011	20,306	21,531	22,636	0.7%	0.4%	0.5%	1.6%	1.5%	1.3%	1.2%	1.0%
		SAN FERNANDO	22,466	23,271	24,171	24,743	26,812	28,844	30,810	32,670	34,345	0.7%	0.8%	0.5%	1.6%	1.5%	1.3%	1.2%	1.0%
		SAN JOSE	10,294	10,881	11,759	12,053	13,060	14,051	15,009	15,915	16,730	1.1%	1.6%	0.5%	1.6%	1.5%	1.3%	1.2%	1.0%
		SANTA FE	15,700	16,098	17,802	18,261	19,787	21,287	22,738	24,111	25,348	0.5%	2.0%	0.5%	1.6%	1.5%	1.3%	1.2%	1.0%
		FERROL	6,802	6,964	8,005	8,221	8,908	9,583	10,236	10,854	11,411	0.5%	2.8%	0.5%	1.6%	1.5%	1.3%	1.2%	1.0%
		SANTA MARIA (IMELDA)	7,683	8,508	8,989	9,206	9,976	10,732	11,463	12,155	12,778	2.1%	1.1%	0.5%	1.6%	1.5%	1.3%	1.2%	1.0%
		Sub-total	283,930	292,781	308,985	316,463	342,910	368,911	394,052	417,842	439,268	0.6%	1.1%	0.5%	1.6%	1.5%	1.3%	1.2%	1.0%
		Total	2,744,671	2,963,360	3,228,558	3,409,486	3,690,765	3,954,840	4,196,820	4,411,154	4,591,413	1.5%	1.7%	1.1%	1.6%	1.4%	1.2%	1.0%	0.8%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
BICOL	Albay	BACACAY	65,724	68,906	72,485	75,904	81,600	86,812	91,421	95,373	98,488	1.0%	1.0%	0.9%	1.5%	1.2%	1.0%	0.8%	0.6%
		CAMALIG	63,585	66,904	72,042	75,496	81,161	86,345	90,928	94,859	97,958	1.0%	1.5%	0.9%	1.5%	1.2%	1.0%	0.9%	0.6%
		DARAGA (LOCSIN)	115,804	126,595	133,893	140,230	150,756	160,386	168,899	176,201	181,957	1.8%	1.1%	0.9%	1.5%	1.2%	1.0%	0.9%	0.6%
		GUINOBATAN	75,967	82,361	85,786	89,800	96,541	102,708	108,160	112,836	116,521	1.6%	0.8%	0.9%	1.5%	1.2%	1.0%	0.9%	0.6%
		JOVELLAR	16,899	17,308	17,795	18,619	20,017	21,296	22,426	23,396	24,160	0.5%	0.6%	0.9%	1.5%	1.2%	1.0%	0.9%	0.6%
		LEGAZPI CITY (Capital)	182,201	196,639	209,533	219,503	235,979	251,055	264,381	275,811	284,820	1.5%	1.3%	0.9%	1.5%	1.2%	1.0%	0.9%	0.6%
		LIBON	71,527	75,172	75,073	78,473	84,363	89,753	94,517	98,604	101,825	1.0%	0.0%	0.9%	1.5%	1.2%	1.0%	0.9%	0.6%
		CITY OF LIGAO	104,914	111,399	118,096	123,695	132,980	141,476	148,986	155,427	160,504	1.2%	1.2%	0.9%	1.5%	1.2%	1.0%	0.9%	0.6%
		MALILIPOT	35,567	37,785	40,857	42,822	46,037	48,978	51,578	53,808	55,565	1.2%	1.6%	0.9%	1.5%	1.2%	1.0%	0.9%	0.6%
		MALINAO	42,770	45,301	47,395	49,619	53,344	56,752	59,765	62,349	64,385	1.2%	0.9%	0.9%	1.5%	1.2%	1.0%	0.9%	0.6%
		MANITO	22,819	24,707	26,162	27,401	29,457	31,340	33,004	34,430	35,556	1.6%	1.2%	0.9%	1.5%	1.2%	1.0%	0.8%	0.6%
		OAS	64,785	67,960	66,084	69,011	74,191	78,931	83,120	86,714	89,546	1.0%	-0.6%	0.9%	1.5%	1.2%	1.0%	0.9%	0.6%
		PIO DURAN	45,028	46,693	49,070	51,381	55,237	58,767	61,886	64,561	66,670	0.7%	1.0%	0.9%	1.5%	1.2%	1.0%	0.8%	0.6%
		POLANGUI	82,307	88,221	89,176	93,254	100,253	106,659	112,321	117,177	121,004	1.4%	0.2%	0.9%	1.5%	1.2%	1.0%	0.9%	0.6%
		RAPU-RAPU	35,875	36,920	36,151	37,761	40,596	43,190	45,483	47,449	48,999	0.6%	-0.4%	0.9%	1.5%	1.2%	1.0%	0.8%	0.6%
		SANTO DOMINGO (LIBOG)	32,414	34,967	37,765	39,579	42,550	45,269	47,671	49,732	51,357	1.5%	1.6%	0.9%	1.5%	1.2%	1.0%	0.9%	0.6%
		CITY OF TABACO	125,083	133,868	140,961	147,611	158,691	168,830	177,792	185,478	191,537	1.4%	1.0%	0.9%	1.5%	1.2%	1.0%	0.9%	0.6%
		TIWI	50,163	53,120	56,444	59,125	63,564	67,625	71,215	74,294	76,720	1.2%	1.2%	0.9%	1.5%	1.2%	1.0%	0.9%	0.6%
		Sub-total	1,233,432	1,314,826	1,374,768	1,439,284	1,547,316	1,646,173	1,733,552	1,808,497	1,867,573	1.3%	0.9%	0.9%	1.5%	1.2%	1.0%	0.9%	0.6%
	Camarines Norte	BASUD	38,176	41,017	45,133	47,517	52,299	57,064	61,765	66,285	70,567	1.4%	1.9%	1.0%	1.9%	1.8%	1.6%	1.4%	1.3%
		CAPALONGA	31,299	32,215	36,223	38,164	42,005	45,832	49,609	53,239	56,677	0.6%	2.4%	1.0%	1.9%	1.8%	1.6%	1.4%	1.3%
		DAET (Capital)	95,572	104,799	111,700	117,482	129,304	141,085	152,711	163,885	174,471	1.9%	1.3%	1.0%	1.9%	1.8%	1.6%	1.4%	1.3%
		SAN LORENZO RUIZ (IMELDA)	12,592	14,063	15,757	16,599	18,269	19,934	21,577	23,156	24,651	2.2%	2.3%	1.0%	1.9%	1.8%	1.6%	1.4%	1.3%
		JOSE PANGANIBAN	55,557	59,639	63,662	66,961	73,699	80,415	87,041	93,409	99,442	1.4%	1.3%	1.0%	1.9%	1.8%	1.6%	1.4%	1.3%
		LABO	92,041	101,082	109,245	114,952	126,520	138,047	149,423	160,356	170,714	1.9%	1.6%	1.0%	1.9%	1.8%	1.6%	1.4%	1.3%
		MERCEDES	47,674	50,841	55,334	58,238	64,098	69,938	75,701	81,241	86,488	1.3%	1.7%	1.0%	1.9%	1.8%	1.6%	1.4%	1.3%
		PARACALE	53,243	59,149	60,198	63,216	69,577	75,916	82,172	88,184	93,880	2.1%	0.4%	1.0%	1.9%	1.8%	1.6%	1.4%	1.3%
		SAN VICENTE	10,114	10,396	12,579	13,282	14,619	15,951	17,266	18,529	19,726	0.6%	3.9%	1.1%	1.9%	1.8%	1.6%	1.4%	1.3%
		SANTA ELENA	40,828	40,786	43,582	45,842	50,455	55,052	59,589	63,949	68,079	0.0%	1.3%	1.0%	1.9%	1.8%	1.6%	1.4%	1.3%
		TALISAY	23,904	25,841	27,244	28,644	31,526	34,398	37,232	39,957	42,538	1.6%	1.1%	1.0%	1.9%	1.8%	1.6%	1.4%	1.3%
		VINZONS	41,915	43,485	49,042	51,674	56,874	62,056	67,170	72,084	76,740	0.7%	2.4%	1.1%	1.9%	1.8%	1.6%	1.4%	1.3%
		Sub-total	542,915	583,313	629,699	662,572	729,246	795,689	861,257	924,277	983,975	1.4%	1.5%	1.0%	1.9%	1.8%	1.6%	1.4%	1.3%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
BICOL	Camarines Sur	BAAO	54,971	58,849	61,493	64,085	69,968	75,617	80,871	85,619	89,655	1.4%	0.9%	0.8%	1.8%	1.6%	1.4%	1.1%	0.9%
		BALATAN	28,699	30,922	30,669	31,904	34,832	37,644	40,260	42,624	44,634	1.5%	-0.2%	0.8%	1.8%	1.6%	1.4%	1.1%	0.9%
		BATO	48,306	52,137	52,155	54,274	59,256	64,041	68,490	72,512	75,930	1.5%	0.0%	0.8%	1.8%	1.6%	1.4%	1.1%	0.9%
		BOMBON	15,437	16,512	17,995	18,780	20,503	22,159	23,699	25,090	26,273	1.4%	1.7%	0.9%	1.8%	1.6%	1.4%	1.1%	0.9%
		BUHI	73,809	77,143	81,306	84,759	92,539	100,011	106,960	113,240	118,579	0.9%	1.1%	0.8%	1.8%	1.6%	1.4%	1.1%	0.9%
		BULA	68,011	69,430	73,143	76,248	83,246	89,968	96,220	101,870	106,672	0.4%	1.0%	0.8%	1.8%	1.6%	1.4%	1.1%	0.9%
		CABUSAO	18,049	18,397	19,257	20,070	21,912	23,681	25,326	26,813	28,077	0.4%	0.9%	0.8%	1.8%	1.6%	1.4%	1.1%	0.9%
		CALABANGA	78,119	83,033	88,906	92,730	101,241	109,416	117,018	123,889	129,730	1.2%	1.4%	0.8%	1.8%	1.6%	1.4%	1.1%	0.9%
		CAMALIGAN	22,254	24,109	25,036	26,086	28,481	30,781	32,919	34,852	36,495	1.6%	0.8%	0.8%	1.8%	1.6%	1.4%	1.1%	0.9%
		CANAMAN	32,390	34,210	36,205	37,748	41,213	44,541	47,635	50,432	52,809	1.1%	1.1%	0.8%	1.8%	1.6%	1.4%	1.1%	0.9%
		CARAMOAN	44,945	47,605	51,728	53,979	58,934	63,692	68,118	72,118	75,518	1.2%	1.7%	0.9%	1.8%	1.6%	1.4%	1.1%	0.9%
		DEL GALLEGO	23,064	25,397	26,403	27,512	30,037	32,462	34,717	36,756	38,489	1.9%	0.8%	0.8%	1.8%	1.6%	1.4%	1.1%	0.9%
		GAINZA	10,345	11,262	11,584	12,065	13,173	14,237	15,226	16,120	16,881	1.7%	0.6%	0.8%	1.8%	1.6%	1.4%	1.1%	0.9%
		GARCHITORENA	25,204	27,010	29,436	30,720	33,539	36,247	38,765	41,042	42,976	1.4%	1.7%	0.9%	1.8%	1.6%	1.4%	1.1%	0.9%
		GOA	58,503	63,308	71,368	74,560	81,404	87,977	94,090	99,615	104,311	1.6%	2.4%	0.9%	1.8%	1.6%	1.4%	1.1%	0.9%
		IRIGA CITY	105,919	111,757	114,457	119,203	130,144	140,653	150,425	159,258	166,766	1.1%	0.5%	0.8%	1.8%	1.6%	1.4%	1.1%	0.9%
		LAGONOY	51,814	55,465	56,714	59,062	64,483	69,690	74,533	78,909	82,629	1.4%	0.4%	0.8%	1.8%	1.6%	1.4%	1.1%	0.9%
		LIBMANAN	100,002	108,716	112,994	117,738	128,545	138,924	148,577	157,301	164,717	1.7%	0.8%	0.8%	1.8%	1.6%	1.4%	1.1%	0.9%
		LUPI	30,118	32,167	33,897	35,336	38,580	41,695	44,591	47,209	49,435	1.3%	1.1%	0.8%	1.8%	1.6%	1.4%	1.1%	0.9%
		MAGARAO	24,274	25,694	26,742	27,866	30,424	32,881	35,165	37,230	38,985	1.1%	0.8%	0.8%	1.8%	1.6%	1.4%	1.1%	0.9%
		MILAOR	28,474	31,150	33,963	35,445	38,698	41,823	44,729	47,355	49,587	1.8%	1.7%	0.9%	1.8%	1.6%	1.4%	1.1%	0.9%
		MINALABAC	48,162	52,390	53,981	56,231	61,393	66,349	70,959	75,126	78,668	1.7%	0.6%	0.8%	1.8%	1.6%	1.4%	1.1%	0.9%
		NABUA	80,111	83,874	86,490	90,097	98,367	106,310	113,696	120,373	126,047	0.9%	0.6%	0.8%	1.8%	1.6%	1.4%	1.1%	0.9%
		NAGA CITY	174,931	196,003	209,170	218,142	238,165	257,395	275,279	291,443	305,183	2.3%	1.3%	0.8%	1.8%	1.6%	1.4%	1.1%	0.9%
		OCAMPO	43,523	45,934	51,073	53,334	58,230	62,932	67,304	71,256	74,616	1.1%	2.1%	0.9%	1.8%	1.6%	1.4%	1.1%	0.9%
		PAMPLONA	34,471	36,390	39,333	41,037	44,803	48,421	51,785	54,826	57,411	1.1%	1.6%	0.9%	1.8%	1.6%	1.4%	1.1%	0.9%
		PASACAO	45,946	49,035	53,461	55,793	60,914	65,833	70,406	74,541	78,055	1.3%	1.7%	0.9%	1.8%	1.6%	1.4%	1.1%	0.9%
		PILI (Capital)	82,307	89,545	99,196	103,576	113,083	122,214	130,705	138,381	144,904	1.7%	2.1%	0.9%	1.8%	1.6%	1.4%	1.1%	0.9%
		PRESENTACION (PARUBCAN)	20,023	20,996	22,591	23,566	25,729	27,807	29,739	31,486	32,969	1.0%	1.5%	0.8%	1.8%	1.6%	1.4%	1.1%	0.9%
		RAGAY	54,934	58,214	59,770	62,254	67,968	73,456	78,560	83,173	87,094	1.2%	0.5%	0.8%	1.8%	1.6%	1.4%	1.1%	0.9%
		SAGÑAY	31,314	34,546	36,841	38,421	41,947	45,334	48,485	51,332	53,752	2.0%	1.3%	0.8%	1.8%	1.6%	1.4%	1.1%	0.9%
		SAN FERNANDO	33,281	35,258	38,626	40,317	44,018	47,572	50,878	53,866	56,405	1.2%	1.8%	0.9%	1.8%	1.6%	1.4%	1.1%	0.9%
		SAN JOSE	38,523	40,623	43,973	45,881	50,093	54,138	57,899	61,299	64,189	1.1%	1.6%	0.9%	1.8%	1.6%	1.4%	1.1%	0.9%
		SIPOCOT	64,042	64,855	68,169	71,057	77,579	83,843	89,669	94,934	99,410	0.3%	1.0%	0.8%	1.8%	1.6%	1.4%	1.1%	0.9%
		SIRUMA	17,050	17,764	19,419	20,268	22,129	23,916	25,578	27,080	28,356	0.8%	1.8%	0.9%	1.8%	1.6%	1.4%	1.1%	0.9%
		TIGAON	48,611	55,272	60,524	63,173	68,971	74,540	79,720	84,400	88,380	2.6%	1.8%	0.9%	1.8%	1.6%	1.4%	1.1%	0.9%
		TINAMBAC	62,435	67,572	70,176	73,120	79,831	86,278	92,273	97,690	102,296	1.6%	0.8%	0.8%	1.8%	1.6%	1.4%	1.1%	0.9%
		Sub-total	1,822,371	1,952,544	2,068,244	2,156,438	2,354,372	2,544,477	2,721,266	2,881,057	3,016,879	1.4%	1.2%	0.8%	1.8%	1.6%	1.4%	1.1%	0.9%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
BICOL	Catanduanes	BAGAMANOC	11,370	11,551	11,086	11,449	12,693	13,954	15,245	16,543	17,858	0.3%	-0.8%	0.6%	2.1%	1.9%	1.8%	1.6%	1.5%
		BARAS	12,243	12,848	13,484	13,970	15,486	17,025	18,600	20,183	21,787	1.0%	1.0%	0.7%	2.1%	1.9%	1.8%	1.6%	1.5%
		BATO	19,984	21,279	21,748	22,512	24,955	27,436	29,973	32,524	35,109	1.3%	0.4%	0.7%	2.1%	1.9%	1.8%	1.6%	1.5%
		CARAMORAN	28,063	30,056	32,114	33,292	36,904	40,573	44,326	48,097	51,920	1.4%	1.3%	0.7%	2.1%	1.9%	1.8%	1.6%	1.5%
		GIGMOTO	8,003	8,368	8,712	9,024	10,003	10,997	12,013	13,035	14,072	0.9%	0.8%	0.7%	2.1%	1.9%	1.8%	1.6%	1.5%
		PANDAN	19,393	20,516	21,473	22,246	24,659	27,111	29,618	32,138	34,693	1.1%	0.9%	0.7%	2.1%	1.9%	1.8%	1.6%	1.5%
		PANGANIBAN (PAYO)	9,738	9,287	9,713	10,063	11,154	12,263	13,398	14,537	15,693	-0.9%	0.9%	0.7%	2.1%	1.9%	1.8%	1.6%	1.5%
		SAN ANDRES (CALOLBON)	35,779	36,779	38,480	39,864	44,189	48,581	53,075	57,590	62,168	0.6%	0.9%	0.7%	2.1%	1.9%	1.8%	1.6%	1.5%
		SAN MIGUEL	14,107	15,006	15,680	16,243	18,005	19,795	21,626	23,466	25,332	1.2%	0.9%	0.7%	2.1%	1.9%	1.8%	1.6%	1.5%
		VIGA	20,669	21,624	22,869	23,700	26,272	28,883	31,555	34,240	36,962	0.9%	1.1%	0.7%	2.1%	1.9%	1.8%	1.6%	1.5%
		VIRAC (Capital)	66,951	73,650	76,520	79,253	87,852	96,584	105,519	114,497	123,599	1.9%	0.8%	0.7%	2.1%	1.9%	1.8%	1.6%	1.5%
		Sub-total	246,300	260,964	271,879	281,615	312,171	343,200	374,947	406,849	439,191	1.2%	0.8%	0.7%	2.1%	1.9%	1.8%	1.6%	1.5%
	Masbate	AROROY	76,139	86,168	88,351	91,743	100,882	109,873	118,198	125,872	132,840	2.5%	0.5%	0.8%	1.9%	1.7%	1.5%	1.3%	1.1%
		BALENO	24,401	26,096	28,855	30,037	33,029	35,973	38,699	41,211	43,494	1.4%	2.0%	0.8%	1.9%	1.7%	1.5%	1.3%	1.1%
		BALUD	35,841	38,124	40,155	41,734	45,891	49,982	53,768	57,260	60,430	1.2%	1.0%	0.8%	1.9%	1.7%	1.5%	1.3%	1.1%
		BATUAN	13,764	15,086	14,610	15,140	16,648	18,132	19,506	20,773	21,922	1.9%	-0.6%	0.7%	1.9%	1.7%	1.5%	1.3%	1.1%
		CATAINGAN	49,078	50,327	50,623	52,532	57,765	62,914	67,681	72,076	76,067	0.5%	0.1%	0.7%	1.9%	1.7%	1.5%	1.3%	1.1%
		CAWAYAN	63,115	67,033	69,265	71,943	79,109	86,160	92,688	98,707	104,171	1.2%	0.7%	0.8%	1.9%	1.7%	1.5%	1.3%	1.1%
		CLAVERIA	41,572	43,693	42,142	43,666	48,016	52,295	56,257	59,911	63,228	1.0%	-0.7%	0.7%	1.9%	1.7%	1.5%	1.3%	1.1%
		DIMASALANG	25,245	26,192	24,909	25,796	28,365	30,894	33,234	35,393	37,353	0.7%	-1.0%	0.7%	1.9%	1.7%	1.5%	1.3%	1.1%
		ESPERANZA	17,357	18,568	17,534	18,154	19,962	21,742	23,389	24,908	26,287	1.4%	-1.1%	0.7%	1.9%	1.7%	1.5%	1.3%	1.1%
		MANDAON	38,161	41,262	44,122	45,881	50,451	54,948	59,111	62,950	66,435	1.6%	1.3%	0.8%	1.9%	1.7%	1.5%	1.3%	1.1%
		CITY OF MASBATE (Capital)	85,227	95,389	104,522	108,773	119,609	130,269	140,138	149,239	157,502	2.3%	1.8%	0.8%	1.9%	1.7%	1.5%	1.3%	1.1%
		MILAGROS	52,619	57,473	57,538	59,698	65,644	71,495	76,912	81,907	86,441	1.8%	0.0%	0.7%	1.9%	1.7%	1.5%	1.3%	1.1%
		MOBO	34,896	38,813	40,823	42,427	46,653	50,811	54,661	58,211	61,434	2.2%	1.0%	0.8%	1.9%	1.7%	1.5%	1.3%	1.1%
		MONREAL	25,366	26,614	25,164	26,055	28,650	31,204	33,568	35,748	37,727	1.0%	-1.1%	0.7%	1.9%	1.7%	1.5%	1.3%	1.1%
		PALANAS	25,501	26,222	27,322	28,386	31,214	33,997	36,572	38,947	41,104	0.6%	0.8%	0.8%	1.9%	1.7%	1.5%	1.3%	1.1%
		PIO V. CORPUZ (LIMBUHAN)	23,292	23,236	23,744	24,653	27,109	29,525	31,762	33,825	35,698	0.0%	0.4%	0.8%	1.9%	1.7%	1.5%	1.3%	1.1%
		PLACER	55,438	55,826	56,340	58,471	64,295	70,026	75,331	80,224	84,665	0.1%	0.2%	0.7%	1.9%	1.7%	1.5%	1.3%	1.1%
		SAN FERNANDO	21,309	23,057	21,600	22,357	24,584	26,775	28,803	30,674	32,372	1.6%	-1.3%	0.7%	1.9%	1.7%	1.5%	1.3%	1.1%
		SAN JACINTO	27,974	30,372	29,686	30,774	33,840	36,856	39,648	42,223	44,561	1.7%	-0.5%	0.7%	1.9%	1.7%	1.5%	1.3%	1.1%
		SAN PASCUAL	44,753	46,674	44,449	46,035	50,620	55,133	59,310	63,162	66,659	0.8%	-1.0%	0.7%	1.9%	1.7%	1.5%	1.3%	1.1%
		USON	53,602	56,168	57,166	59,346	65,257	71,073	76,458	81,423	85,931	0.9%	0.4%	0.8%	1.9%	1.7%	1.5%	1.3%	1.1%
		Sub-total	834,650	892,393	908,920	943,602	1,037,595	1,130,077	1,215,693	1,294,644	1,366,323	1.3%	0.4%	0.8%	1.9%	1.7%	1.5%	1.3%	1.1%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
BICOL	Sorsogon	BARCELONA	20,340	20,990	20,987	22,020	24,175	26,277	28,285	30,159	31,835	0.6%	0.0%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%
		BULAN	93,943	100,076	105,190	110,557	121,371	131,924	142,007	151,406	159,826	1.3%	1.0%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%
		BULUSAN	22,089	22,884	23,932	25,149	27,609	30,011	32,305	34,443	36,358	0.7%	0.9%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%
		CASIGURAN	30,995	32,842	35,602	37,456	41,120	44,695	48,111	51,296	54,149	1.2%	1.6%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%
		CASTILLA	52,903	57,827	60,635	63,724	69,957	76,040	81,852	87,270	92,123	1.8%	1.0%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%
		DONSOL	47,563	49,711	50,281	52,777	57,940	62,978	67,791	72,278	76,298	0.9%	0.2%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%
		GUBAT	57,327	59,534	60,294	63,291	69,482	75,524	81,296	86,677	91,497	0.8%	0.3%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%
		IROSIN	51,777	56,662	59,267	62,280	68,373	74,318	79,998	85,293	90,036	1.8%	0.9%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%
		JUBAN	30,335	32,320	35,297	37,144	40,777	44,322	47,709	50,867	53,696	1.3%	1.8%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%
		MAGALLANES	35,443	37,038	37,411	39,267	43,107	46,855	50,436	53,775	56,766	0.9%	0.2%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%
		MATNOG	37,641	41,101	41,989	44,089	48,401	52,609	56,631	60,379	63,736	1.8%	0.4%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%
		PILAR	68,245	74,564	75,793	79,569	87,353	94,948	102,205	108,970	115,030	1.8%	0.3%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%
		PRIETO DIAZ	20,478	22,442	22,644	23,766	26,091	28,359	30,527	32,547	34,357	1.8%	0.2%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%
		SANTA MAGDALENA	16,520	16,848	17,096	17,947	19,703	21,416	23,053	24,579	25,945	0.4%	0.3%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%
		CITY OF SORSOGON (Capital)	155,144	168,110	182,237	191,729	210,484	228,786	246,272	262,572	277,174	1.6%	1.6%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%
		Sub-total	740,743	792,949	828,655	870,765	955,943	1,039,064	1,118,477	1,192,510	1,258,826	1.4%	0.9%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%
		Total	5,420,411	5,796,989	6,082,165	6,354,276	6,936,643	7,498,680	8,025,192	8,507,834	8,932,767	1.3%	1.0%	0.9%	1.8%	1.6%	1.4%	1.2%	1.0%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
WESTERN VISAYAS	Aklan	ALTAVAS	23,919	24,619	25,639	26,682	28,366	29,935	31,316	32,520	33,565	0.6%	0.8%	0.8%	1.2%	1.1%	0.9%	0.8%	0.6%
		BALETE	27,197	28,920	30,090	31,312	33,288	35,129	36,750	38,163	39,388	1.2%	0.8%	0.8%	1.2%	1.1%	0.9%	0.8%	0.6%
		BANGA	38,063	39,505	40,318	41,928	44,574	47,039	49,209	51,101	52,742	0.7%	0.4%	0.8%	1.2%	1.1%	0.9%	0.8%	0.6%
		BATAN	30,312	32,032	33,484	34,850	37,049	39,098	40,902	42,475	43,839	1.1%	0.9%	0.8%	1.2%	1.1%	0.9%	0.8%	0.6%
		BURUANGA	16,962	19,003	19,357	20,128	21,399	22,582	23,624	24,532	25,320	2.3%	0.4%	0.8%	1.2%	1.1%	0.9%	0.8%	0.6%
		IBAJAY	45,279	49,564	52,364	54,519	57,959	61,164	63,985	66,446	68,580	1.8%	1.1%	0.8%	1.2%	1.1%	0.9%	0.8%	0.6%
		KALIBO (Capital)	74,619	80,605	89,127	92,932	98,795	104,259	109,068	113,263	116,900	1.6%	2.0%	0.8%	1.2%	1.1%	0.9%	0.8%	0.6%
		LEZO	14,518	15,224	15,639	16,268	17,295	18,251	19,093	19,827	20,464	1.0%	0.5%	0.8%	1.2%	1.1%	0.9%	0.8%	0.6%
		LIBACAO	28,005	28,241	28,272	29,381	31,235	32,963	34,483	35,810	36,960	0.2%	0.0%	0.8%	1.2%	1.1%	0.9%	0.8%	0.6%
		MADALAG	18,168	18,389	18,890	19,649	20,888	22,044	23,061	23,948	24,717	0.2%	0.5%	0.8%	1.2%	1.1%	0.9%	0.8%	0.6%
		MAKATO	25,461	27,262	29,717	30,971	32,925	34,746	36,350	37,747	38,959	1.4%	1.7%	0.8%	1.2%	1.1%	0.9%	0.8%	0.6%
		MALAY	45,811	52,973	60,077	62,691	66,646	70,332	73,576	76,406	78,860	2.9%	2.5%	0.9%	1.2%	1.1%	0.9%	0.8%	0.6%
		MALINAO	24,108	23,194	24,517	25,526	27,136	28,637	29,958	31,110	32,109	-0.8%	1.1%	0.8%	1.2%	1.1%	0.9%	0.8%	0.6%
		NABAS	31,052	36,435	40,632	42,378	45,052	47,543	49,736	51,649	53,308	3.2%	2.2%	0.8%	1.2%	1.1%	0.9%	0.8%	0.6%
		NEW WASHINGTON	42,112	45,007	47,955	49,942	53,093	56,030	58,614	60,868	62,824	1.3%	1.3%	0.8%	1.2%	1.1%	0.9%	0.8%	0.6%
		NUMANCIA	29,862	31,934	35,693	37,228	39,578	41,767	43,692	45,373	46,829	1.4%	2.3%	0.8%	1.2%	1.1%	0.9%	0.8%	0.6%
		TANGALAN	20,277	21,916	23,704	24,698	26,255	27,706	28,984	30,098	31,066	1.6%	1.6%	0.8%	1.2%	1.1%	0.9%	0.8%	0.6%
		Sub-total	535,725	574,823	615,475	641,083	681,533	719,225	752,401	781,338	806,430	1.4%	1.4%	0.8%	1.2%	1.1%	0.9%	0.8%	0.6%
	Antique	ANINI-Y	20,349	21,201	22,018	22,903	25,218	27,580	29,997	32,474	35,047	0.8%	0.8%	0.8%	1.9%	1.8%	1.7%	1.6%	1.5%
		BARBAZA	21,775	22,704	23,359	24,289	26,745	29,249	31,812	34,438	37,166	0.8%	0.6%	0.8%	1.9%	1.8%	1.7%	1.6%	1.5%
		BELISON	12,807	13,539	14,129	14,699	16,185	17,701	19,252	20,841	22,493	1.1%	0.9%	0.8%	1.9%	1.8%	1.7%	1.6%	1.5%
		BUGASONG	32,264	33,642	34,676	36,059	39,705	43,424	47,229	51,128	55,179	0.8%	0.6%	0.8%	1.9%	1.8%	1.7%	1.6%	1.5%
		CALUYA	30,046	35,496	38,908	40,543	44,642	48,823	53,102	57,486	62,042	3.4%	1.9%	0.8%	1.9%	1.8%	1.7%	1.6%	1.5%
		CULASI	39,086	41,228	44,494	46,341	51,025	55,804	60,695	65,705	70,911	1.1%	1.5%	0.8%	1.9%	1.8%	1.7%	1.6%	1.5%
		TOBIAS FORNIER (DAO)	30,669	33,046	33,816	35,157	38,711	42,336	46,046	49,848	53,798	1.5%	0.5%	0.8%	1.9%	1.8%	1.7%	1.6%	1.5%
		HAMTIC	45,983	48,592	52,685	54,879	60,427	66,086	71,877	77,811	83,976	1.1%	1.6%	0.8%	1.9%	1.8%	1.7%	1.6%	1.5%
		LAUA-AN	25,211	26,072	26,580	27,630	30,423	33,273	36,189	39,177	42,281	0.7%	0.4%	0.8%	1.9%	1.8%	1.7%	1.6%	1.5%
		LIBERTAD	15,669	16,429	17,507	18,226	20,069	21,949	23,872	25,843	27,891	1.0%	1.3%	0.8%	1.9%	1.8%	1.7%	1.6%	1.5%
		PANDAN	32,494	34,333	35,965	37,420	41,203	45,061	49,010	53,056	57,261	1.1%	0.9%	0.8%	1.9%	1.8%	1.7%	1.6%	1.5%
		PATNONGON	35,102	37,176	38,329	39,858	43,888	47,999	52,205	56,515	60,993	1.2%	0.6%	0.8%	1.9%	1.8%	1.7%	1.6%	1.5%
		SAN JOSE (Capital)	57,847	62,534	65,140	67,763	74,613	81,602	88,753	96,080	103,693	1.6%	0.8%	0.8%	1.9%	1.8%	1.7%	1.6%	1.5%
		SAN REMIGIO	30,446	31,935	34,045	35,443	39,026	42,681	46,421	50,253	54,235	1.0%	1.3%	0.8%	1.9%	1.8%	1.7%	1.6%	1.5%
		SEBASTE	17,270	17,907	18,816	19,579	21,559	23,578	25,644	27,762	29,961	0.7%	1.0%	0.8%	1.9%	1.8%	1.7%	1.6%	1.5%
		SIBALOM	56,058	60,306	63,833	66,439	73,156	80,008	87,019	94,203	101,668	1.5%	1.1%	0.8%	1.9%	1.8%	1.7%	1.6%	1.5%
		TIBIAO	24,513	26,748	28,703	29,888	32,911	35,993	39,146	42,378	45,735	1.8%	1.4%	0.8%	1.9%	1.8%	1.7%	1.6%	1.5%
		VALDERRAMA	18,442	19,124	19,971	20,777	22,879	25,022	27,214	29,460	31,793	0.7%	0.9%	0.8%	1.9%	1.8%	1.7%	1.6%	1.5%
		Sub-total	546,031	582,012	612,974	637,891	702,383	768,166	835,482	904,452	976,121	1.3%	1.0%	0.8%	1.9%	1.8%	1.7%	1.6%	1.5%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
WESTERN VISAYAS	Capiz	CUARTERO	25,456	27,408	27,993	29,606	30,973	32,174	33,102	33,744	33,980	1.5%	0.4%	1.1%	0.9%	0.8%	0.6%	0.4%	0.1%
		DAO	31,911	32,496	33,842	35,815	37,469	38,923	40,046	40,822	41,108	0.4%	0.8%	1.1%	0.9%	0.8%	0.6%	0.4%	0.1%
		DUMALAG	29,298	29,466	30,098	31,831	33,302	34,593	35,592	36,282	36,536	0.1%	0.4%	1.1%	0.9%	0.8%	0.6%	0.4%	0.1%
		DUMARAO	43,986	46,157	49,506	52,444	54,867	56,994	58,639	59,775	60,194	1.0%	1.4%	1.2%	0.9%	0.8%	0.6%	0.4%	0.1%
		IVISAN	26,763	29,055	31,278	33,138	34,669	36,013	37,053	37,771	38,036	1.7%	1.5%	1.2%	0.9%	0.8%	0.6%	0.4%	0.1%
		JAMINDAN	35,002	36,677	38,670	40,941	42,833	44,494	45,778	46,665	46,993	0.9%	1.1%	1.1%	0.9%	0.8%	0.6%	0.4%	0.1%
		MA-AYON	36,430	38,416	41,226	43,674	45,691	47,463	48,832	49,779	50,127	1.1%	1.4%	1.2%	0.9%	0.8%	0.6%	0.4%	0.1%
		MAMBUSAO	37,672	39,644	40,690	43,041	45,029	46,775	48,125	49,058	49,402	1.0%	0.5%	1.1%	0.9%	0.8%	0.6%	0.4%	0.1%
		PANAY	43,449	46,114	48,890	51,771	54,163	56,263	57,886	59,008	59,422	1.2%	1.2%	1.2%	0.9%	0.8%	0.6%	0.4%	0.1%
		PANITAN	37,895	40,289	42,565	45,068	47,151	48,979	50,392	51,368	51,729	1.2%	1.1%	1.1%	0.9%	0.8%	0.6%	0.4%	0.1%
		PILAR	41,572	45,287	47,100	49,845	52,147	54,169	55,732	56,813	57,211	1.7%	0.8%	1.1%	0.9%	0.8%	0.6%	0.4%	0.1%
		PONTEVEDRA	43,525	46,428	49,725	52,673	55,107	57,244	58,896	60,038	60,459	1.3%	1.4%	1.2%	0.9%	0.8%	0.6%	0.4%	0.1%
		PRESIDENT ROXAS	28,561	29,676	31,269	33,105	34,635	35,978	37,015	37,733	37,997	0.8%	1.1%	1.1%	0.9%	0.8%	0.6%	0.4%	0.1%
		ROXAS CITY (Capital)	156,197	167,003	179,292	189,936	198,711	206,417	212,372	216,488	218,006	1.3%	1.4%	1.2%	0.9%	0.8%	0.6%	0.4%	0.1%
		SAPI-AN	24,779	25,821	26,697	28,247	29,552	30,699	31,585	32,197	32,423	0.8%	0.7%	1.1%	0.9%	0.8%	0.6%	0.4%	0.1%
		SIGMA	29,138	30,134	31,688	33,547	35,097	36,458	37,510	38,237	38,504	0.7%	1.0%	1.1%	0.9%	0.8%	0.6%	0.4%	0.1%
		TAPAZ	48,051	51,313	54,423	57,630	60,293	62,631	64,437	65,686	66,147	1.3%	1.2%	1.2%	0.9%	0.8%	0.6%	0.4%	0.1%
		Sub-total	719,685	761,384	804,952	852,312	891,686	926,265	952,990	971,461	978,272	1.1%	1.1%	1.1%	0.9%	0.8%	0.6%	0.4%	0.1%
	Guimaras	BUENAVISTA	46,703	50,437	52,899	55,317	58,288	60,801	62,826	64,230	65,065	1.6%	1.0%	0.9%	1.1%	0.8%	0.7%	0.4%	0.3%
		JORDAN (Capital)	34,791	36,096	39,566	41,434	43,659	45,542	47,059	48,111	48,736	0.7%	1.9%	0.9%	1.1%	0.8%	0.7%	0.4%	0.3%
		NUEVA VALENCIA	37,852	39,810	42,771	44,762	47,166	49,200	50,838	51,974	52,650	1.0%	1.4%	0.9%	1.1%	0.8%	0.7%	0.4%	0.3%
		SAN LORENZO	24,032	26,112	29,444	30,861	32,519	33,922	35,051	35,835	36,300	1.7%	2.4%	0.9%	1.1%	0.8%	0.7%	0.4%	0.3%
		SIBUNAG	19,565	22,158	23,162	24,218	25,519	26,619	27,504	28,119	28,485	2.5%	0.9%	0.9%	1.1%	0.8%	0.7%	0.4%	0.3%
		Sub-total	162,943	174,613	187,842	196,592	207,150	216,083	223,278	228,270	231,237	1.4%	1.5%	0.9%	1.1%	0.8%	0.7%	0.4%	0.3%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
WESTERN VISAYAS	Iloilo	AJUY	47,248	52,268	53,462	55,779	58,412	60,605	62,377	63,627	64,307	2.0%	0.5%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		ALIMODIAN	37,484	38,408	39,722	41,459	43,416	45,046	46,362	47,291	47,796	0.5%	0.7%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		ANILAO	27,486	28,684	30,520	31,884	33,390	34,643	35,655	36,370	36,759	0.9%	1.2%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		BADIANGAN	26,218	27,005	27,056	28,208	29,540	30,649	31,544	32,177	32,520	0.6%	0.0%	0.8%	0.9%	0.7%	0.6%	0.4%	0.2%
		BALASAN	29,724	33,088	35,064	36,626	38,356	39,795	40,957	41,778	42,224	2.2%	1.2%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		BANATE	29,543	32,532	33,376	34,826	36,470	37,839	38,945	39,726	40,149	1.9%	0.5%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		BAROTAC NUEVO	51,867	54,146	58,176	60,796	63,666	66,056	67,986	69,348	70,089	0.9%	1.4%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		BAROTAC VIEJO	41,470	45,808	48,614	50,783	53,181	55,177	56,789	57,927	58,546	2.0%	1.2%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		BATAD	19,385	21,298	22,157	23,131	24,223	25,132	25,866	26,385	26,666	1.9%	0.8%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		BINGAWAN	13,432	15,199	16,164	16,887	17,684	18,347	18,884	19,262	19,468	2.5%	1.2%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		CABATUAN	54,950	58,442	61,110	63,806	66,818	69,326	71,352	72,782	73,560	1.2%	0.9%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		CALINOG	54,430	60,413	62,853	65,615	68,713	71,292	73,376	74,846	75,645	2.1%	0.8%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		CARLES	62,690	68,160	72,637	75,889	79,472	82,455	84,864	86,565	87,489	1.7%	1.3%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		CONCEPCION	39,617	43,159	44,633	46,585	48,785	50,616	52,095	53,139	53,706	1.7%	0.7%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		DINGLE	43,290	45,335	45,965	47,943	50,206	52,091	53,613	54,687	55,271	0.9%	0.3%	0.8%	0.9%	0.7%	0.6%	0.4%	0.2%
		DUEÑAS	33,671	34,242	34,597	36,080	37,783	39,202	40,348	41,157	41,596	0.3%	0.2%	0.8%	0.9%	0.7%	0.6%	0.4%	0.2%
		DUMANGAS	66,108	69,108	73,899	77,217	80,862	83,897	86,349	88,081	89,021	0.9%	1.3%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		ESTANCIA	42,666	48,546	53,200	55,632	58,258	60,445	62,211	63,458	64,136	2.6%	1.8%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		GUIMBAL	32,325	33,820	35,022	36,555	38,280	39,717	40,877	41,697	42,143	0.9%	0.7%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		IGBARAS	31,347	32,004	32,197	33,573	35,158	36,478	37,543	38,296	38,705	0.4%	0.1%	0.8%	0.9%	0.7%	0.6%	0.4%	0.2%
		JANIUAY	63,031	63,905	66,786	69,730	73,023	75,763	77,977	79,540	80,390	0.3%	0.9%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		LAMBUNAO	69,023	73,640	81,236	84,969	88,980	92,321	95,018	96,923	97,958	1.3%	2.0%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		LEGANES	29,438	32,480	34,725	36,284	37,997	39,423	40,575	41,387	41,830	2.0%	1.3%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		LEMERY	27,441	30,851	31,414	32,771	34,318	35,606	36,647	37,381	37,780	2.4%	0.4%	0.8%	0.9%	0.7%	0.6%	0.4%	0.2%
		LEON	47,522	49,875	51,990	54,278	56,841	58,974	60,698	61,915	62,577	1.0%	0.8%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		MAASIN	35,069	36,922	38,461	40,153	42,049	43,627	44,902	45,802	46,291	1.0%	0.8%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		MIAGAO	64,545	67,565	68,115	71,031	74,384	77,176	79,432	81,023	81,888	0.9%	0.2%	0.8%	0.9%	0.7%	0.6%	0.4%	0.2%
		MINA	21,785	23,546	24,042	25,082	26,266	27,252	28,048	28,610	28,916	1.6%	0.4%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		NEW LUCENA	22,174	23,240	24,314	25,387	26,586	27,584	28,389	28,959	29,267	0.9%	0.9%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		OTON	82,572	89,115	98,509	103,041	107,906	111,956	115,228	117,537	118,792	1.5%	2.0%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		CITY OF PASSI	79,663	80,544	88,873	92,956	97,345	100,998	103,949	106,033	107,165	0.2%	2.0%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		PAVIA	43,614	55,603	70,388	73,922	77,412	80,317	82,664	84,320	85,221	5.0%	4.8%	1.0%	0.9%	0.7%	0.6%	0.4%	0.2%
		POTOTAN	70,955	75,070	78,298	81,745	85,604	88,817	91,413	93,245	94,241	1.1%	0.8%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		SAN DIONISIO	33,650	38,775	39,048	40,718	42,640	44,241	45,534	46,447	46,942	2.9%	0.1%	0.8%	0.9%	0.7%	0.6%	0.4%	0.2%
		SAN ENRIQUE	32,422	33,911	36,911	38,589	40,411	41,928	43,153	44,018	44,488	0.9%	1.7%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		SAN JOAQUIN	51,645	51,892	52,617	54,881	57,472	59,629	61,371	62,601	63,270	0.1%	0.3%	0.8%	0.9%	0.7%	0.6%	0.4%	0.2%
		SAN MIGUEL	25,013	27,686	30,115	31,484	32,971	34,208	35,208	35,914	36,297	2.1%	1.7%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		SAN RAFAEL	14,655	16,532	17,795	18,597	19,475	20,206	20,796	21,213	21,439	2.4%	1.5%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		SANTA BARBARA	55,472	60,215	67,630	70,776	74,117	76,899	79,146	80,732	81,595	1.7%	2.3%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		SARA	46,889	52,631	54,637	57,033	59,725	61,968	63,779	65,057	65,752	2.3%	0.8%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		TIGBAUAN	58,814	62,706	65,245	68,111	71,327	74,005	76,167	77,694	78,523	1.3%	0.8%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		TUBUNGAN	21,540	22,449	23,021	24,020	25,154	26,100	26,864	27,402	27,695	0.8%	0.5%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		ZARRAGA	23,693	25,605	27,305	28,529	29,876	30,998	31,905	32,544	32,891	1.6%	1.3%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		ILOILO CITY (Capital)	424,619	447,992	457,626	477,435	499,977	518,745	533,905	544,607	550,423	1.1%	0.4%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%
		Sub-total	2,230,195	2,384,415	2,509,525	2,620,799	2,744,531	2,847,552	2,930,764	2,989,506	3,021,431	1.3%	1.0%	0.9%	0.9%	0.7%	0.6%	0.4%	0.2%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
WESTERN VISAYAS	Negros Occidental	BAGO CITY	163,045	170,981	191,210	197,252	208,946	219,297	227,554	234,615	241,111	1.0%	2.3%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		BINALBAGAN	65,431	67,270	71,407	73,540	77,899	81,758	84,837	87,469	89,891	0.6%	1.2%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		CADIZ CITY	151,500	154,723	158,544	163,086	172,755	181,313	188,139	193,977	199,348	0.4%	0.5%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		CALATRAVA	79,009	80,624	82,540	84,902	89,935	94,391	97,944	100,983	103,780	0.4%	0.5%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		CANDONI	21,336	21,789	23,751	24,482	25,933	27,218	28,243	29,119	29,925	0.4%	1.7%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		CAUAYAN	96,921	102,165	108,480	111,722	118,345	124,208	128,885	132,885	136,564	1.1%	1.2%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		ENRIQUE B. MAGALONA (SARAVIA)	59,434	62,921	64,290	66,125	70,046	73,516	76,284	78,651	80,828	1.1%	0.4%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		CITY OF ESCALANTE	93,005	94,070	96,159	98,906	104,769	109,960	114,099	117,641	120,898	0.2%	0.4%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		CITY OF HIMAMAYLAN	103,006	106,880	116,240	119,806	126,909	133,195	138,210	142,499	146,445	0.7%	1.7%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		HINIGARAN	81,925	85,602	88,909	91,499	96,924	101,725	105,555	108,830	111,843	0.9%	0.8%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		HINOBA-AN (ASIA)	54,624	56,819	60,865	62,702	66,420	69,710	72,334	74,578	76,644	0.8%	1.4%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		ILOG	54,423	57,389	59,855	61,607	65,260	68,493	71,072	73,277	75,306	1.1%	0.8%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		ISABELA	59,523	62,146	64,516	66,393	70,329	73,813	76,592	78,969	81,156	0.9%	0.8%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		CITY OF KABANKALAN	167,666	181,977	200,198	206,416	218,654	229,485	238,126	245,515	252,313	1.7%	1.9%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		LA CARLOTA CITY	63,852	64,469	66,664	68,595	72,661	76,261	79,132	81,587	83,846	0.2%	0.7%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		LA CASTELLANA	71,013	74,855	79,492	81,868	86,722	91,017	94,445	97,375	100,071	1.1%	1.2%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		MANAPLA	52,687	54,845	55,083	56,621	59,979	62,949	65,319	67,346	69,211	0.8%	0.1%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		MOISES PADILLA (MAGALLON)	39,257	41,386	43,462	44,744	47,397	49,745	51,618	53,219	54,693	1.1%	1.0%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		MURCIA	75,207	81,286	88,868	91,610	97,042	101,849	105,683	108,964	111,980	1.6%	1.8%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		PONTEVEDRA	47,945	51,866	54,502	56,111	59,437	62,381	64,730	66,738	68,586	1.6%	1.0%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		PULUPANDAN	25,350	27,735	30,117	31,040	32,881	34,510	35,809	36,920	37,942	1.8%	1.7%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		SAGAY CITY	140,740	146,264	148,894	153,125	162,203	170,238	176,647	182,129	187,171	0.8%	0.4%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		SAN CARLOS CITY	129,981	132,536	132,650	136,340	144,423	151,577	157,283	162,164	166,654	0.4%	0.0%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		SAN ENRIQUE	23,189	23,907	24,177	24,858	26,332	27,636	28,677	29,567	30,386	0.6%	0.2%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		SILAY CITY	120,999	126,930	130,478	134,230	142,189	149,233	154,851	159,656	164,076	1.0%	0.6%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		CITY OF SIPALAY	67,403	70,070	72,448	74,546	78,966	82,877	85,998	88,666	91,121	0.8%	0.7%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		CITY OF TALISAY	97,571	102,214	108,909	112,176	118,826	124,712	129,408	133,424	137,118	0.9%	1.3%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		TOBOSO	41,658	42,114	43,445	44,700	47,350	49,696	51,567	53,168	54,639	0.2%	0.6%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		VALLADOLID	36,416	37,833	39,996	41,186	43,627	45,788	47,512	48,986	50,343	0.8%	1.1%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		CITY OF VICTORIAS	88,299	87,933	90,101	92,682	98,177	103,041	106,920	110,237	113,289	-0.1%	0.5%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		SALVADOR BENEDICTO	23,624	25,662	26,922	27,715	29,359	30,813	31,975	32,968	33,879	1.7%	1.0%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		BACOLOD CITY (Capital)	511,820	561,875	600,783	618,876	655,566	688,042	713,947	736,103	756,482	1.9%	1.3%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		Sub-total	2,907,859	3,059,136	3,223,955	3,319,461	3,516,262	3,690,450	3,829,393	3,948,228	4,057,542	1.0%	1.1%	0.6%	1.2%	1.0%	0.7%	0.6%	0.5%
		Total	7,102,438	7,536,383	7,954,723	8,268,138	8,743,545	9,167,741	9,524,308	9,823,255	10,071,033	1.2%	1.1%	0.8%	1.1%	1.0%	0.8%	0.6%	0.5%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL VISAYAS	Bohol	ALBURQUERQUE	9,921	10,540	11,246	11,602	12,581	13,563	14,525	15,473	16,420	1.2%	1.3%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		ALICIA	22,285	23,517	24,374	25,121	27,239	29,367	31,447	33,502	35,552	1.1%	0.7%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		ANDA	16,909	16,462	17,778	18,348	19,895	21,450	22,969	24,469	25,966	-0.5%	1.6%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		ANTEQUERA	14,481	14,425	14,990	15,452	16,754	18,063	19,342	20,606	21,867	-0.1%	0.8%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		BACLAYON	18,630	20,591	22,461	23,189	25,144	27,108	29,029	30,926	32,817	2.0%	1.8%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		BALILIHAN	17,147	17,903	18,694	19,272	20,897	22,530	24,125	25,702	27,275	0.9%	0.9%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		BATUAN	12,431	12,767	13,845	14,291	15,496	16,707	17,891	19,059	20,225	0.5%	1.6%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		BILAR	17,098	17,590	18,512	19,089	20,699	22,316	23,896	25,457	27,015	0.6%	1.0%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		BUENAVISTA	27,031	27,261	29,711	30,672	33,258	35,856	38,396	40,904	43,407	0.2%	1.7%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		CALAPE	30,146	30,863	33,079	34,131	37,009	39,899	42,726	45,517	48,302	0.5%	1.4%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		CANDIJAY	29,043	29,475	30,119	31,028	33,644	36,272	38,842	41,379	43,911	0.3%	0.4%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		CARMEN	43,579	46,306	49,191	50,740	55,019	59,317	63,517	67,668	71,808	1.2%	1.2%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		CATIGBIAN	22,686	22,675	23,805	24,545	26,615	28,693	30,725	32,732	34,735	0.0%	1.0%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		CLARIN	20,296	20,301	21,158	21,811	23,649	25,496	27,302	29,086	30,865	0.0%	0.8%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		CORELLA	7,699	8,479	9,479	9,794	10,620	11,449	12,260	13,061	13,860	1.9%	2.3%	0.7%	1.6%	1.5%	1.4%	1.3%	1.2%
		CORTES	15,294	16,954	18,344	18,934	20,530	22,133	23,701	25,250	26,795	2.1%	1.6%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		DAGOHOY	18,868	19,158	19,874	20,484	22,211	23,946	25,642	27,317	28,988	0.3%	0.7%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		DANAO	17,952	17,890	20,245	20,925	22,690	24,462	26,195	27,906	29,613	-0.1%	2.5%	0.7%	1.6%	1.5%	1.4%	1.3%	1.2%
		DAUIS	39,448	45,663	52,492	54,281	58,858	63,455	67,949	72,388	76,816	3.0%	2.8%	0.7%	1.6%	1.5%	1.4%	1.3%	1.2%
		DIMIAO	15,166	14,364	14,889	15,345	16,640	17,940	19,210	20,465	21,717	-1.1%	0.7%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		DUERO	17,580	17,876	18,861	19,451	21,092	22,740	24,350	25,941	27,527	0.3%	1.1%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		GARCIA HERNANDEZ	23,038	24,194	24,430	25,156	27,277	29,408	31,491	33,548	35,601	1.0%	0.2%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		GUINDULMAN	31,789	32,408	34,104	35,168	38,133	41,111	44,023	46,899	49,769	0.4%	1.0%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		INABANGA	43,291	45,880	48,534	50,056	54,277	58,517	62,661	66,755	70,839	1.2%	1.1%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		JAGNA	32,566	33,892	35,832	36,955	40,071	43,201	46,261	49,283	52,298	0.8%	1.1%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL VISAYAS	Bohol	GETAFE	27,788	30,955	33,422	34,493	37,402	40,323	43,179	46,000	48,815	2.2%	1.5%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		LILA	11,985	12,257	12,240	12,598	13,661	14,728	15,772	16,803	17,831	0.4%	0.0%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		LOAY	16,261	16,691	17,855	18,422	19,976	21,536	23,061	24,567	26,070	0.5%	1.4%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		LOBOC	16,312	15,993	17,418	17,981	19,497	21,020	22,509	23,980	25,447	-0.4%	1.7%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		LOON	42,800	43,034	44,224	45,567	49,409	53,268	57,041	60,768	64,485	0.1%	0.5%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		MABINI	28,174	27,171	28,701	29,600	32,096	34,603	37,055	39,475	41,890	-0.7%	1.1%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		MARIBOJOC	20,491	20,688	22,178	22,883	24,813	26,750	28,645	30,516	32,383	0.2%	1.4%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		PANGLAO	28,603	33,553	39,839	41,238	44,715	48,208	51,622	54,995	58,360	3.2%	3.5%	0.7%	1.6%	1.5%	1.4%	1.3%	1.2%
		PILAR	26,887	27,256	28,693	29,587	32,082	34,589	37,038	39,458	41,872	0.3%	1.0%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		PRES. CARLOS P. GARCIA (PITOGO)	23,287	23,356	23,625	24,328	26,380	28,440	30,455	32,445	34,430	0.1%	0.2%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		SAGBAYAN (BORJA)	20,091	22,339	24,335	25,122	27,240	29,368	31,448	33,503	35,553	2.1%	1.7%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		SAN ISIDRO	9,125	8,744	9,909	10,242	11,106	11,974	12,821	13,659	14,494	-0.8%	2.5%	0.7%	1.6%	1.5%	1.4%	1.3%	1.2%
		SAN MIGUEL	23,574	24,135	25,356	26,145	28,350	30,564	32,729	34,868	37,002	0.5%	1.0%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		SEVILLA	10,443	10,661	11,376	11,736	12,726	13,721	14,692	15,652	16,610	0.4%	1.3%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		SIERRA BULLONES	24,698	24,745	26,095	26,910	29,178	31,458	33,686	35,887	38,083	0.0%	1.1%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		SIKATUNA	6,380	6,726	6,906	7,114	7,714	8,316	8,906	9,487	10,067	1.1%	0.5%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		TAGBILARAN CITY (Capital)	96,792	105,051	104,976	108,057	117,168	126,320	135,267	144,105	152,921	1.7%	0.0%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		TALIBON	61,373	66,969	71,272	73,521	79,720	85,947	92,035	98,048	104,047	1.8%	1.3%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		TRINIDAD	28,828	31,956	35,119	36,264	39,323	42,394	45,395	48,360	51,319	2.1%	1.9%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		TUBIGON	44,902	45,893	47,886	49,364	53,526	57,707	61,793	65,830	69,857	0.4%	0.9%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		UBAY	68,578	73,712	81,799	84,494	91,618	98,775	105,769	112,682	119,575	1.5%	2.1%	0.7%	1.6%	1.5%	1.4%	1.3%	1.2%
		VALENCIA	27,586	27,126	28,392	29,270	31,737	34,216	36,638	39,033	41,419	-0.3%	0.9%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		BIEN UNIDO	25,796	27,115	26,666	27,432	29,744	32,067	34,338	36,582	38,818	1.0%	-0.3%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%
		Sub-total	1,255,128	1,313,560	1,394,329	1,438,218	1,559,490	1,681,300	1,800,377	1,918,009	2,035,348	0.9%	1.2%	0.6%	1.6%	1.5%	1.4%	1.3%	1.2%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL VISAYAS	Cebu	ALCANTARA	13,556	15,160	16,910	18,145	19,138	19,939	20,527	20,910	21,107	2.3%	2.2%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		ALCOY	14,757	16,979	19,186	20,595	21,723	22,631	23,299	23,734	23,958	2.8%	2.5%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		ALEGRIA	22,072	23,300	25,620	27,479	28,984	30,197	31,087	31,668	31,966	1.1%	1.9%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		ALOGUINSAN	27,650	32,100	34,466	36,938	38,961	40,591	41,789	42,570	42,971	3.0%	1.4%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		ARGAO	69,503	72,366	78,187	83,811	88,401	92,100	94,816	96,588	97,499	0.8%	1.6%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		ASTURIAS	44,732	47,857	55,397	59,511	62,770	65,397	67,326	68,585	69,231	1.4%	3.0%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		BADIAN	37,699	37,912	43,735	46,978	49,550	51,624	53,146	54,140	54,651	0.1%	2.9%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		BALAMBAN	71,237	87,177	95,136	102,012	107,599	112,101	115,407	117,565	118,674	4.1%	1.8%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		BANTAYAN	74,785	79,084	86,247	92,479	97,544	101,625	104,623	106,578	107,584	1.1%	1.7%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		BARILI	65,524	73,862	80,715	86,553	91,293	95,113	97,918	99,748	100,689	2.4%	1.8%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		CITY OF BOGO	69,911	78,120	88,867	95,415	100,640	104,851	107,944	109,961	110,998	2.2%	2.6%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		BOLJOON	15,027	16,344	17,525	18,781	19,809	20,638	21,247	21,645	21,848	1.7%	1.4%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		BORBON	31,598	35,526	38,187	40,927	43,168	44,974	46,301	47,167	47,612	2.4%	1.5%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		CITY OF CARCAR	107,323	119,664	136,453	146,518	154,541	161,007	165,756	168,855	170,447	2.2%	2.7%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		CARMEN	44,648	51,325	57,897	62,148	65,551	68,293	70,308	71,623	72,298	2.8%	2.4%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		CATMON	28,320	30,471	33,745	36,201	38,183	39,781	40,954	41,719	42,113	1.5%	2.1%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		COMPOSTELA	42,574	47,898	55,874	60,037	63,324	65,974	67,920	69,190	69,842	2.4%	3.1%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		CONSOLACION	106,649	131,528	148,012	158,865	167,564	174,575	179,725	183,085	184,812	4.3%	2.4%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		CORDOVA	50,353	59,712	70,595	75,884	80,040	83,389	85,849	87,454	88,279	3.5%	3.4%	1.5%	1.1%	0.8%	0.6%	0.4%	0.2%
		DAANBANTAYAN	74,897	84,430	93,502	100,308	105,800	110,227	113,478	115,600	116,690	2.4%	2.1%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		DALAGUETE	63,239	67,497	74,596	80,020	84,402	87,933	90,527	92,219	93,089	1.3%	2.0%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		DANAO CITY	119,252	136,471	156,321	167,874	177,067	184,476	189,918	193,468	195,292	2.7%	2.8%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		DUMANJUG	46,754	51,210	57,823	62,069	65,468	68,208	70,219	71,532	72,206	1.8%	2.5%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		GINATILAN	15,327	15,919	16,906	18,112	19,104	19,904	20,491	20,874	21,071	0.8%	1.2%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		LILOAN	100,500	118,753	153,197	165,083	174,122	181,408	186,759	190,250	192,044	3.4%	5.2%	1.5%	1.1%	0.8%	0.6%	0.4%	0.2%
		MADRIDEJOS	34,905	36,429	42,039	45,156	47,629	49,622	51,086	52,040	52,531	0.9%	2.9%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		MALABUYOC	18,426	19,373	19,770	21,152	22,311	23,244	23,929	24,377	24,607	1.0%	0.4%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		MEDELLIN	50,047	55,332	59,605	63,887	67,385	70,205	72,275	73,626	74,321	2.0%	1.5%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		MINGLANILLA	113,178	132,135	151,002	162,151	171,030	178,186	183,442	186,872	188,634	3.1%	2.7%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL VISAYAS	Cebu	MOALBOAL	27,676	31,130	36,930	39,702	41,876	43,628	44,914	45,754	46,186	2.4%	3.5%	1.5%	1.1%	0.8%	0.6%	0.4%	0.2%
		CITY OF NAGA	101,571	115,750	133,184	143,047	150,880	157,193	161,829	164,854	166,409	2.6%	2.8%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		OSLOB	26,116	27,893	29,264	31,339	33,055	34,438	35,454	36,116	36,457	1.3%	1.0%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		PILAR	11,564	11,308	12,506	13,415	14,150	14,743	15,177	15,461	15,607	-0.4%	2.0%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		PINAMUNGAHAN	57,997	65,955	75,131	80,670	85,087	88,647	91,262	92,968	93,844	2.6%	2.6%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		PORO	23,498	25,212	26,232	28,085	29,622	30,862	31,772	32,366	32,672	1.4%	0.8%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		RONDA	18,582	20,360	21,005	22,482	23,713	24,706	25,435	25,910	26,155	1.8%	0.6%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		SAMBOAN	18,613	20,884	20,373	21,762	22,954	23,914	24,619	25,079	25,315	2.3%	-0.5%	1.3%	1.1%	0.8%	0.6%	0.4%	0.2%
		SAN FERNANDO	60,970	66,280	72,224	77,441	81,682	85,100	87,610	89,247	90,089	1.7%	1.7%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		SAN FRANCISCO	47,357	55,180	59,236	63,483	66,959	69,761	71,818	73,161	73,851	3.1%	1.4%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		SAN REMIGIO	51,394	57,557	65,744	70,597	74,463	77,578	79,867	81,360	82,127	2.3%	2.7%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		SANTA FE	27,270	28,603	34,471	37,075	39,105	40,741	41,943	42,727	43,130	1.0%	3.8%	1.5%	1.1%	0.8%	0.6%	0.4%	0.2%
		SANTANDER	16,105	17,857	18,527	19,833	20,920	21,795	22,438	22,857	23,073	2.1%	0.7%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		SIBONGA	43,641	48,186	53,424	57,315	60,454	62,983	64,841	66,053	66,676	2.0%	2.1%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		SOGOD	30,626	35,108	39,447	42,337	44,655	46,523	47,896	48,791	49,251	2.8%	2.4%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		TABOGON	33,024	39,013	41,432	44,387	46,818	48,777	50,216	51,154	51,637	3.4%	1.2%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		TABUELAN	22,292	25,630	28,907	31,029	32,728	34,098	35,104	35,760	36,097	2.8%	2.4%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		CITY OF TALISAY	200,772	227,645	263,048	282,565	298,039	310,509	319,667	325,643	328,714	2.5%	2.9%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		TOLEDO CITY	157,078	170,335	207,314	223,037	235,251	245,095	252,324	257,041	259,466	1.6%	4.0%	1.5%	1.1%	0.8%	0.6%	0.4%	0.2%
		TUBURAN	58,914	63,866	68,167	73,042	77,043	80,267	82,635	84,179	84,973	1.6%	1.3%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		TUDELA	9,859	11,296	11,304	12,085	12,748	13,281	13,673	13,929	14,060	2.8%	0.0%	1.3%	1.1%	0.8%	0.6%	0.4%	0.2%
		CEBU CITY (Capital)	866,171	922,611	964,169	1,032,397	1,088,933	1,134,496	1,167,960	1,189,792	1,201,012	1.3%	0.9%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%
		LAPU-LAPU CITY (OPON)	350,467	408,112	497,604	535,368	564,687	588,315	605,668	616,989	622,808	3.1%	4.0%	1.5%	1.1%	0.8%	0.6%	0.4%	0.2%
		MANDAUE CITY	331,320	362,654	364,116	389,347	410,669	427,853	440,472	448,707	452,938	1.8%	0.1%	1.3%	1.1%	0.8%	0.6%	0.4%	0.2%
		Sub-total	4,167,320	4,632,359	5,151,274	5,526,934	5,829,595	6,073,515	6,252,664	6,369,545	6,429,612	2.1%	2.1%	1.4%	1.1%	0.8%	0.6%	0.4%	0.2%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL VISAYAS	Negros Oriental	AMLAN (AYUQUITAN)	22,206	23,624	25,513	26,298	28,167	29,961	31,597	33,181	34,839	1.2%	1.6%	0.6%	1.4%	1.2%	1.1%	1.0%	1.0%
		AYUNGON	46,146	46,303	47,102	48,454	51,898	55,203	58,216	61,135	64,190	0.1%	0.3%	0.6%	1.4%	1.2%	1.1%	1.0%	1.0%
		BACONG	32,286	36,527	41,207	42,533	45,556	48,456	51,101	53,664	56,345	2.5%	2.4%	0.6%	1.4%	1.2%	1.1%	1.0%	1.0%
		BAIS CITY	74,722	76,291	84,317	86,976	93,158	99,088	104,498	109,738	115,222	0.4%	2.0%	0.6%	1.4%	1.2%	1.1%	1.0%	1.0%
		BASAY	24,913	26,566	28,531	29,404	31,494	33,499	35,328	37,100	38,954	1.3%	1.4%	0.6%	1.4%	1.2%	1.1%	1.0%	1.0%
		CITY OF BAYAWAN (TULONG)	114,074	117,900	122,747	126,371	135,353	143,969	151,830	159,443	167,411	0.7%	0.8%	0.6%	1.4%	1.2%	1.1%	1.0%	1.0%
		BINDOY (PAYABON)	39,416	39,819	40,308	41,458	44,405	47,232	49,811	52,309	54,923	0.2%	0.2%	0.6%	1.4%	1.2%	1.1%	1.0%	1.0%
		CANLAON CITY	50,627	54,509	58,822	60,629	64,939	69,073	72,845	76,497	80,320	1.5%	1.5%	0.6%	1.4%	1.2%	1.1%	1.0%	1.0%
		DAUIN	25,239	27,786	30,018	30,941	33,140	35,249	37,174	39,038	40,988	1.9%	1.6%	0.6%	1.4%	1.2%	1.1%	1.0%	1.0%
		DUMAGUETE CITY (Capital)	120,883	131,377	134,103	137,970	147,776	157,184	165,765	174,077	182,777	1.7%	0.4%	0.6%	1.4%	1.2%	1.1%	1.0%	1.0%
		CITY OF GUIHULNGAN	93,675	95,969	102,656	105,781	113,300	120,512	127,092	133,465	140,134	0.5%	1.4%	0.6%	1.4%	1.2%	1.1%	1.0%	1.0%
		JIMALALUD	29,044	30,945	32,256	33,209	35,570	37,834	39,900	41,900	43,994	1.3%	0.8%	0.6%	1.4%	1.2%	1.1%	1.0%	1.0%
		LA LIBERTAD	38,904	38,602	41,089	42,333	45,343	48,229	50,862	53,412	56,081	-0.2%	1.3%	0.6%	1.4%	1.2%	1.1%	1.0%	1.0%
		MABINAY	74,187	78,864	82,953	85,431	91,503	97,328	102,641	107,788	113,174	1.2%	1.0%	0.6%	1.4%	1.2%	1.1%	1.0%	1.0%
		MANJUYOD	41,107	42,332	44,799	46,147	49,427	52,574	55,444	58,224	61,134	0.6%	1.1%	0.6%	1.4%	1.2%	1.1%	1.0%	1.0%
		PAMPLONA	34,906	37,596	39,805	41,003	43,917	46,713	49,263	51,734	54,319	1.5%	1.1%	0.6%	1.4%	1.2%	1.1%	1.0%	1.0%
		SAN JOSE	19,098	20,413	21,956	22,628	24,236	25,779	27,187	28,550	29,976	1.3%	1.5%	0.6%	1.4%	1.2%	1.1%	1.0%	1.0%
		SANTA CATALINA	73,306	75,756	77,501	79,741	85,410	90,846	95,806	100,611	105,639	0.7%	0.5%	0.6%	1.4%	1.2%	1.1%	1.0%	1.0%
		SIATON	73,285	77,696	83,082	85,611	91,697	97,533	102,858	108,015	113,413	1.2%	1.3%	0.6%	1.4%	1.2%	1.1%	1.0%	1.0%
		SIBULAN	51,519	59,455	64,343	66,328	71,042	75,564	79,690	83,686	87,868	2.9%	1.6%	0.6%	1.4%	1.2%	1.1%	1.0%	1.0%
		CITY OF TANJAY	79,098	80,532	82,642	85,040	91,085	96,883	102,173	107,296	112,658	0.4%	0.5%	0.6%	1.4%	1.2%	1.1%	1.0%	1.0%
		TAYASAN	34,609	35,470	38,159	39,327	42,123	44,804	47,250	49,619	52,099	0.5%	1.5%	0.6%	1.4%	1.2%	1.1%	1.0%	1.0%
		VALENCIA (LUZURRIAGA)	31,477	34,852	38,733	39,961	42,801	45,526	48,012	50,419	52,939	2.1%	2.1%	0.6%	1.4%	1.2%	1.1%	1.0%	1.0%
		VALLEHERMOSO	36,943	38,259	40,779	42,016	45,002	47,868	50,481	53,012	55,661	0.7%	1.3%	0.6%	1.4%	1.2%	1.1%	1.0%	1.0%
		ZAMBOANGUITA	24,996	27,552	29,569	30,473	32,639	34,717	36,612	38,448	40,369	2.0%	1.4%	0.6%	1.4%	1.2%	1.1%	1.0%	1.0%
		Sub-total	1,286,666	1,354,995	1,432,990	1,476,065	1,580,984	1,681,625	1,773,436	1,862,360	1,955,428	1.0%	1.1%	0.6%	1.4%	1.2%	1.1%	1.0%	1.0%
	Siquijor	ENRIQUE VILLANUEVA	5,972	6,104	6,790	7,045	7,884	8,808	9,830	10,928	12,082	0.4%	2.2%	0.7%	2.3%	2.2%	2.2%	2.1%	2.0%
		LARENA	12,931	13,847	14,454	14,966	16,748	18,712	20,882	23,216	25,668	1.4%	0.9%	0.7%	2.3%	2.2%	2.2%	2.1%	2.0%
		LAZI	20,024	20,490	22,488	23,324	26,101	29,161	32,543	36,178	40,000	0.5%	1.9%	0.7%	2.3%	2.2%	2.2%	2.1%	2.0%
		MARIA	13,383	13,828	14,385	14,895	16,668	18,622	20,782	23,105	25,545	0.7%	0.8%	0.7%	2.3%	2.2%	2.2%	2.1%	2.0%
		SAN JUAN	13,525	14,854	16,363	16,974	18,995	21,222	23,683	26,329	29,111	1.9%	2.0%	0.7%	2.3%	2.2%	2.2%	2.1%	2.0%
		SIQUIJOR (Capital)	25,231	26,861	28,915	29,972	33,541	37,473	41,818	46,489	51,401	1.3%	1.5%	0.7%	2.3%	2.2%	2.2%	2.1%	2.0%
		Sub-total	91,066	95,984	103,395	107,176	119,938	133,997	149,538	166,245	183,807	1.1%	1.5%	0.7%	2.3%	2.2%	2.2%	2.1%	2.0%
		Total	6,800,180	7,396,898	8,081,988	8,548,393	9,090,007	9,570,437	9,976,015	10,316,159	10,604,195	1.7%	1.8%	1.1%	1.2%	1.0%	0.8%	0.7%	0.6%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
EASTERN VISAYAS	Biliran	ALMERIA	16,495	16,951	17,954	18,593	21,261	24,215	27,449	30,831	34,323	0.5%	1.2%	0.7%	2.7%	2.6%	2.5%	2.4%	2.2%
		BILIRAN	16,183	16,882	17,662	18,284	20,907	23,812	26,992	30,317	33,750	0.8%	0.9%	0.7%	2.7%	2.6%	2.5%	2.4%	2.2%
		CABUCGAYAN	19,621	20,788	21,542	22,293	25,492	29,033	32,910	36,965	41,152	1.2%	0.7%	0.7%	2.7%	2.6%	2.5%	2.4%	2.2%
		CAIBIRAN	21,473	22,524	24,167	25,039	28,632	32,610	36,965	41,519	46,221	1.0%	1.4%	0.7%	2.7%	2.6%	2.5%	2.4%	2.2%
		CULABA	12,252	12,325	12,972	13,432	15,360	17,493	19,829	22,273	24,795	0.1%	1.0%	0.7%	2.7%	2.6%	2.5%	2.4%	2.2%
		KAWAYAN	20,238	20,291	20,455	21,149	24,183	27,543	31,222	35,068	39,040	0.1%	0.2%	0.7%	2.7%	2.6%	2.5%	2.4%	2.2%
		MARIPIPI	6,699	7,159	6,373	6,558	7,499	8,541	9,682	10,875	12,107	1.3%	-2.3%	0.6%	2.7%	2.6%	2.5%	2.4%	2.2%
		NAVAL (Capital)	48,799	54,692	58,187	60,270	68,917	78,491	88,976	99,937	111,253	2.3%	1.2%	0.7%	2.7%	2.6%	2.5%	2.4%	2.2%
		Sub-total	161,760	171,612	179,312	185,616	212,252	241,738	274,025	307,786	342,640	1.2%	0.9%	0.7%	2.7%	2.6%	2.5%	2.4%	2.2%
	Eastern Samar	ARTECHE	15,164	16,026	16,360	17,684	19,267	20,782	22,183	23,485	24,654	1.1%	0.4%	1.6%	1.7%	1.5%	1.3%	1.1%	1.0%
		BALANGIGA	12,756	14,085	14,341	15,499	16,887	18,215	19,443	20,585	21,609	2.0%	0.4%	1.6%	1.7%	1.5%	1.3%	1.1%	1.0%
		BALANGKAYAN	9,046	10,125	10,185	11,003	11,988	12,930	13,802	14,613	15,340	2.3%	0.1%	1.6%	1.7%	1.5%	1.3%	1.1%	1.0%
		CITY OF BORONGAN (Capital)	64,457	69,297	71,961	77,828	84,795	91,463	97,629	103,362	108,504	1.5%	0.8%	1.6%	1.7%	1.5%	1.3%	1.1%	1.0%
		CAN-AVID	19,785	21,015	21,682	23,444	25,543	27,551	29,410	31,136	32,685	1.2%	0.6%	1.6%	1.7%	1.5%	1.3%	1.1%	1.0%
		DOLORES	37,912	42,866	44,626	48,269	52,590	56,725	60,549	64,105	67,294	2.5%	0.8%	1.6%	1.7%	1.5%	1.3%	1.1%	1.0%
		GENERAL MACARTHUR	12,214	14,550	14,411	15,561	16,953	18,286	19,519	20,666	21,694	3.6%	-0.2%	1.5%	1.7%	1.5%	1.3%	1.1%	1.0%
		GIPORLOS	12,040	13,308	13,117	14,160	15,428	16,641	17,763	18,806	19,742	2.0%	-0.3%	1.5%	1.7%	1.5%	1.3%	1.1%	1.0%
		GUIUAN	47,037	52,991	53,361	57,650	62,811	67,750	72,318	76,564	80,374	2.4%	0.1%	1.6%	1.7%	1.5%	1.3%	1.1%	1.0%
		HERNANI	8,070	8,573	8,531	9,213	10,038	10,827	11,557	12,236	12,844	1.2%	-0.1%	1.6%	1.7%	1.5%	1.3%	1.1%	1.0%
		JIPAPAD	7,397	7,885	8,439	9,136	9,954	10,736	11,460	12,133	12,736	1.3%	1.4%	1.6%	1.7%	1.5%	1.3%	1.1%	1.0%
		LAWAAN	11,612	12,742	13,003	14,054	15,313	16,517	17,630	18,666	19,594	1.9%	0.4%	1.6%	1.7%	1.5%	1.3%	1.1%	1.0%
		LLORENTE	19,101	20,149	21,459	23,228	25,308	27,297	29,138	30,849	32,384	1.1%	1.3%	1.6%	1.7%	1.5%	1.3%	1.1%	1.0%
		MASLOG	4,781	5,407	5,463	5,903	6,432	6,937	7,405	7,840	8,230	2.5%	0.2%	1.6%	1.7%	1.5%	1.3%	1.1%	1.0%
		MAYDOLONG	13,614	14,743	15,314	16,562	18,045	19,463	20,776	21,995	23,090	1.6%	0.8%	1.6%	1.7%	1.5%	1.3%	1.1%	1.0%
		MERCEDES	5,369	6,070	6,112	6,603	7,194	7,759	8,283	8,769	9,205	2.5%	0.1%	1.6%	1.7%	1.5%	1.3%	1.1%	1.0%
		ORAS	34,760	36,540	37,451	40,487	44,111	47,579	50,788	53,770	56,445	1.0%	0.5%	1.6%	1.7%	1.5%	1.3%	1.1%	1.0%
		QUINAPONDAN	13,841	14,779	14,507	15,658	17,060	18,402	19,642	20,795	21,830	1.3%	-0.4%	1.5%	1.7%	1.5%	1.3%	1.1%	1.0%
		SALCEDO	19,970	22,532	22,136	23,895	26,034	28,080	29,974	31,734	33,313	2.4%	-0.4%	1.5%	1.7%	1.5%	1.3%	1.1%	1.0%
		SAN JULIAN	13,748	14,498	14,800	15,998	17,430	18,800	20,068	21,246	22,303	1.1%	0.4%	1.6%	1.7%	1.5%	1.3%	1.1%	1.0%
		SAN POLICARPO	13,836	14,687	15,365	16,622	18,110	19,534	20,852	22,076	23,174	1.2%	0.9%	1.6%	1.7%	1.5%	1.3%	1.1%	1.0%
		SULAT	15,184	15,377	15,758	17,036	18,561	20,021	21,372	22,627	23,753	0.3%	0.5%	1.6%	1.7%	1.5%	1.3%	1.1%	1.0%
		TAFT	17,183	18,915	18,786	20,286	22,102	23,841	25,449	26,942	28,282	1.9%	-0.1%	1.5%	1.7%	1.5%	1.3%	1.1%	1.0%
		Sub-total	428,877	467,160	477,168	515,782	561,955	606,141	647,012	685,002	719,081	1.7%	0.4%	1.6%	1.7%	1.5%	1.3%	1.1%	1.0%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
EASTERN VISAYAS	Leyte	ABUYOG	57,146	59,571	61,216	66,296	71,107	75,540	79,426	82,749	85,468	0.8%	0.5%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		ALANGALANG	46,411	55,235	57,185	61,946	66,441	70,583	74,215	77,319	79,859	3.5%	0.7%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		ALBUERA	40,553	46,332	47,151	51,046	54,751	58,164	61,156	63,714	65,808	2.7%	0.4%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		BABATNGON	25,575	27,797	28,823	31,225	33,490	35,578	37,408	38,973	40,253	1.7%	0.7%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		BARUGO	30,092	32,745	34,497	37,391	40,104	42,605	44,796	46,670	48,204	1.7%	1.0%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		BATO	35,610	38,356	38,505	41,666	44,690	47,476	49,918	52,006	53,714	1.5%	0.1%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		CITY OF BAYBAY	102,841	109,432	111,848	121,107	129,895	137,993	145,092	151,160	156,128	1.3%	0.4%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		BURAUEN	48,853	52,732	52,511	56,806	60,929	64,727	68,057	70,904	73,233	1.5%	-0.1%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		CALUBIAN	29,619	31,228	31,646	34,256	36,741	39,032	41,039	42,756	44,162	1.1%	0.3%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		CAPOOCAN	29,834	33,617	33,721	36,489	39,137	41,577	43,716	45,545	47,042	2.4%	0.1%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		CARIGARA	47,444	51,345	54,656	59,261	63,561	67,524	70,997	73,967	76,398	1.6%	1.3%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		DAGAMI	31,490	35,147	36,178	39,182	42,025	44,645	46,942	48,905	50,513	2.2%	0.6%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		DULAG	41,757	47,300	48,992	53,071	56,922	60,471	63,582	66,241	68,418	2.5%	0.7%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		HILONGOS	56,803	63,431	64,514	69,843	74,911	79,581	83,675	87,176	90,040	2.2%	0.3%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		HINDANG	20,179	20,924	20,849	22,554	24,191	25,699	27,020	28,150	29,076	0.7%	-0.1%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		INOPACAN	19,904	20,550	21,389	23,173	24,855	26,405	27,764	28,924	29,875	0.6%	0.8%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		ISABEL	43,593	46,915	46,781	50,610	54,282	57,666	60,633	63,169	65,245	1.5%	-0.1%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		JARO	39,577	43,199	43,758	47,366	50,803	53,970	56,747	59,121	61,063	1.8%	0.3%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		JAVIER (BUGHO)	23,878	25,379	26,658	28,892	30,988	32,920	34,614	36,062	37,246	1.2%	1.0%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		JULITA	13,307	15,114	15,598	16,895	18,121	19,251	20,241	21,088	21,780	2.6%	0.6%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		KANANGA	48,027	56,575	59,696	64,708	69,404	73,731	77,524	80,767	83,421	3.3%	1.1%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		LA PAZ	19,133	19,998	19,174	20,714	22,217	23,603	24,817	25,855	26,704	0.9%	-0.8%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		LEYTE	37,505	40,639	40,397	43,700	46,871	49,793	52,355	54,545	56,337	1.6%	-0.1%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
EASTERN VISAYAS	Leyte	MACARTHUR	18,724	21,211	21,578	23,361	25,056	26,619	27,988	29,159	30,117	2.5%	0.3%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		MAHAPLAG	26,599	27,823	27,865	30,150	32,337	34,353	36,121	37,631	38,867	0.9%	0.0%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		MATAG-OB	17,089	18,373	17,522	18,925	20,299	21,564	22,674	23,623	24,399	1.5%	-0.9%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		MATALOM	31,097	33,121	32,586	35,236	37,793	40,150	42,215	43,981	45,426	1.3%	-0.3%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		MAYORGA	14,694	17,161	18,071	19,587	21,008	22,317	23,466	24,448	25,251	3.2%	1.0%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		MERIDA	27,224	29,863	31,574	34,227	36,711	39,000	41,006	42,722	44,125	1.9%	1.1%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		ORMOC CITY	191,200	215,031	230,998	250,536	268,717	285,470	300,156	312,710	322,986	2.4%	1.4%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		PALO	62,727	70,052	76,213	82,693	88,694	94,224	99,071	103,215	106,607	2.2%	1.7%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		PALOMPON	54,163	58,108	58,313	63,100	67,679	71,899	75,598	78,760	81,348	1.4%	0.1%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		PASTRANA	16,649	18,002	19,359	20,998	22,522	23,926	25,157	26,209	27,070	1.6%	1.5%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		SAN ISIDRO	28,554	31,641	30,722	33,205	35,615	37,835	39,781	41,445	42,806	2.1%	-0.6%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		SAN MIGUEL	17,561	19,420	19,753	21,385	22,937	24,367	25,621	26,692	27,569	2.0%	0.3%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		SANTA FE	17,427	20,439	22,102	23,976	25,715	27,319	28,724	29,925	30,909	3.2%	1.6%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		TABANGO	31,932	34,195	33,868	36,632	39,290	41,740	43,887	45,722	47,225	1.4%	-0.2%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		TABONTABON	9,838	11,204	11,902	12,904	13,840	14,702	15,458	16,105	16,634	2.6%	1.2%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		TANAUAN	50,119	55,021	57,455	62,256	66,774	70,937	74,586	77,706	80,259	1.9%	0.9%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		TOLOSA	17,921	20,978	20,708	22,396	24,022	25,519	26,832	27,954	28,872	3.2%	-0.3%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		TUNGA	6,516	7,584	7,656	8,287	8,889	9,443	9,929	10,344	10,685	3.1%	0.2%	1.6%	1.4%	1.2%	1.0%	0.8%	0.7%
		VILLABA	38,819	41,891	42,859	46,409	49,776	52,880	55,601	57,926	59,830	1.5%	0.5%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		TACLOBAN CITY (Capital)	221,174	242,089	251,881	272,899	292,701	310,948	326,946	340,623	351,816	1.8%	0.8%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%
		Sub-total	1,789,158	1,966,768	2,028,728	2,197,357	2,356,812	2,503,744	2,632,553	2,742,667	2,832,789	1.9%	0.6%	1.6%	1.4%	1.2%	1.0%	0.8%	0.6%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
EASTERN VISAYAS	Northern Samar	ALLEN	23,738	25,469	25,228	26,310	29,041	31,663	34,179	36,541	38,737	1.4%	-0.2%	0.8%	2.0%	1.7%	1.5%	1.3%	1.2%
		BIRI	10,987	11,767	11,274	11,744	12,963	14,133	15,255	16,309	17,290	1.4%	-0.9%	0.8%	2.0%	1.7%	1.5%	1.3%	1.2%
		BOBON	20,956	23,668	25,964	27,170	29,990	32,696	35,294	37,734	40,002	2.5%	1.9%	0.9%	2.0%	1.7%	1.5%	1.3%	1.2%
		CAPUL	12,659	12,679	12,323	12,843	14,176	15,456	16,684	17,837	18,909	0.0%	-0.6%	0.8%	2.0%	1.7%	1.5%	1.3%	1.2%
		CATARMAN (Capital)	84,833	94,037	97,879	102,249	112,863	123,050	132,827	142,004	150,542	2.1%	0.8%	0.9%	2.0%	1.7%	1.5%	1.3%	1.2%
		CATUBIG	31,723	33,025	32,174	33,533	37,014	40,355	43,561	46,571	49,371	0.8%	-0.5%	0.8%	2.0%	1.7%	1.5%	1.3%	1.2%
		GAMAY	22,425	23,511	23,367	24,371	26,901	29,328	31,659	33,846	35,881	1.0%	-0.1%	0.8%	2.0%	1.7%	1.5%	1.3%	1.2%
		LAOANG	58,037	61,359	60,607	63,199	69,759	76,056	82,099	87,772	93,050	1.1%	-0.2%	0.8%	2.0%	1.7%	1.5%	1.3%	1.2%
		LAPINIG	11,744	13,020	11,844	12,313	13,591	14,818	15,996	17,101	18,128	2.1%	-1.9%	0.8%	2.0%	1.7%	1.5%	1.3%	1.2%
		LAS NAVAS	36,539	37,947	36,621	38,154	42,114	45,916	49,564	52,989	56,175	0.8%	-0.7%	0.8%	2.0%	1.7%	1.5%	1.3%	1.2%
		LAVEZARES	27,464	28,770	29,390	30,683	33,869	36,925	39,859	42,613	45,175	0.9%	0.4%	0.9%	2.0%	1.7%	1.5%	1.3%	1.2%
		MAPANAS	12,423	14,025	14,234	14,856	16,398	17,879	19,300	20,634	21,874	2.5%	0.3%	0.9%	2.0%	1.7%	1.5%	1.3%	1.2%
		MONDRAGON	35,318	38,726	41,415	43,303	47,798	52,113	56,253	60,140	63,756	1.9%	1.4%	0.9%	2.0%	1.7%	1.5%	1.3%	1.2%
		PALAPAG	33,453	34,286	34,034	35,495	39,180	42,716	46,110	49,296	52,261	0.5%	-0.1%	0.8%	2.0%	1.7%	1.5%	1.3%	1.2%
		PAMBUJAN	31,057	33,062	35,532	37,158	41,015	44,717	48,271	51,606	54,709	1.3%	1.5%	0.9%	2.0%	1.7%	1.5%	1.3%	1.2%
		ROSARIO	10,214	10,520	10,949	11,438	12,626	13,765	14,859	15,886	16,841	0.6%	0.8%	0.9%	2.0%	1.7%	1.5%	1.3%	1.2%
		SAN ANTONIO	8,877	9,058	8,882	9,260	10,221	11,143	12,029	12,860	13,633	0.4%	-0.4%	0.8%	2.0%	1.7%	1.5%	1.3%	1.2%
		SAN ISIDRO	24,952	26,650	27,867	29,116	32,139	35,039	37,823	40,436	42,868	1.3%	0.9%	0.9%	2.0%	1.7%	1.5%	1.3%	1.2%
		SAN JOSE	16,079	17,561	17,641	18,406	20,317	22,150	23,911	25,563	27,100	1.8%	0.1%	0.9%	2.0%	1.7%	1.5%	1.3%	1.2%
		SAN ROQUE	26,323	30,580	29,882	31,148	34,381	37,484	40,462	43,258	45,859	3.0%	-0.5%	0.8%	2.0%	1.7%	1.5%	1.3%	1.2%
		SAN VICENTE	7,447	7,856	6,928	7,193	7,940	8,657	9,345	9,991	10,591	1.1%	-2.5%	0.8%	2.0%	1.7%	1.5%	1.3%	1.2%
		SILVINO LOBOS	14,303	15,299	15,100	15,745	17,379	18,949	20,454	21,868	23,182	1.4%	-0.3%	0.8%	2.0%	1.7%	1.5%	1.3%	1.2%
		VICTORIA	13,920	14,817	15,361	16,044	17,709	19,308	20,842	22,281	23,622	1.3%	0.7%	0.9%	2.0%	1.7%	1.5%	1.3%	1.2%
		LOPE DE VEGA	13,542	14,687	14,690	15,324	16,913	18,440	19,905	21,279	22,559	1.6%	0.0%	0.8%	2.0%	1.7%	1.5%	1.3%	1.2%
		Sub-total	589,013	632,379	639,186	667,053	736,293	802,753	866,540	926,412	982,114	1.4%	0.2%	0.9%	2.0%	1.7%	1.5%	1.3%	1.2%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
EASTERN VISAYAS	Samar	ALMAGRO	11,024	8,942	9,273	9,656	10,557	11,423	12,233	12,988	13,672	-4.1%	0.7%	0.8%	1.8%	1.6%	1.4%	1.2%	1.0%
		BASEY	50,423	55,480	56,685	58,989	64,494	69,784	74,736	79,341	83,519	1.9%	0.4%	0.8%	1.8%	1.6%	1.4%	1.2%	1.0%
		CALBAYOG CITY	172,778	183,851	186,960	194,528	212,683	230,130	246,459	261,647	275,424	1.3%	0.3%	0.8%	1.8%	1.6%	1.4%	1.2%	1.0%
		CALBIGA	21,434	22,982	23,310	24,252	26,515	28,690	30,726	32,619	34,337	1.4%	0.3%	0.8%	1.8%	1.6%	1.4%	1.2%	1.0%
		CITY OF CATBALOGAN (Capital)	94,317	103,879	106,440	110,778	121,117	131,052	140,351	149,000	156,845	2.0%	0.5%	0.8%	1.8%	1.6%	1.4%	1.2%	1.0%
		DARAM	41,322	42,879	41,608	43,220	47,254	51,130	54,758	58,132	61,193	0.7%	-0.6%	0.8%	1.8%	1.6%	1.4%	1.2%	1.0%
		GANDARA	31,943	34,434	35,242	36,676	40,099	43,389	46,468	49,331	51,929	1.5%	0.5%	0.8%	1.8%	1.6%	1.4%	1.2%	1.0%
		HINABANGAN	12,651	13,673	13,693	14,240	15,569	16,846	18,041	19,153	20,162	1.6%	0.0%	0.8%	1.8%	1.6%	1.4%	1.2%	1.0%
		JIABONG	17,075	18,342	19,205	20,002	21,868	23,662	25,341	26,902	28,319	1.4%	0.9%	0.8%	1.8%	1.6%	1.4%	1.2%	1.0%
		MARABUT	15,115	16,962	17,842	18,585	20,320	21,987	23,547	24,998	26,314	2.3%	1.0%	0.8%	1.8%	1.6%	1.4%	1.2%	1.0%
		MATUGUINAO	6,746	7,288	7,364	7,661	8,376	9,063	9,706	10,303	10,846	1.6%	0.2%	0.8%	1.8%	1.6%	1.4%	1.2%	1.0%
		MOTIONG	14,829	15,156	15,276	15,890	17,372	18,798	20,132	21,372	22,498	0.4%	0.2%	0.8%	1.8%	1.6%	1.4%	1.2%	1.0%
		PINABACDAO	16,208	18,252	18,136	18,855	20,615	22,306	23,889	25,361	26,697	2.4%	-0.1%	0.8%	1.8%	1.6%	1.4%	1.2%	1.0%
		SAN JOSE DE BUAN	6,563	7,769	7,767	8,076	8,830	9,554	10,232	10,862	11,435	3.4%	0.0%	0.8%	1.8%	1.6%	1.4%	1.2%	1.0%
		SAN SEBASTIAN	7,708	8,057	8,704	9,075	9,922	10,736	11,498	12,207	12,849	0.9%	1.6%	0.8%	1.8%	1.6%	1.4%	1.2%	1.0%
		SANTA MARGARITA	24,850	26,348	26,816	27,902	30,506	33,008	35,351	37,529	39,505	1.2%	0.4%	0.8%	1.8%	1.6%	1.4%	1.2%	1.0%
		SANTA RITA	38,082	41,591	42,384	44,103	48,220	52,175	55,877	59,321	62,444	1.8%	0.4%	0.8%	1.8%	1.6%	1.4%	1.2%	1.0%
		SANTO NIÑO	13,504	12,863	12,519	13,005	14,219	15,386	16,478	17,494	18,415	-1.0%	-0.5%	0.8%	1.8%	1.6%	1.4%	1.2%	1.0%
		TALALORA	7,983	8,057	7,856	8,162	8,924	9,656	10,341	10,979	11,557	0.2%	-0.5%	0.8%	1.8%	1.6%	1.4%	1.2%	1.0%
		TARANGNAN	24,146	24,992	25,713	26,765	29,263	31,663	33,910	35,999	37,895	0.7%	0.6%	0.8%	1.8%	1.6%	1.4%	1.2%	1.0%
		VILLAREAL	26,221	28,230	27,394	28,456	31,112	33,664	36,054	38,275	40,291	1.5%	-0.6%	0.8%	1.8%	1.6%	1.4%	1.2%	1.0%
		PARANAS (WRIGHT)	29,327	30,557	32,374	33,731	36,880	39,905	42,737	45,370	47,759	0.8%	1.2%	0.8%	1.8%	1.6%	1.4%	1.2%	1.0%
		ZUMARRAGA	16,936	16,295	16,279	16,927	18,507	20,025	21,446	22,767	23,966	-0.8%	0.0%	0.8%	1.8%	1.6%	1.4%	1.2%	1.0%
		TAGAPUL-AN	7,828	8,473	8,805	9,169	10,024	10,846	11,616	12,332	12,981	1.6%	0.8%	0.8%	1.8%	1.6%	1.4%	1.2%	1.0%
		SAN JORGE	16,340	17,184	17,579	18,295	20,003	21,643	23,179	24,608	25,904	1.0%	0.5%	0.8%	1.8%	1.6%	1.4%	1.2%	1.0%
		PAGSANGHAN	8,024	7,945	7,959	8,278	9,050	9,793	10,488	11,136	11,721	-0.2%	0.0%	0.8%	1.8%	1.6%	1.4%	1.2%	1.0%
		Sub-total	733,377	780,481	793,183	825,275	902,297	976,316	1,045,593	1,110,025	1,168,473	1.3%	0.3%	0.8%	1.8%	1.6%	1.4%	1.2%	1.0%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
EASTERN VISAYAS	Southern Leyte	ANAHAWAN	7,942	8,211	8,429	8,907	9,513	10,042	10,489	10,824	11,009	0.7%	0.5%	1.1%	1.3%	1.1%	0.9%	0.6%	0.3%
		BONTOC	28,079	28,905	29,799	31,490	33,632	35,506	37,086	38,273	38,925	0.6%	0.6%	1.1%	1.3%	1.1%	0.9%	0.6%	0.3%
		HINUNANGAN	28,415	29,976	29,149	30,741	32,832	34,660	36,203	37,361	37,997	1.1%	-0.6%	1.1%	1.3%	1.1%	0.9%	0.6%	0.3%
		HINUNDAYAN	11,890	12,285	12,398	13,092	13,982	14,761	15,418	15,912	16,183	0.7%	0.2%	1.1%	1.3%	1.1%	0.9%	0.6%	0.3%
		LIBAGON	14,352	15,169	15,244	16,096	17,191	18,149	18,957	19,564	19,897	1.1%	0.1%	1.1%	1.3%	1.1%	0.9%	0.6%	0.3%
		LILOAN	22,817	23,981	24,800	26,211	27,993	29,553	30,868	31,855	32,398	1.0%	0.7%	1.1%	1.3%	1.1%	0.9%	0.6%	0.3%
		CITY OF MAASIN (Capital)	81,250	85,560	87,446	92,383	98,668	104,164	108,799	112,280	114,191	1.0%	0.4%	1.1%	1.3%	1.1%	0.9%	0.6%	0.3%
		MACROHON	25,386	26,244	26,580	28,072	29,982	31,652	33,061	34,119	34,700	0.7%	0.3%	1.1%	1.3%	1.1%	0.9%	0.6%	0.3%
		MALITBOG	22,009	22,923	23,256	24,563	26,233	27,695	28,927	29,853	30,361	0.8%	0.3%	1.1%	1.3%	1.1%	0.9%	0.6%	0.3%
		PADRE BURGOS	10,525	11,091	11,159	11,782	12,583	13,284	13,876	14,320	14,563	1.1%	0.1%	1.1%	1.3%	1.1%	0.9%	0.6%	0.3%
		PINTUYAN	9,261	9,826	10,202	10,783	11,516	12,158	12,698	13,105	13,328	1.2%	0.8%	1.1%	1.3%	1.1%	0.9%	0.6%	0.3%
		SAINT BERNARD	25,169	28,395	28,414	29,996	32,037	33,821	35,327	36,457	37,077	2.4%	0.0%	1.1%	1.3%	1.1%	0.9%	0.6%	0.3%
		SAN FRANCISCO	12,528	13,402	13,436	14,185	15,150	15,994	16,706	17,241	17,534	1.4%	0.1%	1.1%	1.3%	1.1%	0.9%	0.6%	0.3%
		SAN JUAN (CABALIAN)	14,073	14,858	14,912	15,744	16,815	17,751	18,541	19,135	19,460	1.1%	0.1%	1.1%	1.3%	1.1%	0.9%	0.6%	0.3%
		SAN RICARDO	10,078	10,494	10,500	11,084	11,838	12,497	13,054	13,472	13,701	0.8%	0.0%	1.1%	1.3%	1.1%	0.9%	0.6%	0.3%
		SILAGO	12,310	12,775	13,116	13,859	14,802	15,626	16,321	16,843	17,130	0.7%	0.5%	1.1%	1.3%	1.1%	0.9%	0.6%	0.3%
		SOGOD	41,411	44,986	47,552	50,295	53,716	56,709	59,233	61,128	62,169	1.7%	1.1%	1.1%	1.3%	1.1%	0.9%	0.6%	0.3%
		TOMAS OPPUS	15,807	16,608	16,990	17,950	19,172	20,240	21,141	21,817	22,188	1.0%	0.5%	1.1%	1.3%	1.1%	0.9%	0.6%	0.3%
		LIMASAWA	5,835	6,061	6,191	6,541	6,988	7,376	7,704	7,949	8,084	0.8%	0.4%	1.1%	1.3%	1.1%	0.9%	0.6%	0.3%
		Sub-total	399,137	421,750	429,573	453,773	484,643	511,638	534,407	551,507	560,892	1.1%	0.4%	1.1%	1.3%	1.1%	0.9%	0.6%	0.3%
		Total	4,101,322	4,440,150	4,547,150	4,844,856	5,254,252	5,642,330	6,000,130	6,323,399	6,605,989	1.6%	0.5%	1.3%	1.6%	1.4%	1.2%	1.1%	0.9%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
ZAMBOANGA PENINSULA	City of Isabela		97,857	112,788	130,379	143,295	153,869	164,118	172,949	181,020	189,426	2.9%	2.9%	1.9%	1.4%	1.3%	1.1%	0.9%	0.9%
	Zamboanga del Norte	DAPITAN CITY	77,441	82,418	85,202	87,546	93,632	99,169	103,951	107,768	110,404	1.3%	0.7%	0.5%	1.4%	1.2%	0.9%	0.7%	0.5%
		DIPOLOG CITY (Capital)	120,460	130,759	138,141	142,043	151,918	160,903	168,661	174,854	179,132	1.7%	1.1%	0.6%	1.4%	1.2%	0.9%	0.7%	0.5%
		KATIPUNAN	43,339	45,577	44,661	45,803	48,987	51,885	54,386	56,383	57,763	1.0%	-0.4%	0.5%	1.4%	1.2%	0.9%	0.7%	0.5%
		LA LIBERTAD	7,771	8,406	8,119	8,322	8,901	9,427	9,882	10,244	10,495	1.6%	-0.7%	0.5%	1.4%	1.2%	0.9%	0.7%	0.5%
		LABASON	40,375	41,357	43,934	45,183	48,324	51,182	53,650	55,620	56,981	0.5%	1.2%	0.6%	1.4%	1.2%	0.9%	0.7%	0.5%
		LILOY	39,015	39,812	42,213	43,410	46,428	49,173	51,544	53,437	54,744	0.4%	1.2%	0.6%	1.4%	1.2%	0.9%	0.7%	0.5%
		MANUKAN	35,589	36,526	36,887	37,872	40,505	42,900	44,968	46,619	47,760	0.5%	0.2%	0.5%	1.4%	1.2%	0.9%	0.7%	0.5%
		MUTIA	11,975	12,675	11,726	12,001	12,836	13,595	14,251	14,774	15,135	1.1%	-1.5%	0.5%	1.4%	1.2%	0.9%	0.7%	0.5%
		PIÑAN (NEW PIÑAN)	20,088	20,161	20,221	20,756	22,199	23,512	24,645	25,550	26,175	0.1%	0.1%	0.5%	1.4%	1.2%	0.9%	0.7%	0.5%
		POLANCO	37,472	39,347	42,265	43,483	46,506	49,256	51,631	53,526	54,836	1.0%	1.4%	0.6%	1.4%	1.2%	0.9%	0.7%	0.5%
		PRES. MANUEL A. ROXAS	37,611	39,323	39,198	40,226	43,022	45,566	47,763	49,516	50,728	0.9%	-0.1%	0.5%	1.4%	1.2%	0.9%	0.7%	0.5%
		RIZAL	14,111	14,021	15,052	15,485	16,562	17,542	18,387	19,063	19,529	-0.1%	1.4%	0.6%	1.4%	1.2%	0.9%	0.7%	0.5%
		SALUG	31,157	32,204	32,134	32,978	35,270	37,356	39,157	40,595	41,588	0.7%	0.0%	0.5%	1.4%	1.2%	0.9%	0.7%	0.5%
		SERGIO OSMEÑA SR.	29,453	30,220	31,942	32,845	35,128	37,206	39,000	40,432	41,421	0.5%	1.1%	0.6%	1.4%	1.2%	0.9%	0.7%	0.5%
		SIAYAN	34,989	34,966	36,236	37,236	39,824	42,180	44,214	45,837	46,959	0.0%	0.7%	0.5%	1.4%	1.2%	0.9%	0.7%	0.5%
		SIBUCO	31,982	34,620	36,049	37,050	39,625	41,969	43,992	45,607	46,723	1.6%	0.8%	0.5%	1.4%	1.2%	0.9%	0.7%	0.5%
		SIBUTAD	16,783	17,645	17,453	17,905	19,150	20,283	21,261	22,042	22,581	1.0%	-0.2%	0.5%	1.4%	1.2%	0.9%	0.7%	0.5%
		SINDANGAN	94,146	99,435	103,952	106,851	114,280	121,038	126,875	131,533	134,750	1.1%	0.9%	0.6%	1.4%	1.2%	0.9%	0.7%	0.5%
		SIOCON	41,637	46,907	48,524	49,860	53,327	56,480	59,204	61,377	62,879	2.4%	0.7%	0.5%	1.4%	1.2%	0.9%	0.7%	0.5%
		SIRAWAI	24,583	28,799	31,163	32,069	34,298	36,327	38,079	39,476	40,442	3.2%	1.6%	0.6%	1.4%	1.2%	0.9%	0.7%	0.5%
		TAMPILISAN	23,056	24,307	24,680	25,343	27,105	28,708	30,093	31,197	31,961	1.1%	0.3%	0.5%	1.4%	1.2%	0.9%	0.7%	0.5%
		JOSE DALMAN (PONOT)	27,033	27,388	28,881	29,695	31,760	33,638	35,260	36,555	37,450	0.3%	1.1%	0.6%	1.4%	1.2%	0.9%	0.7%	0.5%
		GUTALAC	32,153	34,654	36,090	37,092	39,670	42,017	44,042	45,659	46,776	1.5%	0.8%	0.5%	1.4%	1.2%	0.9%	0.7%	0.5%
		BALIGUIAN	21,190	22,588	23,771	24,440	26,139	27,685	29,019	30,085	30,821	1.3%	1.0%	0.6%	1.4%	1.2%	0.9%	0.7%	0.5%
		GODOD	17,788	17,424	17,510	17,973	19,222	20,359	21,340	22,124	22,665	-0.4%	0.1%	0.5%	1.4%	1.2%	0.9%	0.7%	0.5%
		BACUNGAN (Leon T. Postigo)	24,643	26,221	27,639	28,417	30,392	32,191	33,743	34,982	35,838	1.2%	1.1%	0.6%	1.4%	1.2%	0.9%	0.7%	0.5%
		KALAWIT	22,157	23,633	23,812	24,444	26,142	27,690	29,024	30,091	30,826	1.3%	0.2%	0.5%	1.4%	1.2%	0.9%	0.7%	0.5%
		Sub-total	957,997	1,011,393	1,047,455	1,076,328	1,151,155	1,219,237	1,278,022	1,324,948	1,357,363	1.1%	0.7%	0.5%	1.4%	1.2%	0.9%	0.7%	0.5%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
ZAMBOANGA PENINSULA	Zamboanga del Sur	AURORA	48,434	50,755	52,995	54,250	58,161	61,725	64,847	67,494	69,693	0.9%	0.9%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
		BAYOG	30,048	33,591	34,519	35,317	37,863	40,183	42,215	43,938	45,369	2.3%	0.5%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
		DIMATALING	27,715	30,081	31,340	32,079	34,392	36,499	38,345	39,910	41,211	1.7%	0.8%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
		DINAS	34,768	35,504	36,291	37,124	39,801	42,240	44,376	46,188	47,693	0.4%	0.4%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
		DUMALINAO	30,691	32,013	32,928	33,690	36,119	38,333	40,271	41,915	43,280	0.8%	0.6%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
		DUMINGAG	46,500	47,485	48,881	50,014	53,620	56,906	59,783	62,224	64,251	0.4%	0.6%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
		KUMALARANG	28,210	28,469	29,479	30,168	32,344	34,326	36,061	37,533	38,756	0.2%	0.7%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
		LABANGAN	39,168	41,790	44,262	45,332	48,601	51,579	54,187	56,399	58,237	1.3%	1.2%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
		LAPUYAN	26,175	27,264	27,737	28,369	30,414	32,278	33,910	35,295	36,445	0.8%	0.3%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
		MAHAYAG	45,015	46,516	48,258	49,389	52,950	56,195	59,036	61,446	63,448	0.7%	0.7%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
		MARGOSATUBIG	35,596	37,873	38,660	39,545	42,396	44,994	47,269	49,198	50,801	1.2%	0.4%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
		MIDSALIP	31,467	32,075	33,711	34,516	37,005	39,272	41,257	42,942	44,341	0.4%	1.0%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
		MOLAVE	48,939	52,006	53,140	54,359	58,278	61,849	64,977	67,630	69,834	1.2%	0.4%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
		PAGADIAN CITY (Capital)	186,852	199,060	210,452	215,524	231,063	245,224	257,623	268,141	276,878	1.3%	1.1%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
		RAMON MAGSAYSAY (LIARGO)	26,194	26,606	27,280	27,909	29,921	31,754	33,360	34,722	35,853	0.3%	0.5%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
		SAN MIGUEL	18,258	19,205	19,838	20,300	21,764	23,097	24,265	25,256	26,079	1.0%	0.7%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
		SAN PABLO	26,500	26,106	26,648	27,258	29,223	31,014	32,583	33,913	35,018	-0.3%	0.4%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
		TABINA	24,110	25,061	25,734	26,329	28,227	29,957	31,472	32,756	33,823	0.8%	0.5%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
		TAMBULIG	34,883	36,160	37,480	38,357	41,123	43,643	45,850	47,722	49,277	0.7%	0.7%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
		TUKURAN	37,883	39,820	42,429	43,464	46,597	49,453	51,954	54,075	55,837	1.0%	1.3%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
		LAKEWOOD	19,645	20,374	21,559	22,080	23,671	25,122	26,392	27,470	28,365	0.7%	1.1%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
		JOSEFINA	10,826	11,799	12,205	12,490	13,390	14,210	14,929	15,538	16,044	1.7%	0.7%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
		PITOGO	25,502	27,057	27,516	28,142	30,170	32,019	33,638	35,012	36,152	1.2%	0.3%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
		SOMINOT (DON MARIANO MARCOS)	16,652	18,537	19,061	19,502	20,908	22,189	23,312	24,263	25,054	2.2%	0.6%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
		VINCENZO A. SAGUN	20,583	23,759	24,852	25,441	27,275	28,947	30,411	31,652	32,683	2.9%	0.9%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
		GUIPOS	19,771	20,729	21,738	22,255	23,860	25,322	26,602	27,689	28,590	1.0%	1.0%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
		TIGBAO	19,300	20,979	21,675	22,180	23,780	25,238	26,514	27,597	28,496	1.7%	0.7%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
		ZAMBOANGA CITY	807,129	861,799	977,234	1,003,026	1,075,343	1,141,247	1,198,953	1,247,900	1,288,560	1.3%	2.5%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%
		Sub-total	1,766,814	1,872,473	2,027,902	2,078,407	2,228,257	2,364,816	2,484,392	2,585,818	2,670,068	1.2%	1.6%	0.5%	1.4%	1.2%	1.0%	0.8%	0.6%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
ZAMBOANGA PENINSULA	Zamboanga Sibugay	ALICIA	34,895	36,013	39,456	41,702	45,407	48,964	52,221	55,115	57,661	0.6%	1.8%	1.1%	1.7%	1.5%	1.3%	1.1%	0.9%
		BUUG	35,969	36,634	38,425	40,555	44,159	47,618	50,785	53,599	56,075	0.4%	1.0%	1.1%	1.7%	1.5%	1.3%	1.1%	0.9%
		DIPLAHAN	31,215	32,428	32,585	34,341	37,393	40,322	43,005	45,388	47,484	0.8%	0.1%	1.1%	1.7%	1.5%	1.3%	1.1%	0.9%
		IMELDA	27,903	28,018	26,020	27,343	29,773	32,105	34,240	36,138	37,807	0.1%	-1.5%	1.0%	1.7%	1.5%	1.3%	1.1%	0.9%
		IPIL (Capital)	64,939	74,656	89,401	94,747	103,166	111,247	118,647	125,223	131,006	2.8%	3.7%	1.2%	1.7%	1.5%	1.3%	1.1%	0.9%
		KABASALAN	41,421	44,336	46,884	49,496	53,894	58,116	61,981	65,416	68,437	1.4%	1.1%	1.1%	1.7%	1.5%	1.3%	1.1%	0.9%
		MABUHAY	33,093	36,870	37,390	39,417	42,919	46,281	49,360	52,096	54,502	2.2%	0.3%	1.1%	1.7%	1.5%	1.3%	1.1%	0.9%
		MALANGAS	31,243	33,380	32,022	33,691	36,684	39,558	42,189	44,528	46,585	1.3%	-0.8%	1.0%	1.7%	1.5%	1.3%	1.1%	0.9%
		NAGA	37,814	38,547	41,743	44,102	48,021	51,783	55,228	58,289	60,981	0.4%	1.6%	1.1%	1.7%	1.5%	1.3%	1.1%	0.9%
		OLUTANGA	28,717	33,671	38,438	40,678	44,292	47,762	50,938	53,761	56,244	3.2%	2.7%	1.1%	1.7%	1.5%	1.3%	1.1%	0.9%
		PAYAO	29,755	31,686	34,952	36,950	40,234	43,386	46,271	48,836	51,092	1.3%	2.0%	1.1%	1.7%	1.5%	1.3%	1.1%	0.9%
		ROSELLER LIM	37,216	43,646	43,575	45,913	49,992	53,908	57,494	60,680	63,483	3.2%	0.0%	1.1%	1.7%	1.5%	1.3%	1.1%	0.9%
		SIAY	38,229	41,572	40,585	42,727	46,524	50,168	53,505	56,470	59,078	1.7%	-0.5%	1.0%	1.7%	1.5%	1.3%	1.1%	0.9%
		TALUSAN	25,268	29,969	27,873	29,292	31,895	34,393	36,681	38,714	40,503	3.5%	-1.4%	1.0%	1.7%	1.5%	1.3%	1.1%	0.9%
		TITAY	46,456	49,673	53,994	57,053	62,123	66,991	71,447	75,407	78,890	1.3%	1.7%	1.1%	1.7%	1.5%	1.3%	1.1%	0.9%
		TUNGAWAN	40,552	42,030	46,497	49,159	53,527	57,721	61,562	64,974	67,976	0.7%	2.0%	1.1%	1.7%	1.5%	1.3%	1.1%	0.9%
		Sub-total	584,685	633,129	669,840	707,166	770,003	830,322	885,553	934,635	977,805	1.6%	1.1%	1.1%	1.7%	1.5%	1.3%	1.1%	0.9%
		Total	3,407,353	3,629,783	3,875,576	4,005,196	4,303,284	4,578,493	4,820,916	5,026,421	5,194,662	1.3%	1.3%	0.7%	1.4%	1.2%	1.0%	0.8%	0.7%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
NORTHERN MINDANAO	Bukidnon	BAUNGON	32,868	34,336	37,111	39,033	41,903	43,509	44,530	45,021	44,917	0.9%	1.6%	1.0%	1.4%	0.8%	0.5%	0.2%	0.0%
		DAMULOG	25,538	30,302	39,322	41,582	44,639	46,351	47,438	47,963	47,851	3.5%	5.3%	1.1%	1.4%	0.8%	0.5%	0.2%	0.0%
		DANGCAGAN	22,448	23,723	26,076	27,441	29,458	30,588	31,306	31,652	31,579	1.1%	1.9%	1.0%	1.4%	0.8%	0.5%	0.2%	0.0%
		DON CARLOS	64,334	66,959	69,273	72,755	78,104	81,099	83,001	83,918	83,723	0.8%	0.7%	1.0%	1.4%	0.8%	0.5%	0.2%	0.0%
		IMPASUG-ONG	43,587	47,859	53,863	56,725	60,896	63,231	64,714	65,429	65,276	1.9%	2.4%	1.0%	1.4%	0.8%	0.5%	0.2%	0.0%
		KADINGILAN	31,756	33,778	33,735	35,388	37,989	39,445	40,371	40,817	40,723	1.2%	0.0%	1.0%	1.4%	0.8%	0.5%	0.2%	0.0%
		KALILANGAN	39,847	41,601	43,711	45,932	49,309	51,200	52,402	52,981	52,857	0.9%	1.0%	1.0%	1.4%	0.8%	0.5%	0.2%	0.0%
		KIBAWE	35,767	39,612	41,897	44,036	47,273	49,085	50,237	50,792	50,674	2.1%	1.1%	1.0%	1.4%	0.8%	0.5%	0.2%	0.0%
		KITAOTAO	49,488	50,260	53,796	56,564	60,722	63,050	64,529	65,241	65,090	0.3%	1.4%	1.0%	1.4%	0.8%	0.5%	0.2%	0.0%
		LANTAPAN	55,934	61,776	65,974	69,364	74,463	77,318	79,132	80,007	79,821	2.0%	1.3%	1.0%	1.4%	0.8%	0.5%	0.2%	0.0%
		LIBONA	39,393	43,969	48,965	51,550	55,340	57,462	58,810	59,459	59,321	2.2%	2.2%	1.0%	1.4%	0.8%	0.5%	0.2%	0.0%
		CITY OF MALAYBALAY (Capital)	153,085	174,625	190,712	200,656	215,408	223,666	228,914	231,443	230,905	2.7%	1.8%	1.0%	1.4%	0.8%	0.5%	0.2%	0.0%
		MALITBOG	22,880	24,453	26,741	28,137	30,206	31,364	32,100	32,455	32,380	1.3%	1.8%	1.0%	1.4%	0.8%	0.5%	0.2%	0.0%
		MANOLO FORTICH	91,026	100,210	113,200	119,230	127,996	132,903	136,022	137,525	137,205	1.9%	2.5%	1.0%	1.4%	0.8%	0.5%	0.2%	0.0%
		MARAMAG	90,901	102,089	108,293	113,832	122,201	126,886	129,863	131,297	130,992	2.3%	1.2%	1.0%	1.4%	0.8%	0.5%	0.2%	0.0%
		PANGANTUCAN	48,775	53,126	56,580	59,481	63,854	66,302	67,857	68,607	68,448	1.7%	1.3%	1.0%	1.4%	0.8%	0.5%	0.2%	0.0%
		QUEZON	94,584	104,116	109,624	115,202	123,672	128,412	131,425	132,877	132,569	1.9%	1.0%	1.0%	1.4%	0.8%	0.5%	0.2%	0.0%
		SAN FERNANDO	50,207	56,138	63,045	66,391	71,272	74,004	75,741	76,577	76,400	2.3%	2.3%	1.0%	1.4%	0.8%	0.5%	0.2%	0.0%
		SUMILAO	25,668	27,660	29,531	31,048	33,330	34,608	35,420	35,811	35,728	1.5%	1.3%	1.0%	1.4%	0.8%	0.5%	0.2%	0.0%
		TALAKAG	67,123	71,644	77,027	81,003	86,958	90,292	92,410	93,431	93,213	1.3%	1.5%	1.0%	1.4%	0.8%	0.5%	0.2%	0.0%
		CITY OF VALENCIA	181,556	192,993	216,546	228,031	244,798	254,182	260,146	263,020	262,408	1.2%	2.3%	1.0%	1.4%	0.8%	0.5%	0.2%	0.0%
		CABANGLASAN	32,427	33,997	36,286	38,148	40,954	42,523	43,521	44,002	43,899	1.0%	1.3%	1.0%	1.4%	0.8%	0.5%	0.2%	0.0%
		Sub-total	1,299,192	1,415,226	1,541,308	1,621,532	1,740,750	1,807,483	1,849,891	1,870,330	1,865,983	1.7%	1.7%	1.0%	1.4%	0.8%	0.5%	0.2%	0.0%
	Camiguin	CATARMAN	16,388	16,798	17,569	18,176	19,781	20,814	21,590	22,143	22,481	0.5%	0.9%	0.7%	1.7%	1.0%	0.7%	0.5%	0.3%
		GUINSILIBAN	5,580	6,281	6,685	6,920	7,531	7,924	8,219	8,430	8,559	2.4%	1.3%	0.7%	1.7%	1.0%	0.7%	0.5%	0.3%
		MAHINOG	13,531	14,038	14,634	15,138	16,475	17,334	17,981	18,442	18,723	0.7%	0.8%	0.7%	1.7%	1.0%	0.7%	0.5%	0.3%
		MAMBAJAO (Capital)	36,435	38,735	41,094	42,533	46,291	48,707	50,522	51,819	52,609	1.2%	1.2%	0.7%	1.7%	1.0%	0.7%	0.5%	0.3%
		SAGAY	11,873	12,626	12,826	13,255	14,427	15,180	15,745	16,148	16,394	1.2%	0.3%	0.7%	1.7%	1.0%	0.7%	0.5%	0.3%
		Sub-total	83,807	88,478	92,808	96,021	104,505	109,959	114,057	116,983	118,767	1.1%	1.0%	0.7%	1.7%	1.0%	0.7%	0.5%	0.3%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
NORTHERN MINDANAO	Lanao del Norte	BACOLOD	21,818	23,034	24,367	25,754	28,164	29,883	31,310	32,466	33,326	1.1%	1.1%	1.1%	1.8%	1.2%	0.9%	0.7%	0.5%
		BALOI	50,387	58,383	68,465	72,597	79,392	84,238	88,260	91,518	93,944	3.0%	3.2%	1.2%	1.8%	1.2%	0.9%	0.7%	0.5%
		BAROY	20,948	22,600	24,683	26,116	28,559	30,302	31,748	32,920	33,793	1.5%	1.8%	1.1%	1.8%	1.2%	0.9%	0.7%	0.5%
		KAPATAGAN	53,916	62,853	62,571	65,996	72,172	76,578	80,234	83,195	85,400	3.1%	-0.1%	1.1%	1.8%	1.2%	0.9%	0.7%	0.5%
		SULTAN NAGA DIMAPORO (KAROMATAN)	52,430	56,764	60,904	64,401	70,429	74,727	78,294	81,185	83,338	1.6%	1.4%	1.1%	1.8%	1.2%	0.9%	0.7%	0.5%
		KAUSWAGAN	24,006	26,278	24,193	25,445	27,826	29,525	30,934	32,076	32,926	1.8%	-1.6%	1.0%	1.8%	1.2%	0.9%	0.7%	0.5%
		KOLAMBUGAN	26,445	27,005	28,265	29,864	32,659	34,652	36,306	37,647	38,644	0.4%	0.9%	1.1%	1.8%	1.2%	0.9%	0.7%	0.5%
		LALA	65,355	67,727	73,425	77,668	84,938	90,122	94,424	97,910	100,505	0.7%	1.6%	1.1%	1.8%	1.2%	0.9%	0.7%	0.5%
		LINAMON	17,484	20,341	21,269	22,471	24,575	26,074	27,320	28,328	29,079	3.1%	0.9%	1.1%	1.8%	1.2%	0.9%	0.7%	0.5%
		MAGSAYSAY	16,442	19,019	20,463	21,640	23,665	25,109	26,307	27,279	28,002	3.0%	1.5%	1.1%	1.8%	1.2%	0.9%	0.7%	0.5%
		MAIGO	20,131	21,666	23,337	24,681	26,991	28,638	30,006	31,114	31,939	1.5%	1.5%	1.1%	1.8%	1.2%	0.9%	0.7%	0.5%
		MATUNGAO	12,217	13,975	14,756	15,595	17,054	18,096	18,960	19,659	20,180	2.7%	1.1%	1.1%	1.8%	1.2%	0.9%	0.7%	0.5%
		MUNAI	27,600	32,973	35,020	37,019	40,483	42,955	45,005	46,667	47,904	3.6%	1.2%	1.1%	1.8%	1.2%	0.9%	0.7%	0.5%
		NUNUNGAN	16,304	18,367	18,827	19,878	21,738	23,065	24,166	25,059	25,723	2.4%	0.5%	1.1%	1.8%	1.2%	0.9%	0.7%	0.5%
		PANTAO RAGAT	23,122	27,866	30,247	31,996	34,990	37,126	38,898	40,334	41,404	3.8%	1.7%	1.1%	1.8%	1.2%	0.9%	0.7%	0.5%
		POONA PIAGAPO	23,451	27,018	29,183	30,865	33,754	35,814	37,524	38,909	39,941	2.9%	1.6%	1.1%	1.8%	1.2%	0.9%	0.7%	0.5%
		SALVADOR	27,348	31,845	32,115	33,887	37,060	39,322	41,199	42,719	43,851	3.1%	0.2%	1.1%	1.8%	1.2%	0.9%	0.7%	0.5%
		SAPAD	19,479	21,309	22,974	24,297	26,572	28,194	29,539	30,629	31,441	1.8%	1.5%	1.1%	1.8%	1.2%	0.9%	0.7%	0.5%
		TAGOLOAN	11,674	13,253	15,091	15,987	17,483	18,550	19,435	20,152	20,686	2.6%	2.6%	1.2%	1.8%	1.2%	0.9%	0.7%	0.5%
		TANGCAL	12,588	15,181	16,075	16,990	18,581	19,715	20,655	21,417	21,985	3.8%	1.2%	1.1%	1.8%	1.2%	0.9%	0.7%	0.5%
		TUBOD (Capital)	46,332	47,165	50,073	52,929	57,883	61,416	64,348	66,723	68,492	0.4%	1.2%	1.1%	1.8%	1.2%	0.9%	0.7%	0.5%
		PANTAR	18,440	21,773	26,599	28,238	30,882	32,767	34,332	35,600	36,543	3.4%	4.1%	1.2%	1.8%	1.2%	0.9%	0.7%	0.5%
		ILIGAN CITY	322,821	342,618	363,115	383,809	419,733	445,353	466,614	483,841	496,665	1.2%	1.2%	1.1%	1.8%	1.2%	0.9%	0.7%	0.5%
		Sub-total	930,738	1,019,013	1,086,017	1,148,123	1,255,585	1,332,223	1,395,821	1,447,348	1,485,712	1.8%	1.3%	1.1%	1.8%	1.2%	0.9%	0.7%	0.5%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
NORTHERN MINDANAO	Misamis Occidental	ALORAN	26,630	27,625	27,934	28,799	30,956	32,301	33,387	34,165	34,606	0.7%	0.2%	0.6%	1.5%	0.9%	0.7%	0.5%	0.3%
		BALIANGAO	16,155	17,092	18,433	19,045	20,471	21,361	22,079	22,593	22,884	1.1%	1.5%	0.7%	1.5%	0.9%	0.7%	0.5%	0.3%
		BONIFACIO	30,904	32,345	34,558	35,694	38,367	40,034	41,381	42,346	42,891	0.9%	1.3%	0.6%	1.5%	0.9%	0.7%	0.5%	0.3%
		CALAMBA	21,005	21,676	23,227	23,991	25,789	26,910	27,815	28,463	28,830	0.6%	1.4%	0.6%	1.5%	0.9%	0.7%	0.5%	0.3%
		CLARIN	35,573	37,548	39,356	40,622	43,665	45,562	47,094	48,191	48,813	1.1%	0.9%	0.6%	1.5%	0.9%	0.7%	0.5%	0.3%
		CONCEPCION	7,410	10,937	9,324	9,550	10,265	10,711	11,071	11,329	11,476	8.1%	-3.1%	0.5%	1.5%	0.9%	0.7%	0.5%	0.3%
		JIMENEZ	25,234	27,654	28,909	29,838	32,072	33,465	34,591	35,397	35,854	1.8%	0.9%	0.6%	1.5%	0.9%	0.7%	0.5%	0.3%
		LOPEZ JAENA	23,767	25,055	25,507	26,302	28,272	29,501	30,492	31,202	31,605	1.1%	0.4%	0.6%	1.5%	0.9%	0.7%	0.5%	0.3%
		OROQUIETA CITY (Capital)	68,945	70,757	72,301	74,565	80,149	83,632	86,444	88,458	89,599	0.5%	0.4%	0.6%	1.5%	0.9%	0.7%	0.5%	0.3%
		OZAMIZ CITY 1	131,527	141,828	140,334	144,566	155,393	162,145	167,598	171,502	173,714	1.5%	-0.2%	0.6%	1.5%	0.9%	0.7%	0.5%	0.3%
		PANAON	10,176	10,209	10,797	11,149	11,984	12,505	12,925	13,226	13,397	0.1%	1.1%	0.6%	1.5%	0.9%	0.7%	0.5%	0.3%
		PLARIDEL	35,251	38,900	39,840	41,090	44,168	46,087	47,637	48,746	49,375	2.0%	0.5%	0.6%	1.5%	0.9%	0.7%	0.5%	0.3%
		SAPANG DALAGA	19,431	19,983	20,490	21,135	22,718	23,705	24,502	25,073	25,396	0.6%	0.5%	0.6%	1.5%	0.9%	0.7%	0.5%	0.3%
		SINACABAN	18,597	18,391	19,671	20,318	21,840	22,789	23,556	24,105	24,415	-0.2%	1.4%	0.6%	1.5%	0.9%	0.7%	0.5%	0.3%
		TANGUB CITY	59,892	63,011	68,389	70,672	75,965	79,266	81,932	83,840	84,921	1.0%	1.7%	0.7%	1.5%	0.9%	0.7%	0.5%	0.3%
		TUDELA	27,371	28,932	28,599	29,460	31,665	33,042	34,153	34,949	35,399	1.1%	-0.2%	0.6%	1.5%	0.9%	0.7%	0.5%	0.3%
		DON VICTORIANO CHIONGBIAN (DON MARIANO MARCOS)	9,774	10,183	9,664	9,941	10,685	11,150	11,523	11,792	11,944	0.8%	-1.0%	0.6%	1.5%	0.9%	0.7%	0.5%	0.3%
		Sub-total	567,642	602,126	617,333	636,736	684,425	714,165	738,181	755,374	765,119	1.2%	0.5%	0.6%	1.5%	0.9%	0.7%	0.5%	0.3%
	Misamis Oriental	ALUBIJID	26,648	29,724	32,163	32,249	34,674	36,070	37,107	37,730	37,972	2.2%	1.6%	0.1%	1.5%	0.8%	0.6%	0.3%	0.1%
		BALINGASAG	65,876	67,059	74,385	74,642	80,255	83,488	85,889	87,331	87,891	0.4%	2.1%	0.1%	1.5%	0.8%	0.6%	0.3%	0.1%
		BALINGOAN	10,175	11,051	11,020	11,019	11,848	12,325	12,679	12,892	12,975	1.7%	-0.1%	0.0%	1.5%	0.8%	0.6%	0.3%	0.1%
		BINUANGAN	6,765	7,515	7,441	7,438	7,997	8,319	8,558	8,702	8,758	2.1%	-0.2%	0.0%	1.5%	0.8%	0.6%	0.3%	0.1%
		CLAVERIA	44,544	48,906	52,478	52,603	56,559	58,837	60,528	61,545	61,939	1.9%	1.4%	0.0%	1.5%	0.8%	0.6%	0.3%	0.1%
		CITY OF EL SALVADOR	44,848	50,204	58,771	59,072	63,514	66,072	67,971	69,113	69,555	2.3%	3.2%	0.1%	1.5%	0.8%	0.6%	0.3%	0.1%
		GINGOOG CITY	117,908	124,648	136,698	137,121	147,433	153,371	157,781	160,430	161,457	1.1%	1.9%	0.1%	1.5%	0.8%	0.6%	0.3%	0.1%
		GITAGUM	16,098	16,373	17,920	17,974	19,326	20,105	20,683	21,030	21,165	0.3%	1.8%	0.1%	1.5%	0.8%	0.6%	0.3%	0.1%
		INITAO	29,331	32,370	33,902	33,956	36,510	37,980	39,072	39,728	39,982	2.0%	0.9%	0.0%	1.5%	0.8%	0.6%	0.3%	0.1%
		JASAAN	50,121	54,478	57,055	57,145	61,443	63,917	65,755	66,858	67,287	1.7%	0.9%	0.0%	1.5%	0.8%	0.6%	0.3%	0.1%
		KINOGUITAN	12,761	14,391	14,091	14,080	15,138	15,748	16,201	16,474	16,580	2.4%	-0.4%	0.0%	1.5%	0.8%	0.6%	0.3%	0.1%
		LAGONGLONG	19,303	21,659	24,190	24,279	26,105	27,156	27,937	28,406	28,589	2.3%	2.2%	0.1%	1.5%	0.8%	0.6%	0.3%	0.1%
		LAGUINDINGAN	21,822	24,405	26,363	26,432	28,420	29,564	30,415	30,925	31,124	2.3%	1.6%	0.1%	1.5%	0.8%	0.6%	0.3%	0.1%
		LIBERTAD	11,586	12,354	12,948	12,969	13,945	14,507	14,924	15,174	15,271	1.3%	0.9%	0.0%	1.5%	0.8%	0.6%	0.3%	0.1%
		LUGAIT	18,639	19,758	20,559	20,587	22,135	23,026	23,688	24,086	24,240	1.2%	0.8%	0.0%	1.5%	0.8%	0.6%	0.3%	0.1%
		MAGSAYSAY (LINUGOS)	33,047	34,605	36,803	36,880	39,653	41,250	42,437	43,149	43,425	0.9%	1.2%	0.0%	1.5%	0.8%	0.6%	0.3%	0.1%
		MANTICAO	26,786	28,422	29,469	29,506	31,725	33,003	33,952	34,522	34,743	1.2%	0.7%	0.0%	1.5%	0.8%	0.6%	0.3%	0.1%
		MEDINA	31,154	32,907	35,612	35,707	38,392	39,938	41,087	41,777	42,045	1.1%	1.6%	0.1%	1.5%	0.8%	0.6%	0.3%	0.1%
		NAAWAN	18,895	21,213	22,444	22,487	24,178	25,151	25,874	26,309	26,477	2.3%	1.1%	0.0%	1.5%	0.8%	0.6%	0.3%	0.1%
		OPOL	52,108	61,503	66,327	66,496	71,496	74,376	76,514	77,798	78,297	3.4%	1.5%	0.1%	1.5%	0.8%	0.6%	0.3%	0.1%
		SALAY	27,591	28,705	29,998	30,043	32,303	33,603	34,570	35,151	35,376	0.8%	0.9%	0.0%	1.5%	0.8%	0.6%	0.3%	0.1%
		SUGBONGCOGON	8,745	9,226	9,764	9,783	10,518	10,942	11,257	11,446	11,519	1.1%	1.1%	0.0%	1.5%	0.8%	0.6%	0.3%	0.1%
		TAGOLOAN	63,850	73,150	80,319	80,571	86,630	90,119	92,711	94,267	94,871	2.8%	1.9%	0.1%	1.5%	0.8%	0.6%	0.3%	0.1%
		TALISAYAN	23,289	24,505	25,761	25,805	27,746	28,863	29,693	30,191	30,385	1.0%	1.0%	0.0%	1.5%	0.8%	0.6%	0.3%	0.1%
		VILLANUEVA	31,966	39,378	40,419	40,456	43,498	45,249	46,551	47,332	47,634	4.3%	0.5%	0.0%	1.5%	0.8%	0.6%	0.3%	0.1%
		CAGAYAN DE ORO CITY (Capital)	602,088	675,950	728,402	730,242	785,155	816,775	840,263	854,368	859,840	2.3%	1.5%	0.1%	1.5%	0.8%	0.6%	0.3%	0.1%
		Sub-total	1,415,944	1,564,459	1,685,302	1,689,542	1,816,594	1,889,754	1,944,097	1,976,735	1,989,397	2.0%	1.5%	0.1%	1.5%	0.8%	0.6%	0.3%	0.1%
		Total	4,297,323	4,689,302	5,022,768	5,191,954	5,601,859	5,853,584	6,042,047	6,166,770	6,224,978	1.8%	1.4%	0.7%	1.5%	0.9%	0.6%	0.4%	0.2%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
DAVAO	Davao de Oro	COMPOSTELA	81,934	87,474	89,884	93,394	99,927	105,513	110,099	113,386	115,094	1.3%	0.5%	0.8%	1.4%	1.1%	0.9%	0.6%	0.3%
		LAAK (SAN VICENTE)	70,856	73,874	79,744	82,994	88,801	93,764	97,839	100,761	102,278	0.8%	1.5%	0.8%	1.4%	1.1%	0.9%	0.6%	0.3%
		MABINI (DOÑA ALICIA)	36,807	41,102	43,552	45,300	48,469	51,178	53,402	54,996	55,824	2.2%	1.2%	0.8%	1.4%	1.1%	0.9%	0.6%	0.3%
		MACO	72,235	81,277	83,237	86,478	92,527	97,699	101,944	104,988	106,569	2.4%	0.5%	0.8%	1.4%	1.1%	0.9%	0.6%	0.3%
		MARAGUSAN (SAN MARIANO)	55,503	60,842	64,412	66,994	71,680	75,687	78,976	81,334	82,559	1.9%	1.1%	0.8%	1.4%	1.1%	0.9%	0.6%	0.3%
		MAWAB	35,698	37,065	39,631	41,233	44,118	46,584	48,609	50,060	50,815	0.8%	1.3%	0.8%	1.4%	1.1%	0.9%	0.6%	0.3%
		MONKAYO	94,827	94,908	93,937	97,478	104,297	110,127	114,913	118,344	120,126	0.0%	-0.2%	0.7%	1.4%	1.1%	0.9%	0.6%	0.3%
		MONTEVISTA	39,602	43,706	46,558	48,435	51,823	54,719	57,098	58,802	59,687	2.0%	1.3%	0.8%	1.4%	1.1%	0.9%	0.6%	0.3%
		NABUNTURAN (Capital)	73,196	82,234	84,340	87,627	93,757	98,998	103,301	106,386	107,987	2.4%	0.5%	0.8%	1.4%	1.1%	0.9%	0.6%	0.3%
		NEW BATAAN	47,470	47,726	51,466	53,562	57,309	60,512	63,142	65,027	66,006	0.1%	1.5%	0.8%	1.4%	1.1%	0.9%	0.6%	0.3%
		PANTUKAN	79,067	85,899	90,786	94,420	101,024	106,670	111,306	114,628	116,354	1.7%	1.1%	0.8%	1.4%	1.1%	0.9%	0.6%	0.3%
		Sub-total	687,195	736,107	767,547	797,914	853,733	901,451	940,629	968,713	983,299	1.4%	0.8%	0.8%	1.4%	1.1%	0.9%	0.6%	0.3%
	Davao del Norte	ASUNCION (SAUG)	55,844	59,322	61,893	63,781	67,601	70,876	73,570	75,639	77,178	1.2%	0.9%	0.6%	1.2%	1.0%	0.7%	0.6%	0.4%
		CARMEN	69,199	74,679	82,018	84,663	89,733	94,081	97,656	100,403	102,446	1.5%	1.9%	0.6%	1.2%	1.0%	0.7%	0.6%	0.4%
		KAPALONG	68,261	76,334	81,068	83,591	88,597	92,890	96,420	99,133	101,148	2.3%	1.2%	0.6%	1.2%	1.0%	0.7%	0.6%	0.4%
		NEW CORELLA	50,699	54,844	57,913	59,704	63,280	66,345	68,866	70,804	72,244	1.6%	1.1%	0.6%	1.2%	1.0%	0.7%	0.6%	0.4%
		CITY OF PANABO	174,364	184,599	209,230	216,188	229,136	240,237	249,366	256,382	261,597	1.1%	2.5%	0.7%	1.2%	1.0%	0.7%	0.6%	0.4%
		ISLAND GARDEN CITY OF SAMAL	95,874	104,123	116,771	120,616	127,839	134,033	139,126	143,040	145,949	1.7%	2.3%	0.7%	1.2%	1.0%	0.7%	0.6%	0.4%
		SANTO TOMAS	109,269	118,750	128,667	132,758	140,708	147,525	153,131	157,440	160,642	1.7%	1.6%	0.6%	1.2%	1.0%	0.7%	0.6%	0.4%
		CITY OF TAGUM (Capital)	242,801	259,444	296,202	306,122	324,455	340,173	353,100	363,035	370,419	1.3%	2.7%	0.7%	1.2%	1.0%	0.7%	0.6%	0.4%
		TALAINGOD	25,566	27,482	28,333	29,186	30,935	32,433	33,665	34,612	35,316	1.5%	0.6%	0.6%	1.2%	1.0%	0.7%	0.6%	0.4%
		BRAULIO E. DUJALI	28,339	30,104	35,729	36,967	39,182	41,080	42,641	43,841	44,733	1.2%	3.5%	0.7%	1.2%	1.0%	0.7%	0.6%	0.4%
		SAN ISIDRO	25,548	26,651	27,233	28,043	29,723	31,163	32,348	33,257	33,932	0.8%	0.4%	0.6%	1.2%	1.0%	0.7%	0.6%	0.4%
		Sub-total	945,764	1,016,332	1,125,057	1,161,619	1,231,189	1,290,836	1,339,889	1,377,585	1,405,605	1.4%	2.1%	0.6%	1.2%	1.0%	0.7%	0.6%	0.4%
	Davao del Sur	BANSALAN	56,496	60,440	62,737	70,038	75,341	80,322	84,821	88,772	92,218	1.4%	0.7%	2.2%	1.5%	1.3%	1.1%	0.9%	0.8%
		CITY OF DIGOS (Capital)	149,891	169,393	188,376	210,769	226,728	241,717	255,256	267,148	277,516	2.5%	2.1%	2.3%	1.5%	1.3%	1.1%	0.9%	0.8%
		HAGONOY	49,107	53,309	56,919	63,602	68,418	72,941	77,027	80,615	83,744	1.7%	1.3%	2.2%	1.5%	1.3%	1.1%	0.9%	0.8%
		KIBLAWAN	44,618	48,897	49,381	55,075	59,246	63,163	66,701	69,808	72,517	1.8%	0.2%	2.2%	1.5%	1.3%	1.1%	0.9%	0.8%
		MAGSAYSAY	49,141	53,876	56,263	62,823	67,580	72,048	76,083	79,628	82,719	1.9%	0.9%	2.2%	1.5%	1.3%	1.1%	0.9%	0.8%
		MALALAG	35,295	38,731	40,158	44,829	48,223	51,412	54,291	56,820	59,026	1.9%	0.7%	2.2%	1.5%	1.3%	1.1%	0.9%	0.8%
		MATANAO	51,382	56,755	60,493	67,592	72,709	77,516	81,858	85,671	88,997	2.0%	1.3%	2.2%	1.5%	1.3%	1.1%	0.9%	0.8%
		PADADA	25,724	26,587	29,878	33,440	35,973	38,351	40,500	42,386	44,032	0.7%	2.4%	2.3%	1.5%	1.3%	1.1%	0.9%	0.8%
		SANTA CRUZ	81,093	90,987	101,125	113,144	121,711	129,757	137,026	143,409	148,975	2.3%	2.1%	2.3%	1.5%	1.3%	1.1%	0.9%	0.8%
		SULOP	32,163	33,613	35,151	39,251	42,222	45,013	47,535	49,750	51,681	0.9%	0.9%	2.2%	1.5%	1.3%	1.1%	0.9%	0.8%
		DAVAO CITY	1,449,296	1,632,991	1,776,949	1,986,807	2,137,254	2,278,548	2,406,176	2,518,270	2,616,011	2.4%	1.7%	2.3%	1.5%	1.3%	1.1%	0.9%	0.8%
		Sub-total	2,024,206	2,265,579	2,457,430	2,747,370	2,955,408	3,150,789	3,327,273	3,482,277	3,617,435	2.3%	1.6%	2.3%	1.5%	1.3%	1.1%	0.9%	0.8%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
DAVAO	Davao Occidental	DON MARCELINO 2	41,942	44,554	45,540	47,941	51,944	55,710	59,139	62,182	64,836	1.2%	0.4%	1.0%	1.6%	1.4%	1.2%	1.0%	0.8%
		JOSE ABAD SANTOS (TRINIDAD) 2	69,631	76,332	73,381	77,081	83,518	89,572	95,086	99,978	104,245	1.9%	-0.8%	1.0%	1.6%	1.4%	1.2%	1.0%	0.8%
		MALITA 2	109,568	117,746	118,197	124,349	134,734	144,501	153,396	161,288	168,172	1.5%	0.1%	1.0%	1.6%	1.4%	1.2%	1.0%	0.8%
		SANTA MARIA 2	49,349	53,671	57,526	60,654	65,719	70,483	74,822	78,672	82,030	1.7%	1.4%	1.1%	1.6%	1.4%	1.2%	1.0%	0.8%
		SARANGANI 2	23,290	24,039	22,515	23,628	25,603	27,458	29,150	30,650	31,958	0.6%	-1.3%	1.0%	1.6%	1.4%	1.2%	1.0%	0.8%
		Sub-total	293,780	316,342	317,159	333,653	361,517	387,724	411,593	432,770	451,241	1.5%	0.1%	1.0%	1.6%	1.4%	1.2%	1.0%	0.8%
	Davao Oriental	BAGANGA	53,426	56,241	58,714	62,020	66,999	71,796	76,278	80,190	83,359	1.0%	0.9%	1.1%	1.6%	1.4%	1.2%	1.0%	0.8%
		BANAYBANAY	39,121	41,117	44,451	47,009	50,782	54,419	57,816	60,781	63,183	1.0%	1.6%	1.1%	1.6%	1.4%	1.2%	1.0%	0.8%
		BOSTON	12,670	13,535	14,618	15,458	16,699	17,895	19,012	19,987	20,778	1.3%	1.6%	1.1%	1.6%	1.4%	1.2%	1.0%	0.8%
		CARAGA	36,912	40,379	39,704	41,852	45,212	48,450	51,474	54,113	56,252	1.8%	-0.3%	1.1%	1.6%	1.4%	1.2%	1.0%	0.8%
		CATEEL	38,579	40,704	44,207	46,757	50,511	54,127	57,506	60,456	62,845	1.1%	1.7%	1.1%	1.6%	1.4%	1.2%	1.0%	0.8%
		GOVERNOR GENEROSO	50,372	55,109	59,891	63,348	68,433	73,333	77,911	81,907	85,143	1.8%	1.7%	1.1%	1.6%	1.4%	1.2%	1.0%	0.8%
		LUPON	61,723	65,785	66,979	70,691	76,365	81,834	86,942	91,402	95,014	1.3%	0.4%	1.1%	1.6%	1.4%	1.2%	1.0%	0.8%
		MANAY	40,577	42,690	39,572	41,624	44,965	48,184	51,192	53,818	55,945	1.0%	-1.5%	1.0%	1.6%	1.4%	1.2%	1.0%	0.8%
		CITY OF MATI (Capital)	126,143	141,141	147,547	155,862	168,374	180,432	191,694	201,526	209,490	2.3%	0.9%	1.1%	1.6%	1.4%	1.2%	1.0%	0.8%
		SAN ISIDRO	32,424	36,032	33,664	35,420	38,264	41,004	43,564	45,798	47,608	2.1%	-1.4%	1.0%	1.6%	1.4%	1.2%	1.0%	0.8%
		TARRAGONA	25,671	26,225	26,996	28,503	30,791	32,996	35,057	36,855	38,311	0.4%	0.6%	1.1%	1.6%	1.4%	1.2%	1.0%	0.8%
		Sub-total	517,618	558,958	576,343	608,542	657,392	704,469	748,443	786,831	817,927	1.5%	0.6%	1.1%	1.6%	1.4%	1.2%	1.0%	0.8%
		Total	4,468,563	4,893,318	5,243,536	5,649,098	6,059,239	6,435,269	6,767,827	7,048,176	7,275,507	1.8%	1.4%	1.5%	1.4%	1.2%	1.0%	0.8%	0.6%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
SOCCSKSARGEN	Cotabato (North Cotabato)	ALAMADA	56,813	64,596	68,659	74,036	80,259	86,293	91,897	96,872	101,026	2.6%	1.2%	1.5%	1.6%	1.5%	1.3%	1.1%	0.8%
		CARMEN	82,469	95,921	79,140	84,527	91,632	98,521	104,919	110,598	115,341	3.1%	-3.8%	1.3%	1.6%	1.5%	1.3%	1.1%	0.8%
		KABACAN	81,282	89,161	77,164	82,582	89,523	96,253	102,503	108,051	112,684	1.9%	-2.8%	1.4%	1.6%	1.5%	1.3%	1.1%	0.8%
		CITY OF KIDAPAWAN (Capital)	125,447	140,195	160,791	173,801	188,411	202,575	215,731	227,407	237,159	2.2%	2.8%	1.6%	1.6%	1.5%	1.3%	1.1%	0.8%
		LIBUNGAN	45,295	48,768	56,269	60,832	65,945	70,903	75,508	79,595	83,008	1.5%	2.9%	1.6%	1.6%	1.5%	1.3%	1.1%	0.8%
		MAGPET	45,183	49,201	53,800	58,066	62,947	67,680	72,075	75,977	79,235	1.7%	1.8%	1.5%	1.6%	1.5%	1.3%	1.1%	0.8%
		MAKILALA	77,508	83,851	87,927	94,770	102,737	110,460	117,634	124,001	129,317	1.6%	1.0%	1.5%	1.6%	1.5%	1.3%	1.1%	0.8%
		MATALAM	74,034	79,361	81,355	87,619	94,984	102,124	108,757	114,643	119,559	1.4%	0.5%	1.5%	1.6%	1.5%	1.3%	1.1%	0.8%
		MIDSAYAP	134,170	151,684	117,365	124,998	135,505	145,692	155,153	163,551	170,564	2.5%	-5.0%	1.3%	1.6%	1.5%	1.3%	1.1%	0.8%
		M'LANG	87,749	95,070	98,195	105,783	114,675	123,296	131,303	138,410	144,345	1.6%	0.6%	1.5%	1.6%	1.5%	1.3%	1.1%	0.8%
		PIGKAWAYAN	59,975	66,796	52,744	56,226	60,952	65,534	69,790	73,568	76,723	2.2%	-4.6%	1.3%	1.6%	1.5%	1.3%	1.1%	0.8%
		PIKIT	113,014	154,441	67,024	68,822	74,608	80,216	85,426	90,049	93,911	6.4%	-15.4%	0.5%	1.6%	1.5%	1.3%	1.1%	0.8%
		PRESIDENT ROXAS	44,229	47,575	52,512	56,693	61,458	66,079	70,370	74,179	77,360	1.5%	2.0%	1.5%	1.6%	1.5%	1.3%	1.1%	0.8%
		TULUNAN	54,884	56,513	60,978	65,786	71,316	76,677	81,657	86,077	89,767	0.6%	1.5%	1.5%	1.6%	1.5%	1.3%	1.1%	0.8%
		ANTIPAS	25,242	25,304	26,817	28,914	31,345	33,701	35,889	37,831	39,454	0.0%	1.2%	1.5%	1.6%	1.5%	1.3%	1.1%	0.8%
		BANISILAN	39,914	43,677	46,995	50,695	54,957	59,089	62,926	66,331	69,176	1.8%	1.5%	1.5%	1.6%	1.5%	1.3%	1.1%	0.8%
		ALEOSAN	35,746	39,405	36,892	39,604	42,933	46,160	49,158	51,818	54,040	2.0%	-1.3%	1.4%	1.6%	1.5%	1.3%	1.1%	0.8%
		ARAKAN	43,554	48,228	50,558	54,492	59,073	63,513	67,638	71,298	74,355	2.1%	0.9%	1.5%	1.6%	1.5%	1.3%	1.1%	0.8%
		Sub-total	1,226,508	1,379,747	1,275,185	1,368,248	1,483,258	1,594,766	1,698,333	1,790,253	1,867,021	2.4%	-1.6%	1.4%	1.6%	1.5%	1.3%	1.1%	0.8%
	Cotabato City		271,786	299,438	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Sarangani	ALABEL (Capital)	75,477	80,359	88,294	93,296	99,952	105,528	110,022	112,917	113,824	1.3%	1.9%	1.1%	1.4%	1.1%	0.8%	0.5%	0.2%
		GLAN	106,518	118,263	109,547	115,068	123,277	130,153	135,697	139,267	140,386	2.1%	-1.5%	1.0%	1.4%	1.1%	0.8%	0.5%	0.2%
		KIAMBA	54,871	61,058	65,774	69,456	74,411	78,561	81,907	84,062	84,737	2.2%	1.5%	1.1%	1.4%	1.1%	0.8%	0.5%	0.2%
		MAASIM	52,933	59,468	64,940	68,606	73,501	77,600	80,906	83,035	83,701	2.4%	1.8%	1.1%	1.4%	1.1%	0.8%	0.5%	0.2%
		MAITUM	41,675	44,595	44,185	46,527	49,846	52,627	54,868	56,311	56,764	1.4%	-0.2%	1.0%	1.4%	1.1%	0.8%	0.5%	0.2%
		MALAPATAN	72,386	76,914	80,741	85,188	91,266	96,357	100,460	103,103	103,932	1.2%	1.0%	1.1%	1.4%	1.1%	0.8%	0.5%	0.2%
		MALUNGON	95,044	103,604	105,465	111,159	119,089	125,731	131,085	134,533	135,613	1.7%	0.4%	1.1%	1.4%	1.1%	0.8%	0.5%	0.2%
		Sub-total	498,904	544,261	558,946	589,300	631,344	666,559	694,947	713,230	718,959	1.8%	0.5%	1.1%	1.4%	1.1%	0.8%	0.5%	0.2%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
SOCCSKSARGEN	South Cotabato	BANGA	76,343	83,989	89,164	95,136	101,939	107,995	113,194	117,346	120,212	1.9%	1.2%	1.3%	1.4%	1.2%	0.9%	0.7%	0.5%
		CITY OF KORONADAL (Capital)	158,273	174,942	195,398	208,825	223,756	237,049	248,460	257,574	263,864	2.0%	2.2%	1.3%	1.4%	1.2%	0.9%	0.7%	0.5%
		NORALA	44,635	46,642	46,682	49,708	53,263	56,427	59,144	61,313	62,810	0.9%	0.0%	1.3%	1.4%	1.2%	0.9%	0.7%	0.5%
		POLOMOLOK	138,273	152,589	172,605	184,538	197,733	209,479	219,564	227,617	233,175	2.0%	2.5%	1.3%	1.4%	1.2%	0.9%	0.7%	0.5%
		SURALLAH	76,035	84,539	89,340	95,309	102,124	108,191	113,399	117,558	120,428	2.1%	1.1%	1.3%	1.4%	1.2%	0.9%	0.7%	0.5%
		TAMPAKAN	36,254	39,525	41,018	43,732	46,859	49,643	52,033	53,941	55,259	1.7%	0.7%	1.3%	1.4%	1.2%	0.9%	0.7%	0.5%
		TANTANGAN	40,461	43,245	45,744	48,802	52,292	55,398	58,064	60,194	61,665	1.3%	1.1%	1.3%	1.4%	1.2%	0.9%	0.7%	0.5%
		T'BOLI	79,175	91,453	101,049	107,957	115,675	122,547	128,447	133,158	136,410	2.9%	2.0%	1.3%	1.4%	1.2%	0.9%	0.7%	0.5%
		TUPI	61,843	69,976	73,459	78,350	83,952	88,940	93,222	96,641	99,000	2.5%	1.0%	1.3%	1.4%	1.2%	0.9%	0.7%	0.5%
		SANTO NIÑO	39,738	40,947	39,796	42,332	45,359	48,054	50,367	52,215	53,489	0.6%	-0.6%	1.2%	1.4%	1.2%	0.9%	0.7%	0.5%
		LAKE SEBU	76,170	87,442	81,221	86,252	92,419	97,910	102,623	106,387	108,984	2.8%	-1.5%	1.2%	1.4%	1.2%	0.9%	0.7%	0.5%
		GENERAL SANTOS CITY (DADIANGAS)	538,086	594,446	697,315	746,345	799,710	847,217	888,000	920,572	943,053	2.0%	3.2%	1.4%	1.4%	1.2%	0.9%	0.7%	0.5%
		Sub-total	1,365,286	1,509,735	1,672,791	1,787,285	1,915,082	2,028,851	2,126,518	2,204,516	2,258,352	2.0%	2.1%	1.3%	1.4%	1.2%	0.9%	0.7%	0.5%
	Sultan Kudarat	BAGUMBAYAN	63,700	67,061	68,947	71,708	77,286	82,446	87,103	91,296	95,212	1.0%	0.6%	0.8%	1.5%	1.3%	1.1%	0.9%	0.8%
		COLUMBIO	27,440	33,258	33,527	34,846	37,556	40,064	42,327	44,364	46,268	3.9%	0.2%	0.8%	1.5%	1.3%	1.1%	0.9%	0.8%
		ESPERANZA	63,207	66,095	74,696	77,927	83,988	89,595	94,655	99,212	103,467	0.9%	2.5%	0.9%	1.5%	1.3%	1.1%	0.9%	0.8%
		ISULAN (Capital)	86,602	90,682	97,490	101,545	109,444	116,751	123,345	129,284	134,830	0.9%	1.5%	0.8%	1.5%	1.3%	1.1%	0.9%	0.8%
		KALAMANSIG	46,408	49,059	50,900	52,956	57,075	60,886	64,324	67,421	70,313	1.1%	0.7%	0.8%	1.5%	1.3%	1.1%	0.9%	0.8%
		LEBAK	83,280	88,868	91,344	95,002	102,392	109,229	115,398	120,954	126,143	1.3%	0.6%	0.8%	1.5%	1.3%	1.1%	0.9%	0.8%
		LUTAYAN	56,179	63,029	65,644	68,303	73,616	78,531	82,967	86,961	90,691	2.3%	0.8%	0.8%	1.5%	1.3%	1.1%	0.9%	0.8%
		LAMBAYONG (MARIANO MARCOS)	65,557	77,013	79,739	82,952	89,405	95,374	100,760	105,611	110,142	3.3%	0.7%	0.8%	1.5%	1.3%	1.1%	0.9%	0.8%
		PALIMBANG	83,265	90,424	92,828	96,541	104,050	110,997	117,266	122,911	128,185	1.7%	0.5%	0.8%	1.5%	1.3%	1.1%	0.9%	0.8%
		PRESIDENT QUIRINO	38,753	41,408	42,244	43,924	47,341	50,502	53,354	55,923	58,322	1.3%	0.4%	0.8%	1.5%	1.3%	1.1%	0.9%	0.8%
		CITY OF TACURONG	89,188	98,316	109,319	113,989	122,856	131,059	138,461	145,127	151,353	2.0%	2.1%	0.8%	1.5%	1.3%	1.1%	0.9%	0.8%
		SEN. NINOY AQUINO	43,508	46,882	47,374	49,242	53,073	56,615	59,814	62,694	65,385	1.5%	0.2%	0.8%	1.5%	1.3%	1.1%	0.9%	0.8%
		Sub-total	747,087	812,095	854,052	888,933	958,083	1,022,050	1,079,774	1,131,757	1,180,312	1.7%	1.0%	0.8%	1.5%	1.3%	1.1%	0.9%	0.8%
		Total	4,109,571	4,545,276	4,360,974	4,633,766	4,987,767	5,312,226	5,599,572	5,839,756	6,024,644	2.0%	-0.8%	1.2%	1.5%	1.3%	1.1%	0.8%	0.6%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CARAGA	Agusan del Norte	BUENAVISTA	56,139	61,614	68,892	72,606	79,310	86,086	92,773	99,188	105,182	1.9%	2.3%	1.1%	1.8%	1.7%	1.5%	1.3%	1.2%
		CITY OF CABADBARAN	69,241	73,639	80,354	84,622	92,436	100,333	108,126	115,604	122,590	1.2%	1.8%	1.0%	1.8%	1.7%	1.5%	1.3%	1.2%
		CARMEN	19,781	20,839	23,172	24,418	26,672	28,951	31,200	33,358	35,374	1.0%	2.1%	1.1%	1.8%	1.7%	1.5%	1.3%	1.2%
		JABONGA	23,833	23,184	24,855	26,160	28,576	31,017	33,426	35,738	37,898	-0.6%	1.4%	1.0%	1.8%	1.7%	1.5%	1.3%	1.2%
		KITCHARAO	17,377	18,659	21,278	22,439	24,510	26,604	28,670	30,652	32,505	1.4%	2.7%	1.1%	1.8%	1.7%	1.5%	1.3%	1.2%
		LAS NIEVES	26,856	28,414	30,240	31,820	34,759	37,729	40,659	43,470	46,097	1.1%	1.3%	1.0%	1.8%	1.7%	1.5%	1.3%	1.2%
		MAGALLANES	21,481	21,007	22,293	23,456	25,622	27,811	29,971	32,043	33,979	-0.4%	1.2%	1.0%	1.8%	1.7%	1.5%	1.3%	1.2%
		NASIPIT	40,663	41,957	44,822	47,171	51,526	55,928	60,272	64,440	68,334	0.6%	1.3%	1.0%	1.8%	1.7%	1.5%	1.3%	1.2%
		SANTIAGO	20,955	24,200	28,657	30,254	33,047	35,870	38,657	41,330	43,828	2.9%	3.4%	1.1%	1.8%	1.7%	1.5%	1.3%	1.2%
		TUBAY	20,426	24,932	25,785	27,107	29,610	32,139	34,635	37,030	39,268	4.1%	0.7%	1.0%	1.8%	1.7%	1.5%	1.3%	1.2%
		REMEDIOS T. ROMUALDEZ	15,735	16,058	17,155	18,053	19,720	21,405	23,067	24,663	26,153	0.4%	1.3%	1.0%	1.8%	1.7%	1.5%	1.3%	1.2%
		BUTUAN CITY (Capital)	309,709	337,063	372,910	392,888	429,164	465,832	502,012	536,727	569,158	1.7%	2.0%	1.0%	1.8%	1.7%	1.5%	1.3%	1.2%
		Sub-total	642,196	691,566	760,413	800,995	874,950	949,705	1,023,468	1,094,245	1,160,366	1.5%	1.9%	1.0%	1.8%	1.7%	1.5%	1.3%	1.2%
	Agusan del Sur	CITY OF BAYUGAN	99,361	103,202	109,499	113,764	127,550	141,699	156,026	170,265	184,322	0.8%	1.2%	0.8%	2.3%	2.1%	1.9%	1.8%	1.6%
		BUNAWAN	37,482	45,151	47,512	49,350	55,330	61,467	67,682	73,859	79,957	3.8%	1.0%	0.8%	2.3%	2.1%	1.9%	1.8%	1.6%
		ESPERANZA	51,897	54,801	59,353	61,707	69,184	76,859	84,629	92,353	99,977	1.1%	1.6%	0.8%	2.3%	2.1%	1.9%	1.8%	1.6%
		LA PAZ	28,562	28,217	30,969	32,211	36,114	40,120	44,177	48,208	52,188	-0.2%	1.9%	0.8%	2.3%	2.1%	1.9%	1.8%	1.6%
		LORETO	39,474	42,501	43,880	45,547	51,067	56,731	62,468	68,169	73,797	1.5%	0.6%	0.7%	2.3%	2.1%	1.9%	1.8%	1.6%
		PROSPERIDAD (Capital)	76,628	82,631	88,321	91,784	102,906	114,321	125,880	137,368	148,709	1.5%	1.3%	0.8%	2.3%	2.1%	1.9%	1.8%	1.6%
		ROSARIO	38,280	46,683	49,610	51,545	57,792	64,203	70,694	77,145	83,514	4.0%	1.2%	0.8%	2.3%	2.1%	1.9%	1.8%	1.6%
		SAN FRANCISCO	70,986	74,542	80,760	83,963	94,137	104,579	115,153	125,662	136,037	1.0%	1.6%	0.8%	2.3%	2.1%	1.9%	1.8%	1.6%
		SAN LUIS	32,733	32,109	35,196	36,605	41,041	45,593	50,202	54,784	59,307	-0.4%	1.9%	0.8%	2.3%	2.1%	1.9%	1.8%	1.6%
		SANTA JOSEFA	25,156	26,729	26,432	27,395	30,715	34,123	37,573	41,002	44,387	1.2%	-0.2%	0.7%	2.3%	2.1%	1.9%	1.8%	1.6%
		TALACOGON	37,224	38,374	39,678	41,188	46,180	51,303	56,489	61,645	66,734	0.6%	0.7%	0.7%	2.3%	2.1%	1.9%	1.8%	1.6%
		TRENTO	47,193	51,565	54,492	56,608	63,468	70,508	77,636	84,722	91,716	1.8%	1.1%	0.8%	2.3%	2.1%	1.9%	1.8%	1.6%
		VERUELA	40,457	43,706	39,708	41,027	45,999	51,101	56,268	61,403	66,473	1.6%	-1.9%	0.7%	2.3%	2.1%	1.9%	1.8%	1.6%
		SIBAGAT	30,985	30,442	33,957	35,336	39,618	44,011	48,463	52,885	57,251	-0.4%	2.2%	0.8%	2.3%	2.1%	1.9%	1.8%	1.6%
		Sub-total	656,418	700,653	739,367	768,027	861,098	956,614	1,053,336	1,149,466	1,244,364	1.3%	1.1%	0.8%	2.3%	2.1%	1.9%	1.8%	1.6%
	Dinagat Islands	BASILISA (RIZAL)	33,880	36,880	36,911	37,665	41,028	44,361	47,709	50,984	54,141	1.7%	0.0%	0.4%	1.7%	1.6%	1.5%	1.3%	1.2%
		CAGDIANAO	15,047	16,808	18,350	18,779	20,456	22,118	23,787	25,420	26,994	2.2%	1.8%	0.5%	1.7%	1.6%	1.5%	1.3%	1.2%
		DINAGAT	12,786	10,632	10,621	10,838	11,805	12,764	13,728	14,670	15,579	-3.6%	0.0%	0.4%	1.7%	1.6%	1.5%	1.3%	1.2%
		LIBJO (ALBOR)	17,567	17,760	18,051	18,429	20,075	21,705	23,343	24,945	26,490	0.2%	0.3%	0.4%	1.7%	1.6%	1.5%	1.3%	1.2%
		LORETO	8,920	9,309	9,690	9,901	10,785	11,661	12,542	13,403	14,232	0.9%	0.8%	0.4%	1.7%	1.6%	1.5%	1.3%	1.2%
		SAN JOSE (Capital)	31,035	27,487	26,375	26,873	29,272	31,650	34,039	36,375	38,628	-2.4%	-0.8%	0.4%	1.7%	1.6%	1.5%	1.3%	1.2%
		TUBAJON	7,568	8,276	8,119	8,279	9,017	9,751	10,486	11,207	11,901	1.8%	-0.4%	0.4%	1.7%	1.6%	1.5%	1.3%	1.2%
		Sub-total	126,803	127,152	128,117	130,765	142,439	154,013	165,635	177,005	187,966	0.1%	0.2%	0.4%	1.7%	1.6%	1.5%	1.3%	1.2%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CARAGA	Surigao del Norte	ALEGRIA	14,539	16,011	16,184	17,658	18,724	19,648	20,437	21,056	21,487	1.9%	0.2%	1.8%	1.2%	1.0%	0.8%	0.6%	0.4%
		BACUAG	13,211	14,486	14,881	16,245	17,226	18,076	18,802	19,371	19,768	1.9%	0.5%	1.8%	1.2%	1.0%	0.8%	0.6%	0.4%
		BURGOS	4,058	4,034	4,185	4,570	4,845	5,085	5,289	5,449	5,561	-0.1%	0.7%	1.8%	1.2%	1.0%	0.8%	0.6%	0.4%
		CLAVER	23,702	32,773	36,033	39,425	41,804	43,866	45,630	47,011	47,974	6.7%	1.9%	1.8%	1.2%	1.0%	0.8%	0.6%	0.4%
		DAPA	23,492	23,787	29,006	31,835	33,756	35,421	36,844	37,959	38,736	0.2%	4.0%	1.9%	1.2%	1.0%	0.8%	0.6%	0.4%
		DEL CARMEN	17,136	18,392	20,127	22,019	23,348	24,499	25,484	26,255	26,792	1.4%	1.8%	1.8%	1.2%	1.0%	0.8%	0.6%	0.4%
		GENERAL LUNA	15,014	16,771	22,853	25,158	26,676	27,992	29,118	30,000	30,614	2.2%	6.4%	1.9%	1.2%	1.0%	0.8%	0.6%	0.4%
		GIGAQUIT	18,784	20,864	21,849	23,869	25,309	26,557	27,625	28,461	29,044	2.1%	0.9%	1.8%	1.2%	1.0%	0.8%	0.6%	0.4%
		MAINIT	25,596	26,741	28,019	30,609	32,456	34,057	35,425	36,497	37,245	0.9%	0.9%	1.8%	1.2%	1.0%	0.8%	0.6%	0.4%
		MALIMONO	18,316	18,054	18,852	20,592	21,833	22,910	23,831	24,553	25,056	-0.3%	0.9%	1.8%	1.2%	1.0%	0.8%	0.6%	0.4%
		PILAR	9,456	9,752	10,374	11,339	12,023	12,617	13,124	13,521	13,798	0.6%	1.2%	1.8%	1.2%	1.0%	0.8%	0.6%	0.4%
		PLACER	24,600	27,094	29,616	32,398	34,352	36,047	37,496	38,631	39,422	2.0%	1.8%	1.8%	1.2%	1.0%	0.8%	0.6%	0.4%
		SAN BENITO	5,505	5,404	5,663	6,187	6,560	6,884	7,160	7,377	7,529	-0.4%	0.9%	1.8%	1.2%	1.0%	0.8%	0.6%	0.4%
		SAN FRANCISCO (ANAO-AON)	13,335	14,552	15,347	16,769	17,782	18,659	19,409	19,996	20,406	1.8%	1.1%	1.8%	1.2%	1.0%	0.8%	0.6%	0.4%
		SAN ISIDRO	6,973	7,325	8,519	9,337	9,901	10,389	10,807	11,134	11,362	1.0%	3.1%	1.9%	1.2%	1.0%	0.8%	0.6%	0.4%
		SANTA MONICA (SAPAO)	8,715	8,808	9,423	10,302	10,923	11,462	11,923	12,283	12,535	0.2%	1.4%	1.8%	1.2%	1.0%	0.8%	0.6%	0.4%
		SISON	11,377	13,155	14,290	15,630	16,572	17,389	18,089	18,636	19,018	2.9%	1.7%	1.8%	1.2%	1.0%	0.8%	0.6%	0.4%
		SOCORRO	20,304	22,314	25,942	28,433	30,149	31,636	32,907	33,903	34,597	1.9%	3.1%	1.9%	1.2%	1.0%	0.8%	0.6%	0.4%
		SURIGAO CITY (Capital)	140,540	154,137	171,107	187,271	198,569	208,364	216,740	223,299	227,873	1.9%	2.1%	1.8%	1.2%	1.0%	0.8%	0.6%	0.4%
		TAGANA-AN	15,366	16,428	17,323	18,928	20,069	21,059	21,905	22,567	23,029	1.3%	1.1%	1.8%	1.2%	1.0%	0.8%	0.6%	0.4%
		TUBOD	12,569	14,206	15,043	16,437	17,428	18,288	19,023	19,598	20,000	2.5%	1.2%	1.8%	1.2%	1.0%	0.8%	0.6%	0.4%
		Sub-total	442,588	485,088	534,636	585,012	620,305	650,906	677,069	697,560	711,849	1.9%	2.0%	1.8%	1.2%	1.0%	0.8%	0.6%	0.4%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CARAGA	Surigao del Sur	BAROBO	43,663	49,730	53,146	55,152	59,594	63,876	67,988	71,835	75,342	2.6%	1.3%	0.7%	1.6%	1.4%	1.3%	1.1%	1.0%
		BAYABAS	7,779	8,164	8,979	9,327	10,078	10,802	11,497	12,148	12,741	1.0%	1.9%	0.8%	1.6%	1.4%	1.3%	1.1%	1.0%
		CITY OF BISLIG	96,578	94,535	99,290	102,978	111,272	119,268	126,946	134,128	140,678	-0.4%	1.0%	0.7%	1.6%	1.4%	1.3%	1.1%	1.0%
		CAGWAIT	18,899	20,384	21,747	22,567	24,384	26,136	27,819	29,393	30,828	1.5%	1.3%	0.7%	1.6%	1.4%	1.3%	1.1%	1.0%
		CANTILAN	30,231	31,492	34,060	35,359	38,207	40,953	43,589	46,055	48,304	0.8%	1.6%	0.8%	1.6%	1.4%	1.3%	1.1%	1.0%
		CARMEN	10,287	10,347	11,720	12,185	13,166	14,113	15,021	15,871	16,646	0.1%	2.5%	0.8%	1.6%	1.4%	1.3%	1.1%	1.0%
		CARRASCAL	16,529	22,479	24,586	25,533	27,590	29,573	31,476	33,257	34,881	6.3%	1.8%	0.8%	1.6%	1.4%	1.3%	1.1%	1.0%
		CORTES	15,541	15,912	17,924	18,632	20,132	21,578	22,968	24,267	25,452	0.5%	2.4%	0.8%	1.6%	1.4%	1.3%	1.1%	1.0%
		HINATUAN	38,731	39,842	43,841	45,538	49,206	52,741	56,137	59,314	62,210	0.6%	1.9%	0.8%	1.6%	1.4%	1.3%	1.1%	1.0%
		LANUZA	11,857	12,001	13,642	14,185	15,328	16,429	17,487	18,477	19,379	0.2%	2.6%	0.8%	1.6%	1.4%	1.3%	1.1%	1.0%
		LIANGA	28,905	29,493	33,869	35,228	38,065	40,800	43,426	45,882	48,123	0.4%	2.8%	0.8%	1.6%	1.4%	1.3%	1.1%	1.0%
		LINGIG	31,544	31,485	35,142	36,519	39,460	42,296	45,019	47,566	49,888	0.0%	2.2%	0.8%	1.6%	1.4%	1.3%	1.1%	1.0%
		MADRID	14,888	15,223	16,653	17,295	18,687	20,030	21,319	22,525	23,625	0.4%	1.8%	0.8%	1.6%	1.4%	1.3%	1.1%	1.0%
		MARIHATAG	17,926	18,518	19,441	20,163	21,786	23,352	24,856	26,262	27,544	0.7%	1.0%	0.7%	1.6%	1.4%	1.3%	1.1%	1.0%
		SAN AGUSTIN	20,655	22,779	22,855	23,667	25,573	27,411	29,175	30,825	32,331	2.0%	0.1%	0.7%	1.6%	1.4%	1.3%	1.1%	1.0%
		SAN MIGUEL	36,287	39,340	41,809	43,379	46,872	50,241	53,475	56,500	59,259	1.6%	1.2%	0.7%	1.6%	1.4%	1.3%	1.1%	1.0%
		TAGBINA	34,812	38,833	41,051	42,586	46,016	49,322	52,497	55,467	58,176	2.2%	1.1%	0.7%	1.6%	1.4%	1.3%	1.1%	1.0%
		TAGO	33,993	35,329	39,831	41,405	44,740	47,955	51,043	53,930	56,565	0.8%	2.4%	0.8%	1.6%	1.4%	1.3%	1.1%	1.0%
		CITY OF TANDAG (Capital)	52,114	56,364	62,669	65,117	70,360	75,417	80,272	84,812	88,955	1.6%	2.1%	0.8%	1.6%	1.4%	1.3%	1.1%	1.0%
		Sub-total	561,219	592,250	642,255	666,812	720,516	772,293	822,008	868,514	910,926	1.1%	1.6%	0.8%	1.6%	1.4%	1.3%	1.1%	1.0%
		Total	2,429,224	2,596,709	2,804,788	2,951,611	3,219,308	3,483,531	3,741,516	3,986,790	4,215,471	1.3%	1.6%	1.0%	1.8%	1.6%	1.4%	1.3%	1.1%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
BARMM	Basilan	CITY OF LAMITAN	68,996	74,782	100,150	113,088	127,940	143,518	159,548	176,023	192,563	1.6%	6.0%	2.5%	2.5%	2.3%	2.1%	2.0%	1.8%
		LANTAWAN	20,087	24,594	31,040	34,994	39,590	44,411	49,372	54,470	59,588	4.1%	4.8%	2.4%	2.5%	2.3%	2.1%	2.0%	1.8%
		MALUSO	33,803	40,646	45,730	51,381	58,129	65,207	72,491	79,975	87,491	3.8%	2.4%	2.4%	2.5%	2.3%	2.1%	2.0%	1.8%
		SUMISIP	37,031	41,730	47,345	53,211	60,199	67,528	75,071	82,823	90,606	2.4%	2.6%	2.4%	2.5%	2.3%	2.1%	2.0%	1.8%
		TIPO-TIPO	16,978	19,163	25,531	28,824	32,610	36,580	40,666	44,865	49,081	2.5%	5.9%	2.5%	2.5%	2.3%	2.1%	2.0%	1.8%
		TUBURAN	18,988	20,207	24,742	27,870	31,530	35,369	39,320	43,380	47,456	1.3%	4.1%	2.4%	2.5%	2.3%	2.1%	2.0%	1.8%
		AKBAR	13,369	17,531	23,098	26,070	29,494	33,084	36,779	40,577	44,390	5.6%	5.7%	2.5%	2.5%	2.3%	2.1%	2.0%	1.8%
		AL-BARKA	19,523	20,905	23,736	26,677	30,181	33,855	37,637	41,523	45,425	1.4%	2.6%	2.4%	2.5%	2.3%	2.1%	2.0%	1.8%
		HADJI MOHAMMAD AJUL	15,962	19,307	24,625	27,771	31,419	35,244	39,181	43,226	47,287	3.9%	5.0%	2.4%	2.5%	2.3%	2.1%	2.0%	1.8%
		UNGKAYA PUKAN	17,701	18,441	24,016	27,098	30,658	34,391	38,231	42,179	46,142	0.8%	5.4%	2.4%	2.5%	2.3%	2.1%	2.0%	1.8%
		HADJI MUHTAMAD	12,249	25,085	26,867	30,141	34,099	38,251	42,523	46,913	51,322	15.4%	1.4%	2.3%	2.5%	2.3%	2.1%	2.0%	1.8%
		TABUAN-LASA	18,635	24,188	29,327	33,027	37,365	41,915	46,597	51,408	56,238	5.4%	3.9%	2.4%	2.5%	2.3%	2.1%	2.0%	1.8%
		Sub-total	293,322	346,579	426,207	480,153	543,215	609,354	677,417	747,364	817,590	3.4%	4.2%	2.4%	2.5%	2.3%	2.1%	2.0%	1.8%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
BARMM	Lanao del Sur	BACOLOD-KALAWI (BACOLOD GRANDE)	18,555	20,841	23,129	25,519	28,755	32,049	35,388	38,773	42,122	2.4%	2.1%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		BALABAGAN	25,139	26,819	29,863	32,953	37,134	41,388	45,700	50,071	54,396	1.3%	2.2%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		BALINDONG (WATU)	26,007	29,180	32,573	35,945	40,506	45,146	49,850	54,618	59,336	2.3%	2.2%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		BAYANG	21,472	23,965	28,023	30,968	34,896	38,893	42,946	47,053	51,117	2.2%	3.2%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		BINIDAYAN	19,493	22,079	25,965	28,698	32,339	36,044	39,799	43,606	47,372	2.5%	3.3%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		BUBONG	19,455	22,336	26,514	29,314	33,033	36,817	40,653	44,541	48,388	2.8%	3.5%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		BUTIG	16,642	19,302	22,768	25,168	28,360	31,609	34,903	38,242	41,545	3.0%	3.4%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		GANASSI	20,205	23,016	30,802	34,168	38,503	42,913	47,385	51,917	56,401	2.6%	6.0%	2.1%	2.4%	2.2%	2.0%	1.8%	1.7%
		KAPAI	17,370	18,894	20,581	22,694	25,574	28,503	31,473	34,483	37,461	1.7%	1.7%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		LUMBA-BAYABAO (MAGUING)	32,412	36,151	45,909	50,854	57,305	63,870	70,525	77,271	83,943	2.2%	4.9%	2.1%	2.4%	2.2%	2.0%	1.8%	1.7%
		LUMBATAN	16,719	19,105	22,780	25,189	28,385	31,636	34,932	38,273	41,579	2.7%	3.6%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		MADALUM	20,243	23,127	26,478	29,243	32,953	36,728	40,555	44,434	48,272	2.7%	2.7%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		MADAMBA	15,542	17,756	22,050	24,411	27,508	30,659	33,854	37,093	40,296	2.7%	4.4%	2.1%	2.4%	2.2%	2.0%	1.8%	1.7%
		MALABANG	38,724	43,957	49,088	54,171	61,044	68,037	75,126	82,312	89,420	2.6%	2.2%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		MARANTAO	28,550	32,974	37,763	41,706	46,996	52,380	57,837	63,369	68,842	2.9%	2.7%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		MARAWI CITY (Capital)	187,106	201,785	207,010	227,814	256,713	286,119	315,932	346,151	376,047	1.5%	0.5%	1.9%	2.4%	2.2%	2.0%	1.8%	1.7%
		MASIU	25,181	29,176	33,580	37,093	41,798	46,585	51,439	56,360	61,227	3.0%	2.9%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		MULONDO	14,065	16,067	19,932	22,065	24,864	27,712	30,599	33,526	36,421	2.7%	4.4%	2.1%	2.4%	2.2%	2.0%	1.8%	1.7%
		PAGAYAWAN (TATARIKAN)	11,349	13,139	15,057	16,629	18,738	20,885	23,061	25,267	27,449	3.0%	2.8%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		PIAGAPO	21,974	25,440	30,132	33,312	37,538	41,838	46,198	50,617	54,988	3.0%	3.4%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		POONA BAYABAO (GATA)	19,229	22,227	31,141	34,584	38,971	43,435	47,961	52,549	57,087	2.9%	7.0%	2.1%	2.4%	2.2%	2.0%	1.8%	1.7%
		PUALAS	11,163	12,866	14,526	16,035	18,070	20,140	22,238	24,366	26,471	2.9%	2.5%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		DITSAAN-RAMAIN	20,208	22,299	24,406	26,916	30,330	33,804	37,327	40,897	44,429	2.0%	1.8%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		SAGUIARAN	22,673	24,619	26,712	29,451	33,187	36,988	40,842	44,749	48,614	1.7%	1.6%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		TAMPARAN	22,367	25,874	32,074	35,505	40,009	44,592	49,238	53,948	58,607	3.0%	4.4%	2.1%	2.4%	2.2%	2.0%	1.8%	1.7%
		TARAKA	20,881	23,644	27,184	30,026	33,835	37,710	41,639	45,621	49,562	2.5%	2.8%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		TUBARAN	12,933	14,749	16,896	18,659	21,027	23,435	25,877	28,353	30,801	2.7%	2.8%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		TUGAYA	22,235	23,814	24,778	27,282	30,743	34,264	37,834	41,453	45,033	1.4%	0.8%	1.9%	2.4%	2.2%	2.0%	1.8%	1.7%
		WAO	40,479	45,862	50,366	55,553	62,600	69,771	77,041	84,410	91,700	2.5%	1.9%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		MAROGONG	18,541	21,319	30,118	33,455	37,698	42,017	46,395	50,833	55,223	2.8%	7.2%	2.1%	2.4%	2.2%	2.0%	1.8%	1.7%
		CALANOGAS	11,988	13,750	14,985	16,524	18,620	20,753	22,916	25,108	27,277	2.8%	1.7%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		BUADIPOSO-BUNTONG	15,662	16,130	18,046	19,915	22,442	25,013	27,619	30,261	32,875	0.6%	2.3%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		MAGUING	21,444	24,531	30,436	33,693	37,967	42,317	46,726	51,195	55,616	2.7%	4.4%	2.1%	2.4%	2.2%	2.0%	1.8%	1.7%
		PICONG (SULTAN GUMANDER)	14,136	16,615	18,907	20,877	23,525	26,220	28,952	31,721	34,461	3.3%	2.6%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		LUMBAYANAGUE	14,308	16,372	19,091	21,096	23,772	26,496	29,256	32,054	34,823	2.7%	3.1%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		BUMBARAN	8,734	10,401	12,124	13,397	15,096	16,826	18,579	20,356	22,115	3.6%	3.1%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		TAGOLOAN II	9,843	11,169	12,602	13,911	15,676	17,471	19,292	21,137	22,962	2.6%	2.4%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		KAPATAGAN	13,432	15,521	20,498	22,731	25,613	28,547	31,523	34,538	37,521	2.9%	5.7%	2.1%	2.4%	2.2%	2.0%	1.8%	1.7%
		SULTAN DUMALONDONG	10,522	11,298	12,500	13,790	15,539	17,318	19,123	20,952	22,760	1.4%	2.0%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		LUMBACA-UNAYAN	6,279	7,260	8,131	8,974	10,111	11,269	12,443	13,635	14,812	2.9%	2.3%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%
		Sub-total	933,260	1,045,429	1,195,518	1,320,290	1,487,774	1,658,195	1,830,978	2,006,115	2,179,373	2.3%	2.7%	2.0%	2.4%	2.2%	2.0%	1.8%	1.7%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
BARMM	Maguindanao	AMPATUAN	17,800	24,801	28,941	32,882	36,302	39,575	42,621	45,385	47,816	6.9%	3.1%	2.6%	2.0%	1.7%	1.5%	1.3%	1.0%
		BULDON	33,729	35,282	39,684	45,038	49,721	54,206	58,377	62,163	65,494	0.9%	2.4%	2.6%	2.0%	1.7%	1.5%	1.3%	1.0%
		BULUAN	38,106	50,008	57,406	65,192	71,973	78,464	84,503	89,983	94,803	5.6%	2.8%	2.6%	2.0%	1.7%	1.5%	1.3%	1.0%
		Cotabato City	-	-	325,079	334,119	359,300	383,145	405,750	426,231	443,376	-	-	0.6%	1.5%	1.3%	1.2%	1.0%	0.8%
		DATU PAGLAS	20,290	28,387	33,682	38,288	42,270	46,082	49,629	52,847	55,677	6.9%	3.5%	2.6%	2.0%	1.7%	1.5%	1.3%	1.0%
		DATU PIANG	28,492	25,600	28,380	32,194	35,542	38,748	41,731	44,437	46,818	-2.1%	2.1%	2.6%	2.0%	1.7%	1.5%	1.3%	1.0%
		DATU ODIN SINSUAT (DINAIG)	76,332	99,210	116,768	132,704	146,506	159,721	172,014	183,169	192,980	5.4%	3.3%	2.6%	2.0%	1.7%	1.5%	1.3%	1.0%
		SHARIFF AGUAK (MAGANOY) (Capital)	34,376	31,692	33,982	38,508	42,513	46,348	49,915	53,152	55,999	-1.6%	1.4%	2.5%	2.0%	1.7%	1.5%	1.3%	1.0%
		MATANOG	23,269	29,770	36,034	40,986	45,249	49,330	53,127	56,572	59,602	5.1%	3.9%	2.6%	2.0%	1.7%	1.5%	1.3%	1.0%
		PAGALUNGAN	31,891	39,653	46,277	52,578	58,046	63,282	68,152	72,572	76,459	4.5%	3.1%	2.6%	2.0%	1.7%	1.5%	1.3%	1.0%
		PARANG	73,328	89,194	102,914	116,889	129,045	140,684	151,513	161,339	169,981	4.0%	2.9%	2.6%	2.0%	1.7%	1.5%	1.3%	1.0%
		SULTAN KUDARAT (NULING)	82,758	95,201	105,121	119,234	131,634	143,507	154,553	164,575	173,391	2.8%	2.0%	2.6%	2.0%	1.7%	1.5%	1.3%	1.0%
		SULTAN SA BARONGIS (LAMBAYONG)	22,547	22,425	24,476	27,752	30,639	33,402	35,973	38,306	40,358	-0.1%	1.8%	2.5%	2.0%	1.7%	1.5%	1.3%	1.0%
		KABUNTALAN (TUMBAO)	16,794	17,276	25,439	29,082	32,107	35,003	37,697	40,141	42,291	0.6%	8.0%	2.7%	2.0%	1.7%	1.5%	1.3%	1.0%
		UPI	45,444	53,583	59,004	66,919	73,879	80,542	86,741	92,366	97,314	3.3%	1.9%	2.5%	2.0%	1.7%	1.5%	1.3%	1.0%
		TALAYAN	16,042	30,032	34,156	38,777	42,811	46,672	50,264	53,523	56,390	13.4%	2.6%	2.6%	2.0%	1.7%	1.5%	1.3%	1.0%
		SOUTH UPI	35,990	40,178	43,197	48,955	54,046	58,920	63,455	67,570	71,190	2.2%	1.5%	2.5%	2.0%	1.7%	1.5%	1.3%	1.0%
		BARIRA	19,686	30,004	36,143	41,103	45,378	49,470	53,277	56,732	59,771	8.8%	3.8%	2.6%	2.0%	1.7%	1.5%	1.3%	1.0%
		GEN. S.K. PENDATUN	24,004	28,103	31,263	35,469	39,158	42,689	45,975	48,956	51,578	3.2%	2.2%	2.6%	2.0%	1.7%	1.5%	1.3%	1.0%
		MAMASAPANO	22,354	24,800	27,807	31,556	34,838	37,980	40,903	43,555	45,888	2.1%	2.3%	2.6%	2.0%	1.7%	1.5%	1.3%	1.0%
		TALITAY	13,328	14,863	17,463	19,845	21,909	23,886	25,724	27,392	28,859	2.2%	3.3%	2.6%	2.0%	1.7%	1.5%	1.3%	1.0%
		PAGAGAWAN	31,265	34,820	37,314	42,284	46,681	50,892	54,809	58,363	61,489	2.2%	1.4%	2.5%	2.0%	1.7%	1.5%	1.3%	1.0%
		PAGLAT	11,207	15,920	18,727	21,282	23,496	25,616	27,587	29,376	30,950	7.3%	3.3%	2.6%	2.0%	1.7%	1.5%	1.3%	1.0%
		SULTAN MASTURA	21,712	22,261	25,331	28,759	31,750	34,613	37,277	39,694	41,820	0.5%	2.6%	2.6%	2.0%	1.7%	1.5%	1.3%	1.0%
		GUINDULUNGAN	16,071	19,911	24,933	28,386	31,338	34,165	36,794	39,180	41,279	4.4%	4.6%	2.6%	2.0%	1.7%	1.5%	1.3%	1.0%
		DATU SAUDI-AMPATUAN	20,330	26,427	31,060	35,298	38,969	42,484	45,754	48,720	51,330	5.4%	3.3%	2.6%	2.0%	1.7%	1.5%	1.3%	1.0%
		DATU UNSAY	12,490	11,813	12,890	14,616	16,135	17,591	18,944	20,173	21,253	-1.1%	1.8%	2.5%	2.0%	1.7%	1.5%	1.3%	1.0%
		DATU ABDULLAH SANGKI	17,079	23,878	30,117	34,295	37,862	41,276	44,453	47,335	49,870	6.9%	4.8%	2.6%	2.0%	1.7%	1.5%	1.3%	1.0%
		RAJAH BUAYAN	17,423	23,652	27,832	31,631	34,920	38,070	41,001	43,659	45,998	6.3%	3.3%	2.6%	2.0%	1.7%	1.5%	1.3%	1.0%
		DATU BLAH T. SINSUAT	16,533	25,024	28,243	32,057	35,391	38,583	41,553	44,248	46,618	8.6%	2.4%	2.6%	2.0%	1.7%	1.5%	1.3%	1.0%
		DATU ANGGAL MIDTIMBANG	13,339	25,016	28,224	32,036	35,367	38,558	41,526	44,218	46,587	13.4%	2.4%	2.6%	2.0%	1.7%	1.5%	1.3%	1.0%
		MANGUDADATU	14,864	25,046	26,203	29,669	32,755	35,709	38,457	40,951	43,144	11.0%	0.9%	2.5%	2.0%	1.7%	1.5%	1.3%	1.0%
		PANDAG	13,795	25,057	26,356	29,848	32,952	35,924	38,689	41,198	43,404	12.7%	1.0%	2.5%	2.0%	1.7%	1.5%	1.3%	1.0%
		NORTHERN KABUNTALAN	14,251	25,232	26,277	29,748	32,842	35,804	38,560	41,060	43,260	12.1%	0.8%	2.5%	2.0%	1.7%	1.5%	1.3%	1.0%
		DATU HOFFER AMPATUAN	16,295	25,012	26,660	30,205	33,346	36,354	39,151	41,691	43,924	8.9%	1.3%	2.5%	2.0%	1.7%	1.5%	1.3%	1.0%
		DATU SALIBO	15,062	14,947	18,795	21,399	23,625	25,756	27,739	29,540	31,123	-0.2%	4.7%	2.6%	2.0%	1.7%	1.5%	1.3%	1.0%
		SHARIFF SAYDONA MUSTAPHA	16,442	19,855	25,080	28,559	31,530	34,373	37,020	39,421	41,533	3.8%	4.8%	2.6%	2.0%	1.7%	1.5%	1.3%	1.0%
		Sub-total	944,718	1,173,933	1,667,258	1,904,421	2,102,488	2,292,116	2,468,536	2,628,617	2,769,422	4.4%	7.3%	2.7%	2.0%	1.7%	1.5%	1.3%	1.0%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
BARMM	Sulu	INDANAN	65,858	80,883	93,168	103,973	114,571	124,835	134,769	144,198	153,093	4.2%	2.9%	2.2%	2.0%	1.7%	1.5%	1.4%	1.2%
		JOLO (Capital)	118,307	125,564	137,266	152,937	168,527	183,624	198,236	212,106	225,189	1.2%	1.8%	2.2%	2.0%	1.7%	1.5%	1.4%	1.2%
		KALINGALAN CALUANG	26,848	31,567	39,549	44,244	48,754	53,122	57,349	61,362	65,147	3.3%	4.6%	2.3%	2.0%	1.7%	1.5%	1.4%	1.2%
		LUUK	29,897	32,162	37,873	42,293	46,604	50,779	54,820	58,655	62,274	1.5%	3.3%	2.2%	2.0%	1.7%	1.5%	1.4%	1.2%
		MAIMBUNG	28,445	37,914	59,597	67,048	73,883	80,502	86,908	92,988	98,724	5.9%	9.5%	2.4%	2.0%	1.7%	1.5%	1.4%	1.2%
		HADJI PANGLIMA TAHIL (MARUNGGAS)	5,850	6,375	7,906	8,843	9,744	10,617	11,461	12,262	13,019	1.7%	4.4%	2.3%	2.0%	1.7%	1.5%	1.4%	1.2%
		OLD PANAMAO	37,933	40,998	49,849	55,720	61,399	66,900	72,223	77,276	82,043	1.6%	4.0%	2.3%	2.0%	1.7%	1.5%	1.4%	1.2%
		PANGUTARAN	28,461	30,613	36,374	40,630	44,772	48,783	52,665	56,350	59,826	1.5%	3.5%	2.2%	2.0%	1.7%	1.5%	1.4%	1.2%
		PARANG	58,028	62,172	71,495	79,783	87,915	95,791	103,413	110,648	117,474	1.4%	2.8%	2.2%	2.0%	1.7%	1.5%	1.4%	1.2%
		PATA	14,918	22,163	24,736	27,577	30,389	33,111	35,745	38,246	40,605	8.2%	2.2%	2.2%	2.0%	1.7%	1.5%	1.4%	1.2%
		PATIKUL	42,036	62,287	79,564	89,056	98,134	106,925	115,434	123,511	131,129	8.2%	5.0%	2.3%	2.0%	1.7%	1.5%	1.4%	1.2%
		SIASI	64,229	67,705	81,689	91,289	100,594	109,605	118,326	126,604	134,414	1.1%	3.8%	2.2%	2.0%	1.7%	1.5%	1.4%	1.2%
		TALIPAO	75,173	80,255	100,088	111,955	123,367	134,419	145,115	155,268	164,846	1.3%	4.5%	2.3%	2.0%	1.7%	1.5%	1.4%	1.2%
		TAPUL	16,370	18,197	20,799	23,205	25,570	27,860	30,077	32,182	34,167	2.1%	2.7%	2.2%	2.0%	1.7%	1.5%	1.4%	1.2%
		TONGKIL	17,802	24,161	35,616	40,011	44,090	48,040	51,862	55,490	58,912	6.3%	8.1%	2.4%	2.0%	1.7%	1.5%	1.4%	1.2%
		PANGLIMA ESTINO (NEW PANAMAO)	27,724	28,817	34,249	38,257	42,157	45,934	49,590	53,059	56,333	0.8%	3.5%	2.2%	2.0%	1.7%	1.5%	1.4%	1.2%
		LUGUS	19,839	21,897	29,043	32,542	35,859	39,072	42,180	45,132	47,916	2.0%	5.8%	2.3%	2.0%	1.7%	1.5%	1.4%	1.2%
		PANDAMI	22,474	25,885	33,177	37,138	40,924	44,590	48,138	51,506	54,683	2.9%	5.1%	2.3%	2.0%	1.7%	1.5%	1.4%	1.2%
		OMAR	18,098	25,116	28,070	31,296	34,485	37,574	40,565	43,403	46,079	6.8%	2.2%	2.2%	2.0%	1.7%	1.5%	1.4%	1.2%
		Sub-total	718,290	824,731	1,000,108	1,117,796	1,231,738	1,342,082	1,448,874	1,550,244	1,645,869	2.8%	3.9%	2.2%	2.0%	1.7%	1.5%	1.4%	1.2%

Region	Province	City/ Municipality	Census Results			Population Projection (Medium) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
BARMM	Tawi-Tawi	PANGLIMA SUGALA (BALIMBING)	38,704	44,184	48,055	50,297	56,136	62,122	68,231	74,429	80,723	2.7%	1.7%	0.9%	2.2%	2.0%	1.9%	1.8%	1.6%
		BONGAO (Capital)	79,362	100,527	116,118	121,764	135,901	150,394	165,181	180,187	195,425	4.8%	2.9%	1.0%	2.2%	2.0%	1.9%	1.8%	1.6%
		MAPUN (CAGAYAN DE TAWI-TAWI)	24,168	26,597	30,038	31,477	35,132	38,879	42,702	46,581	50,520	1.9%	2.5%	0.9%	2.2%	2.0%	1.9%	1.8%	1.6%
		SIMUNUL	34,538	31,223	34,245	35,852	40,015	44,283	48,636	53,054	57,541	-2.0%	1.9%	0.9%	2.2%	2.0%	1.9%	1.8%	1.6%
		SITANGKAI	30,514	33,334	37,319	39,096	43,635	48,288	53,036	57,855	62,748	1.8%	2.3%	0.9%	2.2%	2.0%	1.9%	1.8%	1.6%
		SOUTH UBIAN	27,741	25,935	29,583	31,009	34,610	38,301	42,067	45,889	49,770	-1.3%	2.7%	0.9%	2.2%	2.0%	1.9%	1.8%	1.6%
		TANDUBAS	27,748	29,390	34,316	35,996	40,176	44,461	48,832	53,269	57,774	1.2%	3.1%	1.0%	2.2%	2.0%	1.9%	1.8%	1.6%
		TURTLE ISLANDS	3,772	4,727	5,683	5,967	6,661	7,371	8,096	8,832	9,579	4.6%	3.8%	1.0%	2.2%	2.0%	1.9%	1.8%	1.6%
		LANGUYAN	42,690	33,494	37,096	38,849	43,360	47,984	52,702	57,490	62,352	-4.7%	2.1%	0.9%	2.2%	2.0%	1.9%	1.8%	1.6%
		SAPA-SAPA	28,781	30,917	33,580	35,145	39,225	43,407	47,675	52,008	56,406	1.4%	1.7%	0.9%	2.2%	2.0%	1.9%	1.8%	1.6%
		SIBUTU	28,532	30,387	34,243	35,879	40,044	44,316	48,673	53,095	57,585	1.3%	2.4%	0.9%	2.2%	2.0%	1.9%	1.8%	1.6%
		Sub-total	366,550	390,715	440,276	461,332	514,895	569,805	625,832	682,689	740,422	1.3%	2.4%	0.9%	2.2%	2.0%	1.9%	1.8%	1.6%
	Interim Province	CARMEN CLUSTER	-	-	28,463	30,540	33,107	35,596	37,908	39,960	41,673	-	-	1.4%	1.6%	1.5%	1.3%	1.1%	0.8%
		KABACAN CLUSTER	-	-	16,658	17,874	19,376	20,833	22,186	23,386	24,389	-	-	1.4%	1.6%	1.5%	1.3%	1.1%	0.8%
		MIDSAYAP CLUSTER I	-	-	25,573	27,439	29,746	31,982	34,059	35,902	37,442	-	-	1.4%	1.6%	1.5%	1.3%	1.1%	0.8%
		MIDSAYAP CLUSTER II	-	-	22,438	24,075	26,099	28,061	29,884	31,501	32,852	-	-	1.4%	1.6%	1.5%	1.3%	1.1%	0.8%
		PIGKAWAYAN CLUSTER	-	-	19,627	21,059	22,830	24,546	26,140	27,555	28,736	-	-	1.4%	1.6%	1.5%	1.3%	1.1%	0.8%
		PIKIT CLUSTER I	-	-	38,795	41,626	45,125	48,518	51,668	54,465	56,800	-	-	1.4%	1.6%	1.5%	1.3%	1.1%	0.8%
		PIKIT CLUSTER II	-	-	34,341	36,847	39,944	42,947	45,736	48,212	50,279	-	-	1.4%	1.6%	1.5%	1.3%	1.1%	0.8%
		PIKIT CLUSTER III	-	-	29,538	31,694	34,358	36,941	39,340	41,469	43,247	-	-	1.4%	1.6%	1.5%	1.3%	1.1%	0.8%
		Sub-total	-	-	215,433	231,154	250,585	269,423	286,920	302,449	315,419	-	-	1.4%	1.6%	1.5%	1.3%	1.1%	0.8%
		Total	3,256,140	3,781,387	4,944,800	5,515,146	6,130,695	6,740,975	7,338,557	7,917,478	8,468,095	3.0%	5.5%	2.2%	2.1%	1.9%	1.7%	1.5%	1.4%

Source: JICA Study Team

Table 1-1 Population Projection by Municipality (Low)

Region	City	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
		2010	2015	2020(updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
NCR	CITY OF MANILA	1,652,171	1,780,148	1,846,513	1,902,308	1,953,274	1,989,634	2,010,792	2,012,363	1,993,447	1.5%	0.7%	0.6%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF MANDALUYONG	328,699	386,276	425,758	439,496	451,270	459,671	464,558	464,922	460,551	3.3%	2.0%	0.6%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF MARIKINA	424,150	450,741	456,059	469,440	482,017	490,990	496,211	496,598	491,930	1.2%	0.2%	0.6%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF PASIG	669,773	755,300	803,159	828,113	850,299	866,128	875,338	876,021	867,787	2.4%	1.2%	0.6%	0.5%	0.4%	0.2%	0.0%	-0.2%
	QUEZON CITY	2,761,720	2,936,116	2,960,048	3,046,513	3,128,133	3,186,365	3,220,249	3,222,765	3,192,469	1.2%	0.2%	0.6%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF SAN JUAN	121,430	122,180	126,347	130,151	133,638	136,125	137,573	137,681	136,387	0.1%	0.7%	0.6%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CALOOCAN CITY	1,489,040	1,583,978	1,661,584	1,712,436	1,758,314	1,791,047	1,810,093	1,811,506	1,794,477	1.2%	1.0%	0.6%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF MALABON	353,337	365,525	380,522	392,067	402,571	410,064	414,426	414,750	410,851	0.7%	0.8%	0.6%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF NAVOTAS	249,131	249,463	247,543	254,633	261,454	266,321	269,154	269,363	266,831	0.0%	-0.2%	0.6%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF VALENZUELA	575,356	620,422	714,978	739,069	758,869	772,994	781,216	781,826	774,477	1.5%	2.9%	0.7%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF LAS PIÑAS	552,573	588,894	606,293	624,454	641,184	653,119	660,065	660,581	654,370	1.3%	0.6%	0.6%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF MAKATI	529,039	582,602	629,616	649,521	666,923	679,338	686,562	687,097	680,639	1.9%	1.6%	0.6%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF MUNTINLUPA	459,941	504,509	543,445	560,566	575,584	586,299	592,534	592,998	587,422	1.9%	1.5%	0.6%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF PARAÑAQUE	588,126	665,822	689,992	710,819	729,862	743,449	751,355	751,941	744,873	2.5%	0.7%	0.6%	0.5%	0.4%	0.2%	0.0%	-0.2%
	PASAY CITY	392,869	416,522	440,656	454,270	466,441	475,124	480,177	480,551	476,034	1.2%	1.1%	0.6%	0.5%	0.4%	0.2%	0.0%	-0.2%
	PATEROS	64,147	63,840	65,227	67,164	68,964	70,247	70,995	71,049	70,381	-0.1%	0.4%	0.6%	0.5%	0.4%	0.2%	0.0%	-0.2%
	TAGUIG CITY	644,473	804,915	886,722	915,317	939,840	957,335	967,515	968,271	959,169	4.5%	2.0%	0.6%	0.5%	0.4%	0.2%	0.0%	-0.2%
	Total	11,855,975	12,877,253	13,484,462	13,896,337	14,268,637	14,534,250	14,688,813	14,700,283	14,562,095	1.7%	0.9%	0.6%	0.5%	0.4%	0.2%	0.0%	-0.2%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CAR	Abra	BANGUED (Capital)	43,936	48,163	50,382	50,288	52,781	54,955	56,936	58,603	59,873	1.9%	0.9%	0.0%	1.0%	0.8%	0.7%	0.6%	0.4%
		BOLINEY	4,063	3,573	4,551	4,569	4,796	4,992	5,172	5,324	5,439	-2.5%	5.0%	0.1%	1.0%	0.8%	0.7%	0.6%	0.4%
		BUCAY	17,126	17,115	17,953	17,920	18,808	19,583	20,289	20,882	21,335	0.0%	1.0%	0.0%	1.0%	0.8%	0.7%	0.6%	0.4%
		BUCLOC	2,176	2,501	2,395	2,383	2,501	2,604	2,698	2,777	2,838	2.8%	-0.9%	-0.1%	1.0%	0.8%	0.7%	0.6%	0.4%
		DAGUIOMAN	1,715	2,088	2,019	2,010	2,109	2,196	2,275	2,342	2,391	4.0%	-0.7%	-0.1%	1.0%	0.8%	0.7%	0.6%	0.4%
		DANGLAS	4,734	4,192	4,074	4,056	4,257	4,432	4,592	4,726	4,829	-2.4%	-0.6%	-0.1%	1.0%	0.8%	0.7%	0.6%	0.4%
		DOLORES	11,499	11,315	11,512	11,479	12,048	12,544	12,996	13,377	13,667	-0.3%	0.3%	-0.1%	1.0%	0.8%	0.7%	0.6%	0.4%
		LA PAZ	14,882	15,437	16,493	16,473	17,290	18,003	18,652	19,197	19,614	0.7%	1.3%	0.0%	1.0%	0.8%	0.7%	0.6%	0.4%
		LACUB	2,977	3,403	3,612	3,606	3,785	3,942	4,084	4,203	4,294	2.7%	1.2%	0.0%	1.0%	0.8%	0.7%	0.6%	0.4%
		LAGANGILANG	13,824	14,255	14,914	14,886	15,624	16,268	16,854	17,347	17,723	0.6%	0.9%	0.0%	1.0%	0.8%	0.7%	0.6%	0.4%
		LAGAYAN	4,477	4,499	4,488	4,473	4,694	4,888	5,064	5,211	5,325	0.1%	0.0%	-0.1%	1.0%	0.8%	0.7%	0.6%	0.4%
		LANGIDEN	3,170	3,198	3,576	3,577	3,754	3,910	4,050	4,170	4,261	0.2%	2.3%	0.0%	1.0%	0.8%	0.7%	0.6%	0.4%
		LICUAN-BAAY (LICUAN)	4,864	4,689	4,566	4,546	4,772	4,969	5,148	5,298	5,413	-0.7%	-0.5%	-0.1%	1.0%	0.8%	0.7%	0.6%	0.4%
		LUBA	6,391	6,339	6,518	6,502	6,824	7,106	7,362	7,577	7,742	-0.2%	0.6%	0.0%	1.0%	0.8%	0.7%	0.6%	0.4%
		MALIBCONG	3,807	3,428	4,027	4,034	4,234	4,408	4,568	4,701	4,804	-2.1%	3.3%	0.0%	1.0%	0.8%	0.7%	0.6%	0.4%
		MANABO	10,756	10,761	11,611	11,600	12,177	12,677	13,134	13,519	13,811	0.0%	1.5%	0.0%	1.0%	0.8%	0.7%	0.6%	0.4%
		PEÑARRUBIA	6,544	6,640	6,951	6,939	7,282	7,582	7,855	8,085	8,261	0.3%	0.9%	0.0%	1.0%	0.8%	0.7%	0.6%	0.4%
		PIDIGAN	11,528	12,185	12,475	12,443	13,059	13,597	14,088	14,500	14,815	1.1%	0.5%	-0.1%	1.0%	0.8%	0.7%	0.6%	0.4%
		PILAR	9,908	10,223	10,146	10,108	10,610	11,047	11,445	11,779	12,035	0.6%	-0.2%	-0.1%	1.0%	0.8%	0.7%	0.6%	0.4%
		SALLAPADAN	5,985	6,622	6,389	6,359	6,674	6,949	7,200	7,410	7,571	2.0%	-0.7%	-0.1%	1.0%	0.8%	0.7%	0.6%	0.4%
		SAN ISIDRO	4,888	4,574	4,745	4,735	4,970	5,175	5,361	5,518	5,638	-1.3%	0.7%	0.0%	1.0%	0.8%	0.7%	0.6%	0.4%
		SAN JUAN	10,546	9,867	10,688	10,680	11,209	11,671	12,091	12,445	12,716	-1.3%	1.6%	0.0%	1.0%	0.8%	0.7%	0.6%	0.4%
		SAN QUINTIN	5,233	5,438	5,705	5,695	5,976	6,223	6,448	6,636	6,780	0.8%	1.0%	0.0%	1.0%	0.8%	0.7%	0.6%	0.4%
		TAYUM	13,940	14,467	14,869	14,832	15,568	16,209	16,793	17,285	17,660	0.7%	0.5%	0.0%	1.0%	0.8%	0.7%	0.6%	0.4%
		TINEG	4,668	5,097	4,977	4,956	5,202	5,416	5,611	5,775	5,900	1.8%	-0.5%	-0.1%	1.0%	0.8%	0.7%	0.6%	0.4%
		TUBO	5,719	5,699	5,674	5,654	5,933	6,178	6,401	6,588	6,731	-0.1%	-0.1%	-0.1%	1.0%	0.8%	0.7%	0.6%	0.4%
		VILLAVICIOSA	5,377	5,392	5,675	5,665	5,946	6,190	6,414	6,602	6,746	0.1%	1.0%	0.0%	1.0%	0.8%	0.7%	0.6%	0.4%
		Sub-total	234,733	241,160	250,985	250,468	262,886	273,716	283,583	291,878	298,212	0.5%	0.8%	0.0%	1.0%	0.8%	0.7%	0.6%	0.4%
	Apayao	CALANASAN (BAYAG)	11,568	12,604	12,550	12,639	13,632	14,518	15,364	16,081	16,676	1.7%	-0.1%	0.1%	1.5%	1.3%	1.1%	0.9%	0.7%
		CONNER	24,811	26,051	27,552	27,808	29,991	31,940	33,803	35,377	36,686	1.0%	1.1%	0.2%	1.5%	1.3%	1.1%	0.9%	0.7%
		FLORA	16,743	17,391	17,944	18,095	19,515	20,784	21,996	23,020	23,871	0.8%	0.6%	0.2%	1.5%	1.3%	1.1%	0.9%	0.7%
		KABUGAO (Capital)	16,170	15,537	16,215	16,358	17,642	18,789	19,884	20,810	21,580	-0.8%	0.9%	0.2%	1.5%	1.3%	1.1%	0.9%	0.7%
		LUNA	18,029	19,063	21,297	21,532	23,223	24,733	26,175	27,394	28,408	1.1%	2.2%	0.2%	1.5%	1.3%	1.1%	0.9%	0.7%
		PUDTOL	13,305	14,925	15,491	15,624	16,852	17,946	18,993	19,878	20,614	2.3%	0.7%	0.2%	1.5%	1.3%	1.1%	0.9%	0.7%
		SANTA MARCELA	12,010	13,613	13,317	13,405	14,458	15,398	16,294	17,053	17,684	2.5%	-0.4%	0.1%	1.5%	1.3%	1.1%	0.9%	0.7%
		Sub-total	112,636	119,184	124,366	125,460	135,312	144,108	152,510	159,615	165,520	1.1%	0.9%	0.2%	1.5%	1.3%	1.1%	0.9%	0.7%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CAR	Benguet	ATOK	19,242	19,668	19,218	19,755	21,079	22,261	23,333	24,237	24,920	0.4%	-0.5%	0.6%	1.3%	1.1%	0.9%	0.8%	0.6%
		BAKUN	13,587	15,357	14,535	14,925	15,925	16,817	17,628	18,310	18,826	2.5%	-1.1%	0.5%	1.3%	1.1%	0.9%	0.8%	0.6%
		BOKOD	12,648	13,756	14,435	14,876	15,872	16,762	17,569	18,250	18,763	1.7%	1.0%	0.6%	1.3%	1.1%	0.9%	0.8%	0.6%
		BUGUIAS	39,271	43,627	44,877	46,219	49,313	52,078	54,588	56,701	58,298	2.1%	0.6%	0.6%	1.3%	1.1%	0.9%	0.8%	0.6%
		ITOGON	55,960	59,820	61,498	63,336	67,576	71,365	74,805	77,702	79,890	1.3%	0.6%	0.6%	1.3%	1.1%	0.9%	0.8%	0.6%
		KABAYAN	13,588	15,260	15,806	16,282	17,372	18,347	19,231	19,975	20,538	2.3%	0.7%	0.6%	1.3%	1.1%	0.9%	0.8%	0.6%
		KAPANGAN	20,084	19,361	19,297	19,852	21,182	22,370	23,447	24,356	25,042	-0.7%	-0.1%	0.6%	1.3%	1.1%	0.9%	0.8%	0.6%
		KIBUNGAN	16,850	17,292	17,051	17,536	18,708	19,758	20,711	21,513	22,119	0.5%	-0.3%	0.6%	1.3%	1.1%	0.9%	0.8%	0.6%
		LA TRINIDAD (Capital)	107,188	129,133	137,404	141,672	151,157	159,633	167,326	173,806	178,700	3.8%	1.2%	0.6%	1.3%	1.1%	0.9%	0.8%	0.6%
		MANKAYAN	35,586	35,953	37,233	38,355	40,923	43,218	45,301	47,055	48,381	0.2%	0.7%	0.6%	1.3%	1.1%	0.9%	0.8%	0.6%
		SABLAN	10,511	11,457	11,588	11,928	12,727	13,440	14,089	14,635	15,046	1.7%	0.2%	0.6%	1.3%	1.1%	0.9%	0.8%	0.6%
		TUBA	42,874	47,648	48,312	49,731	53,061	56,036	58,737	61,011	62,730	2.1%	0.3%	0.6%	1.3%	1.1%	0.9%	0.8%	0.6%
		TUBLAY	16,555	17,892	19,429	20,046	21,388	22,588	23,677	24,594	25,286	1.6%	1.7%	0.6%	1.3%	1.1%	0.9%	0.8%	0.6%
		BAGUIO CITY	318,676	345,366	366,358	377,701	402,987	425,586	446,097	463,373	476,421	1.6%	1.2%	0.6%	1.3%	1.1%	0.9%	0.8%	0.6%
		Sub-total	722,620	791,590	827,041	852,214	909,269	960,260	1,006,537	1,045,516	1,074,959	1.8%	0.9%	0.6%	1.3%	1.1%	0.9%	0.8%	0.6%
	Ifugao	BANAUE	22,365	21,837	20,652	20,755	22,520	24,204	25,851	27,439	28,944	-0.5%	-1.1%	0.1%	1.6%	1.5%	1.3%	1.2%	1.1%
		HUNGDUAN	9,933	9,400	8,866	8,909	9,667	10,389	11,096	11,778	12,424	-1.1%	-1.2%	0.1%	1.6%	1.5%	1.3%	1.2%	1.1%
		KIANGAN	15,837	17,048	17,691	17,838	19,357	20,803	22,218	23,584	24,877	1.5%	0.7%	0.2%	1.6%	1.5%	1.3%	1.2%	1.1%
		LAGAWE (Capital)	18,077	19,333	18,876	18,992	20,609	22,148	23,656	25,109	26,486	1.4%	-0.5%	0.1%	1.6%	1.5%	1.3%	1.2%	1.1%
		LAMUT	23,088	25,279	26,235	26,452	28,704	30,849	32,948	34,973	36,891	1.8%	0.7%	0.2%	1.6%	1.5%	1.3%	1.2%	1.1%
		MAYOYAO	16,413	17,331	15,621	15,670	17,005	18,275	19,518	20,718	21,855	1.1%	-2.1%	0.1%	1.6%	1.5%	1.3%	1.2%	1.1%
		ALFONSO LISTA (POTIA)	28,410	32,119	34,061	34,368	37,294	40,079	42,807	45,438	47,931	2.5%	1.2%	0.2%	1.6%	1.5%	1.3%	1.2%	1.1%
		AGUINALDO	18,610	19,408	21,128	21,336	23,152	24,882	26,575	28,209	29,756	0.8%	1.7%	0.2%	1.6%	1.5%	1.3%	1.2%	1.1%
		HINGYON	9,795	9,227	9,930	10,025	10,878	11,690	12,486	13,254	13,981	-1.2%	1.5%	0.2%	1.6%	1.5%	1.3%	1.2%	1.1%
		TINOC	14,147	16,559	18,475	18,672	20,261	21,775	23,257	24,686	26,039	3.2%	2.2%	0.2%	1.6%	1.5%	1.3%	1.2%	1.1%
		ASIPULO	14,403	15,261	15,963	16,100	17,470	18,775	20,052	21,286	22,453	1.2%	0.9%	0.2%	1.6%	1.5%	1.3%	1.2%	1.1%
		Sub-total	191,078	202,802	207,498	209,115	226,914	243,870	260,464	276,474	291,638	1.2%	0.5%	0.2%	1.6%	1.5%	1.3%	1.2%	1.1%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CAR	Kalinga	BALBALAN	12,082	12,195	12,914	12,998	13,971	14,861	15,662	16,371	16,939	0.2%	1.2%	0.1%	1.5%	1.2%	1.1%	0.9%	0.7%
		LUBUAGAN	9,369	8,733	9,323	9,387	10,090	10,732	11,309	11,822	12,233	-1.4%	1.3%	0.1%	1.5%	1.2%	1.1%	0.9%	0.7%
		PASIL	9,626	9,644	10,577	10,659	11,457	12,185	12,840	13,422	13,888	0.0%	1.9%	0.2%	1.5%	1.2%	1.1%	0.9%	0.7%
		PINUKPUK	29,596	32,026	34,275	34,511	37,097	39,458	41,580	43,466	44,976	1.6%	1.4%	0.1%	1.5%	1.2%	1.1%	0.9%	0.7%
		RIZAL (LIWAN)	15,942	17,038	19,554	19,732	21,210	22,559	23,773	24,851	25,715	1.3%	2.8%	0.2%	1.5%	1.2%	1.1%	0.9%	0.7%
		CITY OF TABUK (Capital)	103,912	110,642	121,033	121,955	131,092	139,433	146,930	153,592	158,930	1.3%	1.8%	0.2%	1.5%	1.2%	1.1%	0.9%	0.7%
		TANUDAN	8,529	9,534	8,746	8,758	9,414	10,014	10,552	11,030	11,414	2.3%	-1.7%	0.0%	1.5%	1.2%	1.1%	0.9%	0.7%
		TINGLAYAN	12,557	12,868	13,148	13,218	14,209	15,113	15,925	16,648	17,226	0.5%	0.4%	0.1%	1.5%	1.2%	1.1%	0.9%	0.7%
		Sub-total	201,613	212,680	229,570	231,219	248,541	264,356	278,569	291,201	301,321	1.1%	1.5%	0.1%	1.5%	1.2%	1.1%	0.9%	0.7%
	Mountain Province	BARLIG	5,838	4,819	4,796	4,750	5,144	5,519	5,884	6,230	6,554	-3.8%	-0.1%	-0.2%	1.6%	1.4%	1.3%	1.1%	1.0%
		BAUKO	30,172	31,065	32,021	31,742	34,382	36,890	39,326	41,635	43,804	0.6%	0.6%	-0.2%	1.6%	1.4%	1.3%	1.1%	1.0%
		BESAO	7,818	7,040	6,873	6,800	7,366	7,903	8,425	8,919	9,384	-2.1%	-0.5%	-0.2%	1.6%	1.4%	1.3%	1.1%	1.0%
		BONTOC (Capital)	23,980	24,643	24,104	23,849	25,833	27,718	29,549	31,283	32,913	0.5%	-0.4%	-0.2%	1.6%	1.4%	1.3%	1.1%	1.0%
		NATONIN	10,048	10,272	10,339	10,240	11,091	11,900	12,686	13,431	14,130	0.4%	0.1%	-0.2%	1.6%	1.4%	1.3%	1.1%	1.0%
		PARACELIS	26,476	28,121	31,168	30,970	33,545	35,992	38,370	40,621	42,737	1.2%	2.1%	-0.1%	1.6%	1.4%	1.3%	1.1%	1.0%
		SABANGAN	8,741	9,315	9,621	9,538	10,331	11,085	11,817	12,510	13,162	1.3%	0.6%	-0.2%	1.6%	1.4%	1.3%	1.1%	1.0%
		SADANGA	9,181	8,799	8,427	8,333	9,025	9,683	10,323	10,929	11,499	-0.8%	-0.9%	-0.2%	1.6%	1.4%	1.3%	1.1%	1.0%
		SAGADA	11,244	11,127	11,510	11,411	12,359	13,260	14,137	14,966	15,747	-0.2%	0.7%	-0.2%	1.6%	1.4%	1.3%	1.1%	1.0%
		TADIAN	20,689	19,389	19,341	19,151	20,742	22,255	23,726	25,119	26,428	-1.3%	0.0%	-0.2%	1.6%	1.4%	1.3%	1.1%	1.0%
		Sub-total	154,187	154,590	158,200	156,783	169,819	182,205	194,245	205,646	216,357	0.1%	0.5%	-0.2%	1.6%	1.4%	1.3%	1.1%	1.0%
		Total	1,616,867	1,722,006	1,797,660	1,825,259	1,952,741	2,068,515	2,175,908	2,270,330	2,348,007	1.3%	0.9%	0.3%	1.4%	1.2%	1.0%	0.9%	0.7%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
ILOCOS	Ilocos Norte	ADAMS	1,785	1,792	2,189	2,206	2,211	2,191	2,134	2,055	1,957	0.1%	4.1%	0.2%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		BACARRA	31,648	32,215	33,496	33,597	33,642	33,304	32,452	31,227	29,740	0.4%	0.8%	0.1%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		BADOC	30,708	31,616	32,530	32,617	32,660	32,334	31,506	30,319	28,874	0.6%	0.6%	0.1%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		BANGUI	14,227	14,672	15,019	15,057	15,077	14,926	14,545	13,996	13,329	0.6%	0.5%	0.1%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		CITY OF BATAC	53,542	55,201	55,484	55,586	55,661	55,103	53,693	51,669	49,208	0.6%	0.1%	0.0%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		BURGOS	9,687	9,777	10,759	10,811	10,826	10,717	10,443	10,049	9,570	0.2%	1.9%	0.1%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		CARASI	1,473	1,567	1,607	1,611	1,613	1,596	1,555	1,497	1,425	1.2%	0.5%	0.0%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		CURRIMAO	11,970	12,184	12,215	12,237	12,253	12,130	11,820	11,375	10,833	0.4%	0.1%	0.0%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		DINGRAS	37,021	38,562	40,127	40,249	40,303	39,899	38,878	37,412	35,629	0.8%	0.8%	0.1%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		DUMALNEG	2,612	2,947	3,087	3,097	3,101	3,070	2,992	2,879	2,742	2.4%	0.9%	0.1%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		BANNA (ESPIRITU)	19,051	19,438	19,297	19,324	19,349	19,155	18,665	17,961	17,105	0.4%	-0.1%	0.0%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		LAOAG CITY (Capital)	104,904	111,125	111,651	111,856	112,006	110,882	108,046	103,972	99,019	1.2%	0.1%	0.0%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		MARCOS	16,984	17,777	18,010	18,048	18,073	17,891	17,433	16,776	15,976	0.9%	0.3%	0.0%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		NUEVA ERA	7,837	9,506	11,968	12,075	12,090	11,969	11,663	11,223	10,688	3.9%	4.7%	0.2%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		PAGUDPUD	21,877	23,770	25,098	25,186	25,221	24,967	24,330	23,412	22,297	1.7%	1.1%	0.1%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		PAOAY	23,956	24,866	25,001	25,049	25,082	24,830	24,196	23,283	22,175	0.7%	0.1%	0.0%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		PASUQUIN	27,952	28,980	29,678	29,751	29,791	29,493	28,739	27,655	26,338	0.7%	0.5%	0.0%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		PIDDIG	20,606	21,497	22,475	22,548	22,577	22,350	21,779	20,958	19,959	0.9%	0.9%	0.1%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		PINILI	16,732	17,300	17,626	17,667	17,689	17,512	17,064	16,421	15,639	0.7%	0.4%	0.0%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		SAN NICOLAS	34,237	36,736	38,895	39,036	39,088	38,696	37,705	36,284	34,556	1.4%	1.1%	0.1%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		SARRAT	24,770	25,212	25,186	25,228	25,261	25,007	24,369	23,449	22,331	0.4%	0.0%	0.0%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		SOLSONA	22,990	24,121	24,851	24,918	24,952	24,702	24,070	23,163	22,060	1.0%	0.6%	0.1%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		VINTAR	31,448	32,220	33,339	33,434	33,478	33,142	32,294	31,077	29,597	0.5%	0.7%	0.1%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		Sub-total	568,017	593,081	609,588	611,193	612,006	605,872	590,371	568,113	541,049	0.9%	0.6%	0.1%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
ILOCOS	Ilocos Sur	ALILEM	6,640	6,695	7,361	7,418	7,560	7,628	7,622	7,541	7,370	0.2%	1.9%	0.2%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		BANAYOYO	7,694	7,748	7,931	7,972	8,125	8,199	8,192	8,103	7,919	0.1%	0.5%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		BANTAY	34,323	35,731	37,118	37,331	38,053	38,393	38,361	37,947	37,082	0.8%	0.8%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		BURGOS	11,679	12,224	12,793	12,869	13,118	13,235	13,224	13,082	12,784	0.9%	0.9%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		CABUGAO	35,706	37,501	38,884	39,104	39,860	40,216	40,183	39,749	38,843	1.0%	0.7%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		CITY OF CANDON	57,884	60,623	61,432	61,731	62,925	63,487	63,433	62,749	61,320	0.9%	0.3%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		CAOAYAN	18,551	19,861	19,574	19,650	20,030	20,208	20,191	19,973	19,518	1.4%	-0.3%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		CERVANTES	16,573	17,211	19,449	19,614	19,994	20,172	20,155	19,938	19,483	0.8%	2.5%	0.2%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		GALIMUYOD	10,011	10,748	10,244	10,271	10,471	10,564	10,555	10,440	10,203	1.4%	-1.0%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		GREGORIO DEL PILAR (CONCEPCION)	4,219	4,875	4,472	4,478	4,564	4,604	4,601	4,551	4,447	2.9%	-1.7%	0.0%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		LIDLIDDA	4,398	4,647	4,705	4,728	4,820	4,862	4,859	4,806	4,697	1.1%	0.2%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		MAGSINGAL	28,302	30,792	31,308	31,464	32,072	32,359	32,332	31,982	31,254	1.7%	0.3%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		NAGBUKEL	4,938	5,259	5,465	5,496	5,603	5,653	5,648	5,587	5,459	1.3%	0.8%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		NARVACAN	42,803	44,006	46,234	46,516	47,416	47,839	47,799	47,283	46,206	0.6%	1.0%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		QUIRINO (ANGKAKI)	8,535	8,573	9,306	9,373	9,554	9,639	9,632	9,528	9,311	0.1%	1.7%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SALCEDO (BAUGEN)	10,935	11,288	11,110	11,153	11,369	11,470	11,461	11,337	11,079	0.6%	-0.3%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SAN EMILIO	7,427	7,407	7,206	7,231	7,371	7,438	7,431	7,351	7,182	-0.1%	-0.5%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SAN ESTEBAN	8,072	8,349	8,381	8,419	8,582	8,658	8,650	8,558	8,362	0.7%	0.1%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SAN ILDEFONSO	7,075	7,787	8,190	8,240	8,399	8,473	8,467	8,375	8,184	1.9%	1.0%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SAN JUAN (LAPOG)	25,199	26,411	26,674	26,800	27,319	27,562	27,540	27,242	26,621	0.9%	0.2%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SAN VICENTE	11,720	12,758	13,118	13,189	13,444	13,565	13,553	13,406	13,101	1.7%	0.6%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SANTA	15,106	15,340	14,992	15,046	15,337	15,474	15,461	15,295	14,946	0.3%	-0.5%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SANTA CATALINA	13,597	13,945	14,493	14,576	14,858	14,990	14,977	14,816	14,478	0.5%	0.8%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SANTA CRUZ	37,911	39,868	41,366	41,601	42,406	42,784	42,748	42,287	41,323	1.0%	0.7%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SANTA LUCIA	24,981	25,402	25,966	26,101	26,606	26,843	26,821	26,531	25,927	0.3%	0.4%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SANTA MARIA	28,597	30,321	30,006	30,127	30,710	30,984	30,958	30,624	29,926	1.2%	-0.2%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SANTIAGO	17,958	18,759	19,471	19,582	19,960	20,138	20,122	19,905	19,452	0.9%	0.7%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SANTO DOMINGO	27,596	27,975	29,041	29,207	29,772	30,037	30,012	29,688	29,012	0.3%	0.8%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SIGAY	2,419	2,737	2,552	2,557	2,606	2,629	2,627	2,599	2,539	2.5%	-1.4%	0.0%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SINAIT	25,427	25,640	25,998	26,125	26,630	26,867	26,844	26,555	25,949	0.2%	0.3%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SUGPON	3,820	4,585	4,930	4,964	5,061	5,105	5,101	5,046	4,932	3.7%	1.5%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SUYO	10,622	11,446	10,766	10,789	10,998	11,096	11,086	10,967	10,717	1.5%	-1.2%	0.0%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		TAGUDIN	38,122	39,277	41,538	41,801	42,610	42,990	42,954	42,490	41,523	0.6%	1.1%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		CITY OF VIGAN (Capital)	49,747	53,879	53,935	54,175	55,222	55,715	55,669	55,068	53,813	1.6%	0.0%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		Sub-total	658,587	689,668	706,009	709,698	723,423	729,875	729,265	721,398	704,963	0.9%	0.5%	0.1%	0.4%	0.2%	0.0%	-0.2%	-0.5%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
ILOCOS	La Union	AGOO	60,596	63,692	66,028	67,111	68,820	69,795	69,824	68,983	67,187	1.0%	0.7%	0.3%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		ARINGAY	44,949	47,458	50,380	51,248	52,552	53,297	53,318	52,676	51,305	1.1%	1.2%	0.3%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		BACNOTAN	40,307	42,078	44,388	45,143	46,293	46,949	46,967	46,403	45,196	0.9%	1.1%	0.3%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		BAGULIN	12,590	13,456	14,428	14,682	15,055	15,267	15,274	15,090	14,698	1.3%	1.4%	0.3%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		BALAOAN	37,910	39,188	40,339	40,992	42,036	42,630	42,648	42,134	41,039	0.7%	0.6%	0.3%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		BANGAR	34,522	35,947	38,041	38,691	39,676	40,238	40,254	39,771	38,737	0.8%	1.1%	0.3%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		BAUANG	70,735	75,032	78,449	79,760	81,792	82,949	82,983	81,986	79,851	1.2%	0.9%	0.3%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		BURGOS	7,850	8,067	9,006	9,177	9,409	9,543	9,547	9,433	9,186	0.5%	2.2%	0.4%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		CABA	21,244	22,039	23,119	23,508	24,107	24,448	24,458	24,164	23,535	0.7%	1.0%	0.3%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		LUNA	35,380	35,802	37,318	37,938	38,904	39,454	39,471	38,997	37,982	0.2%	0.8%	0.3%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		NAGUILIAN	48,407	54,221	52,189	52,908	54,256	55,024	55,046	54,384	52,970	2.3%	-0.8%	0.3%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		PUGO	16,518	19,690	19,337	19,618	20,118	20,403	20,410	20,165	19,641	3.6%	-0.4%	0.3%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		ROSARIO	52,679	55,458	60,278	61,363	62,925	63,816	63,843	63,076	61,434	1.0%	1.7%	0.4%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		CITY OF SAN FERNANDO (Capital)	114,963	121,812	125,640	127,680	130,932	132,785	132,839	131,242	127,828	1.2%	0.6%	0.3%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		SAN GABRIEL	16,628	18,172	18,943	19,258	19,749	20,028	20,036	19,795	19,281	1.8%	0.8%	0.3%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		SAN JUAN	35,098	37,188	40,507	41,239	42,290	42,888	42,905	42,390	41,286	1.2%	1.7%	0.4%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		SANTO TOMAS	35,999	39,092	40,846	41,529	42,586	43,189	43,206	42,687	41,577	1.7%	0.9%	0.3%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		SANTOL	12,007	12,476	14,166	14,440	14,808	15,017	15,024	14,843	14,456	0.8%	2.6%	0.4%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		SUDIPEN	16,531	17,056	17,187	17,453	17,898	18,151	18,159	17,941	17,474	0.6%	0.2%	0.3%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		TUBAO	26,993	28,729	31,763	32,352	33,176	33,646	33,660	33,254	32,389	1.3%	2.0%	0.4%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		Sub-total	741,906	786,653	822,352	836,093	857,382	869,522	869,875	859,414	837,055	1.2%	0.9%	0.3%	0.5%	0.3%	0.0%	-0.2%	-0.5%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
ILOCOS	Pangasinan	AGNO	27,508	28,052	29,947	30,506	32,106	33,413	34,425	35,189	35,687	0.4%	1.3%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		AGUILAR	39,529	41,463	45,100	45,970	48,381	50,349	51,873	53,026	53,777	1.0%	1.7%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		CITY OF ALAMINOS	85,025	89,708	99,397	101,374	106,689	111,029	114,393	116,934	118,590	1.1%	2.1%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		ALCALA	41,077	43,402	48,908	49,906	52,523	54,659	56,316	57,567	58,383	1.1%	2.4%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		ANDA	37,011	39,504	41,548	42,303	44,520	46,330	47,734	48,795	49,486	1.3%	1.0%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		ASINGAN	56,353	57,355	57,811	58,776	61,857	64,373	66,324	67,798	68,758	0.4%	0.2%	0.3%	1.0%	0.8%	0.6%	0.4%	0.3%
		BALUNGAO	26,678	31,106	30,004	30,457	32,054	33,358	34,369	35,132	35,630	3.1%	-0.7%	0.3%	1.0%	0.8%	0.6%	0.4%	0.3%
		BANI	45,758	50,306	52,603	53,548	56,355	58,647	60,424	61,767	62,641	1.9%	0.9%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		BASISTA	30,385	32,959	37,679	38,465	40,482	42,129	43,406	44,370	44,998	1.6%	2.7%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		BAUTISTA	30,193	32,307	35,398	36,089	37,980	39,525	40,723	41,627	42,216	1.4%	1.8%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		BAYAMBANG	111,521	118,205	129,011	131,513	138,407	144,037	148,401	151,699	153,846	1.2%	1.8%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		BINALONAN	52,832	54,555	56,382	57,372	60,380	62,837	64,742	66,180	67,117	0.6%	0.7%	0.3%	1.0%	0.8%	0.6%	0.4%	0.3%
		BINMALEY	78,702	83,052	86,881	88,442	93,079	96,866	99,801	102,018	103,463	1.1%	0.9%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		BOLINAO	74,545	82,084	83,979	85,424	89,902	93,559	96,394	98,536	99,931	1.9%	0.5%	0.3%	1.0%	0.8%	0.6%	0.4%	0.3%
		BUGALLON	64,253	67,348	74,962	76,463	80,473	83,746	86,284	88,202	89,450	0.9%	2.2%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		BURGOS	18,315	21,637	23,749	24,214	25,483	26,521	27,325	27,932	28,327	3.4%	1.9%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		CALASIAO	91,109	95,154	100,471	102,309	107,673	112,053	115,448	118,014	119,684	0.9%	1.1%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		DAGUPAN CITY	163,676	171,271	174,302	177,269	186,563	194,152	200,035	204,480	207,374	0.9%	0.4%	0.3%	1.0%	0.8%	0.6%	0.4%	0.3%
		DASOL	26,991	29,110	31,355	31,950	33,625	34,993	36,053	36,854	37,377	1.5%	1.5%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		INFANTA	23,455	24,584	26,242	26,731	28,133	29,277	30,164	30,835	31,271	0.9%	1.3%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		LABRADOR	21,149	23,201	26,811	27,379	28,815	29,987	30,896	31,582	32,030	1.9%	2.9%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		LINGAYEN (Capital)	98,740	103,278	107,728	109,654	115,403	120,097	123,737	126,486	128,276	0.9%	0.8%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		MABINI	24,011	24,765	26,454	26,948	28,361	29,515	30,409	31,085	31,525	0.6%	1.3%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		MALASIQUI	123,566	130,275	143,094	145,899	153,549	159,795	164,637	168,296	170,678	1.1%	1.9%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		MANAOAG	64,578	69,497	76,045	77,525	81,591	84,909	87,482	89,426	90,693	1.5%	1.8%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		MANGALDAN	98,905	106,331	113,185	115,286	121,330	126,266	130,091	132,982	134,865	1.5%	1.3%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		MANGATAREM	69,969	73,241	79,323	80,841	85,079	88,541	91,224	93,251	94,571	0.9%	1.6%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
ILOCOS	Pangasinan	MAPANDAN	34,439	37,059	38,058	38,718	40,747	42,405	43,690	44,661	45,294	1.5%	0.5%	0.3%	1.0%	0.8%	0.6%	0.4%	0.3%
		NATIVIDAD	22,713	24,299	25,771	26,247	27,623	28,747	29,617	30,276	30,704	1.4%	1.2%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		POZORRUBIO	66,111	69,555	74,729	76,139	80,131	83,391	85,918	87,827	89,070	1.0%	1.4%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		ROSALES	59,687	63,081	66,711	67,934	71,496	74,404	76,660	78,363	79,472	1.1%	1.1%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		SAN CARLOS CITY	175,103	188,571	205,424	209,394	220,373	229,336	236,285	241,537	244,956	1.5%	1.7%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		SAN FABIAN	77,899	83,025	87,428	89,018	93,686	97,497	100,451	102,683	104,137	1.3%	1.0%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		SAN JACINTO	37,737	40,848	44,351	45,204	47,574	49,508	51,008	52,141	52,880	1.6%	1.7%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		SAN MANUEL	46,875	52,939	54,271	55,209	58,103	60,467	62,299	63,683	64,585	2.5%	0.5%	0.3%	1.0%	0.8%	0.6%	0.4%	0.3%
		SAN NICOLAS	34,108	35,574	39,778	40,581	42,708	44,446	45,792	46,810	47,473	0.8%	2.3%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		SAN QUINTIN	32,626	32,945	33,980	34,574	36,387	37,867	39,014	39,881	40,445	0.2%	0.6%	0.3%	1.0%	0.8%	0.6%	0.4%	0.3%
		SANTA BARBARA	76,637	82,012	92,187	94,062	98,993	103,021	106,142	108,500	110,036	1.4%	2.4%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		SANTA MARIA	31,091	33,038	34,220	34,823	36,649	38,140	39,296	40,168	40,737	1.2%	0.7%	0.3%	1.0%	0.8%	0.6%	0.4%	0.3%
		SANTO TOMAS	14,406	15,022	14,878	15,117	15,910	16,557	17,059	17,438	17,684	0.8%	-0.2%	0.3%	1.0%	0.8%	0.6%	0.4%	0.3%
		SISON	43,979	47,518	52,320	53,349	56,147	58,431	60,201	61,539	62,411	1.6%	1.9%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		SUAL	31,216	34,149	39,091	39,908	42,001	43,710	45,034	46,035	46,686	1.8%	2.7%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		TAYUG	40,018	43,149	45,241	46,057	48,472	50,442	51,971	53,126	53,879	1.5%	1.0%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		UMINGAN	67,534	73,252	77,074	78,474	82,588	85,947	88,552	90,520	91,801	1.6%	1.0%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		URBIZTONDO	47,831	50,170	55,557	56,660	59,631	62,057	63,937	65,358	66,282	1.0%	2.1%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		CITY OF URDANETA	125,451	132,940	144,577	147,363	155,089	161,398	166,288	169,982	172,388	1.2%	1.7%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		VILLASIS	59,111	62,333	65,047	66,211	69,682	72,517	74,713	76,373	77,454	1.1%	0.9%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		LAOAC	29,456	31,497	34,128	34,781	36,605	38,094	39,248	40,119	40,688	1.3%	1.6%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		Sub-total	2,779,862	2,956,726	3,163,190	3,222,436	3,391,388	3,529,344	3,636,286	3,717,083	3,769,706	1.2%	1.4%	0.4%	1.0%	0.8%	0.6%	0.4%	0.3%
		Total	4,748,372	5,026,128	5,301,139	5,379,419	5,584,199	5,734,612	5,825,797	5,866,008	5,852,772	1.1%	1.1%	0.3%	0.8%	0.5%	0.3%	0.1%	0.0%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CAGAYAN VALLEY	Batanes	BASCO (Capital)	7,907	8,579	9,517	9,705	10,345	11,166	11,808	12,450	12,975	1.6%	2.1%	0.4%	1.3%	1.5%	1.1%	1.1%	0.8%
		ITBAYAT	2,988	2,867	3,128	3,188	3,398	3,667	3,878	4,090	4,262	-0.8%	1.8%	0.4%	1.3%	1.5%	1.1%	1.1%	0.8%
		IVANA	1,249	1,327	1,407	1,433	1,528	1,649	1,744	1,840	1,917	1.2%	1.2%	0.4%	1.3%	1.5%	1.1%	1.1%	0.8%
		MAHATAO	1,583	1,555	1,703	1,736	1,850	1,997	2,112	2,227	2,320	-0.4%	1.8%	0.4%	1.3%	1.5%	1.1%	1.1%	0.8%
		SABTANG	1,637	1,621	1,696	1,726	1,840	1,987	2,101	2,215	2,308	-0.2%	0.9%	0.4%	1.3%	1.5%	1.1%	1.1%	0.8%
		UYUGAN	1,240	1,297	1,380	1,406	1,497	1,617	1,709	1,803	1,878	0.9%	1.2%	0.4%	1.3%	1.6%	1.1%	1.1%	0.8%
		Sub-total	16,604	17,246	18,831	19,193	20,457	22,082	23,352	24,625	25,661	0.8%	1.8%	0.4%	1.3%	1.5%	1.1%	1.1%	0.8%
	Cagayan	ABULUG	30,675	32,497	34,579	35,414	36,917	38,077	38,910	39,416	39,593	1.2%	1.2%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%
		ALCALA	37,773	38,883	41,295	42,289	44,086	45,470	46,466	47,071	47,282	0.6%	1.2%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%
		ALLACAPAN	31,662	33,571	35,234	36,067	37,601	38,781	39,630	40,146	40,326	1.2%	1.0%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%
		AMULUNG	45,182	47,860	50,336	51,531	53,721	55,408	56,622	57,359	57,616	1.2%	1.0%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%
		APARRI	61,199	65,649	68,839	70,464	73,459	75,767	77,427	78,434	78,786	1.4%	1.0%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%
		BAGGAO	78,188	82,782	87,753	89,859	93,677	96,619	98,735	100,020	100,469	1.1%	1.2%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%
		BALLESTEROS	32,215	34,299	34,488	35,252	36,751	37,905	38,735	39,239	39,415	1.3%	0.1%	0.4%	0.8%	0.6%	0.4%	0.3%	0.1%
		BUGUEY	28,455	30,175	32,148	32,924	34,324	35,402	36,179	36,648	36,812	1.2%	1.3%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%
		CALAYAN	16,200	16,702	17,410	17,818	18,575	19,159	19,580	19,834	19,924	0.6%	0.8%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%
		CAMALANIUGAN	23,404	24,923	25,236	25,802	26,898	27,742	28,350	28,718	28,848	1.3%	0.2%	0.4%	0.8%	0.6%	0.4%	0.3%	0.1%
		CLAVERIA	30,482	29,921	31,900	32,671	34,060	35,130	35,900	36,366	36,530	-0.4%	1.3%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%
		ENRILE	32,553	35,834	36,705	37,542	39,138	40,367	41,251	41,788	41,976	1.9%	0.5%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%
		GATTARAN	54,848	56,661	58,874	60,247	62,808	64,781	66,201	67,062	67,362	0.7%	0.8%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%
		GONZAGA	36,303	38,892	41,680	42,696	44,510	45,908	46,913	47,524	47,738	1.4%	1.4%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%
		IGUIG	25,559	27,862	30,060	30,799	32,109	33,117	33,842	34,283	34,437	1.7%	1.5%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%
		LAL-LO	41,388	44,506	48,733	49,954	52,077	53,712	54,889	55,603	55,853	1.5%	1.8%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%
		LASAM	36,994	39,135	41,225	42,206	44,000	45,381	46,375	46,979	47,190	1.1%	1.0%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%
		PAMPLONA	23,236	23,596	24,781	25,368	26,447	27,278	27,875	28,238	28,364	0.3%	1.0%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%
		PEÑABLANCA	42,736	48,584	50,300	51,466	53,654	55,338	56,551	57,286	57,543	2.6%	0.7%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%
		PIAT	22,961	23,597	24,805	25,393	26,473	27,304	27,902	28,265	28,392	0.5%	1.0%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%
		RIZAL	18,592	17,994	19,077	19,534	20,364	21,003	21,464	21,743	21,840	-0.7%	1.2%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%
		SANCHEZ-MIRA	23,257	24,541	26,164	26,796	27,936	28,812	29,444	29,827	29,961	1.1%	1.3%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%
		SANTA ANA	30,458	32,906	35,688	36,572	38,126	39,323	40,185	40,708	40,890	1.6%	1.6%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%
		SANTA PRAXEDES	3,646	4,154	4,434	4,542	4,735	4,884	4,991	5,057	5,079	2.6%	1.3%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%
		SANTA TERESITA	17,600	19,038	19,573	20,022	20,874	21,528	22,001	22,287	22,388	1.6%	0.6%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%
		SANTO NIÑO (FAIRE)	26,126	27,219	28,537	29,210	30,452	31,407	32,095	32,514	32,659	0.8%	1.0%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%
		SOLANA	76,596	82,502	88,445	90,602	94,453	97,418	99,553	100,848	101,301	1.5%	1.4%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%
		TUAO	57,620	61,535	63,970	65,462	68,244	70,387	71,930	72,866	73,192	1.3%	0.8%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%
		TUGUEGARAO CITY (Capital)	138,865	153,502	166,334	170,448	177,692	183,272	187,287	189,723	190,575	2.0%	1.6%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%
		Sub-total	1,124,773	1,199,320	1,268,603	1,298,950	1,354,160	1,396,682	1,427,284	1,445,851	1,452,343	1.3%	1.1%	0.5%	0.8%	0.6%	0.4%	0.3%	0.1%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CAGAYAN VALLEY	Isabela	ALICIA	64,687	71,504	73,874	75,382	78,315	80,359	81,456	81,687	81,057	2.0%	0.7%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		ANGADANAN	40,143	43,061	44,977	45,913	47,699	48,944	49,612	49,752	49,369	1.4%	0.9%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		AURORA	33,045	35,017	36,621	37,384	38,838	39,851	40,395	40,510	40,197	1.2%	0.9%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		BENITO SOLIVEN	27,337	29,624	29,752	30,329	31,508	32,331	32,772	32,865	32,611	1.6%	0.1%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		BURGOS	22,521	23,784	26,040	26,622	27,658	28,380	28,768	28,850	28,628	1.1%	1.8%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		CABAGAN	45,732	50,174	53,897	55,069	57,212	58,705	59,506	59,674	59,215	1.9%	1.4%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		CABATUAN	37,299	39,413	39,990	40,781	42,367	43,472	44,066	44,191	43,851	1.1%	0.3%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		CITY OF CAUAYAN	122,335	129,523	143,403	146,663	152,368	156,343	158,478	158,925	157,705	1.1%	2.1%	0.5%	0.8%	0.5%	0.3%	0.1%	-0.2%
		CORDON	40,877	42,926	46,477	47,500	49,349	50,636	51,328	51,473	51,078	1.0%	1.6%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		DINAPIGUE	5,484	5,005	5,821	5,963	6,195	6,358	6,444	6,462	6,413	-1.8%	3.1%	0.5%	0.8%	0.5%	0.3%	0.1%	-0.2%
		DIVILACAN	5,034	5,687	5,827	5,944	6,176	6,337	6,423	6,441	6,392	2.5%	0.5%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		ECHAGUE	74,680	79,094	88,410	90,446	93,966	96,417	97,733	98,009	97,256	1.2%	2.3%	0.5%	0.8%	0.5%	0.3%	0.1%	-0.2%
		GAMU	28,657	29,904	30,655	31,272	32,488	33,335	33,791	33,887	33,626	0.9%	0.5%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		ILAGAN CITY (Capital) 1	135,174	145,568	158,218	161,720	168,010	172,393	174,746	175,240	173,892	1.5%	1.7%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		JONES	44,218	45,666	45,628	46,506	48,315	49,575	50,252	50,395	50,007	0.6%	0.0%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		LUNA	18,091	19,326	20,697	21,145	21,968	22,540	22,848	22,912	22,736	1.3%	1.4%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		MACONACON	3,615	4,253	3,977	4,044	4,200	4,310	4,368	4,380	4,347	3.3%	-1.3%	0.3%	0.8%	0.5%	0.3%	0.1%	-0.2%
		DELFIN ALBANO (MAGSAYSAY)	25,422	26,614	29,928	30,623	31,813	32,644	33,089	33,183	32,928	0.9%	2.4%	0.5%	0.8%	0.5%	0.3%	0.1%	-0.2%
		MALLIG	28,345	30,459	32,208	32,891	34,170	35,062	35,541	35,642	35,368	1.4%	1.1%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		NAGUILIAN	29,491	31,902	33,788	34,507	35,849	36,784	37,286	37,391	37,104	1.6%	1.2%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		PALANAN	16,094	17,260	17,684	18,039	18,742	19,231	19,494	19,549	19,399	1.4%	0.5%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		QUEZON	24,522	25,860	27,037	27,600	28,673	29,422	29,824	29,908	29,678	1.1%	0.9%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		QUIRINO	22,285	24,501	25,023	25,523	26,517	27,208	27,579	27,658	27,445	1.9%	0.4%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		RAMON	49,812	52,707	56,523	57,749	59,995	61,561	62,402	62,577	62,097	1.1%	1.4%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		REINA MERCEDES	23,497	26,998	27,900	28,471	29,578	30,350	30,765	30,852	30,614	2.8%	0.7%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		ROXAS	57,699	61,773	65,839	67,253	69,870	71,693	72,671	72,877	72,317	1.4%	1.3%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		SAN AGUSTIN	21,797	22,880	22,096	22,493	23,368	23,978	24,305	24,374	24,187	1.0%	-0.7%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		SAN GUILLERMO	18,423	20,200	20,915	21,343	22,174	22,753	23,063	23,129	22,951	1.9%	0.7%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		SAN ISIDRO	22,758	24,861	27,044	27,644	28,718	29,468	29,871	29,955	29,725	1.8%	1.7%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		SAN MANUEL	30,407	31,896	34,085	34,821	36,176	37,120	37,626	37,732	37,442	1.0%	1.3%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		SAN MARIANO	51,438	55,370	60,124	61,452	63,843	65,507	66,401	66,589	66,078	1.5%	1.7%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		SAN MATEO	60,792	64,505	66,663	68,025	70,671	72,515	73,504	73,713	73,146	1.2%	0.7%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		SAN PABLO	22,040	25,384	26,320	26,861	27,907	28,634	29,025	29,107	28,883	2.9%	0.7%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		SANTA MARIA	22,939	25,382	25,758	26,268	27,289	28,001	28,383	28,463	28,244	2.0%	0.3%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		CITY OF SANTIAGO	132,804	134,830	148,580	151,935	157,845	161,962	164,174	164,637	163,372	0.3%	2.0%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		SANTO TOMAS	21,688	23,005	24,528	25,054	26,030	26,708	27,073	27,150	26,941	1.2%	1.3%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		TUMAUINI	58,463	67,650	70,743	72,217	75,026	76,984	78,034	78,255	77,654	3.0%	0.9%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%
		Sub-total	1,489,645	1,593,566	1,697,050	1,733,452	1,800,885	1,847,869	1,873,096	1,878,392	1,863,952	1.4%	1.3%	0.4%	0.8%	0.5%	0.3%	0.1%	-0.2%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CAGAYAN VALLEY	Nueva Vizcaya	AMBAGUIO	13,452	15,250	15,472	15,888	16,720	17,407	17,917	18,263	18,443	2.5%	0.3%	0.5%	1.0%	0.8%	0.6%	0.4%	0.2%
		ARITAO	37,115	37,225	42,197	43,489	45,766	47,645	49,042	49,992	50,485	0.1%	2.5%	0.6%	1.0%	0.8%	0.6%	0.4%	0.2%
		BAGABAG	35,462	35,501	37,985	39,076	41,122	42,811	44,067	44,922	45,365	0.0%	1.4%	0.6%	1.0%	0.8%	0.6%	0.4%	0.2%
		BAMBANG	47,657	53,433	55,789	57,345	60,347	62,826	64,669	65,923	66,574	2.3%	0.9%	0.6%	1.0%	0.8%	0.6%	0.4%	0.2%
		BAYOMBONG (Capital)	57,416	61,512	67,714	69,723	73,373	76,388	78,629	80,154	80,944	1.4%	1.9%	0.6%	1.0%	0.8%	0.6%	0.4%	0.2%
		DIADI	16,484	18,122	19,236	19,782	20,818	21,674	22,311	22,743	22,967	1.9%	1.2%	0.6%	1.0%	0.8%	0.6%	0.4%	0.2%
		DUPAX DEL NORTE	25,697	27,514	33,295	34,381	36,181	37,668	38,774	39,525	39,916	1.4%	3.9%	0.6%	1.0%	0.8%	0.6%	0.4%	0.2%
		DUPAX DEL SUR	18,146	19,111	21,224	21,860	23,004	23,950	24,652	25,130	25,378	1.0%	2.1%	0.6%	1.0%	0.8%	0.6%	0.4%	0.2%
		KASIBU	33,379	37,705	41,776	43,024	45,277	47,137	48,520	49,461	49,949	2.5%	2.1%	0.6%	1.0%	0.8%	0.6%	0.4%	0.2%
		KAYAPA	21,453	23,714	26,469	27,267	28,694	29,874	30,750	31,346	31,655	2.0%	2.2%	0.6%	1.0%	0.8%	0.6%	0.4%	0.2%
		QUEZON	19,385	21,056	24,055	24,797	26,095	27,167	27,964	28,506	28,788	1.7%	2.7%	0.6%	1.0%	0.8%	0.6%	0.4%	0.2%
		SANTA FE	14,427	16,180	18,276	18,834	19,820	20,634	21,240	21,652	21,866	2.3%	2.5%	0.6%	1.0%	0.8%	0.6%	0.4%	0.2%
		SOLANO	56,134	59,517	65,287	67,216	70,735	73,641	75,802	77,271	78,033	1.2%	1.9%	0.6%	1.0%	0.8%	0.6%	0.4%	0.2%
		VILLAVERDE	17,720	18,507	20,118	20,708	21,791	22,686	23,352	23,804	24,039	0.9%	1.7%	0.6%	1.0%	0.8%	0.6%	0.4%	0.2%
		ALFONSO CASTANEDA	7,428	7,940	8,539	8,785	9,246	9,626	9,908	10,100	10,200	1.3%	1.5%	0.6%	1.0%	0.8%	0.6%	0.4%	0.2%
		Sub-total	421,355	452,287	497,432	512,174	538,991	561,135	577,595	588,793	594,601	1.4%	1.9%	0.6%	1.0%	0.8%	0.6%	0.4%	0.2%
	Quirino	AGLIPAY	26,187	27,787	30,714	31,190	33,704	36,040	38,116	40,042	41,884	1.2%	2.0%	0.3%	1.6%	1.3%	1.1%	1.0%	0.9%
		CABARROGUIS (Capital)	29,395	30,582	33,533	34,044	36,788	39,338	41,605	43,707	45,716	0.8%	1.9%	0.3%	1.6%	1.3%	1.1%	1.0%	0.9%
		DIFFUN	48,501	52,569	56,102	56,908	61,494	65,756	69,545	73,057	76,415	1.6%	1.3%	0.3%	1.6%	1.3%	1.1%	1.0%	0.9%
		MADDELA	35,634	38,499	40,943	41,527	44,873	47,983	50,749	53,312	55,762	1.6%	1.2%	0.3%	1.6%	1.3%	1.1%	1.0%	0.9%
		SAGUDAY	14,596	16,070	17,137	17,382	18,784	20,086	21,242	22,315	23,341	1.9%	1.3%	0.3%	1.6%	1.3%	1.1%	1.0%	0.9%
		NAGTIPUNAN	22,473	23,484	25,399	25,774	27,852	29,783	31,498	33,090	34,611	0.9%	1.6%	0.3%	1.6%	1.3%	1.1%	1.0%	0.9%
		Sub-total	176,786	188,991	203,828	206,826	223,495	238,984	252,755	265,522	277,730	1.3%	1.5%	0.3%	1.6%	1.3%	1.1%	1.0%	0.9%
		Total	3,229,163	3,451,410	3,685,744	3,770,594	3,937,988	4,066,752	4,154,082	4,203,183	4,214,287	1.3%	1.3%	0.5%	0.9%	0.6%	0.4%	0.2%	0.1%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL LUZON	Aurora	BALER (Capital)	36,010	39,562	43,785	44,919	50,721	57,234	64,302	72,027	80,440	1.9%	2.0%	0.5%	2.5%	2.4%	2.4%	2.3%	2.2%
		CASIGURAN	23,865	24,313	26,564	27,242	30,761	34,711	38,997	43,682	48,784	0.4%	1.8%	0.5%	2.5%	2.4%	2.4%	2.3%	2.2%
		DILASAG	15,683	15,835	17,102	17,530	19,795	22,335	25,094	28,107	31,390	0.2%	1.6%	0.5%	2.5%	2.4%	2.4%	2.3%	2.2%
		DINALUNGAN	10,988	11,322	12,508	12,831	14,489	16,348	18,368	20,574	22,977	0.6%	2.0%	0.5%	2.5%	2.4%	2.4%	2.3%	2.2%
		DINGALAN	23,554	25,482	27,878	28,588	32,282	36,427	40,925	45,841	51,195	1.6%	1.8%	0.5%	2.5%	2.4%	2.4%	2.3%	2.2%
		DIPACULAO	27,729	29,736	33,131	33,995	38,388	43,317	48,665	54,511	60,877	1.4%	2.2%	0.5%	2.5%	2.4%	2.4%	2.3%	2.2%
		MARIA AURORA	38,128	40,734	44,958	46,117	52,075	58,761	66,017	73,948	82,584	1.3%	2.0%	0.5%	2.5%	2.4%	2.4%	2.3%	2.2%
		SAN LUIS	25,276	27,352	29,824	30,582	34,532	38,965	43,777	49,036	54,763	1.6%	1.7%	0.5%	2.5%	2.4%	2.4%	2.3%	2.2%
		Sub-total	201,233	214,336	235,750	241,804	273,043	308,100	346,145	387,725	433,009	1.3%	1.9%	0.5%	2.5%	2.4%	2.4%	2.3%	2.2%
	Bataan	ABUCAY	37,719	39,880	42,984	45,207	47,132	48,619	49,590	49,884	49,456	1.1%	1.5%	1.0%	0.8%	0.6%	0.4%	0.1%	-0.2%
		BAGAC	25,568	26,936	31,365	33,065	34,474	35,562	36,272	36,488	36,175	1.0%	3.1%	1.1%	0.8%	0.6%	0.4%	0.1%	-0.2%
		CITY OF BALANGA (Capital)	87,920	96,061	104,173	109,578	114,247	117,852	120,205	120,918	119,876	1.8%	1.6%	1.0%	0.8%	0.6%	0.4%	0.1%	-0.2%
		DINALUPIHAN	97,275	106,371	118,209	124,439	129,739	133,834	136,505	137,315	136,131	1.8%	2.1%	1.0%	0.8%	0.6%	0.4%	0.1%	-0.2%
		HERMOSA	56,997	65,862	77,443	81,666	85,145	87,831	89,585	90,116	89,339	2.9%	3.3%	1.1%	0.8%	0.6%	0.4%	0.1%	-0.2%
		LIMAY	57,207	68,071	78,272	82,485	85,999	88,713	90,484	91,021	90,236	3.5%	2.8%	1.1%	0.8%	0.6%	0.4%	0.1%	-0.2%
		MARIVELES	112,707	127,536	149,879	158,049	164,782	169,981	173,375	174,403	172,901	2.5%	3.3%	1.1%	0.8%	0.6%	0.4%	0.1%	-0.2%
		MORONG	26,171	29,901	35,394	37,331	38,922	40,151	40,952	41,194	40,839	2.7%	3.4%	1.1%	0.8%	0.6%	0.4%	0.1%	-0.2%
		ORANI	61,099	66,909	70,342	73,916	77,065	79,496	81,083	81,564	80,861	1.8%	1.0%	1.0%	0.8%	0.6%	0.4%	0.1%	-0.2%
		ORION	51,454	56,002	60,771	63,925	66,648	68,751	70,123	70,540	69,932	1.7%	1.6%	1.0%	0.8%	0.6%	0.4%	0.1%	-0.2%
		PILAR	39,787	41,823	46,239	48,668	50,741	52,342	53,388	53,704	53,241	1.0%	2.0%	1.0%	0.8%	0.6%	0.4%	0.1%	-0.2%
		SAMAL	33,578	35,298	38,302	40,290	42,006	43,332	44,196	44,458	44,076	1.0%	1.6%	1.0%	0.8%	0.6%	0.4%	0.1%	-0.2%
		Sub-total	687,482	760,650	853,373	898,618	936,900	966,465	985,758	991,604	983,065	2.0%	2.3%	1.0%	0.8%	0.6%	0.4%	0.1%	-0.2%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL LUZON	Bulacan	ANGAT	55,332	59,237	65,617	69,294	73,508	77,133	79,983	81,963	83,129	1.4%	2.1%	1.1%	1.2%	1.0%	0.7%	0.5%	0.3%
		BALAGTAS (BIGAA)	65,440	73,929	77,018	81,171	86,106	90,352	93,692	96,009	97,375	2.5%	0.8%	1.1%	1.2%	1.0%	0.7%	0.5%	0.3%
		BALIUAG	143,565	149,954	168,470	177,990	188,812	198,122	205,446	210,529	213,525	0.9%	2.4%	1.1%	1.2%	1.0%	0.7%	0.5%	0.3%
		BOCAUE	106,407	119,675	141,412	149,632	158,731	166,558	172,715	176,987	179,508	2.4%	3.4%	1.1%	1.2%	1.0%	0.7%	0.5%	0.3%
		BULACAN	71,751	76,565	81,232	85,665	90,875	95,356	98,880	101,326	102,770	1.3%	1.2%	1.1%	1.2%	1.0%	0.7%	0.5%	0.3%
		BUSTOS	62,415	67,039	77,199	81,623	86,586	90,854	94,213	96,545	97,918	1.4%	2.9%	1.1%	1.2%	1.0%	0.7%	0.5%	0.3%
		CALUMPIT	101,068	108,757	118,471	125,044	132,646	139,187	144,332	147,902	150,008	1.5%	1.7%	1.1%	1.2%	1.0%	0.7%	0.5%	0.3%
		GUIGUINTO	90,507	99,730	113,415	119,869	127,157	133,428	138,360	141,783	143,802	2.0%	2.6%	1.1%	1.2%	1.0%	0.7%	0.5%	0.3%
		HAGONOY	125,689	129,807	133,448	140,583	149,130	156,484	162,269	166,284	168,651	0.6%	0.6%	1.0%	1.2%	1.0%	0.7%	0.5%	0.3%
		CITY OF MALOLOS (Capital)	234,945	252,074	261,189	275,225	291,959	306,355	317,681	325,540	330,174	1.4%	0.7%	1.1%	1.2%	1.0%	0.7%	0.5%	0.3%
		MARILAO	185,624	221,965	254,453	269,000	285,354	299,424	310,494	318,174	322,704	3.6%	2.8%	1.1%	1.2%	1.0%	0.7%	0.5%	0.3%
		CITY OF MEYCAUAYAN	199,154	209,083	225,673	238,122	252,600	265,056	274,855	281,654	285,664	1.0%	1.5%	1.1%	1.2%	1.0%	0.7%	0.5%	0.3%
		NORZAGARAY	103,095	111,348	136,064	144,114	152,876	160,414	166,343	170,458	172,885	1.6%	4.1%	1.2%	1.2%	1.0%	0.7%	0.5%	0.3%
		OBANDO	58,009	59,197	59,978	63,152	66,992	70,295	72,894	74,698	75,761	0.4%	0.3%	1.0%	1.2%	1.0%	0.7%	0.5%	0.3%
		PANDI	66,650	89,075	155,115	165,690	175,764	184,430	191,248	195,978	198,769	6.0%	11.7%	1.3%	1.2%	1.0%	0.7%	0.5%	0.3%
		PAOMBONG	50,940	53,294	55,696	58,707	62,276	65,346	67,762	69,438	70,427	0.9%	0.9%	1.1%	1.2%	1.0%	0.7%	0.5%	0.3%
		PLARIDEL	101,441	107,805	114,432	120,680	128,017	134,330	139,295	142,741	144,774	1.2%	1.2%	1.1%	1.2%	1.0%	0.7%	0.5%	0.3%
		PULILAN	85,844	97,323	108,836	114,970	121,960	127,973	132,704	135,987	137,922	2.5%	2.3%	1.1%	1.2%	1.0%	0.7%	0.5%	0.3%
		SAN ILDEFONSO	95,000	104,471	115,713	122,197	129,627	136,019	141,047	144,535	146,593	1.9%	2.1%	1.1%	1.2%	1.0%	0.7%	0.5%	0.3%
		CITY OF SAN JOSE DEL MONTE	454,553	574,089	651,813	688,872	730,756	766,788	795,135	814,805	826,405	4.8%	2.6%	1.1%	1.2%	1.0%	0.7%	0.5%	0.3%
		SAN MIGUEL	142,854	153,882	172,073	181,770	192,823	202,330	209,811	215,001	218,061	1.5%	2.3%	1.1%	1.2%	1.0%	0.7%	0.5%	0.3%
		SAN RAFAEL	85,921	94,655	103,097	108,816	115,432	121,124	125,602	128,708	130,541	2.0%	1.7%	1.1%	1.2%	1.0%	0.7%	0.5%	0.3%
		SANTA MARIA	218,351	256,454	289,820	306,254	324,875	340,894	353,496	362,240	367,397	3.3%	2.5%	1.1%	1.2%	1.0%	0.7%	0.5%	0.3%
		DOÑA REMEDIOS TRINIDAD	19,878	22,663	28,656	30,380	32,227	33,816	35,066	35,934	36,446	2.7%	4.8%	1.2%	1.2%	1.0%	0.7%	0.5%	0.3%
		Sub-total	2,924,433	3,292,071	3,708,890	3,918,822	4,157,088	4,362,067	4,523,328	4,635,224	4,701,211	2.4%	2.4%	1.1%	1.2%	1.0%	0.7%	0.5%	0.3%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL LUZON	Nueva Ecija	ALIAGA	57,805	63,543	70,363	75,720	78,850	81,454	83,391	84,563	84,946	1.9%	2.1%	1.5%	0.8%	0.7%	0.5%	0.3%	0.1%
		BONGABON	59,343	64,173	66,839	71,785	74,754	77,221	79,057	80,168	80,533	1.6%	0.8%	1.4%	0.8%	0.7%	0.5%	0.3%	0.1%
		CABANATUAN CITY	272,676	302,231	327,325	351,999	366,557	378,650	387,660	393,110	394,896	2.1%	1.6%	1.5%	0.8%	0.7%	0.5%	0.3%	0.1%
		CABIAO	72,081	79,007	85,862	92,345	96,164	99,337	101,702	103,132	103,599	1.9%	1.7%	1.5%	0.8%	0.7%	0.5%	0.3%	0.1%
		CARRANGLAN	37,124	41,131	42,420	45,544	47,427	48,992	50,158	50,862	51,093	2.1%	0.6%	1.4%	0.8%	0.7%	0.5%	0.3%	0.1%
		CUYAPO	59,396	65,039	68,066	73,114	76,139	78,650	80,521	81,654	82,025	1.8%	0.9%	1.4%	0.8%	0.7%	0.5%	0.3%	0.1%
		GABALDON (BITULOK & SABANI)	32,246	35,383	38,958	41,916	43,650	45,090	46,163	46,813	47,025	1.9%	1.9%	1.5%	0.8%	0.7%	0.5%	0.3%	0.1%
		CITY OF GAPAN	101,488	110,303	122,968	132,359	137,833	142,380	145,770	147,819	148,490	1.7%	2.2%	1.5%	0.8%	0.7%	0.5%	0.3%	0.1%
		GENERAL MAMERTO NATIVIDAD	36,720	41,656	44,311	47,623	49,593	51,229	52,449	53,185	53,428	2.6%	1.2%	1.5%	0.8%	0.7%	0.5%	0.3%	0.1%
		GENERAL TINIO (PAPAYA)	42,634	47,865	55,925	60,282	62,775	64,846	66,390	67,323	67,630	2.3%	3.2%	1.5%	0.8%	0.7%	0.5%	0.3%	0.1%
		GUIMBA	104,894	118,655	127,653	137,246	142,923	147,639	151,152	153,277	153,973	2.5%	1.5%	1.5%	0.8%	0.7%	0.5%	0.3%	0.1%
		JAEN	67,057	73,184	79,189	85,156	88,679	91,604	93,784	95,102	95,535	1.8%	1.6%	1.5%	0.8%	0.7%	0.5%	0.3%	0.1%
		LAUR	32,205	35,656	38,263	41,135	42,836	44,250	45,302	45,940	46,149	2.1%	1.4%	1.5%	0.8%	0.7%	0.5%	0.3%	0.1%
		LICAB	26,187	28,254	29,269	31,430	32,730	33,810	34,614	35,101	35,260	1.5%	0.7%	1.4%	0.8%	0.7%	0.5%	0.3%	0.1%
		LLANERA	36,200	39,701	42,281	45,444	47,323	48,884	50,047	50,752	50,981	1.9%	1.3%	1.5%	0.8%	0.7%	0.5%	0.3%	0.1%
		LUPAO	40,931	43,788	45,917	49,326	51,367	53,061	54,325	55,088	55,339	1.4%	1.0%	1.4%	0.8%	0.7%	0.5%	0.3%	0.1%
		SCIENCE CITY OF MUÑOZ	75,462	81,483	84,308	90,527	94,271	97,381	99,699	101,100	101,559	1.5%	0.7%	1.4%	0.8%	0.7%	0.5%	0.3%	0.1%
		NAMPICUAN	13,303	14,954	14,471	15,502	16,143	16,676	17,073	17,313	17,392	2.4%	-0.7%	1.4%	0.8%	0.7%	0.5%	0.3%	0.1%
		PALAYAN CITY (Capital)	37,219	41,041	45,383	48,836	50,857	52,535	53,785	54,541	54,789	2.0%	2.0%	1.5%	0.8%	0.7%	0.5%	0.3%	0.1%
		PANTABANGAN	27,353	29,925	31,763	34,134	35,546	36,718	37,593	38,121	38,294	1.8%	1.2%	1.5%	0.8%	0.7%	0.5%	0.3%	0.1%
		PEÑARANDA	27,410	29,882	32,269	34,699	36,135	37,326	38,214	38,751	38,927	1.7%	1.5%	1.5%	0.8%	0.7%	0.5%	0.3%	0.1%
		QUEZON	36,660	40,592	41,845	44,926	46,783	48,327	49,477	50,171	50,399	2.1%	0.6%	1.4%	0.8%	0.7%	0.5%	0.3%	0.1%
		RIZAL	57,145	64,087	70,196	75,514	78,638	81,233	83,164	84,334	84,717	2.3%	1.8%	1.5%	0.8%	0.7%	0.5%	0.3%	0.1%
		SAN ANTONIO	73,074	77,836	83,060	89,279	92,971	96,038	98,324	99,706	100,159	1.3%	1.3%	1.5%	0.8%	0.7%	0.5%	0.3%	0.1%
		SAN ISIDRO	47,800	51,612	54,372	58,418	60,834	62,841	64,337	65,241	65,537	1.5%	1.0%	1.4%	0.8%	0.7%	0.5%	0.3%	0.1%
		SAN JOSE CITY	129,424	139,738	150,917	162,278	168,990	174,565	178,719	181,232	182,055	1.5%	1.6%	1.5%	0.8%	0.7%	0.5%	0.3%	0.1%
		SAN LEONARDO	58,120	65,299	68,536	73,627	76,672	79,201	81,087	82,226	82,601	2.4%	1.0%	1.4%	0.8%	0.7%	0.5%	0.3%	0.1%
		SANTA ROSA	64,503	69,467	75,649	81,366	84,731	87,527	89,609	90,869	91,282	1.5%	1.7%	1.5%	0.8%	0.7%	0.5%	0.3%	0.1%
		SANTO DOMINGO	50,983	57,943	61,092	65,638	68,354	70,609	72,290	73,306	73,639	2.6%	1.1%	1.4%	0.8%	0.7%	0.5%	0.3%	0.1%
		TALAVERA	112,515	124,829	132,338	142,214	148,097	152,982	156,623	158,825	159,545	2.1%	1.2%	1.4%	0.8%	0.7%	0.5%	0.3%	0.1%
		TALUGTUG	21,291	23,817	25,236	27,119	28,241	29,172	29,867	30,287	30,424	2.3%	1.2%	1.4%	0.8%	0.7%	0.5%	0.3%	0.1%
		ZARAGOZA	44,124	49,387	53,090	57,078	59,439	61,400	62,862	63,745	64,035	2.3%	1.5%	1.5%	0.8%	0.7%	0.5%	0.3%	0.1%
		Sub-total	1,955,373	2,151,461	2,310,134	2,483,582	2,586,303	2,671,631	2,735,207	2,773,657	2,786,257	1.9%	1.4%	1.5%	0.8%	0.7%	0.5%	0.3%	0.1%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL LUZON	Pampanga	APALIT	101,537	107,965	117,160	123,734	129,194	131,652	135,164	137,442	138,593	1.2%	1.6%	1.1%	0.9%	0.4%	0.5%	0.3%	0.2%
		ARAYAT	121,348	133,492	144,875	153,004	159,756	162,794	167,138	169,957	171,380	1.9%	1.7%	1.1%	0.9%	0.4%	0.5%	0.3%	0.2%
		BACOLOR	31,508	39,460	48,066	50,941	53,190	54,201	55,648	56,586	57,059	4.6%	4.0%	1.2%	0.9%	0.4%	0.5%	0.3%	0.2%
		CANDABA	102,399	111,586	119,497	126,149	131,715	134,222	137,803	140,128	141,301	1.7%	1.4%	1.1%	0.9%	0.4%	0.5%	0.3%	0.2%
		FLORIDABLANCA	110,846	125,163	135,542	143,138	149,455	152,299	156,363	159,000	160,330	2.5%	1.6%	1.1%	0.9%	0.4%	0.5%	0.3%	0.2%
		GUAGUA	111,199	117,430	128,893	136,175	142,185	144,890	148,756	151,265	152,531	1.1%	1.9%	1.1%	0.9%	0.4%	0.5%	0.3%	0.2%
		LUBAO	150,843	160,838	173,502	183,202	191,287	194,926	200,126	203,502	205,205	1.3%	1.5%	1.1%	0.9%	0.4%	0.5%	0.3%	0.2%
		MABALACAT CITY 1	215,610	250,799	293,244	310,417	324,115	330,280	339,093	344,813	347,700	3.1%	3.2%	1.1%	0.9%	0.4%	0.5%	0.3%	0.2%
		MACABEBE	70,777	75,850	78,151	82,395	86,031	87,668	90,007	91,525	92,291	1.4%	0.6%	1.1%	0.9%	0.4%	0.5%	0.3%	0.2%
		MAGALANG	103,597	113,147	124,188	131,204	136,995	139,602	143,326	145,742	146,963	1.8%	1.9%	1.1%	0.9%	0.4%	0.5%	0.3%	0.2%
		MASANTOL	52,407	57,063	57,990	61,111	63,808	65,022	66,756	67,882	68,451	1.7%	0.3%	1.1%	0.9%	0.4%	0.5%	0.3%	0.2%
		MEXICO	146,851	154,624	173,403	183,324	191,414	195,055	200,260	203,638	205,343	1.0%	2.3%	1.1%	0.9%	0.4%	0.5%	0.3%	0.2%
		MINALIN	44,001	47,713	48,380	50,978	53,229	54,241	55,689	56,628	57,102	1.6%	0.3%	1.1%	0.9%	0.4%	0.5%	0.3%	0.2%
		PORAC	111,441	124,381	140,751	148,845	155,414	158,370	162,596	165,338	166,723	2.2%	2.5%	1.1%	0.9%	0.4%	0.5%	0.3%	0.2%
		CITY OF SAN FERNANDO (Capital)	285,912	306,659	354,666	375,312	391,875	399,330	409,986	416,901	420,388	1.4%	3.0%	1.1%	0.9%	0.4%	0.5%	0.3%	0.2%
		SAN LUIS	49,311	54,106	58,551	61,831	64,560	65,788	67,544	68,682	69,256	1.9%	1.6%	1.1%	0.9%	0.4%	0.5%	0.3%	0.2%
		SAN SIMON	48,353	53,198	59,182	62,552	65,314	66,555	68,332	69,484	70,066	1.9%	2.2%	1.1%	0.9%	0.4%	0.5%	0.3%	0.2%
		SANTA ANA	52,001	55,178	61,537	65,047	67,916	69,209	71,056	72,254	72,859	1.2%	2.2%	1.1%	0.9%	0.4%	0.5%	0.3%	0.2%
		SANTA RITA	38,762	40,979	48,209	51,041	53,294	54,308	55,757	56,697	57,172	1.1%	3.3%	1.1%	0.9%	0.4%	0.5%	0.3%	0.2%
		SANTO TOMAS	38,062	40,475	42,846	45,213	47,210	48,108	49,391	50,225	50,645	1.2%	1.1%	1.1%	0.9%	0.4%	0.5%	0.3%	0.2%
		SASMUAN (Sexmoan)	27,254	28,004	29,076	30,663	32,016	32,625	33,497	34,061	34,346	0.5%	0.8%	1.1%	0.9%	0.4%	0.5%	0.3%	0.2%
		ANGELES CITY	326,336	411,634	462,928	489,457	511,058	520,778	534,676	543,694	548,244	4.8%	2.4%	1.1%	0.9%	0.4%	0.5%	0.3%	0.2%
		Sub-total	2,340,355	2,609,744	2,900,637	3,065,736	3,201,032	3,261,924	3,348,965	3,405,448	3,433,949	2.2%	2.1%	1.1%	0.9%	0.4%	0.5%	0.3%	0.2%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL LUZON	Tarlac	ANAO	10,873	11,528	12,208	12,563	13,048	13,234	13,523	13,684	13,717	1.2%	1.2%	0.6%	0.8%	0.3%	0.4%	0.2%	0.0%
		BAMBAN	62,413	69,466	78,260	80,692	83,807	112,275	114,725	116,089	116,366	2.2%	2.4%	0.6%	0.8%	6.0%	0.4%	0.2%	0.0%
		CAMILING	80,241	83,248	87,319	89,824	93,292	94,612	96,681	97,836	98,074	0.7%	1.0%	0.6%	0.8%	0.3%	0.4%	0.2%	0.0%
		CAPAS	125,852	140,202	156,056	160,841	167,051	223,793	228,675	231,394	231,943	2.2%	2.2%	0.6%	0.8%	6.0%	0.4%	0.2%	0.0%
		CONCEPCION	139,832	154,188	169,953	175,111	181,871	184,443	188,476	190,728	191,193	2.0%	2.0%	0.6%	0.8%	0.3%	0.4%	0.2%	0.0%
		GERONA	83,084	87,531	94,485	97,287	101,043	102,472	104,712	105,963	106,221	1.0%	1.5%	0.6%	0.8%	0.3%	0.4%	0.2%	0.0%
		LA PAZ	60,982	64,017	68,952	70,993	73,732	74,776	76,410	77,323	77,511	1.0%	1.5%	0.6%	0.8%	0.3%	0.4%	0.2%	0.0%
		MAYANTOC	29,987	32,232	32,597	33,491	34,783	35,275	36,047	36,477	36,566	1.5%	0.2%	0.5%	0.8%	0.3%	0.4%	0.2%	0.0%
		MONCADA	56,183	57,787	62,819	64,697	67,196	68,146	69,636	70,467	70,640	0.6%	1.7%	0.6%	0.8%	0.3%	0.4%	0.2%	0.0%
		PANIQUI	87,730	92,606	103,003	106,160	110,258	111,817	114,263	115,627	115,910	1.1%	2.2%	0.6%	0.8%	0.3%	0.4%	0.2%	0.0%
		PURA	22,949	23,712	25,781	26,552	27,577	27,967	28,578	28,919	28,989	0.7%	1.7%	0.6%	0.8%	0.3%	0.4%	0.2%	0.0%
		RAMOS	20,249	21,350	22,879	23,553	24,462	24,808	25,350	25,653	25,715	1.1%	1.4%	0.6%	0.8%	0.3%	0.4%	0.2%	0.0%
		SAN CLEMENTE	12,510	12,657	13,181	13,556	14,078	14,278	14,590	14,765	14,800	0.2%	0.8%	0.6%	0.8%	0.3%	0.4%	0.2%	0.0%
		SAN MANUEL	24,289	25,504	28,387	29,257	30,387	30,817	31,491	31,866	31,944	1.0%	2.2%	0.6%	0.8%	0.3%	0.4%	0.2%	0.0%
		SANTA IGNACIA	43,787	47,538	51,626	53,167	55,221	56,001	57,226	57,910	58,051	1.7%	1.7%	0.6%	0.8%	0.3%	0.4%	0.2%	0.0%
		CITY OF TARLAC (Capital)	318,332	342,493	385,398	397,353	412,692	418,531	427,683	432,791	433,845	1.5%	2.4%	0.6%	0.8%	0.3%	0.4%	0.2%	0.0%
		VICTORIA	59,987	63,715	69,370	71,446	74,205	75,254	76,899	77,818	78,008	1.2%	1.7%	0.6%	0.8%	0.3%	0.4%	0.2%	0.0%
		SAN JOSE	33,960	36,253	41,182	42,472	44,112	44,734	45,715	46,259	46,373	1.3%	2.6%	0.6%	0.8%	0.3%	0.4%	0.2%	0.0%
		Sub-total	1,273,240	1,366,027	1,503,456	1,549,017	1,608,812	1,711,957	1,749,375	1,770,249	1,774,542	1.4%	1.9%	0.6%	0.8%	1.3%	0.4%	0.2%	0.0%
	Zambales	BOTOLAN	54,434	57,707	66,739	69,658	73,606	77,183	80,340	82,971	85,233	1.2%	3.0%	0.9%	1.1%	1.0%	0.8%	0.6%	0.5%
		CABANGAN	23,082	25,163	28,118	29,316	30,978	32,483	33,812	34,919	35,871	1.7%	2.2%	0.8%	1.1%	1.0%	0.8%	0.6%	0.5%
		CANDELARIA	25,020	27,174	30,263	31,548	33,337	34,958	36,388	37,579	38,603	1.7%	2.2%	0.8%	1.1%	1.0%	0.8%	0.6%	0.5%
		CASTILLEJOS	48,845	64,841	67,889	70,633	74,638	78,265	81,466	84,134	86,428	5.8%	0.9%	0.8%	1.1%	1.0%	0.8%	0.6%	0.5%
		IBA (Capital)	46,761	50,506	55,581	57,921	61,206	64,180	66,805	68,993	70,874	1.6%	1.9%	0.8%	1.1%	1.0%	0.8%	0.6%	0.5%
		MASINLOC	44,342	47,719	54,529	56,891	60,117	63,040	65,618	67,766	69,614	1.5%	2.7%	0.9%	1.1%	1.0%	0.8%	0.6%	0.5%
		PALAUIG	33,286	34,947	39,784	41,503	43,857	45,988	47,870	49,437	50,786	1.0%	2.6%	0.8%	1.1%	1.0%	0.8%	0.6%	0.5%
		SAN ANTONIO	34,217	34,661	37,450	39,003	41,215	43,218	44,986	46,460	47,726	0.3%	1.6%	0.8%	1.1%	1.0%	0.8%	0.6%	0.5%
		SAN FELIPE	22,020	23,183	25,033	26,072	27,550	28,889	30,069	31,054	31,901	1.0%	1.5%	0.8%	1.1%	1.0%	0.8%	0.6%	0.5%
		SAN MARCELINO	31,879	33,665	37,719	39,329	41,558	43,579	45,361	46,847	48,124	1.1%	2.3%	0.8%	1.1%	1.0%	0.8%	0.6%	0.5%
		SAN NARCISO	26,966	28,360	30,759	32,039	33,856	35,502	36,954	38,164	39,205	1.0%	1.6%	0.8%	1.1%	1.0%	0.8%	0.6%	0.5%
		SANTA CRUZ	53,867	58,151	63,839	66,523	70,295	73,711	76,725	79,238	81,399	1.5%	1.9%	0.8%	1.1%	1.0%	0.8%	0.6%	0.5%
		SUBIC	89,724	104,771	111,912	116,512	123,119	129,103	134,383	138,784	142,568	3.1%	1.3%	0.8%	1.1%	1.0%	0.8%	0.6%	0.5%
		OLONGAPO CITY	221,178	233,040	260,317	271,407	286,794	300,732	313,033	323,283	332,098	1.1%	2.2%	0.8%	1.1%	1.0%	0.8%	0.6%	0.5%
		Sub-total	755,621	823,888	909,932	948,357	1,002,126	1,050,825	1,093,811	1,129,626	1,160,430	1.7%	2.0%	0.8%	1.1%	1.0%	0.8%	0.6%	0.5%
		Total	10,137,737	11,218,177	12,422,172	13,105,935	13,765,304	14,332,969	14,782,588	15,093,534	15,272,464	2.0%	2.1%	1.1%	1.0%	0.8%	0.6%	0.4%	0.2%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CALABARZON	Batangas	AGONCILLO	35,794	38,059	39,101	43,195	45,426	47,157	48,441	49,142	49,176	1.2%	0.5%	2.0%	1.0%	0.8%	0.5%	0.3%	0.0%
		ALITAGTAG	23,649	25,300	26,819	29,657	31,189	32,379	33,260	33,741	33,765	1.4%	1.2%	2.0%	1.0%	0.8%	0.5%	0.3%	0.0%
		BALAYAN	81,805	90,699	95,913	106,054	111,534	115,789	118,942	120,662	120,743	2.1%	1.1%	2.0%	1.0%	0.8%	0.5%	0.3%	0.0%
		BALETE	20,214	22,661	24,055	26,602	27,976	29,043	29,834	30,266	30,286	2.3%	1.2%	2.0%	1.0%	0.8%	0.5%	0.3%	0.0%
		BATANGAS CITY (Capital)	305,607	329,874	351,437	388,694	408,774	424,372	435,925	442,232	442,530	1.5%	1.3%	2.0%	1.0%	0.8%	0.5%	0.3%	0.0%
		BAUAN	79,831	91,297	90,819	100,213	105,389	109,411	112,389	114,015	114,091	2.7%	-0.1%	2.0%	1.0%	0.8%	0.5%	0.3%	0.0%
		CALACA	64,966	81,859	87,361	96,628	101,619	105,497	108,369	109,937	110,012	4.7%	1.3%	2.0%	1.0%	0.8%	0.5%	0.3%	0.0%
		CALATAGAN	51,544	56,449	58,719	64,892	68,245	70,849	72,778	73,831	73,881	1.8%	0.8%	2.0%	1.0%	0.8%	0.5%	0.3%	0.0%
		CUENCA	28,581	32,783	36,235	40,124	42,197	43,807	44,999	45,651	45,681	2.8%	2.0%	2.1%	1.0%	0.8%	0.5%	0.3%	0.0%
		IBAAN	45,649	52,970	58,507	64,785	68,132	70,732	72,657	73,709	73,759	3.0%	2.0%	2.1%	1.0%	0.8%	0.5%	0.3%	0.0%
		LAUREL	34,953	39,444	43,210	47,834	50,305	52,225	53,646	54,421	54,458	2.4%	1.8%	2.1%	1.0%	0.8%	0.5%	0.3%	0.0%
		LEMERY	76,090	93,157	93,186	102,844	108,157	112,284	115,340	117,010	117,089	4.1%	0.0%	2.0%	1.0%	0.8%	0.5%	0.3%	0.0%
		LIAN	44,925	52,660	56,280	62,253	65,468	67,967	69,817	70,827	70,875	3.2%	1.3%	2.0%	1.0%	0.8%	0.5%	0.3%	0.0%
		LIPA CITY	283,468	332,386	372,931	413,150	434,494	451,074	463,353	470,057	470,374	3.2%	2.3%	2.1%	1.0%	0.8%	0.5%	0.3%	0.0%
		LOBO	37,070	41,504	40,736	44,928	47,249	49,052	50,387	51,116	51,151	2.3%	-0.4%	2.0%	1.0%	0.8%	0.5%	0.3%	0.0%
		MABINI	44,391	46,211	50,858	56,308	59,217	61,478	63,151	64,065	64,108	0.8%	1.9%	2.1%	1.0%	0.8%	0.5%	0.3%	0.0%
		MALVAR	45,952	56,270	64,379	71,366	75,053	77,917	80,038	81,196	81,251	4.1%	2.7%	2.1%	1.0%	0.8%	0.5%	0.3%	0.0%
		MATAASNAKAHOY	27,177	29,187	30,621	33,850	35,599	36,956	37,963	38,512	38,538	1.4%	1.0%	2.0%	1.0%	0.8%	0.5%	0.3%	0.0%
		NASUGBU	122,483	134,113	136,524	150,766	158,555	164,604	169,085	171,532	171,648	1.8%	0.4%	2.0%	1.0%	0.8%	0.5%	0.3%	0.0%
		PADRE GARCIA	44,877	48,302	51,853	57,365	60,328	62,631	64,336	65,267	65,311	1.5%	1.4%	2.0%	1.0%	0.8%	0.5%	0.3%	0.0%
		ROSARIO	105,561	116,764	128,352	142,103	149,444	155,147	159,370	161,676	161,785	2.0%	1.9%	2.1%	1.0%	0.8%	0.5%	0.3%	0.0%
		SAN JOSE	68,517	76,971	79,868	88,258	92,817	96,359	98,981	100,414	100,482	2.4%	0.7%	2.0%	1.0%	0.8%	0.5%	0.3%	0.0%
		SAN JUAN	94,291	108,585	114,068	126,102	132,616	137,677	141,425	143,471	143,568	2.9%	1.0%	2.0%	1.0%	0.8%	0.5%	0.3%	0.0%
		SAN LUIS	30,701	33,149	36,172	40,038	42,107	43,713	44,903	45,553	45,583	1.5%	1.8%	2.1%	1.0%	0.8%	0.5%	0.3%	0.0%
		SAN NICOLAS	20,599	22,623	23,908	26,436	27,801	28,862	29,648	30,076	30,096	1.9%	1.1%	2.0%	1.0%	0.8%	0.5%	0.3%	0.0%
		SAN PASCUAL	59,598	65,424	69,009	76,300	80,242	83,303	85,570	86,809	86,867	1.9%	1.1%	2.0%	1.0%	0.8%	0.5%	0.3%	0.0%
		SANTA TERESITA	17,415	21,127	21,559	23,810	25,041	25,996	26,704	27,091	27,109	3.9%	0.4%	2.0%	1.0%	0.8%	0.5%	0.3%	0.0%
		SANTO TOMAS	124,740	179,844	218,500	242,641	255,176	264,913	272,125	276,063	276,248	7.6%	4.0%	2.1%	1.0%	0.8%	0.5%	0.3%	0.0%
		TAAL	51,503	56,327	61,460	68,028	71,542	74,273	76,295	77,398	77,451	1.8%	1.8%	2.1%	1.0%	0.8%	0.5%	0.3%	0.0%
		TALISAY	39,600	45,301	46,238	51,066	53,704	55,755	57,273	58,101	58,140	2.7%	0.4%	2.0%	1.0%	0.8%	0.5%	0.3%	0.0%
		CITY OF TANAUAN	152,393	173,366	193,936	214,831	225,930	234,551	240,936	244,422	244,588	2.6%	2.3%	2.1%	1.0%	0.8%	0.5%	0.3%	0.0%
		TAYSAN	35,357	38,007	40,146	44,390	46,684	48,465	49,784	50,505	50,538	1.5%	1.1%	2.0%	1.0%	0.8%	0.5%	0.3%	0.0%
		TINGLOY	16,870	17,919	19,215	21,255	22,354	23,208	23,840	24,184	24,200	1.2%	1.4%	2.0%	1.0%	0.8%	0.5%	0.3%	0.0%
		TUY	40,734	43,743	46,519	51,447	54,104	56,169	57,698	58,533	58,573	1.4%	1.2%	2.0%	1.0%	0.8%	0.5%	0.3%	0.0%
		Sub-total	2,377,395	2,694,335	2,908,494	3,218,213	3,384,468	3,513,615	3,609,262	3,661,485	3,663,955	2.5%	1.5%	2.0%	1.0%	0.8%	0.5%	0.3%	0.0%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CALABARZON	Cavite	ALFONSO	48,567	51,839	59,306	64,197	68,847	72,964	76,574	79,523	81,485	1.3%	2.7%	1.6%	1.4%	1.2%	1.0%	0.8%	0.5%
		AMADEO	33,457	37,649	41,901	45,317	48,599	51,505	54,053	56,135	57,521	2.4%	2.2%	1.6%	1.4%	1.2%	1.0%	0.8%	0.5%
		BACOOR CITY	520,216	600,609	664,625	718,672	770,719	816,804	857,235	890,252	912,221	2.9%	2.0%	1.6%	1.4%	1.2%	1.0%	0.8%	0.5%
		CARMONA	74,986	97,557	106,256	114,839	123,155	130,519	136,980	142,256	145,767	5.4%	1.7%	1.6%	1.4%	1.2%	1.0%	0.8%	0.5%
		CAVITE CITY	101,120	102,806	100,674	108,413	116,265	123,217	129,316	134,296	137,611	0.3%	-0.4%	1.5%	1.4%	1.2%	1.0%	0.8%	0.5%
		CITY OF DASMARIÑAS	575,817	659,019	703,141	759,428	814,426	863,126	905,849	940,738	963,955	2.7%	1.3%	1.6%	1.4%	1.2%	1.0%	0.8%	0.5%
		GENERAL EMILIO AGUINALDO	17,507	22,220	23,973	25,901	27,778	29,438	30,896	32,086	32,878	4.9%	1.5%	1.6%	1.4%	1.2%	1.0%	0.8%	0.5%
		CITY OF GENERAL TRIAS 1	243,322	314,303	450,583	490,738	526,276	557,745	585,354	607,899	622,902	5.3%	7.5%	1.7%	1.4%	1.2%	1.0%	0.8%	0.5%
		IMUS CITY	301,624	403,785	496,794	538,901	577,929	612,486	642,803	667,561	684,036	6.0%	4.2%	1.6%	1.4%	1.2%	1.0%	0.8%	0.5%
		INDANG	62,030	65,599	68,699	74,153	79,523	84,278	88,450	91,857	94,123	1.1%	0.9%	1.5%	1.4%	1.2%	1.0%	0.8%	0.5%
		KAWIT	78,209	83,466	107,535	116,799	125,257	132,747	139,318	144,685	148,255	1.3%	5.2%	1.7%	1.4%	1.2%	1.0%	0.8%	0.5%
		MAGALLANES	21,231	22,727	23,851	25,745	27,610	29,260	30,709	31,892	32,679	1.4%	1.0%	1.5%	1.4%	1.2%	1.0%	0.8%	0.5%
		MARAGONDON	35,289	37,720	40,687	43,959	47,142	49,961	52,434	54,454	55,798	1.3%	1.5%	1.6%	1.4%	1.2%	1.0%	0.8%	0.5%
		MENDEZ (MENDEZ-NUÑEZ)	28,570	31,529	34,879	37,715	40,447	42,865	44,986	46,720	47,873	2.0%	2.0%	1.6%	1.4%	1.2%	1.0%	0.8%	0.5%
		NAIC	88,144	111,454	160,987	175,364	188,065	199,311	209,177	217,233	222,595	4.8%	7.6%	1.7%	1.4%	1.2%	1.0%	0.8%	0.5%
		NOVELETA	41,678	45,846	49,452	53,430	57,300	60,725	63,731	66,186	67,820	1.9%	1.5%	1.6%	1.4%	1.2%	1.0%	0.8%	0.5%
		ROSARIO	92,253	110,706	110,807	119,418	128,067	135,724	142,442	147,928	151,580	3.7%	0.0%	1.5%	1.4%	1.2%	1.0%	0.8%	0.5%
		SILANG	213,490	248,085	295,644	320,408	343,612	364,159	382,184	396,905	406,700	3.0%	3.6%	1.6%	1.4%	1.2%	1.0%	0.8%	0.5%
		TAGAYTAY CITY	62,030	71,181	85,330	92,494	99,192	105,122	110,326	114,576	117,403	2.8%	3.7%	1.6%	1.4%	1.2%	1.0%	0.8%	0.5%
		TANZA	188,755	226,188	312,116	339,610	364,205	385,982	405,088	420,691	431,073	3.7%	6.7%	1.7%	1.4%	1.2%	1.0%	0.8%	0.5%
		TERNATE	19,297	23,157	24,653	26,623	28,551	30,259	31,756	32,980	33,794	3.7%	1.3%	1.5%	1.4%	1.2%	1.0%	0.8%	0.5%
		TRECE MARTIRES CITY (Capital)	104,559	155,713	210,503	228,926	245,505	260,186	273,065	283,582	290,580	8.3%	6.2%	1.7%	1.4%	1.2%	1.0%	0.8%	0.5%
		GEN. MARIANO ALVAREZ	138,540	155,143	172,433	186,481	199,987	211,945	222,436	231,004	236,704	2.3%	2.1%	1.6%	1.4%	1.2%	1.0%	0.8%	0.5%
		Sub-total	3,090,691	3,678,301	4,344,829	4,707,531	5,048,457	5,350,328	5,615,162	5,831,439	5,975,353	3.5%	3.4%	1.6%	1.4%	1.2%	1.0%	0.8%	0.5%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CALABARZON	Laguna	ALAMINOS	43,526	47,859	51,619	54,249	57,993	61,292	64,171	66,531	68,321	1.9%	1.5%	1.0%	1.3%	1.1%	0.9%	0.7%	0.5%
		BAY	55,698	62,143	67,182	70,611	75,483	79,776	83,524	86,596	88,927	2.2%	1.6%	1.0%	1.3%	1.1%	0.9%	0.7%	0.5%
		CITY OF BIÑAN	283,396	333,028	407,437	429,848	459,507	485,636	508,453	527,148	541,343	3.3%	4.1%	1.1%	1.3%	1.1%	0.9%	0.7%	0.5%
		CABUYAO CITY 2	248,436	308,745	355,330	374,203	400,023	422,768	442,634	458,908	471,265	4.4%	2.9%	1.0%	1.3%	1.1%	0.9%	0.7%	0.5%
		CITY OF CALAMBA	389,377	454,486	539,671	568,865	608,117	642,695	672,892	697,633	716,419	3.1%	3.5%	1.1%	1.3%	1.1%	0.9%	0.7%	0.5%
		CALAUAN	74,890	80,453	87,693	92,194	98,556	104,160	109,054	113,063	116,108	1.4%	1.7%	1.0%	1.3%	1.1%	0.9%	0.7%	0.5%
		CAVINTI	20,809	21,702	23,980	25,222	26,962	28,494	29,833	30,929	31,762	0.8%	2.0%	1.0%	1.3%	1.1%	0.9%	0.7%	0.5%
		FAMY	15,021	16,587	16,791	17,609	18,824	19,894	20,829	21,595	22,177	2.0%	0.2%	1.0%	1.3%	1.1%	0.9%	0.7%	0.5%
		KALAYAAN	20,944	23,269	24,755	26,005	27,799	29,380	30,760	31,891	32,749	2.1%	1.2%	1.0%	1.3%	1.1%	0.9%	0.7%	0.5%
		LILIW	33,851	36,582	39,491	41,504	44,368	46,891	49,094	50,898	52,269	1.6%	1.5%	1.0%	1.3%	1.1%	0.9%	0.7%	0.5%
		LOS BAÑOS	101,884	112,008	115,353	121,046	129,399	136,756	143,183	148,448	152,445	1.9%	0.6%	1.0%	1.3%	1.1%	0.9%	0.7%	0.5%
		LUISIANA	20,148	19,720	20,859	21,909	23,421	24,752	25,915	26,868	27,592	-0.4%	1.1%	1.0%	1.3%	1.1%	0.9%	0.7%	0.5%
		LUMBAN	29,470	30,652	32,330	33,953	36,296	38,360	40,162	41,638	42,759	0.8%	1.1%	1.0%	1.3%	1.1%	0.9%	0.7%	0.5%
		MABITAC	18,618	20,530	21,275	22,329	23,871	25,228	26,413	27,384	28,122	2.0%	0.7%	1.0%	1.3%	1.1%	0.9%	0.7%	0.5%
		MAGDALENA	22,976	25,266	27,816	29,253	31,270	33,049	34,602	35,873	36,839	1.9%	1.9%	1.0%	1.3%	1.1%	0.9%	0.7%	0.5%
		MAJAYJAY	26,547	27,792	27,893	29,245	31,263	33,040	34,592	35,865	36,830	0.9%	0.1%	1.0%	1.3%	1.1%	0.9%	0.7%	0.5%
		NAGCARLAN	59,726	63,057	64,866	68,064	72,761	76,898	80,511	83,470	85,718	1.1%	0.6%	1.0%	1.3%	1.1%	0.9%	0.7%	0.5%
		PAETE	23,523	25,096	24,945	26,145	27,949	29,538	30,926	32,064	32,927	1.3%	-0.1%	0.9%	1.3%	1.1%	0.9%	0.7%	0.5%
		PAGSANJAN	39,313	42,164	44,327	46,548	49,760	52,588	55,060	57,084	58,621	1.4%	1.0%	1.0%	1.3%	1.1%	0.9%	0.7%	0.5%
		PAKIL	20,822	20,659	23,495	24,735	26,441	27,945	29,258	30,333	31,151	-0.2%	2.6%	1.0%	1.3%	1.1%	0.9%	0.7%	0.5%
		PANGIL	23,201	24,274	25,026	26,262	28,075	29,671	31,065	32,206	33,074	0.9%	0.6%	1.0%	1.3%	1.1%	0.9%	0.7%	0.5%
		PILA	46,534	50,289	54,613	57,410	61,371	64,860	67,908	70,404	72,300	1.6%	1.7%	1.0%	1.3%	1.1%	0.9%	0.7%	0.5%
		RIZAL	15,518	17,253	18,332	19,257	20,586	21,757	22,778	23,617	24,252	2.1%	1.2%	1.0%	1.3%	1.1%	0.9%	0.7%	0.5%
		SAN PABLO CITY	248,890	266,068	285,348	299,837	320,526	338,750	354,667	367,706	377,609	1.3%	1.4%	1.0%	1.3%	1.1%	0.9%	0.7%	0.5%
		CITY OF SAN PEDRO 3	294,310	325,809	326,001	341,751	365,332	386,106	404,247	419,109	430,396	2.1%	0.0%	0.9%	1.3%	1.1%	0.9%	0.7%	0.5%
		SANTA CRUZ (Capital)	110,943	117,605	123,574	129,760	138,714	146,601	153,489	159,133	163,418	1.2%	1.0%	1.0%	1.3%	1.1%	0.9%	0.7%	0.5%
		SANTA MARIA	26,839	30,830	34,511	36,313	38,818	41,026	42,954	44,533	45,732	2.8%	2.3%	1.0%	1.3%	1.1%	0.9%	0.7%	0.5%
		CITY OF SANTA ROSA	284,670	353,767	414,812	437,089	467,249	493,817	517,019	536,028	550,462	4.4%	3.2%	1.1%	1.3%	1.1%	0.9%	0.7%	0.5%
		SINILOAN	35,363	38,067	39,460	41,417	44,274	46,792	48,991	50,792	52,160	1.5%	0.7%	1.0%	1.3%	1.1%	0.9%	0.7%	0.5%
		VICTORIA	34,604	39,321	43,408	45,655	48,805	51,580	54,004	55,989	57,497	2.6%	2.0%	1.0%	1.3%	1.1%	0.9%	0.7%	0.5%
		Sub-total	2,669,847	3,035,081	3,382,193	3,558,288	3,803,813	4,020,100	4,208,988	4,363,736	4,481,244	2.6%	2.2%	1.0%	1.3%	1.1%	0.9%	0.7%	0.5%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CALABARZON	Quezon	AGDANGAN	11,567	12,851	12,764	13,073	13,792	14,361	14,783	15,039	15,121	2.1%	-0.1%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		ALABAT	16,120	15,630	15,936	16,337	17,236	17,946	18,474	18,792	18,895	-0.6%	0.4%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		ATIMONAN	61,587	63,432	64,260	65,864	69,485	72,345	74,471	75,756	76,171	0.6%	0.3%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		BUENAVISTA	29,053	30,047	31,160	31,964	33,721	35,108	36,139	36,763	36,965	0.7%	0.7%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		BURDEOS	24,166	26,760	24,644	25,172	26,556	27,648	28,461	28,952	29,111	2.1%	-1.6%	0.4%	1.1%	0.8%	0.6%	0.3%	0.1%
		CALAUAG	69,223	73,139	71,809	73,521	77,564	80,755	83,127	84,562	85,024	1.1%	-0.4%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		CANDELARIA	110,570	117,434	137,881	141,994	149,800	155,966	160,546	163,317	164,208	1.2%	3.3%	0.6%	1.1%	0.8%	0.6%	0.3%	0.1%
		CATANAUAN	65,832	71,073	72,752	74,595	78,696	81,934	84,341	85,796	86,266	1.5%	0.5%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		DOLORES	27,702	28,891	32,514	33,441	35,280	36,731	37,810	38,463	38,673	0.8%	2.4%	0.6%	1.1%	0.8%	0.6%	0.3%	0.1%
		GENERAL LUNA	25,373	26,494	24,804	25,352	26,746	27,845	28,663	29,159	29,317	0.9%	-1.3%	0.4%	1.1%	0.8%	0.6%	0.3%	0.1%
		GENERAL NAKAR	25,973	29,705	34,225	35,227	37,164	38,692	39,829	40,517	40,738	2.7%	2.9%	0.6%	1.1%	0.8%	0.6%	0.3%	0.1%
		GUINAYANGAN	41,669	45,155	44,045	45,084	47,564	49,521	50,976	51,856	52,139	1.6%	-0.5%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		GUMACA	69,618	73,877	71,942	73,636	77,684	80,880	83,256	84,693	85,156	1.2%	-0.5%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		INFANTA	64,818	69,079	76,186	78,308	82,615	86,014	88,540	90,068	90,560	1.3%	2.0%	0.6%	1.1%	0.8%	0.6%	0.3%	0.1%
		JOMALIG	6,884	7,417	7,667	7,864	8,296	8,638	8,891	9,045	9,095	1.5%	0.7%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		LOPEZ	91,074	95,167	94,657	96,958	102,289	106,498	109,626	111,519	112,127	0.9%	-0.1%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		LUCBAN	46,698	51,475	53,091	54,451	57,444	59,808	61,565	62,627	62,969	2.0%	0.6%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		MACALELON	26,419	28,188	27,312	27,950	29,485	30,698	31,600	32,145	32,321	1.3%	-0.6%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		MAUBAN	61,141	63,819	71,081	73,084	77,102	80,274	82,632	84,058	84,518	0.9%	2.2%	0.6%	1.1%	0.8%	0.6%	0.3%	0.1%
		MULANAY	50,826	53,123	55,576	57,026	60,161	62,637	64,476	65,590	65,948	0.9%	0.9%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		PADRE BURGOS	20,161	22,460	23,488	24,101	25,425	26,472	27,249	27,720	27,870	2.2%	0.9%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CALABARZON	Quezon	PAGBILAO	65,996	75,023	78,700	80,761	85,201	88,707	91,313	92,889	93,396	2.6%	1.0%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		PANUKULAN	12,511	13,546	16,376	16,878	17,808	18,540	19,084	19,414	19,520	1.6%	3.9%	0.6%	1.1%	0.8%	0.6%	0.3%	0.1%
		PATNANUNGAN	13,865	14,606	15,052	15,437	16,286	16,956	17,454	17,755	17,852	1.0%	0.6%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		PEREZ	12,039	12,173	12,767	13,102	13,822	14,390	14,813	15,069	15,151	0.2%	1.0%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		PITOGO	21,380	23,019	22,798	23,349	24,632	25,645	26,398	26,854	27,000	1.5%	-0.2%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		PLARIDEL	10,238	10,935	10,129	10,348	10,917	11,366	11,699	11,902	11,967	1.3%	-1.5%	0.4%	1.1%	0.8%	0.6%	0.3%	0.1%
		POLILLO	28,125	30,582	31,908	32,738	34,538	35,958	37,015	37,653	37,858	1.7%	0.9%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		QUEZON	15,142	15,228	15,886	16,299	17,195	17,902	18,429	18,747	18,849	0.1%	0.8%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		REAL	35,189	35,979	38,678	39,723	41,907	43,633	44,913	45,689	45,938	0.4%	1.5%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		SAMPALOC	13,107	13,907	13,629	13,953	14,720	15,325	15,775	16,048	16,135	1.2%	-0.4%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		SAN ANDRES	33,586	35,780	37,454	38,432	40,546	42,215	43,454	44,204	44,446	1.3%	0.9%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		SAN ANTONIO	31,681	33,467	35,891	36,857	38,884	40,484	41,674	42,393	42,623	1.1%	1.4%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		SAN FRANCISCO (AURORA)	57,979	61,473	62,097	63,641	67,141	69,903	71,957	73,199	73,598	1.2%	0.2%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		SAN NARCISO	45,386	48,461	51,058	52,403	55,283	57,558	59,248	60,272	60,600	1.3%	1.0%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		SARIAYA	138,894	148,980	161,868	166,297	175,442	182,660	188,026	191,272	192,315	1.4%	1.7%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		TAGKAWAYAN	50,833	51,832	54,003	55,404	58,450	60,855	62,643	63,724	64,072	0.4%	0.8%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		CITY OF TAYABAS	91,428	99,779	112,658	115,881	122,254	127,284	131,023	133,284	134,012	1.8%	2.5%	0.6%	1.1%	0.8%	0.6%	0.3%	0.1%
		TIAONG	91,599	99,712	106,265	109,104	115,103	119,840	123,359	125,488	126,173	1.7%	1.3%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		UNISAN	25,186	26,884	25,448	26,020	27,451	28,580	29,419	29,926	30,090	1.3%	-1.1%	0.4%	1.1%	0.8%	0.6%	0.3%	0.1%
		LUCENA CITY (Capital)	246,392	266,248	278,924	286,214	301,952	314,376	323,611	329,196	330,993	1.6%	0.9%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%
		Sub-total	1,987,030	2,122,830	2,229,383	2,287,843	2,413,637	2,512,948	2,586,762	2,631,415	2,645,780	1.3%	1.0%	0.5%	1.1%	0.8%	0.6%	0.3%	0.1%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CALABARZON	Rizal	ANGONO	102,407	113,283	130,494	138,428	149,317	159,212	168,140	175,789	181,702	2.0%	2.9%	1.2%	1.5%	1.3%	1.1%	0.9%	0.7%
		CITY OF ANTIPOLO	677,741	776,386	887,399	941,137	1,015,170	1,082,442	1,143,156	1,195,153	1,235,355	2.8%	2.7%	1.2%	1.5%	1.3%	1.1%	0.9%	0.7%
		BARAS	32,609	69,300	87,637	93,216	100,549	107,213	113,228	118,377	122,360	16.3%	4.8%	1.2%	1.5%	1.3%	1.1%	0.9%	0.7%
		BINANGONAN	249,872	282,474	313,631	332,324	358,466	382,220	403,659	422,020	436,216	2.5%	2.1%	1.2%	1.5%	1.3%	1.1%	0.9%	0.7%
		CAINTA	311,845	322,128	376,933	400,044	431,513	460,108	485,915	508,018	525,107	0.7%	3.2%	1.2%	1.5%	1.3%	1.1%	0.9%	0.7%
		CARDONA	47,414	49,034	50,143	52,988	57,157	60,944	64,363	67,290	69,554	0.7%	0.4%	1.1%	1.5%	1.3%	1.1%	0.9%	0.7%
		JALA-JALA	30,074	32,254	34,017	35,985	38,816	41,388	43,709	45,697	47,234	1.4%	1.1%	1.1%	1.5%	1.3%	1.1%	0.9%	0.7%
		RODRIGUEZ (MONTALBAN)	280,904	369,222	443,954	471,550	508,644	542,350	572,770	598,825	618,968	5.6%	3.8%	1.2%	1.5%	1.3%	1.1%	0.9%	0.7%
		MORONG	52,194	58,118	71,151	75,613	81,561	86,966	91,843	96,022	99,251	2.2%	4.1%	1.2%	1.5%	1.3%	1.1%	0.9%	0.7%
		PILILLA	59,527	64,812	71,535	75,784	81,746	87,163	92,052	96,240	99,476	1.7%	2.0%	1.2%	1.5%	1.3%	1.1%	0.9%	0.7%
		SAN MATEO	205,255	252,527	273,306	289,360	312,123	332,806	351,473	367,462	379,821	4.2%	1.6%	1.1%	1.5%	1.3%	1.1%	0.9%	0.7%
		TANAY	98,879	117,830	139,420	148,016	159,661	170,241	179,789	187,969	194,291	3.6%	3.4%	1.2%	1.5%	1.3%	1.1%	0.9%	0.7%
		TAYTAY	288,956	319,104	386,451	410,557	442,854	472,200	498,686	521,370	538,907	2.0%	3.9%	1.2%	1.5%	1.3%	1.1%	0.9%	0.7%
		TERESA	47,163	57,755	64,072	67,890	73,231	78,084	82,463	86,214	89,114	4.1%	2.1%	1.2%	1.5%	1.3%	1.1%	0.9%	0.7%
		Sub-total	2,484,840	2,884,227	3,330,143	3,532,892	3,810,808	4,063,337	4,291,246	4,486,446	4,637,356	3.0%	2.9%	1.2%	1.5%	1.3%	1.1%	0.9%	0.7%
		Total	12,609,803	14,414,774	16,195,042	17,304,767	18,461,183	19,460,328	20,311,420	20,974,521	21,403,688	2.7%	2.4%	1.3%	1.3%	1.1%	0.9%	0.6%	0.4%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
MIMAROPA	Marinduque	BOAC (Capital)	52,892	54,730	57,283	57,778	62,318	66,711	70,922	74,816	78,319	0.7%	0.9%	0.2%	1.5%	1.4%	1.2%	1.1%	0.9%
		BUENAVISTA	23,111	23,988	26,043	26,300	28,366	30,367	32,283	34,055	35,648	0.7%	1.7%	0.2%	1.5%	1.4%	1.2%	1.1%	0.9%
		GASAN	33,402	34,828	36,197	36,500	39,369	42,145	44,805	47,265	49,476	0.8%	0.8%	0.2%	1.5%	1.4%	1.2%	1.1%	0.9%
		MOGPOG	33,384	34,043	34,516	34,777	37,510	40,155	42,690	45,032	47,140	0.4%	0.3%	0.2%	1.5%	1.4%	1.2%	1.1%	0.9%
		SANTA CRUZ	55,673	56,408	54,692	55,017	59,340	63,525	67,534	71,241	74,575	0.3%	-0.6%	0.1%	1.5%	1.4%	1.2%	1.1%	0.9%
		TORRIJOS	29,366	30,524	30,476	30,688	33,100	35,434	37,671	39,739	41,598	0.8%	0.0%	0.1%	1.5%	1.4%	1.2%	1.1%	0.9%
		Sub-total	227,828	234,521	239,207	241,061	260,002	278,335	295,904	312,146	326,754	0.6%	0.4%	0.2%	1.5%	1.4%	1.2%	1.1%	0.9%
	Occidental Mindoro	ABRA DE ILOG	29,225	31,306	35,176	35,990	38,859	41,490	43,865	45,891	47,503	1.4%	2.4%	0.5%	1.5%	1.3%	1.1%	0.9%	0.7%
		CALINTAAN	28,148	29,826	30,190	30,783	33,237	35,487	37,520	39,253	40,632	1.2%	0.2%	0.4%	1.5%	1.3%	1.1%	0.9%	0.7%
		LOOC	9,758	10,117	7,802	7,869	8,496	9,071	9,590	10,034	10,386	0.7%	-5.1%	0.2%	1.5%	1.3%	1.1%	0.9%	0.7%
		LUBANG	23,068	18,803	17,437	17,723	19,136	20,432	21,602	22,600	23,395	-4.0%	-1.5%	0.3%	1.5%	1.3%	1.1%	0.9%	0.7%
		MAGSAYSAY	31,969	36,016	39,767	40,665	43,908	46,879	49,562	51,853	53,675	2.4%	2.0%	0.4%	1.5%	1.3%	1.1%	0.9%	0.7%
		MAMBURAO (Capital)	39,237	42,975	47,705	48,789	52,679	56,245	59,465	62,212	64,397	1.8%	2.1%	0.5%	1.5%	1.3%	1.1%	0.9%	0.7%
		PALUAN	15,223	16,025	18,566	19,013	20,529	21,919	23,174	24,245	25,096	1.0%	3.0%	0.5%	1.5%	1.3%	1.1%	0.9%	0.7%
		RIZAL	34,458	38,263	40,429	41,282	44,573	47,590	50,315	52,640	54,489	2.1%	1.1%	0.4%	1.5%	1.3%	1.1%	0.9%	0.7%
		SABLAYAN	76,153	83,169	92,598	94,712	102,263	109,186	115,436	120,770	125,012	1.8%	2.2%	0.5%	1.5%	1.3%	1.1%	0.9%	0.7%
		SAN JOSE	131,188	143,430	153,267	156,560	169,042	180,487	190,819	199,635	206,648	1.8%	1.3%	0.4%	1.5%	1.3%	1.1%	0.9%	0.7%
		SANTA CRUZ	34,544	37,484	42,417	43,408	46,868	50,040	52,905	55,350	57,294	1.6%	2.5%	0.5%	1.5%	1.3%	1.1%	0.9%	0.7%
		Sub-total	452,971	487,414	525,354	536,794	579,590	618,826	654,251	684,482	708,525	1.5%	1.5%	0.4%	1.5%	1.3%	1.1%	0.9%	0.7%
	Oriental Mindoro	BACO	35,060	37,215	39,817	40,980	44,340	47,520	50,516	53,276	55,757	1.2%	1.4%	0.6%	1.6%	1.4%	1.2%	1.1%	0.9%
		BANSUD	38,341	40,992	42,671	43,877	47,474	50,879	54,085	57,041	59,697	1.3%	0.8%	0.6%	1.6%	1.4%	1.2%	1.1%	0.9%
		BONGABONG	66,569	72,073	76,973	79,216	85,706	91,854	97,642	102,979	107,775	1.6%	1.3%	0.6%	1.6%	1.4%	1.2%	1.1%	0.9%
		BULALACAO (SAN PEDRO)	33,754	39,107	44,366	45,747	49,496	53,046	56,389	59,472	62,241	3.0%	2.6%	0.6%	1.6%	1.4%	1.2%	1.1%	0.9%
		CITY OF CALAPAN (Capital)	124,173	133,893	145,786	150,128	162,430	174,080	185,052	195,166	204,255	1.5%	1.7%	0.6%	1.6%	1.4%	1.2%	1.1%	0.9%
		GLORIA	42,012	45,073	50,496	52,047	56,311	60,351	64,155	67,661	70,813	1.4%	2.3%	0.6%	1.6%	1.4%	1.2%	1.1%	0.9%
		MANSALAY	51,705	54,533	59,114	60,866	65,854	70,577	75,025	79,126	82,810	1.1%	1.6%	0.6%	1.6%	1.4%	1.2%	1.1%	0.9%
		NAUJAN	94,497	102,998	109,587	112,766	122,006	130,757	138,998	146,595	153,422	1.7%	1.2%	0.6%	1.6%	1.4%	1.2%	1.1%	0.9%
		PINAMALAYAN	81,666	86,172	90,383	92,961	100,579	107,792	114,585	120,848	126,476	1.1%	1.0%	0.6%	1.6%	1.4%	1.2%	1.1%	0.9%
		POLA	32,984	34,701	35,455	36,434	39,418	42,245	44,908	47,363	49,569	1.0%	0.4%	0.5%	1.6%	1.4%	1.2%	1.1%	0.9%
		PUERTO GALERA	32,521	36,606	41,961	43,281	46,826	50,184	53,347	56,264	58,884	2.4%	2.8%	0.6%	1.6%	1.4%	1.2%	1.1%	0.9%
		ROXAS	49,854	53,201	58,849	60,632	65,600	70,306	74,737	78,821	82,491	1.3%	2.0%	0.6%	1.6%	1.4%	1.2%	1.1%	0.9%
		SAN TEODORO	15,810	17,904	19,121	19,679	21,292	22,819	24,258	25,584	26,775	2.5%	1.3%	0.6%	1.6%	1.4%	1.2%	1.1%	0.9%
		SOCORRO	38,348	39,099	41,585	42,791	46,297	49,617	52,744	55,627	58,217	0.4%	1.2%	0.6%	1.6%	1.4%	1.2%	1.1%	0.9%
		VICTORIA	48,308	50,492	52,175	53,636	58,032	62,194	66,113	69,726	72,972	0.9%	0.7%	0.6%	1.6%	1.4%	1.2%	1.1%	0.9%
		Sub-total	785,602	844,059	908,339	935,043	1,011,663	1,084,220	1,152,555	1,215,551	1,272,157	1.4%	1.5%	0.6%	1.6%	1.4%	1.2%	1.1%	0.9%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
MIMAROPA	Palawan	ABORLAN	32,209	35,091	38,736	40,751	44,194	47,384	50,202	52,591	54,458	1.7%	2.0%	1.0%	1.6%	1.4%	1.2%	0.9%	0.7%
		AGUTAYA	11,906	12,545	12,867	13,504	14,644	15,702	16,636	17,427	18,045	1.1%	0.5%	1.0%	1.6%	1.4%	1.2%	0.9%	0.7%
		ARACELI	14,113	14,909	14,434	15,117	16,394	17,578	18,623	19,510	20,202	1.1%	-0.6%	0.9%	1.6%	1.4%	1.2%	0.9%	0.7%
		BALABAC	35,758	40,142	42,527	44,680	48,456	51,953	55,043	57,661	59,707	2.3%	1.2%	1.0%	1.6%	1.4%	1.2%	0.9%	0.7%
		BATARAZA	63,644	75,468	85,439	89,954	97,555	104,598	110,818	116,089	120,209	3.5%	2.5%	1.0%	1.6%	1.4%	1.2%	0.9%	0.7%
		BROOKE'S POINT	61,301	66,374	73,994	77,867	84,447	90,542	95,927	100,490	104,056	1.6%	2.2%	1.0%	1.6%	1.4%	1.2%	0.9%	0.7%
		BUSUANGA	21,358	22,046	25,617	26,992	29,272	31,386	33,252	34,834	36,070	0.6%	3.0%	1.1%	1.6%	1.4%	1.2%	0.9%	0.7%
		CAGAYANCILLO	7,116	6,285	6,884	7,240	7,852	8,420	8,920	9,345	9,677	-2.5%	1.8%	1.0%	1.6%	1.4%	1.2%	0.9%	0.7%
		CORON	42,941	51,803	65,855	69,569	75,448	80,894	85,705	89,782	92,968	3.8%	4.9%	1.1%	1.6%	1.4%	1.2%	0.9%	0.7%
		CUYO	21,847	22,360	23,489	24,672	26,756	28,688	30,394	31,840	32,969	0.5%	1.0%	1.0%	1.6%	1.4%	1.2%	0.9%	0.7%
		DUMARAN	21,397	23,734	23,528	24,663	26,748	28,678	30,384	31,829	32,959	2.1%	-0.2%	0.9%	1.6%	1.4%	1.2%	0.9%	0.7%
		EL NIDO (BACUIT)	36,191	41,606	50,494	53,273	57,775	61,945	65,630	68,752	71,191	2.8%	3.9%	1.1%	1.6%	1.4%	1.2%	0.9%	0.7%
		LINAPACAN	14,180	15,668	16,424	17,250	18,706	20,057	21,250	22,260	23,050	2.0%	0.9%	1.0%	1.6%	1.4%	1.2%	0.9%	0.7%
		MAGSAYSAY	11,965	12,196	12,603	13,230	14,347	15,384	16,298	17,073	17,678	0.4%	0.7%	1.0%	1.6%	1.4%	1.2%	0.9%	0.7%
		NARRA	65,264	73,212	77,948	81,906	88,828	95,239	100,903	105,703	109,454	2.3%	1.3%	1.0%	1.6%	1.4%	1.2%	0.9%	0.7%
		QUEZON	55,142	60,980	65,283	68,612	74,409	79,780	84,525	88,545	91,688	2.0%	1.4%	1.0%	1.6%	1.4%	1.2%	0.9%	0.7%
		ROXAS	61,058	65,358	69,624	73,162	79,345	85,072	90,131	94,419	97,769	1.4%	1.3%	1.0%	1.6%	1.4%	1.2%	0.9%	0.7%
		SAN VICENTE	30,919	31,232	33,507	35,218	38,193	40,950	43,385	45,449	47,062	0.2%	1.4%	1.0%	1.6%	1.4%	1.2%	0.9%	0.7%
		TAYTAY	70,837	75,165	83,357	87,706	95,117	101,982	108,049	113,188	117,204	1.2%	2.1%	1.0%	1.6%	1.4%	1.2%	0.9%	0.7%
		KALAYAAN	222	184	193	202	219	236	249	261	271	-3.7%	1.0%	0.9%	1.6%	1.5%	1.1%	0.9%	0.8%
		CULION	19,543	20,139	23,213	24,454	26,520	28,434	30,125	31,558	32,678	0.6%	2.9%	1.0%	1.6%	1.4%	1.2%	0.9%	0.7%
		RIZAL (MARCOS)	42,759	50,096	56,162	59,112	64,108	68,735	72,824	76,287	78,994	3.2%	2.3%	1.0%	1.6%	1.4%	1.2%	0.9%	0.7%
		SOFRONIO ESPAÑOLA	29,997	32,876	37,416	39,399	42,728	45,812	48,536	50,844	52,648	1.8%	2.6%	1.0%	1.6%	1.4%	1.2%	0.9%	0.7%
		PUERTO PRINCESA CITY (Capital)	222,673	255,116	307,079	323,901	351,271	376,626	399,026	418,006	432,837	2.8%	3.8%	1.1%	1.6%	1.4%	1.2%	0.9%	0.7%
		Sub-total	994,340	1,104,585	1,246,673	1,312,438	1,423,337	1,526,075	1,616,839	1,693,744	1,753,845	2.1%	2.4%	1.0%	1.6%	1.4%	1.2%	0.9%	0.7%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
MIMAROPA	Romblon	ALCANTARA	15,428	16,351	17,171	17,200	18,637	20,050	21,418	22,711	23,875	1.2%	1.0%	0.0%	1.6%	1.5%	1.3%	1.2%	1.0%
		BANTON	5,963	5,536	5,737	5,743	6,224	6,696	7,152	7,584	7,973	-1.5%	0.7%	0.0%	1.6%	1.5%	1.3%	1.2%	1.0%
		CAJIDIOCAN	21,198	21,861	23,259	23,307	25,255	27,169	29,021	30,773	32,352	0.6%	1.2%	0.0%	1.6%	1.5%	1.3%	1.2%	1.0%
		CALATRAVA	9,776	10,275	11,342	11,378	12,329	13,265	14,169	15,024	15,795	1.0%	2.0%	0.1%	1.6%	1.5%	1.3%	1.2%	1.0%
		CONCEPCION	4,445	4,037	3,561	3,544	3,840	4,132	4,413	4,679	4,919	-1.9%	-2.5%	-0.1%	1.6%	1.5%	1.3%	1.2%	1.0%
		CORCUERA	9,935	10,283	10,112	10,105	10,949	11,779	12,582	13,342	14,027	0.7%	-0.3%	0.0%	1.6%	1.5%	1.3%	1.2%	1.0%
		LOOC	21,841	22,262	21,799	21,782	23,602	25,391	27,121	28,759	30,233	0.4%	-0.4%	0.0%	1.6%	1.5%	1.3%	1.2%	1.0%
		MAGDIWANG	13,584	14,142	15,385	15,428	16,718	17,986	19,210	20,370	21,416	0.8%	1.7%	0.1%	1.6%	1.5%	1.3%	1.2%	1.0%
		ODIONGAN	43,676	45,367	49,284	49,418	53,548	57,608	61,534	65,248	68,594	0.8%	1.7%	0.1%	1.6%	1.5%	1.3%	1.2%	1.0%
		ROMBLON (Capital)	37,995	38,758	40,554	40,615	44,009	47,346	50,573	53,626	56,376	0.4%	0.9%	0.0%	1.6%	1.5%	1.3%	1.2%	1.0%
		SAN AGUSTIN	22,116	22,598	24,115	24,166	26,186	28,172	30,092	31,908	33,544	0.4%	1.3%	0.0%	1.6%	1.5%	1.3%	1.2%	1.0%
		SAN ANDRES	15,028	15,589	15,940	15,951	17,284	18,595	19,862	21,060	22,141	0.7%	0.4%	0.0%	1.6%	1.5%	1.3%	1.2%	1.0%
		SAN FERNANDO	22,466	23,271	24,171	24,202	26,225	28,213	30,136	31,955	33,593	0.7%	0.8%	0.0%	1.6%	1.5%	1.3%	1.2%	1.0%
		SAN JOSE	10,294	10,881	11,759	11,789	12,774	13,744	14,681	15,567	16,364	1.1%	1.6%	0.1%	1.6%	1.5%	1.3%	1.2%	1.0%
		SANTA FE	15,700	16,098	17,802	17,861	19,354	20,821	22,240	23,583	24,793	0.5%	2.0%	0.1%	1.6%	1.5%	1.3%	1.2%	1.0%
		FERROL	6,802	6,964	8,005	8,041	8,713	9,373	10,012	10,616	11,161	0.5%	2.8%	0.1%	1.6%	1.5%	1.3%	1.2%	1.0%
		SANTA MARIA (IMELDA)	7,683	8,508	8,989	9,005	9,758	10,497	11,212	11,889	12,498	2.1%	1.1%	0.0%	1.6%	1.5%	1.3%	1.2%	1.0%
		Sub-total	283,930	292,781	308,985	309,538	335,406	360,838	385,429	408,698	429,655	0.6%	1.1%	0.0%	1.6%	1.5%	1.3%	1.2%	1.0%
		Total	2,744,671	2,963,360	3,228,558	3,334,873	3,609,997	3,868,293	4,104,978	4,314,621	4,490,935	1.5%	1.7%	0.7%	1.6%	1.4%	1.2%	1.0%	0.8%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
BICOL	Albay	BACACAY	65,724	68,906	72,485	74,243	79,814	84,912	89,420	93,286	96,333	1.0%	1.0%	0.5%	1.5%	1.2%	1.0%	0.9%	0.6%
		CAMALIG	63,585	66,904	72,042	73,844	79,385	84,455	88,938	92,783	95,814	1.0%	1.5%	0.5%	1.5%	1.2%	1.0%	0.9%	0.6%
		DARAGA (LOCSIN)	115,804	126,595	133,893	137,161	147,457	156,876	165,203	172,345	177,975	1.8%	1.1%	0.5%	1.5%	1.2%	1.0%	0.9%	0.6%
		GUINOBATAN	75,967	82,361	85,786	87,835	94,428	100,460	105,793	110,367	113,971	1.6%	0.8%	0.5%	1.5%	1.2%	1.0%	0.9%	0.6%
		JOVELLAR	16,899	17,308	17,795	18,212	19,579	20,830	21,935	22,884	23,631	0.5%	0.6%	0.5%	1.5%	1.2%	1.0%	0.9%	0.6%
		LEGAZPI CITY (Capital)	182,201	196,639	209,533	214,699	230,815	245,561	258,595	269,775	278,587	1.5%	1.3%	0.5%	1.5%	1.2%	1.0%	0.9%	0.6%
		LIBON	71,527	75,172	75,073	76,756	82,517	87,789	92,449	96,446	99,597	1.0%	0.0%	0.4%	1.5%	1.2%	1.0%	0.9%	0.6%
		CITY OF LIGAO	104,914	111,399	118,096	120,988	130,070	138,380	145,726	152,026	156,992	1.2%	1.2%	0.5%	1.5%	1.2%	1.0%	0.9%	0.6%
		MALILIPOT	35,567	37,785	40,857	41,885	45,030	47,906	50,449	52,630	54,349	1.2%	1.6%	0.5%	1.5%	1.2%	1.0%	0.9%	0.6%
		MALINAO	42,770	45,301	47,395	48,533	52,177	55,510	58,457	60,985	62,976	1.2%	0.9%	0.5%	1.5%	1.2%	1.0%	0.9%	0.6%
		MANITO	22,819	24,707	26,162	26,801	28,812	30,654	32,282	33,677	34,778	1.6%	1.2%	0.5%	1.5%	1.2%	1.0%	0.8%	0.6%
		OAS	64,785	67,960	66,084	67,501	72,567	77,204	81,301	84,816	87,586	1.0%	-0.6%	0.4%	1.5%	1.2%	1.0%	0.9%	0.6%
		PIO DURAN	45,028	46,693	49,070	50,257	54,028	57,481	60,532	63,148	65,211	0.7%	1.0%	0.5%	1.5%	1.2%	1.0%	0.8%	0.6%
		POLANGUI	82,307	88,221	89,176	91,213	98,059	104,325	109,863	114,613	118,356	1.4%	0.2%	0.5%	1.5%	1.2%	1.0%	0.9%	0.6%
		RAPU-RAPU	35,875	36,920	36,151	36,935	39,708	42,245	44,488	46,411	47,927	0.6%	-0.4%	0.4%	1.5%	1.2%	1.0%	0.8%	0.6%
		SANTO DOMINGO (LIBOG)	32,414	34,967	37,765	38,713	41,619	44,278	46,628	48,644	50,233	1.5%	1.6%	0.5%	1.5%	1.2%	1.0%	0.9%	0.6%
		CITY OF TABACO	125,083	133,868	140,961	144,381	155,218	165,135	173,901	181,419	187,345	1.4%	1.0%	0.5%	1.5%	1.2%	1.0%	0.9%	0.6%
		TIWI	50,163	53,120	56,444	57,831	62,173	66,145	69,657	72,668	75,041	1.2%	1.2%	0.5%	1.5%	1.2%	1.0%	0.8%	0.6%
		Sub-total	1,233,432	1,314,826	1,374,768	1,407,788	1,513,456	1,610,146	1,695,617	1,768,923	1,826,702	1.3%	0.9%	0.5%	1.5%	1.2%	1.0%	0.9%	0.6%
	Camarines Norte	BASUD	38,176	41,017	45,133	46,477	51,154	55,815	60,413	64,834	69,023	1.4%	1.9%	0.6%	1.9%	1.8%	1.6%	1.4%	1.3%
		CAPALONGA	31,299	32,215	36,223	37,329	41,086	44,829	48,523	52,074	55,437	0.6%	2.4%	0.6%	1.9%	1.8%	1.6%	1.4%	1.3%
		DAET (Capital)	95,572	104,799	111,700	114,911	126,474	137,998	149,369	160,299	170,653	1.9%	1.3%	0.6%	1.9%	1.8%	1.6%	1.4%	1.3%
		SAN LORENZO RUIZ (IMELDA)	12,592	14,063	15,757	16,236	17,869	19,498	21,105	22,649	24,112	2.2%	2.3%	0.6%	1.9%	1.8%	1.6%	1.4%	1.3%
		JOSE PANGANIBAN	55,557	59,639	63,662	65,496	72,086	78,655	85,136	91,365	97,266	1.4%	1.3%	0.6%	1.9%	1.8%	1.6%	1.4%	1.3%
		LABO	92,041	101,082	109,245	112,436	123,751	135,026	146,153	156,847	166,978	1.9%	1.6%	0.6%	1.9%	1.8%	1.6%	1.4%	1.3%
		MERCEDES	47,674	50,841	55,334	56,964	62,695	68,407	74,044	79,463	84,595	1.3%	1.7%	0.6%	1.9%	1.8%	1.6%	1.4%	1.3%
		PARACALE	53,243	59,149	60,198	61,833	68,054	74,255	80,374	86,254	91,826	2.1%	0.4%	0.5%	1.9%	1.8%	1.6%	1.4%	1.3%
		SAN VICENTE	10,114	10,396	12,579	12,991	14,299	15,602	16,888	18,124	19,294	0.6%	3.9%	0.6%	1.9%	1.8%	1.6%	1.4%	1.3%
		SANTA ELENA	40,828	40,786	43,582	44,839	49,351	53,847	58,285	62,550	66,589	0.0%	1.3%	0.6%	1.9%	1.8%	1.6%	1.4%	1.3%
		TALISAY	23,904	25,841	27,244	28,017	30,836	33,645	36,417	39,083	41,607	1.6%	1.1%	0.6%	1.9%	1.8%	1.6%	1.4%	1.3%
		VINZONS	41,915	43,485	49,042	50,543	55,629	60,698	65,700	70,507	75,061	0.7%	2.4%	0.6%	1.9%	1.8%	1.6%	1.4%	1.3%
		Sub-total	542,915	583,313	629,699	648,072	713,284	778,275	842,407	904,049	962,441	1.4%	1.5%	0.6%	1.9%	1.8%	1.6%	1.4%	1.3%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
BICOL	Camarines Sur	BAAO	54,971	58,849	61,493	62,683	68,437	73,962	79,101	83,745	87,693	1.4%	0.9%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		BALATAN	28,699	30,922	30,669	31,206	34,070	36,820	39,379	41,691	43,657	1.5%	-0.2%	0.3%	1.8%	1.6%	1.4%	1.1%	0.9%
		BATO	48,306	52,137	52,155	53,086	57,959	62,640	66,991	70,925	74,268	1.5%	0.0%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		BOMBON	15,437	16,512	17,995	18,369	20,054	21,674	23,180	24,541	25,698	1.4%	1.7%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		BUHI	73,809	77,143	81,306	82,904	90,514	97,822	104,619	110,762	115,984	0.9%	1.1%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		BULA	68,011	69,430	73,143	74,579	81,424	87,999	94,114	99,641	104,338	0.4%	1.0%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		CABUSAO	18,049	18,397	19,257	19,631	21,432	23,163	24,772	26,226	27,463	0.4%	0.9%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		CALABANGA	78,119	83,033	88,906	90,701	99,025	107,022	114,457	121,178	126,891	1.2%	1.4%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		CAMALIGAN	22,254	24,109	25,036	25,515	27,858	30,107	32,199	34,089	35,696	1.6%	0.8%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		CANAMAN	32,390	34,210	36,205	36,922	40,311	43,566	46,593	49,328	51,653	1.1%	1.1%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		CARAMOAN	44,945	47,605	51,728	52,798	57,644	62,298	66,627	70,540	73,865	1.2%	1.7%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		DEL GALLEGO	23,064	25,397	26,403	26,910	29,380	31,752	33,957	35,952	37,647	1.9%	0.8%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		GAINZA	10,345	11,262	11,584	11,801	12,885	13,925	14,893	15,767	16,512	1.7%	0.6%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		GARCHITORENA	25,204	27,010	29,436	30,048	32,805	35,454	37,917	40,144	42,036	1.4%	1.7%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		GOA	58,503	63,308	71,368	72,928	79,623	86,052	92,031	97,435	102,028	1.6%	2.4%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		IRIGA CITY	105,919	111,757	114,457	116,594	127,296	137,575	147,133	155,773	163,117	1.1%	0.5%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		LAGONOY	51,814	55,465	56,714	57,769	63,072	68,165	72,902	77,182	80,821	1.4%	0.4%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		LIBMANAN	100,002	108,716	112,994	115,161	125,732	135,884	145,326	153,859	161,112	1.7%	0.8%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		LUPI	30,118	32,167	33,897	34,563	37,736	40,783	43,615	46,176	48,353	1.3%	1.1%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		MAGARAO	24,274	25,694	26,742	27,256	29,758	32,161	34,395	36,415	38,132	1.1%	0.8%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		MILAOR	28,474	31,150	33,963	34,669	37,851	40,908	43,750	46,319	48,502	1.8%	1.7%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		MINALABAC	48,162	52,390	53,981	55,000	60,049	64,897	69,406	73,482	76,946	1.7%	0.6%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		NABUA	80,111	83,874	86,490	88,125	96,214	103,984	111,208	117,739	123,289	0.9%	0.6%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		NAGA CITY	174,931	196,003	209,170	213,368	232,953	251,762	269,255	285,065	298,504	2.3%	1.3%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		OCAMPO	43,523	45,934	51,073	52,167	56,956	61,555	65,831	69,697	72,983	1.1%	2.1%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		PAMPLONA	34,471	36,390	39,333	40,139	43,823	47,361	50,652	53,626	56,155	1.1%	1.6%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		PASACAO	45,946	49,035	53,461	54,572	59,581	64,392	68,865	72,910	76,347	1.3%	1.7%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		PILI (Capital)	82,307	89,545	99,196	101,309	110,608	119,539	127,845	135,353	141,733	1.7%	2.1%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		PRESENTACION (PARUBCAN)	20,023	20,996	22,591	23,050	25,166	27,198	29,088	30,797	32,248	1.0%	1.5%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		RAGAY	54,934	58,214	59,770	60,892	66,481	71,849	76,841	81,353	85,188	1.2%	0.5%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		SAGÑAY	31,314	34,546	36,841	37,580	41,029	44,342	47,424	50,209	52,576	2.0%	1.3%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		SAN FERNANDO	33,281	35,258	38,626	39,435	43,055	46,531	49,765	52,687	55,171	1.2%	1.8%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		SAN JOSE	38,523	40,623	43,973	44,877	48,997	52,953	56,632	59,958	62,784	1.1%	1.6%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		SIPOCOT	64,042	64,855	68,169	69,502	75,881	82,008	87,707	92,856	97,235	0.3%	1.0%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		SIRUMA	17,050	17,764	19,419	19,824	21,645	23,393	25,018	26,487	27,735	0.8%	1.8%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		TIGAON	48,611	55,272	60,524	61,791	67,462	72,909	77,975	82,553	86,446	2.6%	1.8%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		TINAMBAC	62,435	67,572	70,176	71,520	78,084	84,390	90,254	95,552	100,057	1.6%	0.8%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%
		Sub-total	1,822,371	1,952,544	2,068,244	2,109,244	2,302,850	2,488,795	2,661,717	2,818,012	2,950,863	1.4%	1.2%	0.4%	1.8%	1.6%	1.4%	1.1%	0.9%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
BICOL	Catanduanes	BAGAMANOC	11,370	11,551	11,086	11,198	12,415	13,649	14,911	16,181	17,467	0.3%	-0.8%	0.2%	2.1%	1.9%	1.8%	1.6%	1.5%
		BARAS	12,243	12,848	13,484	13,664	15,147	16,652	18,193	19,741	21,310	1.0%	1.0%	0.3%	2.1%	1.9%	1.8%	1.6%	1.5%
		BATO	19,984	21,279	21,748	22,019	24,409	26,836	29,317	31,812	34,341	1.3%	0.4%	0.2%	2.1%	1.9%	1.8%	1.6%	1.5%
		CARAMORAN	28,063	30,056	32,114	32,563	36,096	39,685	43,356	47,044	50,784	1.4%	1.3%	0.3%	2.1%	1.9%	1.8%	1.6%	1.5%
		GIGMOTO	8,003	8,368	8,712	8,827	9,784	10,756	11,750	12,750	13,764	0.9%	0.8%	0.3%	2.1%	1.9%	1.8%	1.6%	1.5%
		PANDAN	19,393	20,516	21,473	21,759	24,119	26,518	28,970	31,435	33,934	1.1%	0.9%	0.3%	2.1%	1.9%	1.8%	1.6%	1.5%
		PANGANIBAN (PAYO)	9,738	9,287	9,713	9,843	10,910	11,995	13,105	14,219	15,350	-0.9%	0.9%	0.3%	2.1%	1.9%	1.8%	1.6%	1.5%
		SAN ANDRES (CALOLBON)	35,779	36,779	38,480	38,992	43,222	47,518	51,914	56,330	60,808	0.6%	0.9%	0.3%	2.1%	1.9%	1.8%	1.6%	1.5%
		SAN MIGUEL	14,107	15,006	15,680	15,888	17,611	19,362	21,153	22,952	24,778	1.2%	0.9%	0.3%	2.1%	1.9%	1.8%	1.6%	1.5%
		VIGA	20,669	21,624	22,869	23,181	25,697	28,251	30,864	33,491	36,153	0.9%	1.1%	0.3%	2.1%	1.9%	1.8%	1.6%	1.5%
		VIRAC (Capital)	66,951	73,650	76,520	77,519	85,929	94,470	103,210	111,991	120,894	1.9%	0.8%	0.3%	2.1%	1.9%	1.8%	1.6%	1.5%
		Sub-total	246,300	260,964	271,879	275,453	305,339	335,692	366,743	397,946	429,583	1.2%	0.8%	0.3%	2.1%	1.9%	1.8%	1.6%	1.5%
	Masbate	AROROY	76,139	86,168	88,351	89,735	98,674	107,469	115,611	123,117	129,933	2.5%	0.5%	0.3%	1.9%	1.7%	1.5%	1.3%	1.1%
		BALENO	24,401	26,096	28,855	29,380	32,306	35,186	37,852	40,309	42,542	1.4%	2.0%	0.4%	1.9%	1.7%	1.5%	1.3%	1.1%
		BALUD	35,841	38,124	40,155	40,821	44,887	48,888	52,591	56,007	59,108	1.2%	1.0%	0.3%	1.9%	1.7%	1.5%	1.3%	1.1%
		BATUAN	13,764	15,086	14,610	14,809	16,284	17,735	19,079	20,318	21,442	1.9%	-0.6%	0.3%	1.9%	1.7%	1.5%	1.3%	1.1%
		CATAINGAN	49,078	50,327	50,623	51,382	56,501	61,537	66,200	70,499	74,402	0.5%	0.1%	0.3%	1.9%	1.7%	1.5%	1.3%	1.1%
		CAWAYAN	63,115	67,033	69,265	70,369	77,378	84,274	90,660	96,547	101,891	1.2%	0.7%	0.3%	1.9%	1.7%	1.5%	1.3%	1.1%
		CLAVERIA	41,572	43,693	42,142	42,710	46,965	51,151	55,026	58,600	61,844	1.0%	-0.7%	0.3%	1.9%	1.7%	1.5%	1.3%	1.1%
		DIMASALANG	25,245	26,192	24,909	25,231	27,744	30,218	32,507	34,618	36,536	0.7%	-1.0%	0.3%	1.9%	1.7%	1.5%	1.3%	1.1%
		ESPERANZA	17,357	18,568	17,534	17,757	19,525	21,266	22,877	24,363	25,712	1.4%	-1.1%	0.3%	1.9%	1.7%	1.5%	1.3%	1.1%
		MANDAON	38,161	41,262	44,122	44,877	49,347	53,746	57,817	61,572	64,981	1.6%	1.3%	0.3%	1.9%	1.7%	1.5%	1.3%	1.1%
		CITY OF MASBATE (Capital)	85,227	95,389	104,522	106,393	116,992	127,418	137,071	145,973	154,055	2.3%	1.8%	0.4%	1.9%	1.7%	1.5%	1.3%	1.1%
		MILAGROS	52,619	57,473	57,538	58,392	64,207	69,930	75,229	80,115	84,549	1.8%	0.0%	0.3%	1.9%	1.7%	1.5%	1.3%	1.1%
		MOBO	34,896	38,813	40,823	41,499	45,632	49,699	53,465	56,937	60,090	2.2%	1.0%	0.3%	1.9%	1.7%	1.5%	1.3%	1.1%
		MONREAL	25,366	26,614	25,164	25,485	28,023	30,521	32,833	34,966	36,901	1.0%	-1.1%	0.3%	1.9%	1.7%	1.5%	1.3%	1.1%
		PALANAS	25,501	26,222	27,322	27,765	30,531	33,253	35,772	38,095	40,204	0.6%	0.8%	0.3%	1.9%	1.7%	1.5%	1.3%	1.1%
		PIO V. CORPUZ (LIMBUHAN)	23,292	23,236	23,744	24,113	26,516	28,879	31,067	33,085	34,917	0.0%	0.4%	0.3%	1.9%	1.7%	1.5%	1.3%	1.1%
		PLACER	55,438	55,826	56,340	57,191	62,888	68,494	73,682	78,468	82,812	0.1%	0.2%	0.3%	1.9%	1.7%	1.5%	1.3%	1.1%
		SAN FERNANDO	21,309	23,057	21,600	21,868	24,046	26,189	28,173	30,003	31,664	1.6%	-1.3%	0.2%	1.9%	1.7%	1.5%	1.3%	1.1%
		SAN JACINTO	27,974	30,372	29,686	30,101	33,099	36,049	38,780	41,299	43,586	1.7%	-0.5%	0.3%	1.9%	1.7%	1.5%	1.3%	1.1%
		SAN PASCUAL	44,753	46,674	44,449	45,028	49,512	53,926	58,012	61,780	65,200	0.8%	-1.0%	0.3%	1.9%	1.7%	1.5%	1.3%	1.1%
		USON	53,602	56,168	57,166	58,047	63,829	69,518	74,785	79,641	84,051	0.9%	0.4%	0.3%	1.9%	1.7%	1.5%	1.3%	1.1%
		Sub-total	834,650	892,393	908,920	922,953	1,014,886	1,105,346	1,189,089	1,266,312	1,336,420	1.3%	0.4%	0.3%	1.9%	1.7%	1.5%	1.3%	1.1%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
BICOL	Sorsogon	BARCELONA	20,340	20,990	20,987	21,538	23,646	25,702	27,666	29,499	31,138	0.6%	0.0%	0.5%	1.9%	1.7%	1.5%	1.3%	1.1%
		BULAN	93,943	100,076	105,190	108,138	118,715	129,037	138,899	148,093	156,328	1.3%	1.0%	0.6%	1.9%	1.7%	1.5%	1.3%	1.1%
		BULUSAN	22,089	22,884	23,932	24,599	27,005	29,354	31,598	33,689	35,562	0.7%	0.9%	0.6%	1.9%	1.7%	1.5%	1.3%	1.1%
		CASIGURAN	30,995	32,842	35,602	36,636	40,220	43,717	47,058	50,173	52,964	1.2%	1.6%	0.6%	1.9%	1.7%	1.5%	1.3%	1.1%
		CASTILLA	52,903	57,827	60,635	62,329	68,426	74,376	80,061	85,360	90,107	1.8%	1.0%	0.6%	1.9%	1.7%	1.5%	1.3%	1.1%
		DONSOL	47,563	49,711	50,281	51,622	56,672	61,600	66,307	70,696	74,628	0.9%	0.2%	0.5%	1.9%	1.7%	1.5%	1.3%	1.1%
		GUBAT	57,327	59,534	60,294	61,906	67,961	73,871	79,517	84,780	89,495	0.8%	0.3%	0.5%	1.9%	1.7%	1.5%	1.3%	1.1%
		IROSIN	51,777	56,662	59,267	60,917	66,877	72,692	78,247	83,426	88,066	1.8%	0.9%	0.6%	1.9%	1.7%	1.5%	1.3%	1.1%
		JUBAN	30,335	32,320	35,297	36,331	39,885	43,352	46,665	49,754	52,521	1.3%	1.8%	0.6%	1.9%	1.7%	1.5%	1.3%	1.1%
		MAGALLANES	35,443	37,038	37,411	38,408	42,164	45,830	49,332	52,598	55,524	0.9%	0.2%	0.5%	1.9%	1.7%	1.5%	1.3%	1.1%
		MATNOG	37,641	41,101	41,989	43,124	47,342	51,458	55,392	59,058	62,341	1.8%	0.4%	0.5%	1.9%	1.7%	1.5%	1.3%	1.1%
		PILAR	68,245	74,564	75,793	77,828	85,441	92,870	99,968	106,585	112,513	1.8%	0.3%	0.5%	1.9%	1.7%	1.5%	1.3%	1.1%
		PRIETO DIAZ	20,478	22,442	22,644	23,246	25,520	27,738	29,859	31,835	33,605	1.8%	0.2%	0.5%	1.9%	1.7%	1.5%	1.3%	1.1%
		SANTA MAGDALENA	16,520	16,848	17,096	17,554	19,272	20,947	22,549	24,041	25,377	0.4%	0.3%	0.5%	1.9%	1.7%	1.5%	1.3%	1.1%
		CITY OF SORSOGON (Capital)	155,144	168,110	182,237	187,533	205,878	223,779	240,883	256,826	271,108	1.6%	1.6%	0.6%	1.9%	1.7%	1.5%	1.3%	1.1%
		Sub-total	740,743	792,949	828,655	851,709	935,024	1,016,323	1,094,001	1,166,413	1,231,277	1.4%	0.9%	0.6%	1.9%	1.7%	1.5%	1.3%	1.1%
		Total	5,420,411	5,796,989	6,082,165	6,215,219	6,784,839	7,334,577	7,849,574	8,321,655	8,737,286	1.3%	1.0%	0.4%	1.8%	1.6%	1.4%	1.2%	1.0%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
WESTERN VISAYAS	Aklan	ALTAVAS	23,919	24,619	25,639	26,098	27,745	29,280	30,631	31,808	32,830	0.6%	0.8%	0.4%	1.2%	1.1%	0.9%	0.8%	0.6%
		BALETE	27,197	28,920	30,090	30,627	32,560	34,360	35,946	37,328	38,526	1.2%	0.8%	0.4%	1.2%	1.1%	0.9%	0.8%	0.6%
		BANGA	38,063	39,505	40,318	41,010	43,599	46,010	48,132	49,983	51,588	0.7%	0.4%	0.3%	1.2%	1.1%	0.9%	0.8%	0.6%
		BATAN	30,312	32,032	33,484	34,087	36,238	38,242	40,007	41,545	42,880	1.1%	0.9%	0.4%	1.2%	1.1%	0.9%	0.8%	0.6%
		BURUANGA	16,962	19,003	19,357	19,688	20,931	22,088	23,107	23,995	24,766	2.3%	0.4%	0.3%	1.2%	1.1%	0.9%	0.8%	0.6%
		IBAJAY	45,279	49,564	52,364	53,326	56,691	59,825	62,585	64,992	67,079	1.8%	1.1%	0.4%	1.2%	1.1%	0.9%	0.8%	0.6%
		KALIBO (Capital)	74,619	80,605	89,127	90,898	96,633	101,977	106,681	110,784	114,342	1.6%	2.0%	0.4%	1.2%	1.1%	0.9%	0.8%	0.6%
		LEZO	14,518	15,224	15,639	15,912	16,917	17,852	18,675	19,393	20,016	1.0%	0.5%	0.3%	1.2%	1.1%	0.9%	0.8%	0.6%
		LIBACAO	28,005	28,241	28,272	28,738	30,551	32,242	33,728	35,026	36,151	0.2%	0.0%	0.3%	1.2%	1.1%	0.9%	0.8%	0.6%
		MADALAG	18,168	18,389	18,890	19,219	20,431	21,562	22,556	23,424	24,176	0.2%	0.5%	0.3%	1.2%	1.1%	0.9%	0.8%	0.6%
		MAKATO	25,461	27,262	29,717	30,293	32,204	33,986	35,555	36,921	38,106	1.4%	1.7%	0.4%	1.2%	1.1%	0.9%	0.8%	0.6%
		MALAY	45,811	52,973	60,077	61,319	65,188	68,793	71,966	74,734	77,134	2.9%	2.5%	0.4%	1.2%	1.1%	0.9%	0.8%	0.6%
		MALINAO	24,108	23,194	24,517	24,967	26,542	28,010	29,302	30,429	31,406	-0.8%	1.1%	0.4%	1.2%	1.1%	0.9%	0.8%	0.6%
		NABAS	31,052	36,435	40,632	41,451	44,066	46,503	48,648	50,519	52,141	3.2%	2.2%	0.4%	1.2%	1.1%	0.9%	0.8%	0.6%
		NEW WASHINGTON	42,112	45,007	47,955	48,849	51,931	54,804	57,331	59,536	61,449	1.3%	1.3%	0.4%	1.2%	1.1%	0.9%	0.8%	0.6%
		NUMANCIA	29,862	31,934	35,693	36,413	38,712	40,853	42,736	44,380	45,804	1.4%	2.3%	0.4%	1.2%	1.1%	0.9%	0.8%	0.6%
		TANGALAN	20,277	21,916	23,704	24,158	25,680	27,100	28,350	29,439	30,386	1.6%	1.6%	0.4%	1.2%	1.1%	0.9%	0.8%	0.6%
		Sub-total	535,725	574,823	615,475	627,053	666,619	703,487	735,936	764,236	788,780	1.4%	1.4%	0.4%	1.2%	1.1%	0.9%	0.8%	0.6%
	Antique	ANINI-Y	20,349	21,201	22,018	22,402	24,666	26,976	29,341	31,763	34,280	0.8%	0.8%	0.3%	1.9%	1.8%	1.7%	1.6%	1.5%
		BARBAZA	21,775	22,704	23,359	23,757	26,160	28,609	31,116	33,684	36,353	0.8%	0.6%	0.3%	1.9%	1.8%	1.7%	1.6%	1.5%
		BELISON	12,807	13,539	14,129	14,377	15,831	17,314	18,831	20,385	22,001	1.1%	0.9%	0.3%	1.9%	1.8%	1.7%	1.6%	1.5%
		BUGASONG	32,264	33,642	34,676	35,270	38,836	42,474	46,195	50,009	53,971	0.8%	0.6%	0.3%	1.9%	1.8%	1.7%	1.6%	1.5%
		CALUYA	30,046	35,496	38,908	39,656	43,665	47,755	51,940	56,228	60,684	3.4%	1.9%	0.4%	1.9%	1.8%	1.7%	1.6%	1.5%
		CULASI	39,086	41,228	44,494	45,327	49,908	54,583	59,367	64,267	69,359	1.1%	1.5%	0.4%	1.9%	1.8%	1.7%	1.6%	1.5%
		TOBIAS FORNIER (DAO)	30,669	33,046	33,816	34,388	37,864	41,410	45,038	48,757	52,621	1.5%	0.5%	0.3%	1.9%	1.8%	1.7%	1.6%	1.5%
		HAMTIC	45,983	48,592	52,685	53,678	59,105	64,640	70,304	76,108	82,138	1.1%	1.6%	0.4%	1.9%	1.8%	1.7%	1.6%	1.5%
		LAUA-AN	25,211	26,072	26,580	27,025	29,757	32,545	35,397	38,320	41,356	0.7%	0.4%	0.3%	1.9%	1.8%	1.7%	1.6%	1.5%
		LIBERTAD	15,669	16,429	17,507	17,827	19,630	21,469	23,350	25,277	27,281	1.0%	1.3%	0.4%	1.9%	1.8%	1.7%	1.6%	1.5%
		PANDAN	32,494	34,333	35,965	36,601	40,301	44,075	47,937	51,895	56,008	1.1%	0.9%	0.4%	1.9%	1.8%	1.7%	1.6%	1.5%
		PATNONGON	35,102	37,176	38,329	38,986	42,928	46,949	51,063	55,278	59,658	1.2%	0.6%	0.3%	1.9%	1.8%	1.7%	1.6%	1.5%
		SAN JOSE (Capital)	57,847	62,534	65,140	66,280	72,980	79,816	86,811	93,977	101,424	1.6%	0.8%	0.3%	1.9%	1.8%	1.7%	1.6%	1.5%
		SAN REMIGIO	30,446	31,935	34,045	34,667	38,172	41,747	45,405	49,153	53,048	1.0%	1.3%	0.4%	1.9%	1.8%	1.7%	1.6%	1.5%
		SEBASTE	17,270	17,907	18,816	19,151	21,087	23,062	25,083	27,154	29,305	0.7%	1.0%	0.4%	1.9%	1.8%	1.7%	1.6%	1.5%
		SIBALOM	56,058	60,306	63,833	64,985	71,555	78,257	85,115	92,141	99,443	1.5%	1.1%	0.4%	1.9%	1.8%	1.7%	1.6%	1.5%
		TIBIAO	24,513	26,748	28,703	29,234	32,191	35,205	38,289	41,451	44,734	1.8%	1.4%	0.4%	1.9%	1.8%	1.7%	1.6%	1.5%
		VALDERRAMA	18,442	19,124	19,971	20,322	22,378	24,474	26,618	28,815	31,097	0.7%	0.9%	0.3%	1.9%	1.8%	1.7%	1.6%	1.5%
		Sub-total	546,031	582,012	612,974	623,933	687,014	751,360	817,200	884,662	954,761	1.3%	1.0%	0.4%	1.9%	1.8%	1.7%	1.6%	1.5%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
WESTERN VISAYAS	Capiz	CUARTERO	25,456	27,408	27,993	28,958	30,295	31,470	32,378	33,006	33,236	1.5%	0.4%	0.7%	0.9%	0.8%	0.6%	0.4%	0.1%
		DAO	31,911	32,496	33,842	35,031	36,649	38,071	39,170	39,929	40,208	0.4%	0.8%	0.7%	0.9%	0.8%	0.6%	0.4%	0.1%
		DUMALAG	29,298	29,466	30,098	31,134	32,573	33,836	34,813	35,488	35,736	0.1%	0.4%	0.7%	0.9%	0.8%	0.6%	0.4%	0.1%
		DUMARAO	43,986	46,157	49,506	51,296	53,666	55,747	57,356	58,467	58,877	1.0%	1.4%	0.7%	0.9%	0.8%	0.6%	0.4%	0.1%
		IVISAN	26,763	29,055	31,278	32,413	33,910	35,225	36,242	36,944	37,204	1.7%	1.5%	0.7%	0.9%	0.8%	0.6%	0.4%	0.1%
		JAMINDAN	35,002	36,677	38,670	40,045	41,896	43,520	44,776	45,644	45,965	0.9%	1.1%	0.7%	0.9%	0.8%	0.6%	0.4%	0.1%
		MA-AYON	36,430	38,416	41,226	42,718	44,691	46,424	47,763	48,690	49,030	1.1%	1.4%	0.7%	0.9%	0.8%	0.6%	0.4%	0.1%
		MAMBUSAO	37,672	39,644	40,690	42,099	44,044	45,751	47,072	47,984	48,321	1.0%	0.5%	0.7%	0.9%	0.8%	0.6%	0.4%	0.1%
		PANAY	43,449	46,114	48,890	50,638	52,978	55,032	56,619	57,717	58,122	1.2%	1.2%	0.7%	0.9%	0.8%	0.6%	0.4%	0.1%
		PANITAN	37,895	40,289	42,565	44,082	46,119	47,907	49,289	50,244	50,597	1.2%	1.1%	0.7%	0.9%	0.8%	0.6%	0.4%	0.1%
		PILAR	41,572	45,287	47,100	48,754	51,006	52,984	54,512	55,570	55,959	1.7%	0.8%	0.7%	0.9%	0.8%	0.6%	0.4%	0.1%
		PONTEVEDRA	43,525	46,428	49,725	51,520	53,901	55,991	57,607	58,724	59,136	1.3%	1.4%	0.7%	0.9%	0.8%	0.6%	0.4%	0.1%
		PRESIDENT ROXAS	28,561	29,676	31,269	32,381	33,877	35,191	36,205	36,907	37,165	0.8%	1.1%	0.7%	0.9%	0.8%	0.6%	0.4%	0.1%
		ROXAS CITY (Capital)	156,197	167,003	179,292	185,779	194,362	201,900	207,724	211,750	213,235	1.3%	1.4%	0.7%	0.9%	0.8%	0.6%	0.4%	0.1%
		SAPI-AN	24,779	25,821	26,697	27,629	28,905	30,027	30,894	31,492	31,713	0.8%	0.7%	0.7%	0.9%	0.8%	0.6%	0.4%	0.1%
		SIGMA	29,138	30,134	31,688	32,813	34,329	35,660	36,689	37,400	37,661	0.7%	1.0%	0.7%	0.9%	0.8%	0.6%	0.4%	0.1%
		TAPAZ	48,051	51,313	54,423	56,369	58,974	61,260	63,027	64,249	64,699	1.3%	1.2%	0.7%	0.9%	0.8%	0.6%	0.4%	0.1%
		Sub-total	719,685	761,384	804,952	833,659	872,175	905,996	932,136	950,205	956,864	1.1%	1.1%	0.7%	0.9%	0.8%	0.6%	0.4%	0.1%
	Guimaras	BUENAVISTA	46,703	50,437	52,899	54,106	57,012	59,470	61,451	62,824	63,641	1.6%	1.0%	0.5%	1.1%	0.8%	0.7%	0.4%	0.3%
		JORDAN (Capital)	34,791	36,096	39,566	40,527	42,704	44,545	46,029	47,058	47,669	0.7%	1.9%	0.5%	1.1%	0.8%	0.7%	0.4%	0.3%
		NUEVA VALENCIA	37,852	39,810	42,771	43,782	46,134	48,123	49,725	50,837	51,498	1.0%	1.4%	0.5%	1.1%	0.8%	0.7%	0.4%	0.3%
		SAN LORENZO	24,032	26,112	29,444	30,186	31,807	33,180	34,284	35,051	35,506	1.7%	2.4%	0.5%	1.1%	0.8%	0.7%	0.4%	0.3%
		SIBUNAG	19,565	22,158	23,162	23,688	24,961	26,036	26,902	27,504	27,862	2.5%	0.9%	0.5%	1.1%	0.8%	0.7%	0.4%	0.3%
		Sub-total	162,943	174,613	187,842	192,289	202,618	211,354	218,391	223,274	226,176	1.4%	1.5%	0.5%	1.1%	0.8%	0.7%	0.4%	0.3%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
WESTERN VISAYAS	Iloilo	AJUY	47,248	52,268	53,462	54,558	57,134	59,279	61,012	62,235	62,900	2.0%	0.5%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		ALIMODIAN	37,484	38,408	39,722	40,552	42,466	44,060	45,347	46,256	46,750	0.5%	0.7%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		ANILAO	27,486	28,684	30,520	31,186	32,659	33,885	34,875	35,574	35,955	0.9%	1.2%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		BADIANGAN	26,218	27,005	27,056	27,591	28,894	29,978	30,854	31,473	31,808	0.6%	0.0%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		BALASAN	29,724	33,088	35,064	35,824	37,517	38,924	40,061	40,864	41,300	2.2%	1.2%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		BANATE	29,543	32,532	33,376	34,064	35,672	37,011	38,093	38,857	39,270	1.9%	0.5%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		BAROTAC NUEVO	51,867	54,146	58,176	59,466	62,273	64,610	66,498	67,830	68,555	0.9%	1.4%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		BAROTAC VIEJO	41,470	45,808	48,614	49,672	52,017	53,970	55,546	56,659	57,265	2.0%	1.2%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		BATAD	19,385	21,298	22,157	22,625	23,693	24,582	25,300	25,808	26,082	1.9%	0.8%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		BINGAWAN	13,432	15,199	16,164	16,517	17,297	17,945	18,471	18,840	19,042	2.5%	1.2%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		CABATUAN	54,950	58,442	61,110	62,410	65,356	67,809	69,791	71,189	71,950	1.2%	0.9%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		CALINOG	54,430	60,413	62,853	64,179	67,209	69,732	71,770	73,208	73,990	2.1%	0.8%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		CARLES	62,690	68,160	72,637	74,228	77,733	80,651	83,007	84,671	85,574	1.7%	1.3%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		CONCEPCION	39,617	43,159	44,633	45,566	47,717	49,508	50,955	51,976	52,531	1.7%	0.7%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		DINGLE	43,290	45,335	45,965	46,894	49,107	50,951	52,440	53,490	54,061	0.9%	0.3%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		DUEÑAS	33,671	34,242	34,597	35,290	36,956	38,344	39,465	40,256	40,686	0.3%	0.2%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		DUMANGAS	66,108	69,108	73,899	75,527	79,092	82,061	84,459	86,153	87,073	0.9%	1.3%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		ESTANCIA	42,666	48,546	53,200	54,415	56,983	59,122	60,850	62,069	62,732	2.6%	1.8%	0.5%	0.9%	0.7%	0.6%	0.4%	0.2%
		GUIMBAL	32,325	33,820	35,022	35,755	37,442	38,848	39,982	40,785	41,221	0.9%	0.7%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		IGBARAS	31,347	32,004	32,197	32,838	34,389	35,680	36,721	37,458	37,858	0.4%	0.1%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		JANIUAY	63,031	63,905	66,786	68,204	71,425	74,105	76,271	77,799	78,631	0.3%	0.9%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		LAMBUNAO	69,023	73,640	81,236	83,110	87,033	90,301	92,939	94,802	95,814	1.3%	2.0%	0.5%	0.9%	0.7%	0.6%	0.4%	0.2%
		LEGANES	29,438	32,480	34,725	35,490	37,165	38,560	39,687	40,481	40,915	2.0%	1.3%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
WESTERN VISAYAS	Iloilo	LEMERY	27,441	30,851	31,414	32,054	33,567	34,827	35,845	36,563	36,953	2.4%	0.4%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		LEON	47,522	49,875	51,990	53,090	55,597	57,683	59,370	60,560	61,208	1.0%	0.8%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		MAASIN	35,069	36,922	38,461	39,274	41,129	42,672	43,919	44,800	45,278	1.0%	0.8%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		MIAGAO	64,545	67,565	68,115	69,477	72,756	75,487	77,694	79,250	80,096	0.9%	0.2%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		MINA	21,785	23,546	24,042	24,533	25,691	26,656	27,434	27,984	28,283	1.6%	0.4%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		NEW LUCENA	22,174	23,240	24,314	24,831	26,004	26,980	27,768	28,325	28,627	0.9%	0.9%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		OTON	82,572	89,115	98,509	100,786	105,545	109,506	112,706	114,965	116,192	1.5%	2.0%	0.5%	0.9%	0.7%	0.6%	0.4%	0.2%
		CITY OF PASSI	79,663	80,544	88,873	90,922	95,215	98,788	101,674	103,713	104,820	0.2%	2.0%	0.5%	0.9%	0.7%	0.6%	0.4%	0.2%
		PAVIA	43,614	55,603	70,388	72,304	75,718	78,559	80,855	82,475	83,356	5.0%	4.8%	0.5%	0.9%	0.7%	0.6%	0.4%	0.2%
		POTOTAN	70,955	75,070	78,298	79,956	83,731	86,873	89,413	91,204	92,179	1.1%	0.8%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		SAN DIONISIO	33,650	38,775	39,048	39,827	41,707	43,273	44,538	45,431	45,915	2.9%	0.1%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		SAN ENRIQUE	32,422	33,911	36,911	37,745	39,527	41,010	42,209	43,055	43,514	0.9%	1.7%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		SAN JOAQUIN	51,645	51,892	52,617	53,680	56,214	58,324	60,028	61,231	61,885	0.1%	0.3%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		SAN MIGUEL	25,013	27,686	30,115	30,795	32,249	33,459	34,438	35,128	35,503	2.1%	1.7%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		SAN RAFAEL	14,655	16,532	17,795	18,190	19,049	19,764	20,341	20,749	20,970	2.4%	1.5%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		SANTA BARBARA	55,472	60,215	67,630	69,227	72,495	75,216	77,414	78,965	79,809	1.7%	2.3%	0.5%	0.9%	0.7%	0.6%	0.4%	0.2%
		SARA	46,889	52,631	54,637	55,785	58,418	60,612	62,383	63,633	64,313	2.3%	0.8%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		TIGBAUAN	58,814	62,706	65,245	66,620	69,766	72,385	74,500	75,994	76,805	1.3%	0.8%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		TUBUNGAN	21,540	22,449	23,021	23,494	24,604	25,529	26,276	26,802	27,089	0.8%	0.5%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		ZARRAGA	23,693	25,605	27,305	27,905	29,222	30,320	31,207	31,832	32,171	1.6%	1.3%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		ILOILO CITY (Capital)	424,619	447,992	457,626	466,987	489,036	507,393	522,221	532,689	538,378	1.1%	0.4%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%
		Sub-total	2,230,195	2,384,415	2,509,525	2,563,443	2,684,469	2,785,232	2,866,627	2,924,081	2,955,307	1.3%	1.0%	0.4%	0.9%	0.7%	0.6%	0.4%	0.2%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
WESTERN VISAYAS	Negros Occidental	BAGO CITY	163,045	170,981	191,210	192,935	204,373	214,498	222,574	229,481	235,835	1.0%	2.3%	0.2%	1.2%	1.0%	0.7%	0.6%	0.5%
		BINALBAGAN	65,431	67,270	71,407	71,931	76,194	79,969	82,980	85,555	87,924	0.6%	1.2%	0.1%	1.2%	1.0%	0.7%	0.6%	0.5%
		CADIZ CITY	151,500	154,723	158,544	159,517	168,974	177,345	184,022	189,732	194,986	0.4%	0.5%	0.1%	1.2%	1.0%	0.7%	0.6%	0.5%
		CALATRAVA	79,009	80,624	82,540	83,044	87,967	92,325	95,801	98,773	101,509	0.4%	0.5%	0.1%	1.2%	1.0%	0.7%	0.6%	0.5%
		CANDONI	21,336	21,789	23,751	23,946	25,365	26,622	27,625	28,482	29,270	0.4%	1.7%	0.2%	1.2%	1.0%	0.7%	0.6%	0.5%
		CAUAYAN	96,921	102,165	108,480	109,277	115,755	121,490	126,065	129,977	133,575	1.1%	1.2%	0.1%	1.2%	1.0%	0.7%	0.6%	0.5%
		ENRIQUE B. MAGALONA (SARAVIA)	59,434	62,921	64,290	64,678	68,513	71,907	74,615	76,930	79,059	1.1%	0.4%	0.1%	1.2%	1.0%	0.7%	0.6%	0.5%
		CITY OF ESCALANTE	93,005	94,070	96,159	96,742	102,476	107,554	111,602	115,067	118,252	0.2%	0.4%	0.1%	1.2%	1.0%	0.7%	0.6%	0.5%
		CITY OF HIMAMAYLAN	103,006	106,880	116,240	117,184	124,132	130,280	135,185	139,381	143,240	0.7%	1.7%	0.2%	1.2%	1.0%	0.7%	0.6%	0.5%
		HINIGARAN	81,925	85,602	88,909	89,497	94,803	99,499	103,245	106,448	109,395	0.9%	0.8%	0.1%	1.2%	1.0%	0.7%	0.6%	0.5%
		HINOBA-AN (ASIA)	54,624	56,819	60,865	61,330	64,966	68,184	70,751	72,946	74,967	0.8%	1.4%	0.2%	1.2%	1.0%	0.7%	0.6%	0.5%
		ILOG	54,423	57,389	59,855	60,259	63,832	66,994	69,517	71,673	73,658	1.1%	0.8%	0.1%	1.2%	1.0%	0.7%	0.6%	0.5%
		ISABELA	59,523	62,146	64,516	64,940	68,790	72,198	74,916	77,241	79,380	0.9%	0.8%	0.1%	1.2%	1.0%	0.7%	0.6%	0.5%
		CITY OF KABANKALAN	167,666	181,977	200,198	201,899	213,869	224,463	232,915	240,142	246,791	1.7%	1.9%	0.2%	1.2%	1.0%	0.7%	0.6%	0.5%
		LA CARLOTA CITY	63,852	64,469	66,664	67,094	71,071	74,592	77,400	79,802	82,011	0.2%	0.7%	0.1%	1.2%	1.0%	0.7%	0.6%	0.5%
		LA CASTELLANA	71,013	74,855	79,492	80,076	84,824	89,025	92,378	95,244	97,881	1.1%	1.2%	0.1%	1.2%	1.0%	0.7%	0.6%	0.5%
		MANAPLA	52,687	54,845	55,083	55,382	58,666	61,571	63,890	65,872	67,696	0.8%	0.1%	0.1%	1.2%	1.0%	0.7%	0.6%	0.5%
		MOISES PADILLA (MAGALLON)	39,257	41,386	43,462	43,765	46,360	48,656	50,488	52,054	53,496	1.1%	1.0%	0.1%	1.2%	1.0%	0.7%	0.6%	0.5%
		MURCIA	75,207	81,286	88,868	89,605	94,918	99,620	103,370	106,579	109,529	1.6%	1.8%	0.2%	1.2%	1.0%	0.7%	0.6%	0.5%
		PONTEVEDRA	47,945	51,866	54,502	54,883	58,136	61,016	63,313	65,278	67,085	1.6%	1.0%	0.1%	1.2%	1.0%	0.7%	0.6%	0.5%
		PULUPANDAN	25,350	27,735	30,117	30,361	32,161	33,755	35,025	36,112	37,112	1.8%	1.7%	0.2%	1.2%	1.0%	0.7%	0.6%	0.5%
		SAGAY CITY	140,740	146,264	148,894	149,774	158,653	166,513	172,781	178,143	183,075	0.8%	0.4%	0.1%	1.2%	1.0%	0.7%	0.6%	0.5%
		SAN CARLOS CITY	129,981	132,536	132,650	133,356	141,262	148,260	153,841	158,615	163,007	0.4%	0.0%	0.1%	1.2%	1.0%	0.7%	0.6%	0.5%
		SAN ENRIQUE	23,189	23,907	24,177	24,314	25,756	27,031	28,049	28,920	29,721	0.6%	0.2%	0.1%	1.2%	1.0%	0.7%	0.6%	0.5%
		SILAY CITY	120,999	126,930	130,478	131,293	139,077	145,967	151,462	156,162	160,485	1.0%	0.6%	0.1%	1.2%	1.0%	0.7%	0.6%	0.5%
		CITY OF SIPALAY	67,403	70,070	72,448	72,915	77,238	81,063	84,116	86,726	89,127	0.8%	0.7%	0.1%	1.2%	1.0%	0.7%	0.6%	0.5%
		CITY OF TALISAY	97,571	102,214	108,909	109,721	116,226	121,983	126,576	130,504	134,117	0.9%	1.3%	0.1%	1.2%	1.0%	0.7%	0.6%	0.5%
		TOBOSO	41,658	42,114	43,445	43,722	46,314	48,608	50,439	52,004	53,443	0.2%	0.6%	0.1%	1.2%	1.0%	0.7%	0.6%	0.5%
		VALLADOLID	36,416	37,833	39,996	40,285	42,672	44,786	46,472	47,914	49,241	0.8%	1.1%	0.1%	1.2%	1.0%	0.7%	0.6%	0.5%
		CITY OF VICTORIAS	88,299	87,933	90,101	90,654	96,029	100,786	104,580	107,825	110,810	-0.1%	0.5%	0.1%	1.2%	1.0%	0.7%	0.6%	0.5%
		SALVADOR BENEDICTO	23,624	25,662	26,922	27,108	28,717	30,139	31,275	32,247	33,138	1.7%	1.0%	0.1%	1.2%	1.0%	0.7%	0.6%	0.5%
		BACOLOD CITY (Capital)	511,820	561,875	600,783	605,333	641,220	672,985	698,323	719,994	739,927	1.9%	1.3%	0.2%	1.2%	1.0%	0.7%	0.6%	0.5%
		Sub-total	2,907,859	3,059,136	3,223,955	3,246,820	3,439,309	3,609,684	3,745,591	3,861,823	3,968,742	1.0%	1.1%	0.1%	1.2%	1.0%	0.7%	0.6%	0.5%
		Total	7,102,438	7,536,383	7,954,723	8,087,197	8,552,204	8,967,113	9,315,881	9,608,281	9,850,630	1.2%	1.1%	0.3%	1.1%	1.0%	0.8%	0.6%	0.5%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL VISAYAS	Bohol	ALBURQUERQUE	9,921	10,540	11,246	11,348	12,306	13,266	14,207	15,134	16,061	1.2%	1.3%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		ALICIA	22,285	23,517	24,374	24,571	26,643	28,724	30,759	32,769	34,774	1.1%	0.7%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		ANDA	16,909	16,462	17,778	17,946	19,460	20,981	22,466	23,934	25,398	-0.5%	1.6%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		ANTEQUERA	14,481	14,425	14,990	15,114	16,387	17,668	18,919	20,155	21,388	-0.1%	0.8%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		BACLAYON	18,630	20,591	22,461	22,682	24,594	26,515	28,394	30,249	32,099	2.0%	1.8%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		BALILIHAN	17,147	17,903	18,694	18,850	20,440	22,037	23,597	25,140	26,678	0.9%	0.9%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		BATUAN	12,431	12,767	13,845	13,978	15,157	16,341	17,499	18,642	19,782	0.5%	1.6%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		BILAR	17,098	17,590	18,512	18,671	20,246	21,828	23,373	24,900	26,424	0.6%	1.0%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		BUENAVISTA	27,031	27,261	29,711	30,001	32,530	35,071	37,556	40,009	42,457	0.2%	1.7%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		CALAPE	30,146	30,863	33,079	33,384	36,199	39,026	41,791	44,521	47,245	0.5%	1.4%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		CANDIJAY	29,043	29,475	30,119	30,349	32,908	35,478	37,992	40,473	42,950	0.3%	0.4%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		CARMEN	43,579	46,306	49,191	49,630	53,815	58,019	62,127	66,187	70,237	1.2%	1.2%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		CATIGBIAN	22,686	22,675	23,805	24,008	26,033	28,065	30,053	32,016	33,975	0.0%	1.0%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		CLARIN	20,296	20,301	21,158	21,334	23,131	24,938	26,705	28,449	30,190	0.0%	0.8%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		CORELLA	7,699	8,479	9,479	9,580	10,388	11,198	11,992	12,775	13,557	1.9%	2.3%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		CORTES	15,294	16,954	18,344	18,520	20,081	21,649	23,182	24,697	26,209	2.1%	1.6%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		DAGOHOY	18,868	19,158	19,874	20,036	21,725	23,422	25,081	26,719	28,354	0.3%	0.7%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		DANAO	17,952	17,890	20,245	20,467	22,193	23,927	25,622	27,295	28,965	-0.1%	2.5%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		DAUIS	39,448	45,663	52,492	53,093	57,570	62,066	66,462	70,804	75,135	3.0%	2.8%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		DIMIAO	15,166	14,364	14,889	15,009	16,276	17,547	18,790	20,017	21,242	-1.1%	0.7%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		DUERO	17,580	17,876	18,861	19,025	20,630	22,242	23,817	25,373	26,925	0.3%	1.1%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		GARCIA HERNANDEZ	23,038	24,194	24,430	24,605	26,680	28,764	30,802	32,814	34,822	1.0%	0.2%	0.1%	1.6%	1.5%	1.4%	1.3%	1.2%
		GUINDULMAN	31,789	32,408	34,104	34,398	37,299	40,211	43,060	45,873	48,680	0.4%	1.0%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		INABANGA	43,291	45,880	48,534	48,961	53,089	57,236	61,290	65,294	69,289	1.2%	1.1%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		JAGNA	32,566	33,892	35,832	36,146	39,194	42,256	45,249	48,205	51,154	0.8%	1.1%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL VISAYAS	Bohol	GETAFE	27,788	30,955	33,422	33,738	36,584	39,441	42,234	44,993	47,747	2.2%	1.5%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		LILA	11,985	12,257	12,240	12,322	13,362	14,406	15,427	16,435	17,441	0.4%	0.0%	0.1%	1.6%	1.5%	1.4%	1.3%	1.2%
		LOAY	16,261	16,691	17,855	18,019	19,539	21,065	22,556	24,029	25,499	0.5%	1.4%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		LOBOC	16,312	15,993	17,418	17,588	19,070	20,560	22,016	23,455	24,890	-0.4%	1.7%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		LOON	42,800	43,034	44,224	44,570	48,328	52,102	55,793	59,438	63,074	0.1%	0.5%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		MABINI	28,174	27,171	28,701	28,952	31,394	33,846	36,244	38,611	40,973	-0.7%	1.1%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		MARIBOJOC	20,491	20,688	22,178	22,382	24,270	26,165	28,018	29,848	31,674	0.2%	1.4%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		PANGLAO	28,603	33,553	39,839	40,336	43,736	47,153	50,492	53,792	57,083	3.2%	3.5%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		PILAR	26,887	27,256	28,693	28,940	31,380	33,832	36,227	38,595	40,956	0.3%	1.0%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		PRES. CARLOS P. GARCIA (PITOGO)	23,287	23,356	23,625	23,796	25,803	27,818	29,789	31,735	33,677	0.1%	0.2%	0.1%	1.6%	1.5%	1.4%	1.3%	1.2%
		SAGBAYAN (BORJA)	20,091	22,339	24,335	24,572	26,644	28,725	30,760	32,770	34,775	2.1%	1.7%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		SAN ISIDRO	9,125	8,744	9,909	10,018	10,863	11,712	12,540	13,360	14,177	-0.8%	2.5%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		SAN MIGUEL	23,574	24,135	25,356	25,573	27,730	29,895	32,013	34,105	36,192	0.5%	1.0%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		SEVILLA	10,443	10,661	11,376	11,479	12,448	13,421	14,370	15,309	16,247	0.4%	1.3%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		SIERRA BULLONES	24,698	24,745	26,095	26,321	28,539	30,770	32,949	35,102	37,250	0.0%	1.1%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		SIKATUNA	6,380	6,726	6,906	6,958	7,545	8,134	8,711	9,279	9,847	1.1%	0.5%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		TAGBILARAN CITY (Capital)	96,792	105,051	104,976	105,692	114,604	123,556	132,307	140,951	149,575	1.7%	0.0%	0.1%	1.6%	1.5%	1.4%	1.3%	1.2%
		TALIBON	61,373	66,969	71,272	71,912	77,975	84,066	90,021	95,902	101,770	1.8%	1.3%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		TRINIDAD	28,828	31,956	35,119	35,470	38,462	41,466	44,402	47,302	50,196	2.1%	1.9%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		TUBIGON	44,902	45,893	47,886	48,284	52,355	56,444	60,441	64,389	68,328	0.4%	0.9%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		UBAY	68,578	73,712	81,799	82,645	89,613	96,613	103,454	110,216	116,958	1.5%	2.1%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		VALENCIA	27,586	27,126	28,392	28,629	31,042	33,467	35,836	38,179	40,513	-0.3%	0.9%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%
		BIEN UNIDO	25,796	27,115	26,666	26,832	29,093	31,365	33,587	35,781	37,969	1.0%	-0.3%	0.1%	1.6%	1.5%	1.4%	1.3%	1.2%
		Sub-total	1,255,128	1,313,560	1,394,329	1,406,734	1,525,353	1,644,497	1,760,972	1,876,020	1,990,801	0.9%	1.2%	0.2%	1.6%	1.5%	1.4%	1.3%	1.2%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL VISAYAS	Cebu	ALCANTARA	13,556	15,160	16,910	17,748	18,719	19,503	20,078	20,452	20,645	2.3%	2.2%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		ALCOY	14,757	16,979	19,186	20,144	21,248	22,136	22,789	23,215	23,434	2.8%	2.5%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		ALEGRIA	22,072	23,300	25,620	26,878	28,350	29,536	30,407	30,975	31,266	1.1%	1.9%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		ALOGUINSAN	27,650	32,100	34,466	36,130	38,108	39,703	40,874	41,638	42,031	3.0%	1.4%	0.9%	1.1%	0.8%	0.6%	0.4%	0.2%
		ARGAO	69,503	72,366	78,187	81,977	86,466	90,085	92,741	94,474	95,365	0.8%	1.6%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		ASTURIAS	44,732	47,857	55,397	58,209	61,396	63,966	65,853	67,084	67,716	1.4%	3.0%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		BADIAN	37,699	37,912	43,735	45,950	48,466	50,494	51,983	52,955	53,455	0.1%	2.9%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		BALAMBAN	71,237	87,177	95,136	99,780	105,244	109,648	112,881	114,992	116,077	4.1%	1.8%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		BANTAYAN	74,785	79,084	86,247	90,455	95,409	99,401	102,333	104,246	105,230	1.1%	1.7%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		BARILI	65,524	73,862	80,715	84,659	89,295	93,032	95,775	97,565	98,486	2.4%	1.8%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		CITY OF BOGO	69,911	78,120	88,867	93,327	98,438	102,556	105,582	107,555	108,569	2.2%	2.6%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		BOLJOON	15,027	16,344	17,525	18,370	19,376	20,186	20,782	21,171	21,370	1.7%	1.4%	0.9%	1.1%	0.8%	0.6%	0.4%	0.2%
		BORBON	31,598	35,526	38,187	40,031	42,223	43,990	45,288	46,135	46,570	2.4%	1.5%	0.9%	1.1%	0.8%	0.6%	0.4%	0.2%
		CITY OF CARCAR	107,323	119,664	136,453	143,312	151,159	157,484	162,129	165,160	166,717	2.2%	2.7%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		CARMEN	44,648	51,325	57,897	60,788	64,116	66,798	68,769	70,056	70,716	2.8%	2.4%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		CATMON	28,320	30,471	33,745	35,409	37,347	38,910	40,058	40,806	41,191	1.5%	2.1%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		COMPOSTELA	42,574	47,898	55,874	58,723	61,938	64,530	66,434	67,676	68,314	2.4%	3.1%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		CONSOLACION	106,649	131,528	148,012	155,388	163,897	170,755	175,792	179,078	180,768	4.3%	2.4%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		CORDOVA	50,353	59,712	70,595	74,223	78,288	81,564	83,970	85,540	86,347	3.5%	3.4%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		DAANBANTAYAN	74,897	84,430	93,502	98,113	103,485	107,815	110,995	113,070	114,136	2.4%	2.1%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		DALAGUETE	63,239	67,497	74,596	78,269	82,555	86,009	88,546	90,201	91,052	1.3%	2.0%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		DANAO CITY	119,252	136,471	156,321	164,200	173,192	180,439	185,762	189,234	191,018	2.7%	2.8%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		DUMANJUG	46,754	51,210	57,823	60,711	64,035	66,715	68,682	69,967	70,626	1.8%	2.5%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		GINATILAN	15,327	15,919	16,906	17,716	18,686	19,468	20,043	20,417	20,610	0.8%	1.2%	0.9%	1.1%	0.8%	0.6%	0.4%	0.2%
		LILOAN	100,500	118,753	153,197	161,470	170,312	177,438	182,672	186,087	187,841	3.4%	5.2%	1.1%	1.1%	0.8%	0.6%	0.4%	0.2%
		MADRIDEJOS	34,905	36,429	42,039	44,168	46,587	48,536	49,968	50,901	51,381	0.9%	2.9%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		MALABUYOC	18,426	19,373	19,770	20,689	21,823	22,735	23,405	23,844	24,069	1.0%	0.4%	0.9%	1.1%	0.8%	0.6%	0.4%	0.2%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL VISAYAS	Cebu	MEDELLIN	50,047	55,332	59,605	62,489	65,910	68,669	70,693	72,015	72,695	2.0%	1.5%	0.9%	1.1%	0.8%	0.6%	0.4%	0.2%
		MINGLANILLA	113,178	132,135	151,002	158,603	167,287	174,287	179,428	182,783	184,506	3.1%	2.7%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		MOALBOAL	27,676	31,130	36,930	38,833	40,960	42,673	43,931	44,753	45,175	2.4%	3.5%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		CITY OF NAGA	101,571	115,750	133,184	139,917	147,578	153,753	158,288	161,246	162,767	2.6%	2.8%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		OSLOB	26,116	27,893	29,264	30,653	32,332	33,684	34,678	35,326	35,659	1.3%	1.0%	0.9%	1.1%	0.8%	0.6%	0.4%	0.2%
		PILAR	11,564	11,308	12,506	13,121	13,840	14,420	14,845	15,123	15,265	-0.4%	2.0%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		PINAMUNGAHAN	57,997	65,955	75,131	78,905	83,225	86,707	89,265	90,934	91,790	2.6%	2.6%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		PORO	23,498	25,212	26,232	27,470	28,974	30,187	31,077	31,658	31,957	1.4%	0.8%	0.9%	1.1%	0.8%	0.6%	0.4%	0.2%
		RONDA	18,582	20,360	21,005	21,990	23,194	24,165	24,878	25,343	25,583	1.8%	0.6%	0.9%	1.1%	0.8%	0.6%	0.4%	0.2%
		SAMBOAN	18,613	20,884	20,373	21,286	22,452	23,391	24,080	24,530	24,761	2.3%	-0.5%	0.9%	1.1%	0.8%	0.6%	0.4%	0.2%
		SAN FERNANDO	60,970	66,280	72,224	75,746	79,894	83,238	85,693	87,294	88,118	1.7%	1.7%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		SAN FRANCISCO	47,357	55,180	59,236	62,094	65,494	68,234	70,246	71,560	72,235	3.1%	1.4%	0.9%	1.1%	0.8%	0.6%	0.4%	0.2%
		SAN REMIGIO	51,394	57,557	65,744	69,052	72,833	75,880	78,119	79,580	80,330	2.3%	2.7%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		SANTA FE	27,270	28,603	34,471	36,264	38,249	39,849	41,025	41,792	42,186	1.0%	3.8%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		SANTANDER	16,105	17,857	18,527	19,399	20,462	21,318	21,947	22,357	22,568	2.1%	0.7%	0.9%	1.1%	0.8%	0.6%	0.4%	0.2%
		SIBONGA	43,641	48,186	53,424	56,061	59,131	61,605	63,422	64,608	65,217	2.0%	2.1%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		SOGOD	30,626	35,108	39,447	41,411	43,678	45,505	46,848	47,723	48,173	2.8%	2.4%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		TABOGON	33,024	39,013	41,432	43,416	45,793	47,710	49,117	50,035	50,507	3.4%	1.2%	0.9%	1.1%	0.8%	0.6%	0.4%	0.2%
		TABUELAN	22,292	25,630	28,907	30,350	32,012	33,352	34,336	34,977	35,307	2.8%	2.4%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		CITY OF TALISAY	200,772	227,645	263,048	276,381	291,517	303,714	312,671	318,517	321,520	2.5%	2.9%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		TOLEDO CITY	157,078	170,335	207,314	218,156	230,103	239,731	246,802	251,416	253,788	1.6%	4.0%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		TUBURAN	58,914	63,866	68,167	71,444	75,357	78,510	80,827	82,337	83,113	1.6%	1.3%	0.9%	1.1%	0.8%	0.6%	0.4%	0.2%
		TUDELA	9,859	11,296	11,304	11,821	12,469	12,990	13,374	13,624	13,752	2.8%	0.0%	0.9%	1.1%	0.8%	0.6%	0.4%	0.2%
		CEBU CITY (Capital)	866,171	922,611	964,169	1,009,804	1,065,103	1,109,669	1,142,401	1,163,755	1,174,729	1.3%	0.9%	0.9%	1.1%	0.8%	0.6%	0.4%	0.2%
		LAPU-LAPU CITY (OPON)	350,467	408,112	497,604	523,652	552,330	575,440	592,414	603,487	609,179	3.1%	4.0%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%
		MANDAUE CITY	331,320	362,654	364,116	380,827	401,682	418,490	430,833	438,888	443,026	1.8%	0.1%	0.9%	1.1%	0.8%	0.6%	0.4%	0.2%
		Sub-total	4,167,320	4,632,359	5,151,274	5,405,982	5,702,017	5,940,603	6,115,829	6,230,155	6,288,906	2.1%	2.1%	1.0%	1.1%	0.8%	0.6%	0.4%	0.2%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL VISAYAS	Negros Oriental	AMLAN (AYUQUITAN)	22,206	23,624	25,513	25,722	27,551	29,305	30,906	32,455	34,077	1.2%	1.6%	0.2%	1.4%	1.2%	1.1%	1.0%	1.0%
		AYUNGON	46,146	46,303	47,102	47,394	50,762	53,995	56,942	59,797	62,785	0.1%	0.3%	0.1%	1.4%	1.2%	1.1%	1.0%	1.0%
		BACONG	32,286	36,527	41,207	41,602	44,559	47,396	49,983	52,490	55,112	2.5%	2.4%	0.2%	1.4%	1.2%	1.1%	1.0%	1.0%
		BAIS CITY	74,722	76,291	84,317	85,073	91,119	96,920	102,211	107,337	112,701	0.4%	2.0%	0.2%	1.4%	1.2%	1.1%	1.0%	1.0%
		BASAY	24,913	26,566	28,531	28,761	30,805	32,766	34,555	36,288	38,102	1.3%	1.4%	0.2%	1.4%	1.2%	1.1%	1.0%	1.0%
		CITY OF BAYAWAN (TULONG)	114,074	117,900	122,747	123,606	132,391	140,818	148,507	155,954	163,747	0.7%	0.8%	0.1%	1.4%	1.2%	1.1%	1.0%	1.0%
		BINDOY (PAYABON)	39,416	39,819	40,308	40,551	43,433	46,198	48,721	51,164	53,721	0.2%	0.2%	0.1%	1.4%	1.2%	1.1%	1.0%	1.0%
		CANLAON CITY	50,627	54,509	58,822	59,302	63,518	67,561	71,251	74,823	78,562	1.5%	1.5%	0.2%	1.4%	1.2%	1.1%	1.0%	1.0%
		DAUIN	25,239	27,786	30,018	30,264	32,415	34,478	36,360	38,184	40,091	1.9%	1.6%	0.2%	1.4%	1.2%	1.1%	1.0%	1.0%
		DUMAGUETE CITY (Capital)	120,883	131,377	134,103	134,951	144,542	153,744	162,137	170,268	178,777	1.7%	0.4%	0.1%	1.4%	1.2%	1.1%	1.0%	1.0%
		CITY OF GUIHULNGAN	93,675	95,969	102,656	103,466	110,821	117,875	124,311	130,544	137,067	0.5%	1.4%	0.2%	1.4%	1.2%	1.1%	1.0%	1.0%
		JIMALALUD	29,044	30,945	32,256	32,482	34,792	37,006	39,027	40,983	43,031	1.3%	0.8%	0.1%	1.4%	1.2%	1.1%	1.0%	1.0%
		LA LIBERTAD	38,904	38,602	41,089	41,407	44,351	47,174	49,749	52,243	54,854	-0.2%	1.3%	0.2%	1.4%	1.2%	1.1%	1.0%	1.0%
		MABINAY	74,187	78,864	82,953	83,561	89,501	95,198	100,395	105,429	110,697	1.2%	1.0%	0.1%	1.4%	1.2%	1.1%	1.0%	1.0%
		MANJUYOD	41,107	42,332	44,799	45,137	48,345	51,423	54,231	56,950	59,796	0.6%	1.1%	0.2%	1.4%	1.2%	1.1%	1.0%	1.0%
		PAMPLONA	34,906	37,596	39,805	40,106	42,956	45,691	48,185	50,602	53,130	1.5%	1.1%	0.2%	1.4%	1.2%	1.1%	1.0%	1.0%
		SAN JOSE	19,098	20,413	21,956	22,133	23,706	25,215	26,592	27,925	29,320	1.3%	1.5%	0.2%	1.4%	1.2%	1.1%	1.0%	1.0%
		SANTA CATALINA	73,306	75,756	77,501	77,996	83,541	88,858	93,709	98,409	103,327	0.7%	0.5%	0.1%	1.4%	1.2%	1.1%	1.0%	1.0%
		SIATON	73,285	77,696	83,082	83,738	89,690	95,399	100,607	105,651	110,931	1.2%	1.3%	0.2%	1.4%	1.2%	1.1%	1.0%	1.0%
		SIBULAN	51,519	59,455	64,343	64,876	69,487	73,910	77,946	81,855	85,945	2.9%	1.6%	0.2%	1.4%	1.2%	1.1%	1.0%	1.0%
		CITY OF TANJAY	79,098	80,532	82,642	83,179	89,092	94,763	99,937	104,948	110,193	0.4%	0.5%	0.1%	1.4%	1.2%	1.1%	1.0%	1.0%
		TAYASAN	34,609	35,470	38,159	38,466	41,201	43,824	46,216	48,533	50,959	0.5%	1.5%	0.2%	1.4%	1.2%	1.1%	1.0%	1.0%
		VALENCIA (LUZURRIAGA)	31,477	34,852	38,733	39,087	41,864	44,530	46,961	49,316	51,780	2.1%	2.1%	0.2%	1.4%	1.2%	1.1%	1.0%	1.0%
		VALLEHERMOSO	36,943	38,259	40,779	41,097	44,017	46,820	49,376	51,852	54,443	0.7%	1.3%	0.2%	1.4%	1.2%	1.1%	1.0%	1.0%
		ZAMBOANGUITA	24,996	27,552	29,569	29,806	31,925	33,957	35,811	37,607	39,486	2.0%	1.4%	0.2%	1.4%	1.2%	1.1%	1.0%	1.0%
		Sub-total	1,286,666	1,354,995	1,432,990	1,443,763	1,546,384	1,644,824	1,734,626	1,821,607	1,912,634	1.0%	1.1%	0.1%	1.4%	1.2%	1.1%	1.0%	1.0%
	Siquijor	ENRIQUE VILLANUEVA	5,972	6,104	6,790	6,891	7,711	8,615	9,615	10,689	11,818	0.4%	2.2%	0.3%	2.3%	2.2%	2.2%	2.1%	2.0%
		LARENA	12,931	13,847	14,454	14,638	16,381	18,303	20,425	22,708	25,106	1.4%	0.9%	0.3%	2.3%	2.2%	2.2%	2.1%	2.0%
		LAZI	20,024	20,490	22,488	22,814	25,530	28,523	31,831	35,386	39,125	0.5%	1.9%	0.3%	2.3%	2.2%	2.2%	2.1%	2.0%
		MARIA	13,383	13,828	14,385	14,569	16,303	18,214	20,327	22,599	24,986	0.7%	0.8%	0.3%	2.3%	2.2%	2.2%	2.1%	2.0%
		SAN JUAN	13,525	14,854	16,363	16,603	18,579	20,758	23,165	25,753	28,474	1.9%	2.0%	0.3%	2.3%	2.2%	2.2%	2.1%	2.0%
		SIQUIJOR (Capital)	25,231	26,861	28,915	29,316	32,807	36,653	40,903	45,472	50,276	1.3%	1.5%	0.3%	2.3%	2.2%	2.2%	2.1%	2.0%
		Sub-total	91,066	95,984	103,395	104,831	117,311	131,066	146,266	162,607	179,785	1.1%	1.5%	0.3%	2.3%	2.2%	2.2%	2.1%	2.0%
		Total	6,800,180	7,396,898	8,081,988	8,361,310	8,891,065	9,360,990	9,757,693	10,090,389	10,372,126	1.7%	1.8%	0.7%	1.2%	1.0%	0.8%	0.7%	0.6%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
EASTERN VISAYAS	Biliran	ALMERIA	16,495	16,951	17,954	18,186	20,796	23,685	26,848	30,156	33,572	0.5%	1.2%	0.3%	2.7%	2.6%	2.5%	2.4%	2.2%
		BILIRAN	16,183	16,882	17,662	17,884	20,449	23,291	26,401	29,654	33,011	0.8%	0.9%	0.3%	2.7%	2.6%	2.5%	2.4%	2.2%
		CABUCGAYAN	19,621	20,788	21,542	21,805	24,934	28,398	32,190	36,156	40,251	1.2%	0.7%	0.2%	2.7%	2.6%	2.5%	2.4%	2.2%
		CAIBIRAN	21,473	22,524	24,167	24,491	28,005	31,896	36,156	40,610	45,210	1.0%	1.4%	0.3%	2.7%	2.6%	2.5%	2.4%	2.2%
		CULABA	12,252	12,325	12,972	13,138	15,024	17,110	19,395	21,786	24,252	0.1%	1.0%	0.3%	2.7%	2.6%	2.5%	2.4%	2.2%
		KAWAYAN	20,238	20,291	20,455	20,686	23,654	26,940	30,539	34,301	38,186	0.1%	0.2%	0.2%	2.7%	2.6%	2.5%	2.4%	2.2%
		MARIPIPI	6,699	7,159	6,373	6,414	7,335	8,354	9,470	10,637	11,842	1.3%	-2.3%	0.1%	2.7%	2.6%	2.5%	2.4%	2.2%
		NAVAL (Capital)	48,799	54,692	58,187	58,951	67,409	76,773	87,029	97,750	108,818	2.3%	1.2%	0.3%	2.7%	2.6%	2.5%	2.4%	2.2%
		Sub-total	161,760	171,612	179,312	181,554	207,607	236,448	268,028	301,050	335,142	1.2%	0.9%	0.2%	2.7%	2.6%	2.5%	2.4%	2.2%
	Eastern Samar	ARTECHE	15,164	16,026	16,360	17,297	18,845	20,327	21,698	22,971	24,114	1.1%	0.4%	1.1%	1.7%	1.5%	1.3%	1.1%	1.0%
		BALANGIGA	12,756	14,085	14,341	15,160	16,517	17,816	19,018	20,135	21,136	2.0%	0.4%	1.1%	1.7%	1.5%	1.3%	1.1%	1.0%
		BALANGKAYAN	9,046	10,125	10,185	10,762	11,726	12,647	13,500	14,293	15,004	2.3%	0.1%	1.1%	1.7%	1.5%	1.3%	1.1%	1.0%
		CITY OF BORONGAN (Capital)	64,457	69,297	71,961	76,125	82,939	89,461	95,493	101,100	106,130	1.5%	0.8%	1.1%	1.7%	1.5%	1.3%	1.1%	1.0%
		CAN-AVID	19,785	21,015	21,682	22,931	24,984	26,948	28,766	30,455	31,970	1.2%	0.6%	1.1%	1.7%	1.5%	1.3%	1.1%	1.0%
		DOLORES	37,912	42,866	44,626	47,213	51,439	55,484	59,224	62,702	65,821	2.5%	0.8%	1.1%	1.7%	1.5%	1.3%	1.1%	1.0%
		GENERAL MACARTHUR	12,214	14,550	14,411	15,220	16,582	17,886	19,092	20,214	21,219	3.6%	-0.2%	1.1%	1.7%	1.5%	1.3%	1.1%	1.0%
		GIPORLOS	12,040	13,308	13,117	13,850	15,090	16,277	17,374	18,394	19,310	2.0%	-0.3%	1.1%	1.7%	1.5%	1.3%	1.1%	1.0%
		GUIUAN	47,037	52,991	53,361	56,388	61,436	66,267	70,735	74,888	78,615	2.4%	0.1%	1.1%	1.7%	1.5%	1.3%	1.1%	1.0%
		HERNANI	8,070	8,573	8,531	9,011	9,818	10,590	11,304	11,968	12,563	1.2%	-0.1%	1.1%	1.7%	1.5%	1.3%	1.1%	1.0%
		JIPAPAD	7,397	7,885	8,439	8,936	9,736	10,501	11,209	11,867	12,457	1.3%	1.4%	1.2%	1.7%	1.5%	1.3%	1.1%	1.0%
		LAWAAN	11,612	12,742	13,003	13,746	14,978	16,156	17,244	18,258	19,165	1.9%	0.4%	1.1%	1.7%	1.5%	1.3%	1.1%	1.0%
		LLORENTE	19,101	20,149	21,459	22,720	24,754	26,700	28,500	30,174	31,675	1.1%	1.3%	1.1%	1.7%	1.5%	1.3%	1.1%	1.0%
		MASLOG	4,781	5,407	5,463	5,774	6,291	6,785	7,243	7,668	8,050	2.5%	0.2%	1.1%	1.7%	1.5%	1.3%	1.1%	1.0%
		MAYDOLONG	13,614	14,743	15,314	16,200	17,650	19,037	20,321	21,514	22,585	1.6%	0.8%	1.1%	1.7%	1.5%	1.3%	1.1%	1.0%
		MERCEDES	5,369	6,070	6,112	6,459	7,037	7,589	8,102	8,577	9,004	2.5%	0.1%	1.1%	1.7%	1.5%	1.3%	1.1%	1.0%
		ORAS	34,760	36,540	37,451	39,601	43,146	46,538	49,677	52,593	55,210	1.0%	0.5%	1.1%	1.7%	1.5%	1.3%	1.1%	1.0%
		QUINAPONDAN	13,841	14,779	14,507	15,315	16,687	17,999	19,212	20,340	21,352	1.3%	-0.4%	1.1%	1.7%	1.5%	1.3%	1.1%	1.0%
		SALCEDO	19,970	22,532	22,136	23,372	25,464	27,466	29,318	31,040	32,584	2.4%	-0.4%	1.1%	1.7%	1.5%	1.3%	1.1%	1.0%
		SAN JULIAN	13,748	14,498	14,800	15,648	17,049	18,389	19,629	20,781	21,815	1.1%	0.4%	1.1%	1.7%	1.5%	1.3%	1.1%	1.0%
		SAN POLICARPO	13,836	14,687	15,365	16,258	17,714	19,107	20,396	21,593	22,667	1.2%	0.9%	1.1%	1.7%	1.5%	1.3%	1.1%	1.0%
		SULAT	15,184	15,377	15,758	16,663	18,155	19,583	20,904	22,132	23,233	0.3%	0.5%	1.1%	1.7%	1.5%	1.3%	1.1%	1.0%
		TAFT	17,183	18,915	18,786	19,842	21,618	23,319	24,892	26,352	27,663	1.9%	-0.1%	1.1%	1.7%	1.5%	1.3%	1.1%	1.0%
		Sub-total	428,877	467,160	477,168	504,495	549,657	592,876	632,853	670,012	703,345	1.7%	0.4%	1.1%	1.7%	1.5%	1.3%	1.1%	1.0%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
EASTERN VISAYAS	Leyte	ABUYOG	57,146	59,571	61,216	64,845	69,551	73,887	77,688	80,938	83,598	0.8%	0.5%	1.2%	1.4%	1.2%	1.0%	0.8%	0.6%
		ALANGALANG	46,411	55,235	57,185	60,590	64,987	69,038	72,591	75,627	78,111	3.5%	0.7%	1.2%	1.4%	1.2%	1.0%	0.8%	0.6%
		ALBUERA	40,553	46,332	47,151	49,929	53,553	56,891	59,818	62,320	64,368	2.7%	0.4%	1.2%	1.4%	1.2%	1.0%	0.8%	0.6%
		BABATNGON	25,575	27,797	28,823	30,542	32,757	34,799	36,589	38,120	39,372	1.7%	0.7%	1.2%	1.4%	1.2%	1.0%	0.8%	0.6%
		BARUGO	30,092	32,745	34,497	36,573	39,226	41,673	43,816	45,649	47,149	1.7%	1.0%	1.2%	1.4%	1.2%	1.0%	0.8%	0.6%
		BATO	35,610	38,356	38,505	40,754	43,712	46,437	48,826	50,868	52,539	1.5%	0.1%	1.1%	1.4%	1.2%	1.0%	0.8%	0.6%
		CITY OF BAYBAY	102,841	109,432	111,848	118,457	127,052	134,973	141,917	147,852	152,711	1.3%	0.4%	1.2%	1.4%	1.2%	1.0%	0.8%	0.6%
		BURAUEN	48,853	52,732	52,511	55,563	59,596	63,311	66,568	69,352	71,630	1.5%	-0.1%	1.1%	1.4%	1.2%	1.0%	0.8%	0.6%
		CALUBIAN	29,619	31,228	31,646	33,506	35,937	38,178	40,141	41,820	43,196	1.1%	0.3%	1.1%	1.4%	1.2%	1.0%	0.8%	0.6%
		CAPOOCAN	29,834	33,617	33,721	35,690	38,281	40,667	42,759	44,548	46,013	2.4%	0.1%	1.1%	1.4%	1.2%	1.0%	0.8%	0.6%
		CARIGARA	47,444	51,345	54,656	57,964	62,170	66,046	69,443	72,348	74,726	1.6%	1.3%	1.2%	1.4%	1.2%	1.0%	0.8%	0.6%
		DAGAMI	31,490	35,147	36,178	38,325	41,105	43,668	45,915	47,835	49,408	2.2%	0.6%	1.2%	1.4%	1.2%	1.0%	0.8%	0.6%
		DULAG	41,757	47,300	48,992	51,910	55,676	59,148	62,191	64,791	66,921	2.5%	0.7%	1.2%	1.4%	1.2%	1.0%	0.8%	0.6%
		HILONGOS	56,803	63,431	64,514	68,315	73,272	77,839	81,844	85,268	88,070	2.2%	0.3%	1.2%	1.4%	1.2%	1.0%	0.8%	0.6%
		HINDANG	20,179	20,924	20,849	22,060	23,662	25,137	26,429	27,534	28,440	0.7%	-0.1%	1.1%	1.4%	1.2%	1.0%	0.8%	0.6%
		INOPACAN	19,904	20,550	21,389	22,666	24,311	25,827	27,156	28,291	29,221	0.6%	0.8%	1.2%	1.4%	1.2%	1.0%	0.8%	0.6%
		ISABEL	43,593	46,915	46,781	49,502	53,094	56,404	59,306	61,787	63,817	1.5%	-0.1%	1.1%	1.4%	1.2%	1.0%	0.8%	0.6%
		JARO	39,577	43,199	43,758	46,329	49,691	52,789	55,505	57,827	59,727	1.8%	0.3%	1.1%	1.4%	1.2%	1.0%	0.8%	0.6%
		JAVIER (BUGHO)	23,878	25,379	26,658	28,260	30,310	32,200	33,857	35,273	36,431	1.2%	1.0%	1.2%	1.4%	1.2%	1.0%	0.8%	0.6%
		JULITA	13,307	15,114	15,598	16,525	17,724	18,830	19,798	20,627	21,303	2.6%	0.6%	1.2%	1.4%	1.2%	1.0%	0.8%	0.6%
		KANANGA	48,027	56,575	59,696	63,292	67,885	72,117	75,827	79,000	81,595	3.3%	1.1%	1.2%	1.4%	1.2%	1.0%	0.8%	0.6%
		LA PAZ	19,133	19,998	19,174	20,261	21,731	23,086	24,274	25,289	26,120	0.9%	-0.8%	1.1%	1.4%	1.2%	1.0%	0.8%	0.6%
		LEYTE	37,505	40,639	40,397	42,744	45,845	48,703	51,209	53,351	55,104	1.6%	-0.1%	1.1%	1.4%	1.2%	1.0%	0.8%	0.6%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
EASTERN VISAYAS	Leyte	MACARTHUR	18,724	21,211	21,578	22,850	24,508	26,036	27,376	28,521	29,458	2.5%	0.3%	1.2%	1.4%	1.2%	1.0%	0.8%	0.6%
		MAHAPLAG	26,599	27,823	27,865	29,490	31,629	33,601	35,331	36,807	38,016	0.9%	0.0%	1.1%	1.4%	1.2%	1.0%	0.8%	0.6%
		MATAG-OB	17,089	18,373	17,522	18,511	19,855	21,092	22,178	23,106	23,865	1.5%	-0.9%	1.1%	1.4%	1.2%	1.0%	0.8%	0.6%
		MATALOM	31,097	33,121	32,586	34,465	36,966	39,271	41,291	43,019	44,432	1.3%	-0.3%	1.1%	1.4%	1.2%	1.0%	0.8%	0.6%
		MAYORGA	14,694	17,161	18,071	19,158	20,548	21,829	22,952	23,913	24,698	3.2%	1.0%	1.2%	1.4%	1.2%	1.0%	0.8%	0.6%
		MERIDA	27,224	29,863	31,574	33,478	35,908	38,147	40,109	41,787	43,159	1.9%	1.1%	1.2%	1.4%	1.2%	1.0%	0.8%	0.6%
		ORMOC CITY	191,200	215,031	230,998	245,053	262,836	279,223	293,587	305,867	315,918	2.4%	1.4%	1.2%	1.4%	1.2%	1.0%	0.8%	0.6%
		PALO	62,727	70,052	76,213	80,883	86,753	92,162	96,903	100,956	104,274	2.2%	1.7%	1.2%	1.4%	1.2%	1.0%	0.8%	0.6%
		PALOMPON	54,163	58,108	58,313	61,719	66,198	70,326	73,944	77,036	79,568	1.4%	0.1%	1.1%	1.4%	1.2%	1.0%	0.8%	0.6%
		PASTRANA	16,649	18,002	19,359	20,538	22,029	23,402	24,606	25,635	26,478	1.6%	1.5%	1.2%	1.4%	1.2%	1.0%	0.8%	0.6%
		SAN ISIDRO	28,554	31,641	30,722	32,478	34,836	37,007	38,910	40,538	41,869	2.1%	-0.6%	1.1%	1.4%	1.2%	1.0%	0.8%	0.6%
		SAN MIGUEL	17,561	19,420	19,753	20,917	22,435	23,834	25,060	26,108	26,966	2.0%	0.3%	1.2%	1.4%	1.2%	1.0%	0.8%	0.6%
		SANTA FE	17,427	20,439	22,102	23,451	25,152	26,721	28,095	29,270	30,233	3.2%	1.6%	1.2%	1.4%	1.2%	1.0%	0.8%	0.6%
		TABANGO	31,932	34,195	33,868	35,830	38,430	40,827	42,927	44,721	46,192	1.4%	-0.2%	1.1%	1.4%	1.2%	1.0%	0.8%	0.6%
		TABONTABON	9,838	11,204	11,902	12,622	13,537	14,380	15,120	15,753	16,270	2.6%	1.2%	1.2%	1.4%	1.2%	1.0%	0.8%	0.6%
		TANAUAN	50,119	55,021	57,455	60,894	65,313	69,385	72,954	76,005	78,503	1.9%	0.9%	1.2%	1.4%	1.2%	1.0%	0.8%	0.6%
		TOLOSA	17,921	20,978	20,708	21,906	23,496	24,961	26,245	27,342	28,240	3.2%	-0.3%	1.1%	1.4%	1.2%	1.0%	0.8%	0.6%
		TUNGA	6,516	7,584	7,656	8,106	8,694	9,236	9,712	10,118	10,451	3.1%	0.2%	1.1%	1.4%	1.2%	1.0%	0.8%	0.6%
		VILLABA	38,819	41,891	42,859	45,393	48,687	51,723	54,384	56,658	58,521	1.5%	0.5%	1.2%	1.4%	1.2%	1.0%	0.8%	0.6%
		TACLOBAN CITY (Capital)	221,174	242,089	251,881	266,927	286,296	304,143	319,791	333,169	344,117	1.8%	0.8%	1.2%	1.4%	1.2%	1.0%	0.8%	0.6%
		Sub-total	1,789,158	1,966,768	2,028,728	2,149,270	2,305,236	2,448,953	2,574,943	2,682,647	2,770,797	1.9%	0.6%	1.2%	1.4%	1.2%	1.0%	0.8%	0.6%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
EASTERN VISAYAS	Northern Samar	ALLEN	23,738	25,469	25,228	25,734	28,405	30,970	33,431	35,741	37,889	1.4%	-0.2%	0.4%	2.0%	1.7%	1.5%	1.3%	1.2%
		BIRI	10,987	11,767	11,274	11,487	12,679	13,824	14,921	15,952	16,912	1.4%	-0.9%	0.4%	2.0%	1.7%	1.5%	1.3%	1.2%
		BOBON	20,956	23,668	25,964	26,575	29,334	31,980	34,522	36,908	39,127	2.5%	1.9%	0.5%	2.0%	1.7%	1.5%	1.3%	1.2%
		CAPUL	12,659	12,679	12,323	12,562	13,866	15,118	16,319	17,447	18,495	0.0%	-0.6%	0.4%	2.0%	1.7%	1.5%	1.3%	1.2%
		CATARMAN (Capital)	84,833	94,037	97,879	100,011	110,393	120,357	129,920	138,896	147,248	2.1%	0.8%	0.4%	2.0%	1.7%	1.5%	1.3%	1.2%
		CATUBIG	31,723	33,025	32,174	32,799	36,204	39,472	42,608	45,552	48,291	0.8%	-0.5%	0.4%	2.0%	1.7%	1.5%	1.3%	1.2%
		GAMAY	22,425	23,511	23,367	23,838	26,312	28,686	30,966	33,105	35,096	1.0%	-0.1%	0.4%	2.0%	1.7%	1.5%	1.3%	1.2%
		LAOANG	58,037	61,359	60,607	61,816	68,232	74,392	80,302	85,851	91,014	1.1%	-0.2%	0.4%	2.0%	1.7%	1.5%	1.3%	1.2%
		LAPINIG	11,744	13,020	11,844	12,044	13,294	14,494	15,646	16,727	17,731	2.1%	-1.9%	0.3%	2.0%	1.7%	1.5%	1.3%	1.2%
		LAS NAVAS	36,539	37,947	36,621	37,319	41,192	44,911	48,479	51,829	54,946	0.8%	-0.7%	0.4%	2.0%	1.7%	1.5%	1.3%	1.2%
		LAVEZARES	27,464	28,770	29,390	30,012	33,128	36,117	38,987	41,680	44,186	0.9%	0.4%	0.4%	2.0%	1.7%	1.5%	1.3%	1.2%
		MAPANAS	12,423	14,025	14,234	14,531	16,039	17,488	18,878	20,182	21,395	2.5%	0.3%	0.4%	2.0%	1.7%	1.5%	1.3%	1.2%
		MONDRAGON	35,318	38,726	41,415	42,355	46,752	50,973	55,022	58,824	62,361	1.9%	1.4%	0.4%	2.0%	1.7%	1.5%	1.3%	1.2%
		PALAPAG	33,453	34,286	34,034	34,718	38,323	41,781	45,101	48,217	51,117	0.5%	-0.1%	0.4%	2.0%	1.7%	1.5%	1.3%	1.2%
		PAMBUJAN	31,057	33,062	35,532	36,345	40,117	43,738	47,215	50,477	53,512	1.3%	1.5%	0.5%	2.0%	1.7%	1.5%	1.3%	1.2%
		ROSARIO	10,214	10,520	10,949	11,188	12,350	13,464	14,534	15,538	16,472	0.6%	0.8%	0.4%	2.0%	1.7%	1.5%	1.3%	1.2%
		SAN ANTONIO	8,877	9,058	8,882	9,057	9,997	10,899	11,766	12,579	13,335	0.4%	-0.4%	0.4%	2.0%	1.7%	1.5%	1.3%	1.2%
		SAN ISIDRO	24,952	26,650	27,867	28,479	31,436	34,272	36,995	39,551	41,930	1.3%	0.9%	0.4%	2.0%	1.7%	1.5%	1.3%	1.2%
		SAN JOSE	16,079	17,561	17,641	18,003	19,872	21,665	23,388	25,004	26,507	1.8%	0.1%	0.4%	2.0%	1.7%	1.5%	1.3%	1.2%
		SAN ROQUE	26,323	30,580	29,882	30,466	33,629	36,664	39,577	42,311	44,855	3.0%	-0.5%	0.4%	2.0%	1.7%	1.5%	1.3%	1.2%
		SAN VICENTE	7,447	7,856	6,928	7,036	7,766	8,468	9,140	9,772	10,359	1.1%	-2.5%	0.3%	2.0%	1.7%	1.5%	1.3%	1.2%
		SILVINO LOBOS	14,303	15,299	15,100	15,400	16,999	18,534	20,006	21,389	22,675	1.4%	-0.3%	0.4%	2.0%	1.7%	1.5%	1.3%	1.2%
		VICTORIA	13,920	14,817	15,361	15,693	17,321	18,885	20,386	21,793	23,105	1.3%	0.7%	0.4%	2.0%	1.7%	1.5%	1.3%	1.2%
		LOPE DE VEGA	13,542	14,687	14,690	14,989	16,543	18,036	19,469	20,813	22,065	1.6%	0.0%	0.4%	2.0%	1.7%	1.5%	1.3%	1.2%
		Sub-total	589,013	632,379	639,186	652,455	720,180	785,186	847,577	906,139	960,622	1.4%	0.2%	0.4%	2.0%	1.7%	1.5%	1.3%	1.2%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
EASTERN VISAYAS	Samar	ALMAGRO	11,024	8,942	9,273	9,445	10,326	11,173	11,965	12,704	13,373	-4.1%	0.7%	0.4%	1.8%	1.6%	1.4%	1.2%	1.0%
		BASEY	50,423	55,480	56,685	57,698	63,083	68,257	73,100	77,605	81,691	1.9%	0.4%	0.4%	1.8%	1.6%	1.4%	1.2%	1.0%
		CALBAYOG CITY	172,778	183,851	186,960	190,271	208,029	225,094	241,066	255,921	269,397	1.3%	0.3%	0.4%	1.8%	1.6%	1.4%	1.2%	1.0%
		CALBIGA	21,434	22,982	23,310	23,721	25,935	28,062	30,054	31,905	33,586	1.4%	0.3%	0.4%	1.8%	1.6%	1.4%	1.2%	1.0%
		CITY OF CATBALOGAN (Capital)	94,317	103,879	106,440	108,354	118,466	128,184	137,280	145,739	153,413	2.0%	0.5%	0.4%	1.8%	1.6%	1.4%	1.2%	1.0%
		DARAM	41,322	42,879	41,608	42,274	46,220	50,011	53,560	56,860	59,854	0.7%	-0.6%	0.3%	1.8%	1.6%	1.4%	1.2%	1.0%
		GANDARA	31,943	34,434	35,242	35,873	39,221	42,439	45,451	48,251	50,793	1.5%	0.5%	0.4%	1.8%	1.6%	1.4%	1.2%	1.0%
		HINABANGAN	12,651	13,673	13,693	13,928	15,228	16,477	17,646	18,734	19,721	1.6%	0.0%	0.3%	1.8%	1.6%	1.4%	1.2%	1.0%
		JIABONG	17,075	18,342	19,205	19,564	21,389	23,144	24,786	26,313	27,699	1.4%	0.9%	0.4%	1.8%	1.6%	1.4%	1.2%	1.0%
		MARABUT	15,115	16,962	17,842	18,178	19,875	21,506	23,032	24,451	25,738	2.3%	1.0%	0.4%	1.8%	1.6%	1.4%	1.2%	1.0%
		MATUGUINAO	6,746	7,288	7,364	7,493	8,193	8,865	9,494	10,078	10,609	1.6%	0.2%	0.3%	1.8%	1.6%	1.4%	1.2%	1.0%
		MOTIONG	14,829	15,156	15,276	15,542	16,992	18,387	19,691	20,904	22,006	0.4%	0.2%	0.3%	1.8%	1.6%	1.4%	1.2%	1.0%
		PINABACDAO	16,208	18,252	18,136	18,442	20,164	21,818	23,366	24,806	26,113	2.4%	-0.1%	0.3%	1.8%	1.6%	1.4%	1.2%	1.0%
		SAN JOSE DE BUAN	6,563	7,769	7,767	7,899	8,637	9,345	10,008	10,624	11,185	3.4%	0.0%	0.3%	1.8%	1.6%	1.4%	1.2%	1.0%
		SAN SEBASTIAN	7,708	8,057	8,704	8,876	9,705	10,501	11,246	11,940	12,568	0.9%	1.6%	0.4%	1.8%	1.6%	1.4%	1.2%	1.0%
		SANTA MARGARITA	24,850	26,348	26,816	27,291	29,838	32,286	34,577	36,708	38,640	1.2%	0.4%	0.4%	1.8%	1.6%	1.4%	1.2%	1.0%
		SANTA RITA	38,082	41,591	42,384	43,138	47,165	51,033	54,654	58,023	61,077	1.8%	0.4%	0.4%	1.8%	1.6%	1.4%	1.2%	1.0%
		SANTO NIÑO	13,504	12,863	12,519	12,720	13,908	15,049	16,117	17,111	18,012	-1.0%	-0.5%	0.3%	1.8%	1.6%	1.4%	1.2%	1.0%
		TALALORA	7,983	8,057	7,856	7,983	8,729	9,445	10,115	10,739	11,304	0.2%	-0.5%	0.3%	1.8%	1.6%	1.4%	1.2%	1.0%
		TARANGNAN	24,146	24,992	25,713	26,179	28,623	30,970	33,168	35,211	37,066	0.7%	0.6%	0.4%	1.8%	1.6%	1.4%	1.2%	1.0%
		VILLAREAL	26,221	28,230	27,394	27,833	30,431	32,927	35,265	37,437	39,409	1.5%	-0.6%	0.3%	1.8%	1.6%	1.4%	1.2%	1.0%
		PARANAS (WRIGHT)	29,327	30,557	32,374	32,993	36,073	39,032	41,802	44,377	46,714	0.8%	1.2%	0.4%	1.8%	1.6%	1.4%	1.2%	1.0%
		ZUMARRAGA	16,936	16,295	16,279	16,557	18,102	19,587	20,977	22,269	23,442	-0.8%	0.0%	0.3%	1.8%	1.6%	1.4%	1.2%	1.0%
		TAGAPUL-AN	7,828	8,473	8,805	8,968	9,805	10,609	11,362	12,062	12,697	1.6%	0.8%	0.4%	1.8%	1.6%	1.4%	1.2%	1.0%
		SAN JORGE	16,340	17,184	17,579	17,895	19,565	21,169	22,672	24,069	25,337	1.0%	0.5%	0.4%	1.8%	1.6%	1.4%	1.2%	1.0%
		PAGSANGHAN	8,024	7,945	7,959	8,097	8,852	9,579	10,258	10,892	11,464	-0.2%	0.0%	0.3%	1.8%	1.6%	1.4%	1.2%	1.0%
		Sub-total	733,377	780,481	793,183	807,215	882,551	954,950	1,022,711	1,085,733	1,142,902	1.3%	0.3%	0.4%	1.8%	1.6%	1.4%	1.2%	1.0%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
EASTERN VISAYAS	Southern Leyte	ANAHAWAN	7,942	8,211	8,429	8,712	9,305	9,822	10,259	10,587	10,768	0.7%	0.5%	0.7%	1.3%	1.1%	0.9%	0.6%	0.3%
		BONTOC	28,079	28,905	29,799	30,801	32,896	34,729	36,274	37,435	38,073	0.6%	0.6%	0.7%	1.3%	1.1%	0.9%	0.6%	0.3%
		HINUNANGAN	28,415	29,976	29,149	30,068	32,114	33,902	35,411	36,543	37,165	1.1%	-0.6%	0.6%	1.3%	1.1%	0.9%	0.6%	0.3%
		HINUNDAYAN	11,890	12,285	12,398	12,805	13,676	14,438	15,081	15,564	15,829	0.7%	0.2%	0.6%	1.3%	1.1%	0.9%	0.6%	0.3%
		LIBAGON	14,352	15,169	15,244	15,744	16,815	17,752	18,542	19,136	19,462	1.1%	0.1%	0.6%	1.3%	1.1%	0.9%	0.6%	0.3%
		LILOAN	22,817	23,981	24,800	25,637	27,380	28,906	30,192	31,158	31,689	1.0%	0.7%	0.7%	1.3%	1.1%	0.9%	0.6%	0.3%
		CITY OF MAASIN (Capital)	81,250	85,560	87,446	90,361	96,509	101,884	106,418	109,823	111,692	1.0%	0.4%	0.7%	1.3%	1.1%	0.9%	0.6%	0.3%
		MACROHON	25,386	26,244	26,580	27,458	29,326	30,959	32,337	33,372	33,941	0.7%	0.3%	0.7%	1.3%	1.1%	0.9%	0.6%	0.3%
		MALITBOG	22,009	22,923	23,256	24,025	25,659	27,089	28,294	29,200	29,697	0.8%	0.3%	0.7%	1.3%	1.1%	0.9%	0.6%	0.3%
		PADRE BURGOS	10,525	11,091	11,159	11,524	12,308	12,993	13,572	14,007	14,244	1.1%	0.1%	0.6%	1.3%	1.1%	0.9%	0.6%	0.3%
		PINTUYAN	9,261	9,826	10,202	10,547	11,264	11,892	12,420	12,818	13,036	1.2%	0.8%	0.7%	1.3%	1.1%	0.9%	0.6%	0.3%
		SAINT BERNARD	25,169	28,395	28,414	29,340	31,336	33,081	34,554	35,659	36,266	2.4%	0.0%	0.6%	1.3%	1.1%	0.9%	0.6%	0.3%
		SAN FRANCISCO	12,528	13,402	13,436	13,875	14,818	15,644	16,340	16,864	17,150	1.4%	0.1%	0.6%	1.3%	1.1%	0.9%	0.6%	0.3%
		SAN JUAN (CABALIAN)	14,073	14,858	14,912	15,399	16,447	17,363	18,135	18,716	19,034	1.1%	0.1%	0.6%	1.3%	1.1%	0.9%	0.6%	0.3%
		SAN RICARDO	10,078	10,494	10,500	10,841	11,579	12,224	12,768	13,177	13,401	0.8%	0.0%	0.6%	1.3%	1.1%	0.9%	0.6%	0.3%
		SILAGO	12,310	12,775	13,116	13,556	14,478	15,284	15,964	16,474	16,755	0.7%	0.5%	0.7%	1.3%	1.1%	0.9%	0.6%	0.3%
		SOGOD	41,411	44,986	47,552	49,194	52,540	55,468	57,937	59,790	60,809	1.7%	1.1%	0.7%	1.3%	1.1%	0.9%	0.6%	0.3%
		TOMAS OPPUS	15,807	16,608	16,990	17,557	18,752	19,797	20,678	21,340	21,702	1.0%	0.5%	0.7%	1.3%	1.1%	0.9%	0.6%	0.3%
		LIMASAWA	5,835	6,061	6,191	6,398	6,835	7,215	7,535	7,775	7,907	0.8%	0.4%	0.7%	1.3%	1.1%	0.9%	0.6%	0.3%
		Sub-total	399,137	421,750	429,573	443,843	474,037	500,441	522,712	539,438	548,618	1.1%	0.4%	0.7%	1.3%	1.1%	0.9%	0.6%	0.3%
		Total	4,101,322	4,440,150	4,547,150	4,738,832	5,139,269	5,518,854	5,868,824	6,185,019	6,461,425	1.6%	0.5%	0.8%	1.6%	1.4%	1.2%	1.1%	0.9%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
ZAMBOANGA PENINSULA	City of Isabela		97,857	112,788	130,379	140,159	150,502	160,526	169,164	177,059	185,281	2.9%	2.9%	1.5%	1.4%	1.3%	1.1%	0.9%	0.9%
	Zamboanga del Norte	DAPITAN CITY	77,441	82,418	85,202	85,630	91,583	96,999	101,676	105,410	107,988	1.3%	0.7%	0.1%	1.4%	1.2%	0.9%	0.7%	0.5%
		DIPOLOG CITY (Capital)	120,460	130,759	138,141	138,935	148,593	157,382	164,970	171,028	175,212	1.7%	1.1%	0.1%	1.4%	1.2%	0.9%	0.7%	0.5%
		KATIPUNAN	43,339	45,577	44,661	44,801	47,915	50,750	53,196	55,149	56,499	1.0%	-0.4%	0.1%	1.4%	1.2%	0.9%	0.7%	0.5%
		LA LIBERTAD	7,771	8,406	8,119	8,140	8,706	9,221	9,666	10,020	10,265	1.6%	-0.7%	0.1%	1.4%	1.2%	0.9%	0.7%	0.5%
		LABASON	40,375	41,357	43,934	44,194	47,266	50,062	52,476	54,403	55,734	0.5%	1.2%	0.1%	1.4%	1.2%	0.9%	0.7%	0.5%
		LILOY	39,015	39,812	42,213	42,460	45,412	48,097	50,416	52,268	53,546	0.4%	1.2%	0.1%	1.4%	1.2%	0.9%	0.7%	0.5%
		MANUKAN	35,589	36,526	36,887	37,043	39,619	41,961	43,984	45,599	46,715	0.5%	0.2%	0.1%	1.4%	1.2%	0.9%	0.7%	0.5%
		MUTIA	11,975	12,675	11,726	11,738	12,555	13,297	13,939	14,451	14,804	1.1%	-1.5%	0.0%	1.4%	1.2%	0.9%	0.7%	0.5%
		PIÑAN (NEW PIÑAN)	20,088	20,161	20,221	20,302	21,713	22,997	24,106	24,991	25,602	0.1%	0.1%	0.1%	1.4%	1.2%	0.9%	0.7%	0.5%
		POLANCO	37,472	39,347	42,265	42,531	45,488	48,178	50,501	52,355	53,636	1.0%	1.4%	0.1%	1.4%	1.2%	0.9%	0.7%	0.5%
		PRES. MANUEL A. ROXAS	37,611	39,323	39,198	39,346	42,081	44,569	46,718	48,432	49,618	0.9%	-0.1%	0.1%	1.4%	1.2%	0.9%	0.7%	0.5%
		RIZAL	14,111	14,021	15,052	15,146	16,200	17,158	17,985	18,646	19,102	-0.1%	1.4%	0.1%	1.4%	1.2%	0.9%	0.7%	0.5%
		SALUG	31,157	32,204	32,134	32,256	34,498	36,539	38,300	39,707	40,678	0.7%	0.0%	0.1%	1.4%	1.2%	0.9%	0.7%	0.5%
		SERGIO OSMEÑA SR.	29,453	30,220	31,942	32,126	34,359	36,392	38,147	39,547	40,515	0.5%	1.1%	0.1%	1.4%	1.2%	0.9%	0.7%	0.5%
		SIAYAN	34,989	34,966	36,236	36,421	38,952	41,257	43,246	44,834	45,931	0.0%	0.7%	0.1%	1.4%	1.2%	0.9%	0.7%	0.5%
		SIBUCO	31,982	34,620	36,049	36,239	38,758	41,051	43,029	44,609	45,701	1.6%	0.8%	0.1%	1.4%	1.2%	0.9%	0.7%	0.5%
		SIBUTAD	16,783	17,645	17,453	17,513	18,731	19,839	20,796	21,560	22,087	1.0%	-0.2%	0.1%	1.4%	1.2%	0.9%	0.7%	0.5%
		SINDANGAN	94,146	99,435	103,952	104,513	111,779	118,389	124,098	128,655	131,801	1.1%	0.9%	0.1%	1.4%	1.2%	0.9%	0.7%	0.5%
		SIOCON	41,637	46,907	48,524	48,769	52,160	55,244	57,908	60,034	61,503	2.4%	0.7%	0.1%	1.4%	1.2%	0.9%	0.7%	0.5%
		SIRAWAI	24,583	28,799	31,163	31,367	33,547	35,532	37,246	38,612	39,557	3.2%	1.6%	0.1%	1.4%	1.2%	0.9%	0.7%	0.5%
		TAMPILISAN	23,056	24,307	24,680	24,788	26,512	28,080	29,434	30,514	31,262	1.1%	0.3%	0.1%	1.4%	1.2%	0.9%	0.7%	0.5%
		JOSE DALMAN (PONOT)	27,033	27,388	28,881	29,045	31,065	32,902	34,488	35,755	36,630	0.3%	1.1%	0.1%	1.4%	1.2%	0.9%	0.7%	0.5%
		GUTALAC	32,153	34,654	36,090	36,280	38,802	41,098	43,078	44,660	45,752	1.5%	0.8%	0.1%	1.4%	1.2%	0.9%	0.7%	0.5%
		BALIGUIAN	21,190	22,588	23,771	23,905	25,567	27,079	28,384	29,427	30,147	1.3%	1.0%	0.1%	1.4%	1.2%	0.9%	0.7%	0.5%
		GODOD	17,788	17,424	17,510	17,580	18,801	19,913	20,873	21,640	22,169	-0.4%	0.1%	0.1%	1.4%	1.2%	0.9%	0.7%	0.5%
		BACUNGAN (Leon T. Postigo)	24,643	26,221	27,639	27,795	29,727	31,487	33,005	34,216	35,054	1.2%	1.1%	0.1%	1.4%	1.2%	0.9%	0.7%	0.5%
		KALAWIT	22,157	23,633	23,812	23,909	25,570	27,084	28,389	29,432	30,151	1.3%	0.2%	0.1%	1.4%	1.2%	0.9%	0.7%	0.5%
		Sub-total	957,997	1,011,393	1,047,455	1,052,774	1,125,963	1,192,555	1,250,054	1,295,953	1,327,659	1.1%	0.7%	0.1%	1.4%	1.2%	0.9%	0.7%	0.5%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
ZAMBOANGA PENINSULA	Zamboanga del Sur	AURORA	48,434	50,755	52,995	53,063	56,888	60,374	63,428	66,017	68,168	0.9%	0.9%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%
		BAYOG	30,048	33,591	34,519	34,544	37,034	39,304	41,291	42,976	44,376	2.3%	0.5%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%
		DIMATALING	27,715	30,081	31,340	31,377	33,639	35,700	37,506	39,037	40,309	1.7%	0.8%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%
		DINAS	34,768	35,504	36,291	36,312	38,930	41,316	43,405	45,177	46,649	0.4%	0.4%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%
		DUMALINAO	30,691	32,013	32,928	32,953	35,329	37,494	39,390	40,998	42,333	0.8%	0.6%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%
		DUMINGAG	46,500	47,485	48,881	48,920	52,447	55,661	58,475	60,862	62,845	0.4%	0.6%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%
		KUMALARANG	28,210	28,469	29,479	29,508	31,636	33,575	35,272	36,712	37,908	0.2%	0.7%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%
		LABANGAN	39,168	41,790	44,262	44,340	47,537	50,450	53,001	55,165	56,963	1.3%	1.2%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%
		LAPUYAN	26,175	27,264	27,737	27,748	29,748	31,572	33,168	34,523	35,647	0.8%	0.3%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%
		MAHAYAG	45,015	46,516	48,258	48,308	51,791	54,965	57,744	60,101	62,060	0.7%	0.7%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%
		MARGOSATUBIG	35,596	37,873	38,660	38,680	41,468	44,009	46,235	48,121	49,689	1.2%	0.4%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%
		MIDSALIP	31,467	32,075	33,711	33,761	36,195	38,413	40,354	42,002	43,371	0.4%	1.0%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%
		MOLAVE	48,939	52,006	53,140	53,169	57,003	60,496	63,555	66,150	68,306	1.2%	0.4%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%
		PAGADIAN CITY (Capital)	186,852	199,060	210,452	210,808	226,006	239,858	251,985	262,273	270,819	1.3%	1.1%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%
		RAMON MAGSAYSAY (LIARGO)	26,194	26,606	27,280	27,298	29,266	31,059	32,630	33,962	35,068	0.3%	0.5%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%
		SAN MIGUEL	18,258	19,205	19,838	19,856	21,288	22,592	23,734	24,703	25,508	1.0%	0.7%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%
		SAN PABLO	26,500	26,106	26,648	26,661	28,583	30,335	31,870	33,171	34,252	-0.3%	0.4%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%
		TABINA	24,110	25,061	25,734	25,753	27,609	29,301	30,783	32,039	33,083	0.8%	0.5%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%
		TAMBULIG	34,883	36,160	37,480	37,518	40,223	42,688	44,847	46,678	48,199	0.7%	0.7%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%
		TUKURAN	37,883	39,820	42,429	42,513	45,577	48,371	50,817	52,892	54,615	1.0%	1.3%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%
		LAKEWOOD	19,645	20,374	21,559	21,597	23,153	24,572	25,814	26,869	27,744	0.7%	1.1%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%
		JOSEFINA	10,826	11,799	12,205	12,217	13,097	13,899	14,602	15,198	15,693	1.7%	0.7%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%
		PITOGO	25,502	27,057	27,516	27,526	29,510	31,318	32,902	34,246	35,361	1.2%	0.3%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%
		SOMINOT (DON MARIANO MARCOS)	16,652	18,537	19,061	19,075	20,450	21,703	22,802	23,732	24,506	2.2%	0.6%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%
		VINCENZO A. SAGUN	20,583	23,759	24,852	24,884	26,678	28,314	29,745	30,959	31,968	2.9%	0.9%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%
		GUIPOS	19,771	20,729	21,738	21,768	23,338	24,768	26,020	27,083	27,964	1.0%	1.0%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%
		TIGBAO	19,300	20,979	21,675	21,695	23,260	24,686	25,934	26,993	27,872	1.7%	0.7%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%
		ZAMBOANGA CITY	807,129	861,799	977,234	981,076	1,051,810	1,116,272	1,172,715	1,220,591	1,260,361	1.3%	2.5%	0.1%	1.4%	1.2%	1.0%	0.8%	0.6%
		Sub-total	1,766,814	1,872,473	2,027,902	2,032,924	2,179,494	2,313,065	2,430,024	2,529,230	2,611,637	1.2%	1.6%	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
ZAMBOANGA PENINSULA	Zamboanga Sibugay	ALICIA	34,895	36,013	39,456	40,789	44,413	47,892	51,078	53,909	56,399	0.6%	1.8%	0.7%	1.7%	1.5%	1.3%	1.1%	0.9%
		BUUG	35,969	36,634	38,425	39,668	43,193	46,576	49,674	52,426	54,848	0.4%	1.0%	0.6%	1.7%	1.5%	1.3%	1.1%	0.9%
		DIPLAHAN	31,215	32,428	32,585	33,589	36,575	39,440	42,064	44,395	46,445	0.8%	0.1%	0.6%	1.7%	1.5%	1.3%	1.1%	0.9%
		IMELDA	27,903	28,018	26,020	26,745	29,121	31,402	33,491	35,347	36,980	0.1%	-1.5%	0.6%	1.7%	1.5%	1.3%	1.1%	0.9%
		IPIL (Capital)	64,939	74,656	89,401	92,674	100,908	108,812	116,051	122,483	128,139	2.8%	3.7%	0.7%	1.7%	1.5%	1.3%	1.1%	0.9%
		KABASALAN	41,421	44,336	46,884	48,413	52,715	56,844	60,625	63,984	66,939	1.4%	1.1%	0.6%	1.7%	1.5%	1.3%	1.1%	0.9%
		MABUHAY	33,093	36,870	37,390	38,554	41,980	45,268	48,280	50,956	53,309	2.2%	0.3%	0.6%	1.7%	1.5%	1.3%	1.1%	0.9%
		MALANGAS	31,243	33,380	32,022	32,954	35,881	38,692	41,266	43,554	45,566	1.3%	-0.8%	0.6%	1.7%	1.5%	1.3%	1.1%	0.9%
		NAGA	37,814	38,547	41,743	43,137	46,970	50,650	54,019	57,013	59,647	0.4%	1.6%	0.7%	1.7%	1.5%	1.3%	1.1%	0.9%
		OLUTANGA	28,717	33,671	38,438	39,788	43,323	46,717	49,823	52,585	55,013	3.2%	2.7%	0.7%	1.7%	1.5%	1.3%	1.1%	0.9%
		PAYAO	29,755	31,686	34,952	36,141	39,354	42,437	45,258	47,767	49,974	1.3%	2.0%	0.7%	1.7%	1.5%	1.3%	1.1%	0.9%
		ROSELLER LIM	37,216	43,646	43,575	44,908	48,898	52,728	56,236	59,352	62,094	3.2%	0.0%	0.6%	1.7%	1.5%	1.3%	1.1%	0.9%
		SIAY	38,229	41,572	40,585	41,792	45,506	49,070	52,334	55,234	57,785	1.7%	-0.5%	0.6%	1.7%	1.5%	1.3%	1.1%	0.9%
		TALUSAN	25,268	29,969	27,873	28,651	31,197	33,640	35,878	37,867	39,617	3.5%	-1.4%	0.6%	1.7%	1.5%	1.3%	1.1%	0.9%
		TITAY	46,456	49,673	53,994	55,804	60,764	65,525	69,883	73,757	77,164	1.3%	1.7%	0.7%	1.7%	1.5%	1.3%	1.1%	0.9%
		TUNGAWAN	40,552	42,030	46,497	48,083	52,356	56,458	60,215	63,552	66,488	0.7%	2.0%	0.7%	1.7%	1.5%	1.3%	1.1%	0.9%
		Sub-total	584,685	633,129	669,840	691,691	753,152	812,151	866,174	914,182	956,407	1.6%	1.1%	0.6%	1.7%	1.5%	1.3%	1.1%	0.9%
		Total	3,407,353	3,629,783	3,875,576	3,917,547	4,209,112	4,478,298	4,715,416	4,916,424	5,080,983	1.3%	1.3%	0.2%	1.4%	1.2%	1.0%	0.8%	0.7%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
NORTHERN MINDANAO	Bukidnon	BAUNGON	32,868	34,336	37,111	38,179	40,986	42,557	43,556	44,036	43,934	0.9%	1.6%	0.6%	1.4%	0.8%	0.5%	0.2%	0.0%
		DAMULOG	25,538	30,302	39,322	40,672	43,662	45,337	46,400	46,913	46,804	3.5%	5.3%	0.7%	1.4%	0.8%	0.5%	0.2%	0.0%
		DANGCAGAN	22,448	23,723	26,076	26,840	28,813	29,919	30,621	30,959	30,888	1.1%	1.9%	0.6%	1.4%	0.8%	0.5%	0.2%	0.0%
		DON CARLOS	64,334	66,959	69,273	71,163	76,395	79,324	81,185	82,082	81,891	0.8%	0.7%	0.5%	1.4%	0.8%	0.5%	0.2%	0.0%
		IMPASUG-ONG	43,587	47,859	53,863	55,484	59,563	61,847	63,298	63,997	63,848	1.9%	2.4%	0.6%	1.4%	0.8%	0.5%	0.2%	0.0%
		KADINGILAN	31,756	33,778	33,735	34,614	37,158	38,582	39,488	39,924	39,832	1.2%	0.0%	0.5%	1.4%	0.8%	0.5%	0.2%	0.0%
		KALILANGAN	39,847	41,601	43,711	44,927	48,230	50,080	51,255	51,822	51,700	0.9%	1.0%	0.6%	1.4%	0.8%	0.5%	0.2%	0.0%
		KIBAWE	35,767	39,612	41,897	43,072	46,238	48,011	49,138	49,680	49,565	2.1%	1.1%	0.6%	1.4%	0.8%	0.5%	0.2%	0.0%
		KITAOTAO	49,488	50,260	53,796	55,326	59,393	61,670	63,117	63,813	63,666	0.3%	1.4%	0.6%	1.4%	0.8%	0.5%	0.2%	0.0%
		LANTAPAN	55,934	61,776	65,974	67,846	72,833	75,626	77,400	78,256	78,074	2.0%	1.3%	0.6%	1.4%	0.8%	0.5%	0.2%	0.0%
		LIBONA	39,393	43,969	48,965	50,422	54,129	56,205	57,523	58,158	58,023	2.2%	2.2%	0.6%	1.4%	0.8%	0.5%	0.2%	0.0%
		CITY OF MALAYBALAY (Capital)	153,085	174,625	190,712	196,265	210,694	218,771	223,904	226,378	225,852	2.7%	1.8%	0.6%	1.4%	0.8%	0.5%	0.2%	0.0%
		MALITBOG	22,880	24,453	26,741	27,521	29,545	30,678	31,398	31,745	31,671	1.3%	1.8%	0.6%	1.4%	0.8%	0.5%	0.2%	0.0%
		MANOLO FORTICH	91,026	100,210	113,200	116,621	125,195	129,995	133,045	134,515	134,202	1.9%	2.5%	0.6%	1.4%	0.8%	0.5%	0.2%	0.0%
		MARAMAG	90,901	102,089	108,293	111,341	119,527	124,109	127,021	128,424	128,125	2.3%	1.2%	0.6%	1.4%	0.8%	0.5%	0.2%	0.0%
		PANGANTUCAN	48,775	53,126	56,580	58,179	62,457	64,851	66,372	67,106	66,950	1.7%	1.3%	0.6%	1.4%	0.8%	0.5%	0.2%	0.0%
		QUEZON	94,584	104,116	109,624	112,681	120,966	125,602	128,549	129,969	129,668	1.9%	1.0%	0.6%	1.4%	0.8%	0.5%	0.2%	0.0%
		SAN FERNANDO	50,207	56,138	63,045	64,938	69,712	72,385	74,083	74,901	74,728	2.3%	2.3%	0.6%	1.4%	0.8%	0.5%	0.2%	0.0%
		SUMILAO	25,668	27,660	29,531	30,369	32,601	33,851	34,645	35,027	34,946	1.5%	1.3%	0.6%	1.4%	0.8%	0.5%	0.2%	0.0%
		TALAKAG	67,123	71,644	77,027	79,230	85,055	88,316	90,388	91,386	91,173	1.3%	1.5%	0.6%	1.4%	0.8%	0.5%	0.2%	0.0%
		CITY OF VALENCIA	181,556	192,993	216,546	223,041	239,441	248,620	254,453	257,264	256,666	1.2%	2.3%	0.6%	1.4%	0.8%	0.5%	0.2%	0.0%
		CABANGLASAN	32,427	33,997	36,286	37,313	40,058	41,592	42,569	43,039	42,938	1.0%	1.3%	0.6%	1.4%	0.8%	0.5%	0.2%	0.0%
		Sub-total	1,299,192	1,415,226	1,541,308	1,586,044	1,702,651	1,767,928	1,809,408	1,829,394	1,825,144	1.7%	1.7%	0.6%	1.4%	0.8%	0.5%	0.2%	0.0%
	Camiguin	CATARMAN	16,388	16,798	17,569	17,778	19,348	20,359	21,118	21,658	21,989	0.5%	0.9%	0.2%	1.7%	1.0%	0.7%	0.5%	0.3%
		GUINSILIBAN	5,580	6,281	6,685	6,769	7,366	7,751	8,039	8,246	8,372	2.4%	1.3%	0.3%	1.7%	1.0%	0.7%	0.5%	0.3%
		MAHINOG	13,531	14,038	14,634	14,807	16,114	16,955	17,588	18,038	18,313	0.7%	0.8%	0.2%	1.7%	1.0%	0.7%	0.5%	0.3%
		MAMBAJAO (Capital)	36,435	38,735	41,094	41,602	45,278	47,641	49,416	50,685	51,458	1.2%	1.2%	0.2%	1.7%	1.0%	0.7%	0.5%	0.3%
		SAGAY	11,873	12,626	12,826	12,965	14,111	14,848	15,400	15,795	16,035	1.2%	0.3%	0.2%	1.7%	1.0%	0.7%	0.5%	0.3%
		Sub-total	83,807	88,478	92,808	93,921	102,217	107,554	111,561	114,422	116,167	1.1%	1.0%	0.2%	1.7%	1.0%	0.7%	0.5%	0.3%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
NORTHERN MINDANAO	Lanao del Norte	BACOLOD	21,818	23,034	24,367	25,190	27,548	29,229	30,625	31,756	32,597	1.1%	1.1%	0.7%	1.8%	1.2%	0.9%	0.7%	0.5%
		BALOI	50,387	58,383	68,465	71,008	77,655	82,395	86,329	89,515	91,888	3.0%	3.2%	0.7%	1.8%	1.2%	0.9%	0.7%	0.5%
		BAROY	20,948	22,600	24,683	25,544	27,934	29,639	31,053	32,200	33,053	1.5%	1.8%	0.7%	1.8%	1.2%	0.9%	0.7%	0.5%
		KAPATAGAN	53,916	62,853	62,571	64,552	70,593	74,902	78,478	81,374	83,531	3.1%	-0.1%	0.6%	1.8%	1.2%	0.9%	0.7%	0.5%
		SULTAN NAGA DIMAPORO (KAROMATAN)	52,430	56,764	60,904	62,992	68,888	73,092	76,581	79,408	81,514	1.6%	1.4%	0.7%	1.8%	1.2%	0.9%	0.7%	0.5%
		KAUSWAGAN	24,006	26,278	24,193	24,888	27,217	28,879	30,257	31,374	32,205	1.8%	-1.6%	0.6%	1.8%	1.2%	0.9%	0.7%	0.5%
		KOLAMBUGAN	26,445	27,005	28,265	29,210	31,944	33,894	35,511	36,823	37,798	0.4%	0.9%	0.7%	1.8%	1.2%	0.9%	0.7%	0.5%
		LALA	65,355	67,727	73,425	75,968	83,079	88,150	92,358	95,767	98,306	0.7%	1.6%	0.7%	1.8%	1.2%	0.9%	0.7%	0.5%
		LINAMON	17,484	20,341	21,269	21,979	24,037	25,503	26,722	27,708	28,443	3.1%	0.9%	0.7%	1.8%	1.2%	0.9%	0.7%	0.5%
		MAGSAYSAY	16,442	19,019	20,463	21,166	23,147	24,560	25,731	26,682	27,389	3.0%	1.5%	0.7%	1.8%	1.2%	0.9%	0.7%	0.5%
		MAIGO	20,131	21,666	23,337	24,141	26,400	28,011	29,349	30,433	31,240	1.5%	1.5%	0.7%	1.8%	1.2%	0.9%	0.7%	0.5%
		MATUNGAO	12,217	13,975	14,756	15,254	16,681	17,700	18,545	19,229	19,738	2.7%	1.1%	0.7%	1.8%	1.2%	0.9%	0.7%	0.5%
		MUNAI	27,600	32,973	35,020	36,209	39,597	42,015	44,020	45,646	46,856	3.6%	1.2%	0.7%	1.8%	1.2%	0.9%	0.7%	0.5%
		NUNUNGAN	16,304	18,367	18,827	19,443	21,262	22,560	23,637	24,511	25,160	2.4%	0.5%	0.6%	1.8%	1.2%	0.9%	0.7%	0.5%
		PANTAO RAGAT	23,122	27,866	30,247	31,296	34,224	36,314	38,047	39,451	40,498	3.8%	1.7%	0.7%	1.8%	1.2%	0.9%	0.7%	0.5%
		POONA PIAGAPO	23,451	27,018	29,183	30,190	33,015	35,030	36,703	38,058	39,067	2.9%	1.6%	0.7%	1.8%	1.2%	0.9%	0.7%	0.5%
		SALVADOR	27,348	31,845	32,115	33,145	36,249	38,461	40,297	41,784	42,891	3.1%	0.2%	0.6%	1.8%	1.2%	0.9%	0.7%	0.5%
		SAPAD	19,479	21,309	22,974	23,765	25,991	27,577	28,893	29,959	30,753	1.8%	1.5%	0.7%	1.8%	1.2%	0.9%	0.7%	0.5%
		TAGOLOAN	11,674	13,253	15,091	15,637	17,100	18,144	19,010	19,711	20,233	2.6%	2.6%	0.7%	1.8%	1.2%	0.9%	0.7%	0.5%
		TANGCAL	12,588	15,181	16,075	16,618	18,174	19,284	20,203	20,948	21,504	3.8%	1.2%	0.7%	1.8%	1.2%	0.9%	0.7%	0.5%
		TUBOD (Capital)	46,332	47,165	50,073	51,771	56,616	60,072	62,940	65,263	66,993	0.4%	1.2%	0.7%	1.8%	1.2%	0.9%	0.7%	0.5%
		PANTAR	18,440	21,773	26,599	27,620	30,206	32,050	33,581	34,821	35,743	3.4%	4.1%	0.8%	1.8%	1.2%	0.9%	0.7%	0.5%
		ILIGAN CITY	322,821	342,618	363,115	375,410	410,548	435,607	456,403	473,253	485,796	1.2%	1.2%	0.7%	1.8%	1.2%	0.9%	0.7%	0.5%
		Sub-total	930,738	1,019,013	1,086,017	1,122,996	1,228,105	1,303,068	1,365,273	1,415,674	1,453,196	1.8%	1.3%	0.7%	1.8%	1.2%	0.9%	0.7%	0.5%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
NORTHERN MINDANAO	Misamis Occidental	ALORAN	26,630	27,625	27,934	28,169	30,279	31,594	32,656	33,417	33,849	0.7%	0.2%	0.2%	1.5%	0.9%	0.7%	0.5%	0.3%
		BALIANGAO	16,155	17,092	18,433	18,628	20,023	20,894	21,596	22,099	22,383	1.1%	1.5%	0.2%	1.5%	0.9%	0.7%	0.5%	0.3%
		BONIFACIO	30,904	32,345	34,558	34,913	37,527	39,158	40,475	41,419	41,952	0.9%	1.3%	0.2%	1.5%	0.9%	0.7%	0.5%	0.3%
		CALAMBA	21,005	21,676	23,227	23,466	25,225	26,321	27,206	27,840	28,199	0.6%	1.4%	0.2%	1.5%	0.9%	0.7%	0.5%	0.3%
		CLARIN	35,573	37,548	39,356	39,733	42,709	44,565	46,063	47,136	47,745	1.1%	0.9%	0.2%	1.5%	0.9%	0.7%	0.5%	0.3%
		CONCEPCION	7,410	10,937	9,324	9,341	10,040	10,477	10,829	11,081	11,225	8.1%	-3.1%	0.0%	1.5%	0.9%	0.7%	0.5%	0.3%
		JIMENEZ	25,234	27,654	28,909	29,185	31,370	32,733	33,834	34,622	35,069	1.8%	0.9%	0.2%	1.5%	0.9%	0.7%	0.5%	0.3%
		LOPEZ JAENA	23,767	25,055	25,507	25,726	27,653	28,855	29,825	30,519	30,913	1.1%	0.4%	0.2%	1.5%	0.9%	0.7%	0.5%	0.3%
		OROQUIETA CITY (Capital)	68,945	70,757	72,301	72,933	78,395	81,802	84,552	86,522	87,638	0.5%	0.4%	0.2%	1.5%	0.9%	0.7%	0.5%	0.3%
		OZAMIZ CITY 1	131,527	141,828	140,334	141,402	151,992	158,597	163,930	167,749	169,912	1.5%	-0.2%	0.2%	1.5%	0.9%	0.7%	0.5%	0.3%
		PANAON	10,176	10,209	10,797	10,905	11,722	12,231	12,642	12,937	13,104	0.1%	1.1%	0.2%	1.5%	0.9%	0.7%	0.5%	0.3%
		PLARIDEL	35,251	38,900	39,840	40,191	43,201	45,078	46,595	47,679	48,294	2.0%	0.5%	0.2%	1.5%	0.9%	0.7%	0.5%	0.3%
		SAPANG DALAGA	19,431	19,983	20,490	20,672	22,221	23,186	23,966	24,524	24,840	0.6%	0.5%	0.2%	1.5%	0.9%	0.7%	0.5%	0.3%
		SINACABAN	18,597	18,391	19,671	19,873	21,362	22,290	23,041	23,577	23,881	-0.2%	1.4%	0.2%	1.5%	0.9%	0.7%	0.5%	0.3%
		TANGUB CITY	59,892	63,011	68,389	69,125	74,303	77,531	80,139	82,005	83,063	1.0%	1.7%	0.2%	1.5%	0.9%	0.7%	0.5%	0.3%
		TUDELA	27,371	28,932	28,599	28,815	30,972	32,319	33,406	34,184	34,624	1.1%	-0.2%	0.2%	1.5%	0.9%	0.7%	0.5%	0.3%
		DON VICTORIANO CHIONGBIAN (DON MARIANO MARCOS)	9,774	10,183	9,664	9,723	10,451	10,906	11,271	11,534	11,683	0.8%	-1.0%	0.1%	1.5%	0.9%	0.7%	0.5%	0.3%
		Sub-total	567,642	602,126	617,333	622,800	669,445	698,537	722,026	738,844	748,374	1.2%	0.5%	0.2%	1.5%	0.9%	0.7%	0.5%	0.3%
	Misamis Oriental	ALUBIJID	26,648	29,724	32,163	31,543	33,915	35,281	36,295	36,904	37,141	2.2%	1.6%	-0.4%	1.5%	0.8%	0.6%	0.3%	0.1%
		BALINGASAG	65,876	67,059	74,385	73,009	78,499	81,661	84,009	85,420	85,968	0.4%	2.1%	-0.4%	1.5%	0.8%	0.6%	0.3%	0.1%
		BALINGOAN	10,175	11,051	11,020	10,778	11,589	12,055	12,402	12,610	12,691	1.7%	-0.1%	-0.4%	1.5%	0.8%	0.6%	0.3%	0.1%
		BINUANGAN	6,765	7,515	7,441	7,275	7,822	8,137	8,371	8,512	8,566	2.1%	-0.2%	-0.5%	1.5%	0.8%	0.6%	0.3%	0.1%
		CLAVERIA	44,544	48,906	52,478	51,452	55,321	57,549	59,203	60,198	60,584	1.9%	1.4%	-0.4%	1.5%	0.8%	0.6%	0.3%	0.1%
		CITY OF EL SALVADOR	44,848	50,204	58,771	57,779	62,124	64,626	66,484	67,601	68,033	2.3%	3.2%	-0.3%	1.5%	0.8%	0.6%	0.3%	0.1%
		GINGOOG CITY	117,908	124,648	136,698	134,120	144,207	150,015	154,328	156,919	157,924	1.1%	1.9%	-0.4%	1.5%	0.8%	0.6%	0.3%	0.1%
		GITAGUM	16,098	16,373	17,920	17,581	18,903	19,665	20,230	20,570	20,702	0.3%	1.8%	-0.4%	1.5%	0.8%	0.6%	0.3%	0.1%
		INITAO	29,331	32,370	33,902	33,213	35,711	37,149	38,217	38,859	39,107	2.0%	0.9%	-0.4%	1.5%	0.8%	0.6%	0.3%	0.1%
		JASAAN	50,121	54,478	57,055	55,894	60,098	62,518	64,316	65,395	65,815	1.7%	0.9%	-0.4%	1.5%	0.8%	0.6%	0.3%	0.1%
		KINOGUITAN	12,761	14,391	14,091	13,772	14,807	15,403	15,846	16,113	16,217	2.4%	-0.4%	-0.5%	1.5%	0.8%	0.6%	0.3%	0.1%
		LAGONGLONG	19,303	21,659	24,190	23,748	25,534	26,562	27,326	27,784	27,963	2.3%	2.2%	-0.4%	1.5%	0.8%	0.6%	0.3%	0.1%
		LAGUINDINGAN	21,822	24,405	26,363	25,854	27,798	28,917	29,749	30,248	30,443	2.3%	1.6%	-0.4%	1.5%	0.8%	0.6%	0.3%	0.1%
		LIBERTAD	11,586	12,354	12,948	12,685	13,640	14,190	14,597	14,842	14,937	1.3%	0.9%	-0.4%	1.5%	0.8%	0.6%	0.3%	0.1%
		LUGAIT	18,639	19,758	20,559	20,136	21,651	22,522	23,170	23,559	23,710	1.2%	0.8%	-0.4%	1.5%	0.8%	0.6%	0.3%	0.1%
		MAGSAYSAY (LINUGOS)	33,047	34,605	36,803	36,073	38,785	40,347	41,508	42,205	42,475	0.9%	1.2%	-0.4%	1.5%	0.8%	0.6%	0.3%	0.1%
		MANTICAO	26,786	28,422	29,469	28,860	31,031	32,281	33,209	33,767	33,983	1.2%	0.7%	-0.4%	1.5%	0.8%	0.6%	0.3%	0.1%
		MEDINA	31,154	32,907	35,612	34,926	37,552	39,064	40,188	40,863	41,125	1.1%	1.6%	-0.4%	1.5%	0.8%	0.6%	0.3%	0.1%
		NAAWAN	18,895	21,213	22,444	21,995	23,649	24,601	25,308	25,733	25,898	2.3%	1.1%	-0.4%	1.5%	0.8%	0.6%	0.3%	0.1%
		OPOL	52,108	61,503	66,327	65,041	69,931	72,748	74,840	76,095	76,584	3.4%	1.5%	-0.4%	1.5%	0.8%	0.6%	0.3%	0.1%
		SALAY	27,591	28,705	29,998	29,386	31,596	32,868	33,813	34,382	34,602	0.8%	0.9%	-0.4%	1.5%	0.8%	0.6%	0.3%	0.1%
		SUGBONGCOGON	8,745	9,226	9,764	9,569	10,288	10,703	11,011	11,196	11,267	1.1%	1.1%	-0.4%	1.5%	0.8%	0.6%	0.3%	0.1%
		TAGOLOAN	63,850	73,150	80,319	78,808	84,734	88,147	90,682	92,204	92,795	2.8%	1.9%	-0.4%	1.5%	0.8%	0.6%	0.3%	0.1%
		TALISAYAN	23,289	24,505	25,761	25,240	27,139	28,231	29,043	29,530	29,720	1.0%	1.0%	-0.4%	1.5%	0.8%	0.6%	0.3%	0.1%
		VILLANUEVA	31,966	39,378	40,419	39,571	42,546	44,259	45,532	46,296	46,592	4.3%	0.5%	-0.4%	1.5%	0.8%	0.6%	0.3%	0.1%
		CAGAYAN DE ORO CITY (Capital)	602,088	675,950	728,402	714,262	767,973	798,901	821,875	835,671	841,023	2.3%	1.5%	-0.4%	1.5%	0.8%	0.6%	0.3%	0.1%
		Sub-total	1,415,944	1,564,459	1,685,302	1,652,570	1,776,843	1,848,400	1,901,552	1,933,476	1,945,865	2.0%	1.5%	-0.4%	1.5%	0.8%	0.6%	0.3%	0.1%
		Total	4,297,323	4,689,302	5,022,768	5,078,331	5,479,261	5,725,487	5,909,820	6,031,810	6,088,746	1.8%	1.4%	0.2%	1.5%	0.9%	0.6%	0.4%	0.2%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
DAVAO	Davao de Oro	COMPOSTELA	81,934	87,474	89,884	91,350	97,740	103,204	107,690	110,905	112,575	1.3%	0.5%	0.3%	1.4%	1.1%	0.9%	0.6%	0.3%
		LAAK (SAN VICENTE)	70,856	73,874	79,744	81,178	86,858	91,712	95,698	98,556	100,040	0.8%	1.5%	0.4%	1.4%	1.1%	0.9%	0.6%	0.3%
		MABINI (DOÑA ALICIA)	36,807	41,102	43,552	44,309	47,408	50,058	52,233	53,792	54,602	2.2%	1.2%	0.3%	1.4%	1.1%	0.9%	0.6%	0.3%
		MACO	72,235	81,277	83,237	84,586	90,502	95,561	99,713	102,690	104,237	2.4%	0.5%	0.3%	1.4%	1.1%	0.9%	0.6%	0.3%
		MARAGUSAN (SAN MARIANO)	55,503	60,842	64,412	65,528	70,111	74,031	77,248	79,554	80,752	1.9%	1.1%	0.3%	1.4%	1.1%	0.9%	0.6%	0.3%
		MAWAB	35,698	37,065	39,631	40,331	43,153	45,565	47,545	48,964	49,703	0.8%	1.3%	0.4%	1.4%	1.1%	0.9%	0.6%	0.3%
		MONKAYO	94,827	94,908	93,937	95,345	102,015	107,717	112,398	115,754	117,497	0.0%	-0.2%	0.3%	1.4%	1.1%	0.9%	0.6%	0.3%
		MONTEVISTA	39,602	43,706	46,558	47,375	50,689	53,522	55,848	57,515	58,381	2.0%	1.3%	0.3%	1.4%	1.1%	0.9%	0.6%	0.3%
		NABUNTURAN (Capital)	73,196	82,234	84,340	85,709	91,705	96,832	101,040	104,058	105,624	2.4%	0.5%	0.3%	1.4%	1.1%	0.9%	0.6%	0.3%
		NEW BATAAN	47,470	47,726	51,466	52,390	56,055	59,188	61,760	63,604	64,562	0.1%	1.5%	0.4%	1.4%	1.1%	0.9%	0.6%	0.3%
		PANTUKAN	79,067	85,899	90,786	92,354	98,813	104,336	108,870	112,120	113,808	1.7%	1.1%	0.3%	1.4%	1.1%	0.9%	0.6%	0.3%
		Sub-total	687,195	736,107	767,547	780,455	835,049	881,726	920,043	947,512	961,781	1.4%	0.8%	0.3%	1.4%	1.1%	0.9%	0.6%	0.3%
	Davao del Norte	ASUNCION (SAUG)	55,844	59,322	61,893	62,385	66,122	69,325	71,960	73,984	75,489	1.2%	0.9%	0.2%	1.2%	1.0%	0.7%	0.6%	0.4%
		CARMEN	69,199	74,679	82,018	82,810	87,769	92,022	95,519	98,206	100,204	1.5%	1.9%	0.2%	1.2%	1.0%	0.7%	0.6%	0.4%
		KAPALONG	68,261	76,334	81,068	81,762	86,658	90,857	94,310	96,964	98,934	2.3%	1.2%	0.2%	1.2%	1.0%	0.7%	0.6%	0.4%
		NEW CORELLA	50,699	54,844	57,913	58,397	61,895	64,893	67,359	69,255	70,663	1.6%	1.1%	0.2%	1.2%	1.0%	0.7%	0.6%	0.4%
		CITY OF PANABO	174,364	184,599	209,230	211,457	224,122	234,980	243,909	250,771	255,872	1.1%	2.5%	0.2%	1.2%	1.0%	0.7%	0.6%	0.4%
		ISLAND GARDEN CITY OF SAMAL	95,874	104,123	116,771	117,976	125,041	131,100	136,081	139,910	142,755	1.7%	2.3%	0.2%	1.2%	1.0%	0.7%	0.6%	0.4%
		SANTO TOMAS	109,269	118,750	128,667	129,853	137,629	144,297	149,780	153,995	157,127	1.7%	1.6%	0.2%	1.2%	1.0%	0.7%	0.6%	0.4%
		CITY OF TAGUM (Capital)	242,801	259,444	296,202	299,423	317,355	332,729	345,373	355,090	362,313	1.3%	2.7%	0.2%	1.2%	1.0%	0.7%	0.6%	0.4%
		TALAINGOD	25,566	27,482	28,333	28,547	30,258	31,723	32,928	33,855	34,543	1.5%	0.6%	0.2%	1.2%	1.0%	0.7%	0.6%	0.4%
		BRAULIO E. DUJALI	28,339	30,104	35,729	36,158	38,325	40,181	41,708	42,882	43,754	1.2%	3.5%	0.2%	1.2%	1.0%	0.7%	0.6%	0.4%
		SAN ISIDRO	25,548	26,651	27,233	27,429	29,073	30,481	31,640	32,529	33,189	0.8%	0.4%	0.1%	1.2%	1.0%	0.7%	0.6%	0.4%
		Sub-total	945,764	1,016,332	1,125,057	1,136,197	1,204,247	1,262,588	1,310,567	1,347,441	1,374,843	1.4%	2.1%	0.2%	1.2%	1.0%	0.7%	0.6%	0.4%
	Davao del Sur	BANSALAN	56,496	60,440	62,737	68,505	73,692	78,564	82,965	86,829	90,200	1.4%	0.7%	1.8%	1.5%	1.3%	1.1%	0.9%	0.8%
		CITY OF DIGOS (Capital)	149,891	169,393	188,376	206,157	221,766	236,427	249,670	261,302	271,443	2.5%	2.1%	1.8%	1.5%	1.3%	1.1%	0.9%	0.8%
		HAGONOY	49,107	53,309	56,919	62,210	66,921	71,345	75,341	78,851	81,911	1.7%	1.3%	1.8%	1.5%	1.3%	1.1%	0.9%	0.8%
		KIBLAWAN	44,618	48,897	49,381	53,870	57,949	61,781	65,241	68,280	70,930	1.8%	0.2%	1.8%	1.5%	1.3%	1.1%	0.9%	0.8%
		MAGSAYSAY	49,141	53,876	56,263	61,448	66,101	70,471	74,418	77,885	80,909	1.9%	0.9%	1.8%	1.5%	1.3%	1.1%	0.9%	0.8%
		MALALAG	35,295	38,731	40,158	43,848	47,168	50,287	53,103	55,577	57,734	1.9%	0.7%	1.8%	1.5%	1.3%	1.1%	0.9%	0.8%
		MATANAO	51,382	56,755	60,493	66,113	71,118	75,820	80,067	83,796	87,049	2.0%	1.3%	1.8%	1.5%	1.3%	1.1%	0.9%	0.8%
		PADADA	25,724	26,587	29,878	32,708	35,186	37,512	39,614	41,458	43,068	0.7%	2.4%	1.8%	1.5%	1.3%	1.1%	0.9%	0.8%
		SANTA CRUZ	81,093	90,987	101,125	110,668	119,048	126,917	134,027	140,271	145,715	2.3%	2.1%	1.8%	1.5%	1.3%	1.1%	0.9%	0.8%
		SULOP	32,163	33,613	35,151	38,392	41,298	44,028	46,495	48,661	50,550	0.9%	0.9%	1.8%	1.5%	1.3%	1.1%	0.9%	0.8%
		DAVAO CITY	1,449,296	1,632,991	1,776,949	1,943,328	2,090,483	2,228,685	2,353,520	2,463,161	2,558,763	2.4%	1.7%	1.8%	1.5%	1.3%	1.1%	0.9%	0.8%
		Sub-total	2,024,206	2,265,579	2,457,430	2,687,247	2,890,730	3,081,837	3,254,461	3,406,071	3,538,272	2.3%	1.6%	1.8%	1.5%	1.3%	1.1%	0.9%	0.8%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
DAVAO	Davao Occidental	DON MARCELINO 2	41,942	44,554	45,540	46,892	50,807	54,491	57,845	60,821	63,417	1.2%	0.4%	0.6%	1.6%	1.4%	1.2%	1.0%	0.8%
		JOSE ABAD SANTOS (TRINIDAD) 2	69,631	76,332	73,381	75,394	81,690	87,612	93,005	97,790	101,964	1.9%	-0.8%	0.5%	1.6%	1.4%	1.2%	1.0%	0.8%
		MALITA 2	109,568	117,746	118,197	121,628	131,786	141,339	150,039	157,758	164,492	1.5%	0.1%	0.6%	1.6%	1.4%	1.2%	1.0%	0.8%
		SANTA MARIA 2	49,349	53,671	57,526	59,327	64,281	68,941	73,185	76,950	80,235	1.7%	1.4%	0.6%	1.6%	1.4%	1.2%	1.0%	0.8%
		SARANGANI 2	23,290	24,039	22,515	23,111	25,043	26,857	28,512	29,979	31,259	0.6%	-1.3%	0.5%	1.6%	1.4%	1.2%	1.0%	0.8%
		Sub-total	293,780	316,342	317,159	326,352	353,607	379,240	402,586	423,298	441,367	1.5%	0.1%	0.6%	1.6%	1.4%	1.2%	1.0%	0.8%
	Davao Oriental	BAGANGA	53,426	56,241	58,714	60,663	65,533	70,225	74,609	78,435	81,535	1.0%	0.9%	0.7%	1.6%	1.4%	1.2%	1.0%	0.8%
		BANAYBANAY	39,121	41,117	44,451	45,980	49,671	53,228	56,551	59,451	61,800	1.0%	1.6%	0.7%	1.6%	1.4%	1.2%	1.0%	0.8%
		BOSTON	12,670	13,535	14,618	15,120	16,334	17,503	18,596	19,550	20,323	1.3%	1.6%	0.7%	1.6%	1.4%	1.2%	1.0%	0.8%
		CARAGA	36,912	40,379	39,704	40,936	44,223	47,390	50,348	52,929	55,021	1.8%	-0.3%	0.6%	1.6%	1.4%	1.2%	1.0%	0.8%
		CATEEL	38,579	40,704	44,207	45,734	49,406	52,942	56,248	59,133	61,470	1.1%	1.7%	0.7%	1.6%	1.4%	1.2%	1.0%	0.8%
		GOVERNOR GENEROSO	50,372	55,109	59,891	61,962	66,935	71,728	76,206	80,115	83,280	1.8%	1.7%	0.7%	1.6%	1.4%	1.2%	1.0%	0.8%
		LUPON	61,723	65,785	66,979	69,144	74,694	80,043	85,039	89,402	92,935	1.3%	0.4%	0.6%	1.6%	1.4%	1.2%	1.0%	0.8%
		MANAY	40,577	42,690	39,572	40,713	43,981	47,130	50,072	52,640	54,721	1.0%	-1.5%	0.6%	1.6%	1.4%	1.2%	1.0%	0.8%
		CITY OF MATI (Capital)	126,143	141,141	147,547	152,451	164,689	176,483	187,499	197,116	204,906	2.3%	0.9%	0.7%	1.6%	1.4%	1.2%	1.0%	0.8%
		SAN ISIDRO	32,424	36,032	33,664	34,645	37,427	40,107	42,611	44,796	46,566	2.1%	-1.4%	0.6%	1.6%	1.4%	1.2%	1.0%	0.8%
		TARRAGONA	25,671	26,225	26,996	27,879	30,117	32,274	34,290	36,048	37,473	0.4%	0.6%	0.6%	1.6%	1.4%	1.2%	1.0%	0.8%
		Sub-total	517,618	558,958	576,343	595,227	643,010	689,053	732,069	769,615	800,030	1.5%	0.6%	0.6%	1.6%	1.4%	1.2%	1.0%	0.8%
		Total	4,468,563	4,893,318	5,243,536	5,525,478	5,926,643	6,294,444	6,619,726	6,893,937	7,116,293	1.8%	1.4%	1.1%	1.4%	1.2%	1.0%	0.8%	0.6%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
SOCCSKSARGEN	Cotabato (North Cotabato)	ALAMADA	56,813	64,596	68,659	72,416	78,503	84,405	89,886	94,752	98,815	2.6%	1.2%	1.1%	1.6%	1.5%	1.3%	1.1%	0.8%
		CARMEN	82,469	95,921	79,140	82,677	89,627	96,365	102,623	108,178	112,817	3.1%	-3.8%	0.9%	1.6%	1.5%	1.3%	1.1%	0.8%
		KABACAN	81,282	89,161	77,164	80,775	87,564	94,147	100,260	105,686	110,218	1.9%	-2.8%	0.9%	1.6%	1.5%	1.3%	1.1%	0.8%
		CITY OF KIDAPAWAN (Capital)	125,447	140,195	160,791	169,998	184,288	198,142	211,010	222,430	231,969	2.2%	2.8%	1.1%	1.6%	1.5%	1.3%	1.1%	0.8%
		LIBUNGAN	45,295	48,768	56,269	59,501	64,502	69,351	73,856	77,853	81,191	1.5%	2.9%	1.1%	1.6%	1.5%	1.3%	1.1%	0.8%
		MAGPET	45,183	49,201	53,800	56,795	61,569	66,199	70,498	74,314	77,501	1.7%	1.8%	1.1%	1.6%	1.5%	1.3%	1.1%	0.8%
		MAKILALA	77,508	83,851	87,927	92,696	100,489	108,043	115,060	121,287	126,487	1.6%	1.0%	1.1%	1.6%	1.5%	1.3%	1.1%	0.8%
		MATALAM	74,034	79,361	81,355	85,702	92,905	99,889	106,377	112,134	116,943	1.4%	0.5%	1.0%	1.6%	1.5%	1.3%	1.1%	0.8%
		MIDSAYAP	134,170	151,684	117,365	122,263	132,540	142,504	151,758	159,972	166,831	2.5%	-5.0%	0.8%	1.6%	1.5%	1.3%	1.1%	0.8%
		M'LANG	87,749	95,070	98,195	103,468	112,165	120,598	128,430	135,381	141,186	1.6%	0.6%	1.1%	1.6%	1.5%	1.3%	1.1%	0.8%
		PIGKAWAYAN	59,975	66,796	52,744	54,996	59,618	64,100	68,263	71,958	75,044	2.2%	-4.6%	0.8%	1.6%	1.5%	1.3%	1.1%	0.8%
		PIKIT	113,014	154,441	67,024	67,316	72,975	78,461	83,557	88,078	91,856	6.4%	-15.4%	0.1%	1.6%	1.5%	1.3%	1.1%	0.8%
		PRESIDENT ROXAS	44,229	47,575	52,512	55,452	60,113	64,633	68,830	72,556	75,667	1.5%	2.0%	1.1%	1.6%	1.5%	1.3%	1.1%	0.8%
		TULUNAN	54,884	56,513	60,978	64,346	69,755	74,999	79,870	84,193	87,803	0.6%	1.5%	1.1%	1.6%	1.5%	1.3%	1.1%	0.8%
		ANTIPAS	25,242	25,304	26,817	28,281	30,659	32,963	35,104	37,003	38,591	0.0%	1.2%	1.1%	1.6%	1.5%	1.3%	1.1%	0.8%
		BANISILAN	39,914	43,677	46,995	49,586	53,754	57,796	61,549	64,879	67,662	1.8%	1.5%	1.1%	1.6%	1.5%	1.3%	1.1%	0.8%
		ALEOSAN	35,746	39,405	36,892	38,737	41,993	45,150	48,082	50,684	52,857	2.0%	-1.3%	1.0%	1.6%	1.5%	1.3%	1.1%	0.8%
		ARAKAN	43,554	48,228	50,558	53,300	57,780	62,123	66,158	69,738	72,728	2.1%	0.9%	1.1%	1.6%	1.5%	1.3%	1.1%	0.8%
		Sub-total	1,226,508	1,379,747	1,275,185	1,338,305	1,450,799	1,559,868	1,661,171	1,751,076	1,826,166	2.4%	-1.6%	1.0%	1.6%	1.5%	1.3%	1.1%	0.8%
	Cotabato City		271,786	299,438	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Sarangani	ALABEL (Capital)	75,477	80,359	88,294	91,254	97,765	103,219	107,614	110,446	111,333	1.3%	1.9%	0.7%	1.4%	1.1%	0.8%	0.5%	0.2%
		GLAN	106,518	118,263	109,547	112,550	120,579	127,305	132,727	136,219	137,314	2.1%	-1.5%	0.5%	1.4%	1.1%	0.8%	0.5%	0.2%
		KIAMBA	54,871	61,058	65,774	67,936	72,783	76,842	80,115	82,222	82,883	2.2%	1.5%	0.6%	1.4%	1.1%	0.8%	0.5%	0.2%
		MAASIM	52,933	59,468	64,940	67,105	71,893	75,902	79,135	81,218	81,869	2.4%	1.8%	0.7%	1.4%	1.1%	0.8%	0.5%	0.2%
		MAITUM	41,675	44,595	44,185	45,509	48,755	51,475	53,667	55,079	55,522	1.4%	-0.2%	0.6%	1.4%	1.1%	0.8%	0.5%	0.2%
		MALAPATAN	72,386	76,914	80,741	83,324	89,269	94,248	98,262	100,847	101,658	1.2%	1.0%	0.6%	1.4%	1.1%	0.8%	0.5%	0.2%
		MALUNGON	95,044	103,604	105,465	108,726	116,483	122,980	128,216	131,589	132,645	1.7%	0.4%	0.6%	1.4%	1.1%	0.8%	0.5%	0.2%
		Sub-total	498,904	544,261	558,946	576,404	617,527	651,971	679,736	697,620	703,224	1.8%	0.5%	0.6%	1.4%	1.1%	0.8%	0.5%	0.2%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
SOCCSKSARGEN	South Cotabato	BANGA	76,343	83,989	89,164	93,054	99,708	105,632	110,717	114,778	117,581	1.9%	1.2%	0.9%	1.4%	1.2%	0.9%	0.7%	0.5%
		CITY OF KORONADAL (Capital)	158,273	174,942	195,398	204,255	218,859	231,861	243,023	251,937	258,090	2.0%	2.2%	0.9%	1.4%	1.2%	0.9%	0.7%	0.5%
		NORALA	44,635	46,642	46,682	48,620	52,097	55,192	57,850	59,971	61,435	0.9%	0.0%	0.8%	1.4%	1.2%	0.9%	0.7%	0.5%
		POLOMOLOK	138,273	152,589	172,605	180,500	193,406	204,895	214,759	222,636	228,072	2.0%	2.5%	0.9%	1.4%	1.2%	0.9%	0.7%	0.5%
		SURALLAH	76,035	84,539	89,340	93,223	99,889	105,823	110,917	114,985	117,793	2.1%	1.1%	0.9%	1.4%	1.2%	0.9%	0.7%	0.5%
		TAMPAKAN	36,254	39,525	41,018	42,775	45,834	48,557	50,894	52,761	54,050	1.7%	0.7%	0.8%	1.4%	1.2%	0.9%	0.7%	0.5%
		TANTANGAN	40,461	43,245	45,744	47,734	51,148	54,186	56,793	58,877	60,316	1.3%	1.1%	0.9%	1.4%	1.2%	0.9%	0.7%	0.5%
		T'BOLI	79,175	91,453	101,049	105,594	113,144	119,865	125,636	130,244	133,425	2.9%	2.0%	0.9%	1.4%	1.2%	0.9%	0.7%	0.5%
		TUPI	61,843	69,976	73,459	76,635	82,115	86,994	91,182	94,526	96,834	2.5%	1.0%	0.9%	1.4%	1.2%	0.9%	0.7%	0.5%
		SANTO NIÑO	39,738	40,947	39,796	41,406	44,366	47,002	49,265	51,072	52,318	0.6%	-0.6%	0.8%	1.4%	1.2%	0.9%	0.7%	0.5%
		LAKE SEBU	76,170	87,442	81,221	84,364	90,397	95,767	100,377	104,059	106,599	2.8%	-1.5%	0.8%	1.4%	1.2%	0.9%	0.7%	0.5%
		GENERAL SANTOS CITY (DADIANGAS)	538,086	594,446	697,315	730,012	782,209	828,677	868,567	900,426	922,415	2.0%	3.2%	0.9%	1.4%	1.2%	0.9%	0.7%	0.5%
		Sub-total	1,365,286	1,509,735	1,672,791	1,748,172	1,873,172	1,984,451	2,079,980	2,156,272	2,208,928	2.0%	2.1%	0.9%	1.4%	1.2%	0.9%	0.7%	0.5%
	Sultan Kudarat	BAGUMBAYAN	63,700	67,061	68,947	70,139	75,595	80,642	85,197	89,298	93,128	1.0%	0.6%	0.3%	1.5%	1.3%	1.1%	0.9%	0.8%
		COLUMBIO	27,440	33,258	33,527	34,083	36,734	39,187	41,401	43,393	45,255	3.9%	0.2%	0.3%	1.5%	1.3%	1.1%	0.9%	0.8%
		ESPERANZA	63,207	66,095	74,696	76,222	82,150	87,634	92,584	97,041	101,203	0.9%	2.5%	0.4%	1.5%	1.3%	1.1%	0.9%	0.8%
		ISULAN (Capital)	86,602	90,682	97,490	99,323	107,049	114,196	120,646	126,455	131,879	0.9%	1.5%	0.4%	1.5%	1.3%	1.1%	0.9%	0.8%
		KALAMANSIG	46,408	49,059	50,900	51,797	55,826	59,554	62,916	65,946	68,774	1.1%	0.7%	0.3%	1.5%	1.3%	1.1%	0.9%	0.8%
		LEBAK	83,280	88,868	91,344	92,923	100,151	106,839	112,873	118,307	123,383	1.3%	0.6%	0.3%	1.5%	1.3%	1.1%	0.9%	0.8%
		LUTAYAN	56,179	63,029	65,644	66,808	72,005	76,812	81,151	85,058	88,706	2.3%	0.8%	0.4%	1.5%	1.3%	1.1%	0.9%	0.8%
		LAMBAYONG (MARIANO MARCOS)	65,557	77,013	79,739	81,137	87,448	93,287	98,555	103,300	107,732	3.3%	0.7%	0.3%	1.5%	1.3%	1.1%	0.9%	0.8%
		PALIMBANG	83,265	90,424	92,828	94,428	101,773	108,568	114,700	120,221	125,380	1.7%	0.5%	0.3%	1.5%	1.3%	1.1%	0.9%	0.8%
		PRESIDENT QUIRINO	38,753	41,408	42,244	42,963	46,305	49,397	52,186	54,699	57,046	1.3%	0.4%	0.3%	1.5%	1.3%	1.1%	0.9%	0.8%
		CITY OF TACURONG	89,188	98,316	109,319	111,494	120,167	128,191	135,431	141,951	148,041	2.0%	2.1%	0.4%	1.5%	1.3%	1.1%	0.9%	0.8%
		SEN. NINOY AQUINO	43,508	46,882	47,374	48,164	51,912	55,376	58,505	61,322	63,954	1.5%	0.2%	0.3%	1.5%	1.3%	1.1%	0.9%	0.8%
		Sub-total	747,087	812,095	854,052	869,481	937,115	999,683	1,056,145	1,106,991	1,154,481	1.7%	1.0%	0.4%	1.5%	1.3%	1.1%	0.9%	0.8%
		Total	4,109,571	4,545,276	4,360,974	4,532,362	4,878,613	5,195,973	5,477,032	5,711,959	5,892,799	2.0%	-0.8%	0.8%	1.5%	1.3%	1.1%	0.8%	0.6%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CARAGA	Agusan del Norte	BUENAVISTA	56,139	61,614	68,892	71,017	77,574	84,202	90,743	97,017	102,880	1.9%	2.3%	0.6%	1.8%	1.7%	1.5%	1.3%	1.2%
		CITY OF CABADBARAN	69,241	73,639	80,354	82,770	90,413	98,137	105,760	113,074	119,907	1.2%	1.8%	0.6%	1.8%	1.7%	1.5%	1.3%	1.2%
		CARMEN	19,781	20,839	23,172	23,884	26,088	28,317	30,517	32,628	34,600	1.0%	2.1%	0.6%	1.8%	1.7%	1.5%	1.3%	1.2%
		JABONGA	23,833	23,184	24,855	25,588	27,951	30,338	32,695	34,956	37,069	-0.6%	1.4%	0.6%	1.8%	1.7%	1.5%	1.3%	1.2%
		KITCHARAO	17,377	18,659	21,278	21,948	23,974	26,022	28,043	29,981	31,794	1.4%	2.7%	0.6%	1.8%	1.7%	1.5%	1.3%	1.2%
		LAS NIEVES	26,856	28,414	30,240	31,124	33,998	36,903	39,769	42,519	45,088	1.1%	1.3%	0.6%	1.8%	1.7%	1.5%	1.3%	1.2%
		MAGALLANES	21,481	21,007	22,293	22,943	25,061	27,202	29,315	31,342	33,235	-0.4%	1.2%	0.6%	1.8%	1.7%	1.5%	1.3%	1.2%
		NASIPIT	40,663	41,957	44,822	46,139	50,398	54,704	58,953	63,030	66,839	0.6%	1.3%	0.6%	1.8%	1.7%	1.5%	1.3%	1.2%
		SANTIAGO	20,955	24,200	28,657	29,592	32,324	35,085	37,811	40,426	42,869	2.9%	3.4%	0.6%	1.8%	1.7%	1.5%	1.3%	1.2%
		TUBAY	20,426	24,932	25,785	26,514	28,962	31,436	33,877	36,220	38,409	4.1%	0.7%	0.6%	1.8%	1.7%	1.5%	1.3%	1.2%
		REMEDIOS T. ROMUALDEZ	15,735	16,058	17,155	17,658	19,288	20,937	22,562	24,123	25,581	0.4%	1.3%	0.6%	1.8%	1.7%	1.5%	1.3%	1.2%
		BUTUAN CITY (Capital)	309,709	337,063	372,910	384,290	419,772	455,638	491,026	524,981	556,703	1.7%	2.0%	0.6%	1.8%	1.7%	1.5%	1.3%	1.2%
		Sub-total	642,196	691,566	760,413	783,467	855,803	928,921	1,001,071	1,070,297	1,134,974	1.5%	1.9%	0.6%	1.8%	1.7%	1.5%	1.3%	1.2%
	Agusan del Sur	CITY OF BAYUGAN	99,361	103,202	109,499	111,274	124,759	138,598	152,612	166,539	180,288	0.8%	1.2%	0.3%	2.3%	2.1%	1.9%	1.8%	1.6%
		BUNAWAN	37,482	45,151	47,512	48,270	54,119	60,122	66,201	72,243	78,207	3.8%	1.0%	0.3%	2.3%	2.1%	1.9%	1.8%	1.6%
		ESPERANZA	51,897	54,801	59,353	60,357	67,670	75,177	82,777	90,332	97,789	1.1%	1.6%	0.3%	2.3%	2.1%	1.9%	1.8%	1.6%
		LA PAZ	28,562	28,217	30,969	31,506	35,324	39,242	43,210	47,153	51,046	-0.2%	1.9%	0.3%	2.3%	2.1%	1.9%	1.8%	1.6%
		LORETO	39,474	42,501	43,880	44,550	49,949	55,490	61,101	66,677	72,182	1.5%	0.6%	0.3%	2.3%	2.1%	1.9%	1.8%	1.6%
		PROSPERIDAD (Capital)	76,628	82,631	88,321	89,775	100,654	111,819	123,125	134,362	145,455	1.5%	1.3%	0.3%	2.3%	2.1%	1.9%	1.8%	1.6%
		ROSARIO	38,280	46,683	49,610	50,417	56,527	62,798	69,147	75,457	81,686	4.0%	1.2%	0.3%	2.3%	2.1%	1.9%	1.8%	1.6%
		SAN FRANCISCO	70,986	74,542	80,760	82,126	92,077	102,290	112,633	122,912	133,060	1.0%	1.6%	0.3%	2.3%	2.1%	1.9%	1.8%	1.6%
		SAN LUIS	32,733	32,109	35,196	35,804	40,143	44,595	49,103	53,585	58,009	-0.4%	1.9%	0.3%	2.3%	2.1%	1.9%	1.8%	1.6%
		SANTA JOSEFA	25,156	26,729	26,432	26,795	30,043	33,376	36,751	40,105	43,416	1.2%	-0.2%	0.3%	2.3%	2.1%	1.9%	1.8%	1.6%
		TALACOGON	37,224	38,374	39,678	40,287	45,169	50,180	55,253	60,296	65,274	0.6%	0.7%	0.3%	2.3%	2.1%	1.9%	1.8%	1.6%
		TRENTO	47,193	51,565	54,492	55,369	62,079	68,965	75,937	82,868	89,709	1.8%	1.1%	0.3%	2.3%	2.1%	1.9%	1.8%	1.6%
		VERUELA	40,457	43,706	39,708	40,129	44,992	49,983	55,037	60,059	65,018	1.6%	-1.9%	0.2%	2.3%	2.1%	1.9%	1.8%	1.6%
		SIBAGAT	30,985	30,442	33,957	34,563	38,751	43,048	47,402	51,728	55,998	-0.4%	2.2%	0.4%	2.3%	2.1%	1.9%	1.8%	1.6%
		Sub-total	656,418	700,653	739,367	751,222	842,256	935,683	1,030,289	1,124,316	1,217,137	1.3%	1.1%	0.3%	2.3%	2.1%	1.9%	1.8%	1.6%
	Dinagat Islands	BASILISA (RIZAL)	33,880	36,880	36,911	36,841	40,130	43,390	46,665	49,868	52,956	1.7%	0.0%	0.0%	1.7%	1.6%	1.5%	1.3%	1.2%
		CAGDIANAO	15,047	16,808	18,350	18,368	20,008	21,634	23,266	24,864	26,403	2.2%	1.8%	0.0%	1.7%	1.6%	1.5%	1.3%	1.2%
		DINAGAT	12,786	10,632	10,621	10,601	11,547	12,485	13,428	14,349	15,238	-3.6%	0.0%	0.0%	1.7%	1.6%	1.5%	1.3%	1.2%
		LIBJO (ALBOR)	17,567	17,760	18,051	18,026	19,636	21,230	22,832	24,399	25,910	0.2%	0.3%	0.0%	1.7%	1.6%	1.5%	1.3%	1.2%
		LORETO	8,920	9,309	9,690	9,684	10,549	11,406	12,268	13,110	13,921	0.9%	0.8%	0.0%	1.7%	1.6%	1.5%	1.3%	1.2%
		SAN JOSE (Capital)	31,035	27,487	26,375	26,285	28,631	30,957	33,294	35,579	37,783	-2.4%	-0.8%	-0.1%	1.7%	1.6%	1.5%	1.3%	1.2%
		TUBAJON	7,568	8,276	8,119	8,098	8,820	9,538	10,257	10,962	11,641	1.8%	-0.4%	-0.1%	1.7%	1.6%	1.5%	1.3%	1.2%
		Sub-total	126,803	127,152	128,117	127,903	139,321	150,640	162,010	173,131	183,852	0.1%	0.2%	0.0%	1.7%	1.6%	1.5%	1.3%	1.2%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CARAGA	Surigao del Norte	ALEGRIA	14,539	16,011	16,184	17,272	18,314	19,218	19,990	20,595	21,017	1.9%	0.2%	1.3%	1.2%	1.0%	0.8%	0.6%	0.4%
		BACUAG	13,211	14,486	14,881	15,889	16,849	17,680	18,391	18,947	19,335	1.9%	0.5%	1.3%	1.2%	1.0%	0.8%	0.6%	0.4%
		BURGOS	4,058	4,034	4,185	4,470	4,739	4,974	5,173	5,330	5,439	-0.1%	0.7%	1.3%	1.2%	1.0%	0.8%	0.6%	0.4%
		CLAVER	23,702	32,773	36,033	38,562	40,889	42,906	44,631	45,982	46,924	6.7%	1.9%	1.4%	1.2%	1.0%	0.8%	0.6%	0.4%
		DAPA	23,492	23,787	29,006	31,138	33,017	34,646	36,038	37,128	37,888	0.2%	4.0%	1.4%	1.2%	1.0%	0.8%	0.6%	0.4%
		DEL CARMEN	17,136	18,392	20,127	21,537	22,837	23,963	24,926	25,680	26,206	1.4%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%	0.4%
		GENERAL LUNA	15,014	16,771	22,853	24,607	26,092	27,379	28,481	29,343	29,944	2.2%	6.4%	1.5%	1.2%	1.0%	0.8%	0.6%	0.4%
		GIGAQUIT	18,784	20,864	21,849	23,347	24,755	25,976	27,020	27,838	28,408	2.1%	0.9%	1.3%	1.2%	1.0%	0.8%	0.6%	0.4%
		MAINIT	25,596	26,741	28,019	29,939	31,746	33,312	34,650	35,698	36,430	0.9%	0.9%	1.3%	1.2%	1.0%	0.8%	0.6%	0.4%
		MALIMONO	18,316	18,054	18,852	20,141	21,355	22,409	23,309	24,016	24,508	-0.3%	0.9%	1.3%	1.2%	1.0%	0.8%	0.6%	0.4%
		PILAR	9,456	9,752	10,374	11,091	11,760	12,341	12,837	13,225	13,496	0.6%	1.2%	1.3%	1.2%	1.0%	0.8%	0.6%	0.4%
		PLACER	24,600	27,094	29,616	31,689	33,600	35,258	36,675	37,786	38,559	2.0%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%	0.4%
		SAN BENITO	5,505	5,404	5,663	6,052	6,416	6,733	7,003	7,216	7,364	-0.4%	0.9%	1.3%	1.2%	1.0%	0.8%	0.6%	0.4%
		SAN FRANCISCO (ANAO-AON)	13,335	14,552	15,347	16,402	17,393	18,251	18,984	19,558	19,959	1.8%	1.1%	1.3%	1.2%	1.0%	0.8%	0.6%	0.4%
		SAN ISIDRO	6,973	7,325	8,519	9,133	9,684	10,162	10,571	10,890	11,113	1.0%	3.1%	1.4%	1.2%	1.0%	0.8%	0.6%	0.4%
		SANTA MONICA (SAPAO)	8,715	8,808	9,423	10,077	10,684	11,211	11,662	12,014	12,261	0.2%	1.4%	1.4%	1.2%	1.0%	0.8%	0.6%	0.4%
		SISON	11,377	13,155	14,290	15,288	16,209	17,008	17,693	18,228	18,602	2.9%	1.7%	1.4%	1.2%	1.0%	0.8%	0.6%	0.4%
		SOCORRO	20,304	22,314	25,942	27,811	29,489	30,944	32,187	33,161	33,840	1.9%	3.1%	1.4%	1.2%	1.0%	0.8%	0.6%	0.4%
		SURIGAO CITY (Capital)	140,540	154,137	171,107	183,173	194,224	203,804	211,997	218,412	222,886	1.9%	2.1%	1.4%	1.2%	1.0%	0.8%	0.6%	0.4%
		TAGANA-AN	15,366	16,428	17,323	18,514	19,630	20,598	21,426	22,073	22,525	1.3%	1.1%	1.3%	1.2%	1.0%	0.8%	0.6%	0.4%
		TUBOD	12,569	14,206	15,043	16,077	17,047	17,888	18,607	19,169	19,562	2.5%	1.2%	1.3%	1.2%	1.0%	0.8%	0.6%	0.4%
		Sub-total	442,588	485,088	534,636	572,209	606,729	636,661	662,251	682,289	696,266	1.9%	2.0%	1.4%	1.2%	1.0%	0.8%	0.6%	0.4%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CARAGA	Surigao del Sur	BAROBO	43,663	49,730	53,146	53,945	58,290	62,478	66,500	70,263	73,693	2.6%	1.3%	0.3%	1.6%	1.4%	1.3%	1.1%	1.0%
		BAYABAS	7,779	8,164	8,979	9,123	9,857	10,566	11,245	11,882	12,462	1.0%	1.9%	0.3%	1.6%	1.4%	1.3%	1.1%	1.0%
		CITY OF BISLIG	96,578	94,535	99,290	100,724	108,837	116,658	124,168	131,193	137,599	-0.4%	1.0%	0.3%	1.6%	1.4%	1.3%	1.1%	1.0%
		CAGWAIT	18,899	20,384	21,747	22,073	23,850	25,564	27,210	28,750	30,153	1.5%	1.3%	0.3%	1.6%	1.4%	1.3%	1.1%	1.0%
		CANTILAN	30,231	31,492	34,060	34,585	37,371	40,057	42,635	45,047	47,247	0.8%	1.6%	0.3%	1.6%	1.4%	1.3%	1.1%	1.0%
		CARMEN	10,287	10,347	11,720	11,918	12,878	13,804	14,692	15,524	16,282	0.1%	2.5%	0.3%	1.6%	1.4%	1.3%	1.1%	1.0%
		CARRASCAL	16,529	22,479	24,586	24,974	26,986	28,926	30,787	32,529	34,118	6.3%	1.8%	0.3%	1.6%	1.4%	1.3%	1.1%	1.0%
		CORTES	15,541	15,912	17,924	18,224	19,691	21,106	22,465	23,736	24,895	0.5%	2.4%	0.3%	1.6%	1.4%	1.3%	1.1%	1.0%
		HINATUAN	38,731	39,842	43,841	44,541	48,129	51,587	54,909	58,016	60,849	0.6%	1.9%	0.3%	1.6%	1.4%	1.3%	1.1%	1.0%
		LANUZA	11,857	12,001	13,642	13,875	14,993	16,069	17,104	18,073	18,955	0.2%	2.6%	0.3%	1.6%	1.4%	1.3%	1.1%	1.0%
		LIANGA	28,905	29,493	33,869	34,457	37,232	39,907	42,476	44,878	47,070	0.4%	2.8%	0.3%	1.6%	1.4%	1.3%	1.1%	1.0%
		LINGIG	31,544	31,485	35,142	35,720	38,596	41,370	44,034	46,525	48,796	0.0%	2.2%	0.3%	1.6%	1.4%	1.3%	1.1%	1.0%
		MADRID	14,888	15,223	16,653	16,917	18,278	19,592	20,852	22,032	23,108	0.4%	1.8%	0.3%	1.6%	1.4%	1.3%	1.1%	1.0%
		MARIHATAG	17,926	18,518	19,441	19,722	21,309	22,841	24,312	25,687	26,941	0.7%	1.0%	0.3%	1.6%	1.4%	1.3%	1.1%	1.0%
		SAN AGUSTIN	20,655	22,779	22,855	23,149	25,013	26,811	28,537	30,150	31,623	2.0%	0.1%	0.3%	1.6%	1.4%	1.3%	1.1%	1.0%
		SAN MIGUEL	36,287	39,340	41,809	42,430	45,846	49,142	52,305	55,264	57,962	1.6%	1.2%	0.3%	1.6%	1.4%	1.3%	1.1%	1.0%
		TAGBINA	34,812	38,833	41,051	41,654	45,009	48,243	51,348	54,253	56,903	2.2%	1.1%	0.3%	1.6%	1.4%	1.3%	1.1%	1.0%
		TAGO	33,993	35,329	39,831	40,499	43,761	46,906	49,926	52,750	55,327	0.8%	2.4%	0.3%	1.6%	1.4%	1.3%	1.1%	1.0%
		CITY OF TANDAG (Capital)	52,114	56,364	62,669	63,692	68,820	73,767	78,515	82,956	87,008	1.6%	2.1%	0.3%	1.6%	1.4%	1.3%	1.1%	1.0%
		Sub-total	561,219	592,250	642,255	652,222	704,746	755,394	804,020	849,508	890,991	1.1%	1.6%	0.3%	1.6%	1.4%	1.3%	1.1%	1.0%
		Total	2,429,224	2,596,709	2,804,788	2,887,023	3,148,855	3,407,299	3,659,641	3,899,541	4,123,220	1.3%	1.6%	0.6%	1.8%	1.6%	1.4%	1.3%	1.1%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
BARMM	Basilan	CITY OF LAMITAN	68,996	74,782	100,150	110,613	125,140	140,377	156,056	172,171	188,349	1.6%	6.0%	2.0%	2.5%	2.3%	2.1%	2.0%	1.8%
		LANTAWAN	20,087	24,594	31,040	34,228	38,724	43,439	48,292	53,278	58,284	4.1%	4.8%	2.0%	2.5%	2.3%	2.1%	2.0%	1.8%
		MALUSO	33,803	40,646	45,730	50,257	56,857	63,780	70,905	78,225	85,576	3.8%	2.4%	1.9%	2.5%	2.3%	2.1%	2.0%	1.8%
		SUMISIP	37,031	41,730	47,345	52,047	58,882	66,050	73,428	81,011	88,623	2.4%	2.6%	1.9%	2.5%	2.3%	2.1%	2.0%	1.8%
		TIPO-TIPO	16,978	19,163	25,531	28,193	31,896	35,779	39,776	43,883	48,007	2.5%	5.9%	2.0%	2.5%	2.3%	2.1%	2.0%	1.8%
		TUBURAN	18,988	20,207	24,742	27,260	30,840	34,595	38,460	42,431	46,417	1.3%	4.1%	2.0%	2.5%	2.3%	2.1%	2.0%	1.8%
		AKBAR	13,369	17,531	23,098	25,499	28,849	32,360	35,974	39,689	43,419	5.6%	5.7%	2.0%	2.5%	2.3%	2.1%	2.0%	1.8%
		AL-BARKA	19,523	20,905	23,736	26,093	29,521	33,114	36,813	40,614	44,431	1.4%	2.6%	1.9%	2.5%	2.3%	2.1%	2.0%	1.8%
		HADJI MOHAMMAD AJUL	15,962	19,307	24,625	27,163	30,731	34,473	38,324	42,280	46,252	3.9%	5.0%	2.0%	2.5%	2.3%	2.1%	2.0%	1.8%
		UNGKAYA PUKAN	17,701	18,441	24,016	26,505	29,987	33,638	37,394	41,256	45,132	0.8%	5.4%	2.0%	2.5%	2.3%	2.1%	2.0%	1.8%
		HADJI MUHTAMAD	12,249	25,085	26,867	29,481	33,353	37,414	41,592	45,886	50,199	15.4%	1.4%	1.9%	2.5%	2.3%	2.1%	2.0%	1.8%
		TABUAN-LASA	18,635	24,188	29,327	32,304	36,547	40,998	45,577	50,283	55,007	5.4%	3.9%	2.0%	2.5%	2.3%	2.1%	2.0%	1.8%
		Sub-total	293,322	346,579	426,207	469,645	531,327	596,019	662,593	731,009	799,698	3.4%	4.2%	2.0%	2.5%	2.3%	2.1%	2.0%	1.8%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
BARMM	Lanao del Sur	BACOLOD-KALAWI (BACOLOD GRANDE)	18,555	20,841	23,129	24,961	28,126	31,348	34,614	37,924	41,200	2.4%	2.1%	1.5%	2.4%	2.2%	2.0%	1.8%	1.7%
		BALABAGAN	25,139	26,819	29,863	32,232	36,321	40,482	44,700	48,975	53,206	1.3%	2.2%	1.5%	2.4%	2.2%	2.0%	1.8%	1.7%
		BALINDONG (WATU)	26,007	29,180	32,573	35,158	39,620	44,158	48,759	53,423	58,038	2.3%	2.2%	1.5%	2.4%	2.2%	2.0%	1.8%	1.7%
		BAYANG	21,472	23,965	28,023	30,290	34,132	38,042	42,006	46,023	49,998	2.2%	3.2%	1.6%	2.4%	2.2%	2.0%	1.8%	1.7%
		BINIDAYAN	19,493	22,079	25,965	28,070	31,631	35,255	38,928	42,652	46,335	2.5%	3.3%	1.6%	2.4%	2.2%	2.0%	1.8%	1.7%
		BUBONG	19,455	22,336	26,514	28,672	32,310	36,011	39,763	43,566	47,329	2.8%	3.5%	1.6%	2.4%	2.2%	2.0%	1.8%	1.7%
		BUTIG	16,642	19,302	22,768	24,617	27,739	30,917	34,139	37,405	40,636	3.0%	3.4%	1.6%	2.4%	2.2%	2.0%	1.8%	1.7%
		GANASSI	20,205	23,016	30,802	33,420	37,660	41,974	46,348	50,781	55,167	2.6%	6.0%	1.6%	2.4%	2.2%	2.0%	1.8%	1.7%
		KAPAI	17,370	18,894	20,581	22,197	25,014	27,879	30,784	33,728	36,641	1.7%	1.7%	1.5%	2.4%	2.2%	2.0%	1.8%	1.7%
		LUMBA-BAYABAO (MAGUING)	32,412	36,151	45,909	49,741	56,051	62,472	68,982	75,580	82,106	2.2%	4.9%	1.6%	2.4%	2.2%	2.0%	1.8%	1.7%
		LUMBATAN	16,719	19,105	22,780	24,638	27,764	30,944	34,168	37,435	40,669	2.7%	3.6%	1.6%	2.4%	2.2%	2.0%	1.8%	1.7%
		MADALUM	20,243	23,127	26,478	28,603	32,232	35,924	39,668	43,462	47,216	2.7%	2.7%	1.6%	2.4%	2.2%	2.0%	1.8%	1.7%
		MADAMBA	15,542	17,756	22,050	23,877	26,906	29,988	33,113	36,281	39,414	2.7%	4.4%	1.6%	2.4%	2.2%	2.0%	1.8%	1.7%
		MALABANG	38,724	43,957	49,088	52,986	59,708	66,548	73,482	80,511	87,463	2.6%	2.2%	1.5%	2.4%	2.2%	2.0%	1.8%	1.7%
		MARANTAO	28,550	32,974	37,763	40,793	45,968	51,234	56,571	61,982	67,335	2.9%	2.7%	1.6%	2.4%	2.2%	2.0%	1.8%	1.7%
		MARAWI CITY (Capital)	187,106	201,785	207,010	222,829	251,095	279,858	309,018	338,576	367,818	1.5%	0.5%	1.5%	2.4%	2.2%	2.0%	1.8%	1.7%
		MASIU	25,181	29,176	33,580	36,281	40,883	45,566	50,313	55,127	59,887	3.0%	2.9%	1.6%	2.4%	2.2%	2.0%	1.8%	1.7%
		MULONDO	14,065	16,067	19,932	21,582	24,320	27,106	29,929	32,792	35,624	2.7%	4.4%	1.6%	2.4%	2.2%	2.0%	1.8%	1.7%
		PAGAYAWAN (TATARIKAN)	11,349	13,139	15,057	16,265	18,328	20,428	22,556	24,714	26,848	3.0%	2.8%	1.6%	2.4%	2.2%	2.0%	1.8%	1.7%
		PIAGAPO	21,974	25,440	30,132	32,583	36,717	40,922	45,187	49,509	53,785	3.0%	3.4%	1.6%	2.4%	2.2%	2.0%	1.8%	1.7%
		POONA BAYABAO (GATA)	19,229	22,227	31,141	33,827	38,118	42,484	46,911	51,399	55,838	2.9%	7.0%	1.7%	2.4%	2.2%	2.0%	1.8%	1.7%
		PUALAS	11,163	12,866	14,526	15,684	17,675	19,699	21,751	23,833	25,892	2.9%	2.5%	1.5%	2.4%	2.2%	2.0%	1.8%	1.7%
		DITSAAN-RAMAIN	20,208	22,299	24,406	26,327	29,666	33,064	36,510	40,002	43,457	2.0%	1.8%	1.5%	2.4%	2.2%	2.0%	1.8%	1.7%
		SAGUIARAN	22,673	24,619	26,712	28,807	32,461	36,179	39,948	43,770	47,550	1.7%	1.6%	1.5%	2.4%	2.2%	2.0%	1.8%	1.7%
		TAMPARAN	22,367	25,874	32,074	34,728	39,133	43,616	48,160	52,767	57,324	3.0%	4.4%	1.6%	2.4%	2.2%	2.0%	1.8%	1.7%
		TARAKA	20,881	23,644	27,184	29,369	33,095	36,885	40,728	44,623	48,477	2.5%	2.8%	1.6%	2.4%	2.2%	2.0%	1.8%	1.7%
		TUBARAN	12,933	14,749	16,896	18,251	20,567	22,922	25,311	27,733	30,127	2.7%	2.8%	1.6%	2.4%	2.2%	2.0%	1.8%	1.7%
		TUGAYA	22,235	23,814	24,778	26,685	30,070	33,514	37,006	40,546	44,048	1.4%	0.8%	1.5%	2.4%	2.2%	2.0%	1.8%	1.7%
		WAO	40,479	45,862	50,366	54,337	61,230	68,244	75,355	82,563	89,693	2.5%	1.9%	1.5%	2.4%	2.2%	2.0%	1.8%	1.7%
		MAROGONG	18,541	21,319	30,118	32,723	36,873	41,098	45,380	49,721	54,015	2.8%	7.2%	1.7%	2.4%	2.2%	2.0%	1.8%	1.7%
		CALANOGAS	11,988	13,750	14,985	16,162	18,213	20,299	22,415	24,559	26,680	2.8%	1.7%	1.5%	2.4%	2.2%	2.0%	1.8%	1.7%
		BUADIPOSO-BUNTONG	15,662	16,130	18,046	19,479	21,951	24,466	27,015	29,599	32,156	0.6%	2.3%	1.5%	2.4%	2.2%	2.0%	1.8%	1.7%
		MAGUING	21,444	24,531	30,436	32,956	37,136	41,391	45,703	50,075	54,399	2.7%	4.4%	1.6%	2.4%	2.2%	2.0%	1.8%	1.7%
		PICONG (SULTAN GUMANDER)	14,136	16,615	18,907	20,420	23,010	25,646	28,318	31,027	33,707	3.3%	2.6%	1.6%	2.4%	2.2%	2.0%	1.8%	1.7%
		LUMBAYANAGUE	14,308	16,372	19,091	20,634	23,252	25,916	28,616	31,353	34,061	2.7%	3.1%	1.6%	2.4%	2.2%	2.0%	1.8%	1.7%
		BUMBARAN	8,734	10,401	12,124	13,104	14,766	16,458	18,172	19,911	21,631	3.6%	3.1%	1.6%	2.4%	2.2%	2.0%	1.8%	1.7%
		TAGOLOAN II	9,843	11,169	12,602	13,607	15,333	17,089	18,870	20,674	22,460	2.6%	2.4%	1.5%	2.4%	2.2%	2.0%	1.8%	1.7%
		KAPATAGAN	13,432	15,521	20,498	22,234	25,052	27,922	30,833	33,782	36,700	2.9%	5.7%	1.6%	2.4%	2.2%	2.0%	1.8%	1.7%
		SULTAN DUMALONDONG	10,522	11,298	12,500	13,488	15,199	16,939	18,705	20,493	22,262	1.4%	2.0%	1.5%	2.4%	2.2%	2.0%	1.8%	1.7%
		LUMBACA-UNAYAN	6,279	7,260	8,131	8,778	9,890	11,022	12,171	13,337	14,488	2.9%	2.3%	1.5%	2.4%	2.2%	2.0%	1.8%	1.7%
		Sub-total	933,260	1,045,429	1,195,518	1,291,397	1,455,216	1,621,907	1,790,909	1,962,214	2,131,680	2.3%	2.7%	1.6%	2.4%	2.2%	2.0%	1.8%	1.7%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
BARMM	Maguindanao	AMPATUAN	17,800	24,801	28,941	32,162	35,508	38,709	41,688	44,392	46,770	6.9%	3.1%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		BULDON	33,729	35,282	39,684	44,052	48,633	53,020	57,099	60,803	64,061	0.9%	2.4%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		BULUAN	38,106	50,008	57,406	63,765	70,398	76,747	82,654	88,014	92,728	5.6%	2.8%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		Cotabato City	-	-	325,079	326,807	351,437	374,760	396,871	416,903	433,673	-	-	0.1%	1.5%	1.3%	1.2%	1.0%	0.8%
		DATU PAGLAS	20,290	28,387	33,682	37,450	41,345	45,074	48,543	51,691	54,459	6.9%	3.5%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		DATU PIANG	28,492	25,600	28,380	31,489	34,764	37,900	40,818	43,465	45,793	-2.1%	2.1%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		DATU ODIN SINSUAT (DINAIG)	76,332	99,210	116,768	129,800	143,300	156,226	168,250	179,161	188,757	5.4%	3.3%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		SHARIFF AGUAK (MAGANOY) (Capital)	34,376	31,692	33,982	37,665	41,583	45,334	48,823	51,989	54,774	-1.6%	1.4%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		MATANOG	23,269	29,770	36,034	40,089	44,259	48,250	51,964	55,334	58,298	5.1%	3.9%	2.2%	2.0%	1.7%	1.5%	1.3%	1.0%
		PAGALUNGAN	31,891	39,653	46,277	51,427	56,776	61,897	66,661	70,984	74,786	4.5%	3.1%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		PARANG	73,328	89,194	102,914	114,331	126,221	137,605	148,197	157,808	166,261	4.0%	2.9%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		SULTAN KUDARAT (NULING)	82,758	95,201	105,121	116,625	128,753	140,367	151,171	160,973	169,597	2.8%	2.0%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		SULTAN SA BARONGIS (LAMBAYONG)	22,547	22,425	24,476	27,145	29,969	32,671	35,186	37,468	39,475	-0.1%	1.8%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		KABUNTALAN (TUMBAO)	16,794	17,276	25,439	28,446	31,404	34,237	36,872	39,263	41,366	0.6%	8.0%	2.3%	2.0%	1.7%	1.5%	1.3%	1.0%
		UPI	45,444	53,583	59,004	65,455	72,262	78,779	84,843	90,345	95,184	3.3%	1.9%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		TALAYAN	16,042	30,032	34,156	37,928	41,874	45,651	49,164	52,352	55,156	13.4%	2.6%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		SOUTH UPI	35,990	40,178	43,197	47,884	52,863	57,631	62,066	66,091	69,632	2.2%	1.5%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		BARIRA	19,686	30,004	36,143	40,204	44,385	48,387	52,111	55,490	58,463	8.8%	3.8%	2.2%	2.0%	1.7%	1.5%	1.3%	1.0%
		GEN. S.K. PENDATUN	24,004	28,103	31,263	34,693	38,301	41,755	44,969	47,885	50,449	3.2%	2.2%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		MAMASAPANO	22,354	24,800	27,807	30,865	34,076	37,149	40,008	42,602	44,884	2.1%	2.3%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		TALITAY	13,328	14,863	17,463	19,411	21,430	23,363	25,161	26,793	28,227	2.2%	3.3%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		PAGAGAWAN	31,265	34,820	37,314	41,359	45,659	49,778	53,610	57,086	60,143	2.2%	1.4%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		PAGLAT	11,207	15,920	18,727	20,816	22,982	25,055	26,983	28,733	30,273	7.3%	3.3%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		SULTAN MASTURA	21,712	22,261	25,331	28,130	31,055	33,856	36,461	38,825	40,905	0.5%	2.6%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		GUINDULUNGAN	16,071	19,911	24,933	27,765	30,652	33,417	35,989	38,323	40,376	4.4%	4.6%	2.2%	2.0%	1.7%	1.5%	1.3%	1.0%
		DATU SAUDI-AMPATUAN	20,330	26,427	31,060	34,526	38,116	41,554	44,753	47,654	50,207	5.4%	3.3%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		DATU UNSAY	12,490	11,813	12,890	14,296	15,782	17,206	18,529	19,732	20,788	-1.1%	1.8%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		DATU ABDULLAH SANGKI	17,079	23,878	30,117	33,544	37,033	40,373	43,480	46,299	48,779	6.9%	4.8%	2.2%	2.0%	1.7%	1.5%	1.3%	1.0%
		RAJAH BUAYAN	17,423	23,652	27,832	30,939	34,156	37,237	40,104	42,704	44,991	6.3%	3.3%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		DATU BLAH T. SINSUAT	16,533	25,024	28,243	31,355	34,617	37,739	40,644	43,280	45,598	8.6%	2.4%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		DATU ANGGAL MIDTIMBANG	13,339	25,016	28,224	31,335	34,593	37,714	40,617	43,250	45,567	13.4%	2.4%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		MANGUDADATU	14,864	25,046	26,203	29,020	32,038	34,928	37,615	40,055	42,200	11.0%	0.9%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		PANDAG	13,795	25,057	26,356	29,195	32,231	35,138	37,842	40,296	42,454	12.7%	1.0%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		NORTHERN KABUNTALAN	14,251	25,232	26,277	29,097	32,123	35,020	37,716	40,161	42,313	12.1%	0.8%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		DATU HOFFER AMPATUAN	16,295	25,012	26,660	29,544	32,616	35,558	38,294	40,779	42,963	8.9%	1.3%	2.1%	2.0%	1.7%	1.5%	1.3%	1.0%
		DATU SALIBO	15,062	14,947	18,795	20,931	23,108	25,192	27,132	28,894	30,442	-0.2%	4.7%	2.2%	2.0%	1.7%	1.5%	1.3%	1.0%
		SHARIFF SAYDONA MUSTAPHA	16,442	19,855	25,080	27,934	30,840	33,621	36,210	38,558	40,624	3.8%	4.8%	2.2%	2.0%	1.7%	1.5%	1.3%	1.0%
		Sub-total	944,718	1,173,933	1,667,258	1,862,745	2,056,478	2,241,956	2,414,515	2,571,093	2,708,817	4.4%	7.3%	2.2%	2.0%	1.7%	1.5%	1.3%	1.0%

Region	Province	City/ Municipality	Census Results			Population Projection (Low) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
BARMM	Sulu	INDANAN	65,858	80,883	93,168	101,698	112,064	122,103	131,820	141,042	149,743	4.2%	2.9%	1.8%	2.0%	1.7%	1.5%	1.4%	1.2%
		JOLO (Capital)	118,307	125,564	137,266	149,590	164,839	179,606	193,898	207,464	220,261	1.2%	1.8%	1.7%	2.0%	1.7%	1.5%	1.4%	1.2%
		KALINGALAN CALUANG	26,848	31,567	39,549	43,276	47,687	51,959	56,094	60,019	63,721	3.3%	4.6%	1.8%	2.0%	1.7%	1.5%	1.4%	1.2%
		LUUK	29,897	32,162	37,873	41,367	45,584	49,668	53,620	57,371	60,911	1.5%	3.3%	1.8%	2.0%	1.7%	1.5%	1.4%	1.2%
		MAIMBUNG	28,445	37,914	59,597	65,581	72,266	78,740	85,006	90,953	96,564	5.9%	9.5%	1.9%	2.0%	1.7%	1.5%	1.4%	1.2%
		HADJI PANGLIMA TAHIL (MARUNGGAS)	5,850	6,375	7,906	8,649	9,531	10,385	11,210	11,994	12,734	1.7%	4.4%	1.8%	2.0%	1.7%	1.5%	1.4%	1.2%
		OLD PANAMAO	37,933	40,998	49,849	54,501	60,055	65,436	70,642	75,585	80,248	1.6%	4.0%	1.8%	2.0%	1.7%	1.5%	1.4%	1.2%
		PANGUTARAN	28,461	30,613	36,374	39,741	43,792	47,715	51,512	55,117	58,517	1.5%	3.5%	1.8%	2.0%	1.7%	1.5%	1.4%	1.2%
		PARANG	58,028	62,172	71,495	78,037	85,991	93,695	101,150	108,227	114,903	1.4%	2.8%	1.8%	2.0%	1.7%	1.5%	1.4%	1.2%
		PATA	14,918	22,163	24,736	26,974	29,724	32,386	34,963	37,409	39,716	8.2%	2.2%	1.7%	2.0%	1.7%	1.5%	1.4%	1.2%
		PATIKUL	42,036	62,287	79,564	87,107	95,986	104,585	112,908	120,808	128,259	8.2%	5.0%	1.8%	2.0%	1.7%	1.5%	1.4%	1.2%
		SIASI	64,229	67,705	81,689	89,291	98,393	107,206	115,737	123,833	131,473	1.1%	3.8%	1.8%	2.0%	1.7%	1.5%	1.4%	1.2%
		TALIPAO	75,173	80,255	100,088	109,505	120,667	131,477	141,939	151,870	161,239	1.3%	4.5%	1.8%	2.0%	1.7%	1.5%	1.4%	1.2%
		TAPUL	16,370	18,197	20,799	22,697	25,010	27,250	29,419	31,478	33,419	2.1%	2.7%	1.8%	2.0%	1.7%	1.5%	1.4%	1.2%
		TONGKIL	17,802	24,161	35,616	39,135	43,125	46,989	50,727	54,276	57,623	6.3%	8.1%	1.9%	2.0%	1.7%	1.5%	1.4%	1.2%
		PANGLIMA ESTINO (NEW PANAMAO)	27,724	28,817	34,249	37,420	41,234	44,929	48,505	51,898	55,100	0.8%	3.5%	1.8%	2.0%	1.7%	1.5%	1.4%	1.2%
		LUGUS	19,839	21,897	29,043	31,830	35,074	38,217	41,257	44,144	46,867	2.0%	5.8%	1.8%	2.0%	1.7%	1.5%	1.4%	1.2%
		PANDAMI	22,474	25,885	33,177	36,325	40,028	43,614	47,085	50,379	53,486	2.9%	5.1%	1.8%	2.0%	1.7%	1.5%	1.4%	1.2%
		OMAR	18,098	25,116	28,070	30,611	33,730	36,752	39,677	42,453	45,071	6.8%	2.2%	1.7%	2.0%	1.7%	1.5%	1.4%	1.2%
		Sub-total	718,290	824,731	1,000,108	1,093,334	1,204,783	1,312,712	1,417,167	1,516,319	1,609,851	2.8%	3.9%	1.8%	2.0%	1.7%	1.5%	1.4%	1.2%
	Tawi-Tawi	PANGLIMA SUGALA (BALIMBING)	38,704	44,184	48,055	49,196	54,908	60,763	66,738	72,800	78,956	2.7%	1.7%	0.5%	2.2%	2.0%	1.9%	1.8%	1.6%
		BONGAO (Capital)	79,362	100,527	116,118	119,099	132,927	147,103	161,566	176,244	191,148	4.8%	2.9%	0.5%	2.2%	2.0%	1.9%	1.8%	1.6%
		MAPUN (CAGAYAN DE TAWI-TAWI)	24,168	26,597	30,038	30,788	34,363	38,028	41,768	45,562	49,414	1.9%	2.5%	0.5%	2.2%	2.0%	1.9%	1.8%	1.6%
		SIMUNUL	34,538	31,223	34,245	35,067	39,139	43,314	47,572	51,893	56,282	-2.0%	1.9%	0.5%	2.2%	2.0%	1.9%	1.8%	1.6%
		SITANGKAI	30,514	33,334	37,319	38,240	42,680	47,231	51,875	56,589	61,375	1.8%	2.3%	0.5%	2.2%	2.0%	1.9%	1.8%	1.6%
		SOUTH UBIAN	27,741	25,935	29,583	30,330	33,853	37,463	41,146	44,885	48,681	-1.3%	2.7%	0.5%	2.2%	2.0%	1.9%	1.8%	1.6%
		TANDUBAS	27,748	29,390	34,316	35,208	39,297	43,488	47,763	52,103	56,510	1.2%	3.1%	0.5%	2.2%	2.0%	1.9%	1.8%	1.6%
		TURTLE ISLANDS	3,772	4,727	5,683	5,836	6,515	7,210	7,919	8,639	9,369	4.6%	3.8%	0.5%	2.2%	2.0%	1.9%	1.8%	1.6%
		LANGUYAN	42,690	33,494	37,096	37,999	42,411	46,934	51,549	56,232	60,988	-4.7%	2.1%	0.5%	2.2%	2.0%	1.9%	1.8%	1.6%
		SAPA-SAPA	28,781	30,917	33,580	34,376	38,367	42,457	46,632	50,870	55,172	1.4%	1.7%	0.5%	2.2%	2.0%	1.9%	1.8%	1.6%
		SIBUTU	28,532	30,387	34,243	35,094	39,168	43,346	47,608	51,933	56,325	1.3%	2.4%	0.5%	2.2%	2.0%	1.9%	1.8%	1.6%
		Sub-total	366,550	390,715	440,276	451,236	503,627	557,336	612,136	667,749	724,219	1.3%	2.4%	0.5%	2.2%	2.0%	1.9%	1.8%	1.6%
	Interim Province	CARMEN CLUSTER	-	-	28,463	29,218	31,674	34,055	36,267	38,230	39,869	-	-	0.5%	1.6%	1.5%	1.3%	1.1%	0.8%
		KABACAN CLUSTER	-	-	16,658	17,100	18,537	19,931	21,225	22,374	23,333	-	-	0.5%	1.6%	1.5%	1.3%	1.1%	0.8%
		MIDSAYAP CLUSTER I	-	-	25,573	26,251	28,458	30,597	32,585	34,348	35,821	-	-	0.5%	1.6%	1.5%	1.3%	1.1%	0.8%
		MIDSAYAP CLUSTER II	-	-	22,438	23,033	24,969	26,847	28,590	30,137	31,430	-	-	0.5%	1.6%	1.5%	1.3%	1.1%	0.8%
		PIGKAWAYAN CLUSTER	-	-	19,627	20,148	21,841	23,483	25,008	26,362	27,492	-	-	0.5%	1.6%	1.5%	1.3%	1.1%	0.8%
		PIKIT CLUSTER I	-	-	38,795	39,824	43,172	46,417	49,432	52,107	54,342	-	-	0.5%	1.6%	1.5%	1.3%	1.1%	0.8%
		PIKIT CLUSTER II	-	-	34,341	35,252	38,215	41,088	43,757	46,125	48,103	-	-	0.5%	1.6%	1.5%	1.3%	1.1%	0.8%
		PIKIT CLUSTER III	-	-	29,538	30,322	32,870	35,342	37,637	39,674	41,375	-	-	0.5%	1.6%	1.5%	1.3%	1.1%	0.8%
		Sub-total	-	-	215,433	221,148	239,737	257,760	274,500	289,356	301,765	-	-	0.5%	1.6%	1.5%	1.3%	1.1%	0.8%
		Total	3,256,140	3,781,387	4,944,800	5,389,506	5,991,168	6,587,690	7,171,821	7,737,740	8,276,029	3.0%	5.5%	1.7%	2.1%	1.9%	1.7%	1.5%	1.4%

Table 1-2 Population Projection by Municipality (High)

Region	City	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
		2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
NCR	CITY OF MANILA	1,652,171	1,780,148	1,846,513	1,964,516	2,017,148	2,054,698	2,076,547	2,078,169	2,058,635	1.5%	0.7%	1.2%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF MANDALUYONG	328,699	386,276	425,758	453,868	466,027	474,702	479,750	480,126	475,611	3.3%	2.0%	1.3%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF MARIKINA	424,150	450,741	456,059	484,791	497,779	507,046	512,438	512,838	508,017	1.2%	0.2%	1.2%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF PASIG	669,773	755,300	803,159	855,194	878,105	894,451	903,962	904,668	896,164	2.4%	1.2%	1.3%	0.5%	0.4%	0.2%	0.0%	-0.2%
	QUEZON CITY	2,761,720	2,936,116	2,960,048	3,146,138	3,230,427	3,290,563	3,325,555	3,328,153	3,296,866	1.2%	0.2%	1.2%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF SAN JUAN	121,430	122,180	126,347	134,407	138,008	140,577	142,072	142,183	140,847	0.1%	0.7%	1.2%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CALOOCAN CITY	1,489,040	1,583,978	1,661,584	1,768,435	1,815,814	1,849,617	1,869,285	1,870,745	1,853,159	1.2%	1.0%	1.3%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF MALABON	353,337	365,525	380,522	404,888	415,736	423,474	427,978	428,312	424,286	0.7%	0.8%	1.2%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF NAVOTAS	249,131	249,463	247,543	262,960	270,004	275,031	277,956	278,172	275,557	0.0%	-0.2%	1.2%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF VALENZUELA	575,356	620,422	714,978	763,237	783,684	798,272	806,762	807,393	799,804	1.5%	2.9%	1.3%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF LAS PIÑAS	552,573	588,894	606,293	644,874	662,151	674,477	681,650	682,182	675,769	1.3%	0.6%	1.2%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF MAKATI	529,039	582,602	629,616	670,761	688,732	701,553	709,014	709,566	702,896	1.9%	1.6%	1.3%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF MUNTINLUPA	459,941	504,509	543,445	578,897	594,407	605,472	611,911	612,389	606,632	1.9%	1.5%	1.3%	0.5%	0.4%	0.2%	0.0%	-0.2%
	CITY OF PARAÑAQUE	588,126	665,822	689,992	734,063	753,729	767,760	775,925	776,531	769,231	2.5%	0.7%	1.2%	0.5%	0.4%	0.2%	0.0%	-0.2%
	PASAY CITY	392,869	416,522	440,656	469,126	481,694	490,661	495,879	496,266	491,601	1.2%	1.1%	1.3%	0.5%	0.4%	0.2%	0.0%	-0.2%
	PATEROS	64,147	63,840	65,227	69,361	71,219	72,544	73,316	73,373	72,683	-0.1%	0.4%	1.2%	0.5%	0.4%	0.2%	0.0%	-0.2%
	TAGUIG CITY	644,473	804,915	886,722	945,249	970,573	988,641	999,154	999,935	990,535	4.5%	2.0%	1.3%	0.5%	0.4%	0.2%	0.0%	-0.2%
	Total	11,855,975	12,877,253	13,484,462	14,350,764	14,735,236	15,009,540	15,169,154	15,181,001	15,038,293	1.7%	0.9%	1.3%	0.5%	0.4%	0.2%	0.0%	-0.2%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CAR	Abra	BANGUED (Capital)	43,936	48,163	50,382	51,932	54,507	56,753	58,798	60,519	61,831	1.9%	0.9%	0.6%	1.0%	0.8%	0.7%	0.6%	0.4%
		BOLINEY	4,063	3,573	4,551	4,718	4,953	5,156	5,341	5,498	5,617	-2.5%	5.0%	0.7%	1.0%	0.8%	0.7%	0.6%	0.4%
		BUCAY	17,126	17,115	17,953	18,506	19,423	20,223	20,953	21,565	22,032	0.0%	1.0%	0.6%	1.0%	0.8%	0.7%	0.6%	0.4%
		BUCLOC	2,176	2,501	2,395	2,461	2,583	2,689	2,786	2,868	2,930	2.8%	-0.9%	0.5%	1.0%	0.8%	0.7%	0.6%	0.4%
		DAGUIOMAN	1,715	2,088	2,019	2,076	2,178	2,268	2,349	2,418	2,470	4.0%	-0.7%	0.6%	1.0%	0.8%	0.7%	0.6%	0.4%
		DANGLAS	4,734	4,192	4,074	4,189	4,396	4,577	4,742	4,881	4,987	-2.4%	-0.6%	0.6%	1.0%	0.8%	0.7%	0.6%	0.4%
		DOLORES	11,499	11,315	11,512	11,855	12,442	12,955	13,421	13,814	14,114	-0.3%	0.3%	0.6%	1.0%	0.8%	0.7%	0.6%	0.4%
		LA PAZ	14,882	15,437	16,493	17,012	17,856	18,592	19,262	19,825	20,256	0.7%	1.3%	0.6%	1.0%	0.8%	0.7%	0.6%	0.4%
		LACUB	2,977	3,403	3,612	3,724	3,909	4,071	4,217	4,340	4,434	2.7%	1.2%	0.6%	1.0%	0.8%	0.7%	0.6%	0.4%
		LAGANGILANG	13,824	14,255	14,914	15,373	16,135	16,800	17,405	17,914	18,303	0.6%	0.9%	0.6%	1.0%	0.8%	0.7%	0.6%	0.4%
		LAGAYAN	4,477	4,499	4,488	4,619	4,847	5,047	5,229	5,382	5,499	0.1%	0.0%	0.6%	1.0%	0.8%	0.7%	0.6%	0.4%
		LANGIDEN	3,170	3,198	3,576	3,694	3,877	4,037	4,183	4,306	4,400	0.2%	2.3%	0.7%	1.0%	0.8%	0.7%	0.6%	0.4%
		LICUAN-BAAY (LICUAN)	4,864	4,689	4,566	4,695	4,928	5,131	5,316	5,472	5,590	-0.7%	-0.5%	0.6%	1.0%	0.8%	0.7%	0.6%	0.4%
		LUBA	6,391	6,339	6,518	6,714	7,047	7,338	7,603	7,825	7,995	-0.2%	0.6%	0.6%	1.0%	0.8%	0.7%	0.6%	0.4%
		MALIBCONG	3,807	3,428	4,027	4,166	4,373	4,553	4,717	4,855	4,961	-2.1%	3.3%	0.7%	1.0%	0.8%	0.7%	0.6%	0.4%
		MANABO	10,756	10,761	11,611	11,980	12,575	13,092	13,564	13,961	14,263	0.0%	1.5%	0.6%	1.0%	0.8%	0.7%	0.6%	0.4%
		PEÑARRUBIA	6,544	6,640	6,951	7,166	7,520	7,830	8,112	8,350	8,531	0.3%	0.9%	0.6%	1.0%	0.8%	0.7%	0.6%	0.4%
		PIDIGAN	11,528	12,185	12,475	12,850	13,486	14,041	14,548	14,974	15,299	1.1%	0.5%	0.6%	1.0%	0.8%	0.7%	0.6%	0.4%
		PILAR	9,908	10,223	10,146	10,438	10,957	11,408	11,819	12,165	12,428	0.6%	-0.2%	0.6%	1.0%	0.8%	0.7%	0.6%	0.4%
		SALLAPADAN	5,985	6,622	6,389	6,567	6,892	7,176	7,435	7,653	7,818	2.0%	-0.7%	0.6%	1.0%	0.8%	0.7%	0.6%	0.4%
		SAN ISIDRO	4,888	4,574	4,745	4,890	5,132	5,344	5,536	5,698	5,822	-1.3%	0.7%	0.6%	1.0%	0.8%	0.7%	0.6%	0.4%
		SAN JUAN	10,546	9,867	10,688	11,029	11,576	12,053	12,487	12,852	13,131	-1.3%	1.6%	0.6%	1.0%	0.8%	0.7%	0.6%	0.4%
		SAN QUINTIN	5,233	5,438	5,705	5,881	6,172	6,426	6,659	6,853	7,002	0.8%	1.0%	0.6%	1.0%	0.8%	0.7%	0.6%	0.4%
		TAYUM	13,940	14,467	14,869	15,317	16,077	16,739	17,342	17,851	18,237	0.7%	0.5%	0.6%	1.0%	0.8%	0.7%	0.6%	0.4%
		TINEG	4,668	5,097	4,977	5,118	5,372	5,593	5,795	5,964	6,093	1.8%	-0.5%	0.6%	1.0%	0.8%	0.7%	0.6%	0.4%
		TUBO	5,719	5,699	5,674	5,838	6,127	6,380	6,610	6,803	6,952	-0.1%	-0.1%	0.6%	1.0%	0.8%	0.7%	0.6%	0.4%
		VILLAVICIOSA	5,377	5,392	5,675	5,851	6,140	6,393	6,623	6,818	6,967	0.1%	1.0%	0.6%	1.0%	0.8%	0.7%	0.6%	0.4%
		Sub-total	234,733	241,160	250,985	258,659	271,483	282,667	292,857	301,422	307,964	0.5%	0.8%	0.6%	1.0%	0.8%	0.7%	0.6%	0.4%
	Apayao	CALANASAN (BAYAG)	11,568	12,604	12,550	13,053	14,078	14,993	15,867	16,607	17,221	1.7%	-0.1%	0.8%	1.5%	1.3%	1.1%	0.9%	0.7%
		CONNER	24,811	26,051	27,552	28,717	30,972	32,985	34,908	36,534	37,886	1.0%	1.1%	0.8%	1.5%	1.3%	1.1%	0.9%	0.7%
		FLORA	16,743	17,391	17,944	18,687	20,154	21,464	22,715	23,773	24,652	0.8%	0.6%	0.8%	1.5%	1.3%	1.1%	0.9%	0.7%
		KABUGAO (Capital)	16,170	15,537	16,215	16,893	18,219	19,403	20,534	21,491	22,286	-0.8%	0.9%	0.8%	1.5%	1.3%	1.1%	0.9%	0.7%
		LUNA	18,029	19,063	21,297	22,236	23,983	25,541	27,031	28,290	29,337	1.1%	2.2%	0.9%	1.5%	1.3%	1.1%	0.9%	0.7%
		PUDTOL	13,305	14,925	15,491	16,135	17,403	18,533	19,614	20,528	21,288	2.3%	0.7%	0.8%	1.5%	1.3%	1.1%	0.9%	0.7%
		SANTA MARCELA	12,010	13,613	13,317	13,843	14,930	15,901	16,827	17,611	18,263	2.5%	-0.4%	0.8%	1.5%	1.3%	1.1%	0.9%	0.7%
		Sub-total	112,636	119,184	124,366	129,563	139,736	148,820	157,497	164,834	170,932	1.1%	0.9%	0.8%	1.5%	1.3%	1.1%	0.9%	0.7%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CAR	Benguet	ATOK	19,242	19,668	19,218	20,401	21,769	22,989	24,096	25,029	25,735	0.4%	-0.5%	1.2%	1.3%	1.1%	0.9%	0.8%	0.6%
		BAKUN	13,587	15,357	14,535	15,413	16,445	17,367	18,204	18,909	19,441	2.5%	-1.1%	1.2%	1.3%	1.1%	0.9%	0.8%	0.6%
		BOKOD	12,648	13,756	14,435	15,363	16,391	17,310	18,143	18,846	19,377	1.7%	1.0%	1.3%	1.3%	1.1%	0.9%	0.8%	0.6%
		BUGUIAS	39,271	43,627	44,877	47,730	50,925	53,781	56,373	58,556	60,204	2.1%	0.6%	1.2%	1.3%	1.1%	0.9%	0.8%	0.6%
		ITOGON	55,960	59,820	61,498	65,407	69,786	73,699	77,252	80,242	82,502	1.3%	0.6%	1.2%	1.3%	1.1%	0.9%	0.8%	0.6%
		KABAYAN	13,588	15,260	15,806	16,814	17,940	18,946	19,860	20,628	21,209	2.3%	0.7%	1.2%	1.3%	1.1%	0.9%	0.8%	0.6%
		KAPANGAN	20,084	19,361	19,297	20,501	21,875	23,101	24,214	25,153	25,861	-0.7%	-0.1%	1.2%	1.3%	1.1%	0.9%	0.8%	0.6%
		KIBUNGAN	16,850	17,292	17,051	18,109	19,320	20,404	21,388	22,216	22,842	0.5%	-0.3%	1.2%	1.3%	1.1%	0.9%	0.8%	0.6%
		LA TRINIDAD (Capital)	107,188	129,133	137,404	146,305	156,100	164,854	172,798	179,490	184,544	3.8%	1.2%	1.3%	1.3%	1.1%	0.9%	0.8%	0.6%
		MANKAYAN	35,586	35,953	37,233	39,609	42,262	44,631	46,783	48,594	49,963	0.2%	0.7%	1.2%	1.3%	1.1%	0.9%	0.8%	0.6%
		SABLAN	10,511	11,457	11,588	12,318	13,143	13,880	14,550	15,113	15,538	1.7%	0.2%	1.2%	1.3%	1.1%	0.9%	0.8%	0.6%
		TUBA	42,874	47,648	48,312	51,358	54,796	57,869	60,658	63,006	64,781	2.1%	0.3%	1.2%	1.3%	1.1%	0.9%	0.8%	0.6%
		TUBLAY	16,555	17,892	19,429	20,702	22,088	23,326	24,452	25,398	26,113	1.6%	1.7%	1.3%	1.3%	1.1%	0.9%	0.8%	0.6%
		BAGUIO CITY	318,676	345,366	366,358	390,052	416,165	439,503	460,685	478,526	492,000	1.6%	1.2%	1.3%	1.3%	1.1%	0.9%	0.8%	0.6%
		Sub-total	722,620	791,590	827,041	880,082	939,003	991,661	1,039,452	1,079,706	1,110,111	1.8%	0.9%	1.3%	1.3%	1.1%	0.9%	0.8%	0.6%
	Ifugao	BANAUE	22,365	21,837	20,652	21,433	23,257	24,996	26,696	28,336	29,891	-0.5%	-1.1%	0.7%	1.6%	1.5%	1.3%	1.2%	1.1%
		HUNGDUAN	9,933	9,400	8,866	9,200	9,983	10,728	11,459	12,164	12,830	-1.1%	-1.2%	0.7%	1.6%	1.4%	1.3%	1.2%	1.1%
		KIANGAN	15,837	17,048	17,691	18,421	19,990	21,483	22,944	24,356	25,691	1.5%	0.7%	0.8%	1.6%	1.5%	1.3%	1.2%	1.1%
		LAGAWE (Capital)	18,077	19,333	18,876	19,613	21,283	22,873	24,429	25,930	27,353	1.4%	-0.5%	0.8%	1.6%	1.5%	1.3%	1.2%	1.1%
		LAMUT	23,088	25,279	26,235	27,317	29,642	31,858	34,025	36,116	38,097	1.8%	0.7%	0.8%	1.6%	1.5%	1.3%	1.2%	1.1%
		MAYOYAO	16,413	17,331	15,621	16,183	17,561	18,873	20,157	21,396	22,570	1.1%	-2.1%	0.7%	1.6%	1.5%	1.3%	1.2%	1.1%
		ALFONSO LISTA (POTIA)	28,410	32,119	34,061	35,492	38,513	41,390	44,207	46,924	49,498	2.5%	1.2%	0.8%	1.6%	1.5%	1.3%	1.2%	1.1%
		AGUINALDO	18,610	19,408	21,128	22,033	23,909	25,696	27,444	29,131	30,729	0.8%	1.7%	0.8%	1.6%	1.5%	1.3%	1.2%	1.1%
		HINGYON	9,795	9,227	9,930	10,353	11,233	12,073	12,894	13,688	14,438	-1.2%	1.5%	0.8%	1.6%	1.5%	1.3%	1.2%	1.1%
		TINOC	14,147	16,559	18,475	19,283	20,923	22,487	24,017	25,493	26,891	3.2%	2.2%	0.9%	1.6%	1.5%	1.3%	1.2%	1.1%
		ASIPULO	14,403	15,261	15,963	16,626	18,041	19,389	20,708	21,982	23,187	1.2%	0.9%	0.8%	1.6%	1.5%	1.3%	1.2%	1.1%
		Sub-total	191,078	202,802	207,498	215,954	234,335	251,845	268,981	285,515	301,175	1.2%	0.5%	0.8%	1.6%	1.5%	1.3%	1.2%	1.1%
	Kalinga	BALBALAN	12,082	12,195	12,914	13,423	14,428	15,347	16,174	16,906	17,493	0.2%	1.2%	0.8%	1.5%	1.2%	1.1%	0.9%	0.7%
		LUBUAGAN	9,369	8,733	9,323	9,694	10,420	11,083	11,679	12,208	12,633	-1.4%	1.3%	0.8%	1.5%	1.2%	1.1%	0.9%	0.7%
		PASIL	9,626	9,644	10,577	11,007	11,831	12,584	13,260	13,861	14,342	0.0%	1.9%	0.8%	1.5%	1.2%	1.1%	0.9%	0.7%
		PINUKPUK	29,596	32,026	34,275	35,639	38,310	40,749	42,939	44,887	46,447	1.6%	1.4%	0.8%	1.5%	1.2%	1.1%	0.9%	0.7%
		RIZAL (LIWAN)	15,942	17,038	19,554	20,377	21,904	23,297	24,551	25,664	26,556	1.3%	2.8%	0.8%	1.5%	1.2%	1.1%	0.9%	0.7%
		CITY OF TABUK (Capital)	103,912	110,642	121,033	125,944	135,379	143,993	151,734	158,614	164,127	1.3%	1.8%	0.8%	1.5%	1.2%	1.1%	0.9%	0.7%
		TANUDAN	8,529	9,534	8,746	9,044	9,722	10,341	10,897	11,391	11,787	2.3%	-1.7%	0.7%	1.5%	1.2%	1.1%	0.9%	0.7%
		TINGLAYAN	12,557	12,868	13,148	13,651	14,674	15,607	16,445	17,192	17,789	0.5%	0.4%	0.8%	1.5%	1.2%	1.1%	0.9%	0.7%
		Sub-total	201,613	212,680	229,570	238,780	256,669	273,001	287,679	300,723	311,175	1.1%	1.5%	0.8%	1.5%	1.2%	1.1%	0.9%	0.7%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CAR	Mountain Province	BARLIG	5,838	4,819	4,796	4,905	5,312	5,699	6,077	6,433	6,769	-3.8%	-0.1%	0.5%	1.6%	1.4%	1.3%	1.1%	1.0%
		BAUKO	30,172	31,065	32,021	32,780	35,506	38,096	40,612	42,997	45,236	0.6%	0.6%	0.5%	1.6%	1.4%	1.3%	1.1%	1.0%
		BESAO	7,818	7,040	6,873	7,022	7,607	8,162	8,701	9,211	9,691	-2.1%	-0.5%	0.4%	1.6%	1.4%	1.3%	1.1%	1.0%
		BONTOC (Capital)	23,980	24,643	24,104	24,629	26,678	28,624	30,515	32,306	33,989	0.5%	-0.4%	0.4%	1.6%	1.4%	1.3%	1.1%	1.0%
		NATONIN	10,048	10,272	10,339	10,575	11,454	12,289	13,101	13,870	14,592	0.4%	0.1%	0.5%	1.6%	1.4%	1.3%	1.1%	1.0%
		PARACELIS	26,476	28,121	31,168	31,983	34,642	37,169	39,624	41,950	44,134	1.2%	2.1%	0.5%	1.6%	1.4%	1.3%	1.1%	1.0%
		SABANGAN	8,741	9,315	9,621	9,850	10,669	11,447	12,203	12,919	13,592	1.3%	0.6%	0.5%	1.6%	1.4%	1.3%	1.1%	1.0%
		SADANGA	9,181	8,799	8,427	8,605	9,320	10,000	10,661	11,287	11,875	-0.8%	-0.9%	0.4%	1.6%	1.4%	1.3%	1.1%	1.0%
		SAGADA	11,244	11,127	11,510	11,784	12,764	13,694	14,599	15,456	16,262	-0.2%	0.7%	0.5%	1.6%	1.4%	1.3%	1.1%	1.0%
		TADIAN	20,689	19,389	19,341	19,777	21,420	22,983	24,502	25,940	27,292	-1.3%	0.0%	0.4%	1.6%	1.4%	1.3%	1.1%	1.0%
		Sub-total	154,187	154,590	158,200	161,910	175,372	188,164	200,597	212,371	223,432	0.1%	0.5%	0.5%	1.6%	1.4%	1.3%	1.1%	1.0%
		Total	1,616,867	1,722,006	1,797,660	1,884,948	2,016,597	2,136,158	2,247,063	2,344,572	2,424,790	1.3%	0.9%	1.0%	1.4%	1.2%	1.0%	0.9%	0.7%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
ILOCOS	Ilocos Norte	ADAMS	1,785	1,792	2,189	2,278	2,283	2,263	2,204	2,122	2,021	0.1%	4.1%	0.8%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		BACARRA	31,648	32,215	33,496	34,696	34,742	34,393	33,513	32,249	30,712	0.4%	0.8%	0.7%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		BADOC	30,708	31,616	32,530	33,684	33,728	33,391	32,536	31,310	29,818	0.6%	0.6%	0.7%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		BANGUI	14,227	14,672	15,019	15,550	15,570	15,414	15,020	14,454	13,765	0.6%	0.5%	0.7%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		CITY OF BATAC	53,542	55,201	55,484	57,404	57,481	56,905	55,449	53,359	50,817	0.6%	0.1%	0.7%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		BURGOS	9,687	9,777	10,759	11,165	11,180	11,068	10,785	10,378	9,883	0.2%	1.9%	0.7%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		CARASI	1,473	1,567	1,607	1,664	1,666	1,648	1,606	1,546	1,472	1.2%	0.5%	0.7%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		CURRIMAO	11,970	12,184	12,215	12,637	12,654	12,526	12,206	11,746	11,187	0.4%	0.1%	0.7%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		DINGRAS	37,021	38,562	40,127	41,566	41,621	41,204	40,150	38,635	36,794	0.8%	0.8%	0.7%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		DUMALNEG	2,612	2,947	3,087	3,198	3,202	3,171	3,090	2,973	2,831	2.4%	0.9%	0.7%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		BANNA (ESPIRITU)	19,051	19,438	19,297	19,956	19,982	19,782	19,276	18,548	17,665	0.4%	-0.1%	0.7%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		LAOAG CITY (Capital)	104,904	111,125	111,651	115,514	115,669	114,508	111,579	107,372	102,257	1.2%	0.1%	0.7%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		MARCOS	16,984	17,777	18,010	18,638	18,664	18,476	18,003	17,324	16,498	0.9%	0.3%	0.7%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		NUEVA ERA	7,837	9,506	11,968	12,470	12,485	12,361	12,044	11,590	11,037	3.9%	4.7%	0.8%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		PAGUDPUD	21,877	23,770	25,098	26,010	26,045	25,784	25,125	24,178	23,026	1.7%	1.1%	0.7%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		PAOAY	23,956	24,866	25,001	25,868	25,902	25,642	24,987	24,044	22,900	0.7%	0.1%	0.7%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		PASUQUIN	27,952	28,980	29,678	30,724	30,766	30,458	29,679	28,560	27,199	0.7%	0.5%	0.7%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		PIDDIG	20,606	21,497	22,475	23,285	23,315	23,081	22,491	21,643	20,612	0.9%	0.9%	0.7%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		PINILI	16,732	17,300	17,626	18,244	18,268	18,085	17,622	16,958	16,151	0.7%	0.4%	0.7%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		SAN NICOLAS	34,237	36,736	38,895	40,312	40,367	39,962	38,938	37,471	35,686	1.4%	1.1%	0.7%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		SARRAT	24,770	25,212	25,186	26,053	26,087	25,825	25,166	24,216	23,062	0.4%	0.0%	0.7%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		SOLSONA	22,990	24,121	24,851	25,733	25,768	25,510	24,858	23,920	22,782	1.0%	0.6%	0.7%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		VINTAR	31,448	32,220	33,339	34,527	34,573	34,226	33,351	32,093	30,565	0.5%	0.7%	0.7%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%
		Sub-total	568,017	593,081	609,588	631,179	632,020	625,684	609,677	586,691	558,742	0.9%	0.6%	0.7%	0.0%	-0.2%	-0.5%	-0.8%	-1.0%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
ILOCOS	Ilocos Sur	ALILEM	6,640	6,695	7,361	7,661	7,807	7,878	7,872	7,788	7,611	0.2%	1.9%	0.8%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		BANAYOYO	7,694	7,748	7,931	8,232	8,391	8,467	8,460	8,368	8,178	0.1%	0.5%	0.7%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		BANTAY	34,323	35,731	37,118	38,552	39,297	39,649	39,615	39,188	38,295	0.8%	0.8%	0.8%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		BURGOS	11,679	12,224	12,793	13,290	13,547	13,668	13,657	13,510	13,202	0.9%	0.9%	0.8%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		CABUGAO	35,706	37,501	38,884	40,383	41,164	41,531	41,497	41,049	40,113	1.0%	0.7%	0.8%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		CITY OF CANDON	57,884	60,623	61,432	63,750	64,983	65,563	65,507	64,801	63,325	0.9%	0.3%	0.7%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		CAOAYAN	18,551	19,861	19,574	20,293	20,685	20,869	20,852	20,626	20,157	1.4%	-0.3%	0.7%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		CERVANTES	16,573	17,211	19,449	20,256	20,647	20,831	20,814	20,590	20,120	0.8%	2.5%	0.8%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		GALIMUYOD	10,011	10,748	10,244	10,607	10,813	10,909	10,900	10,782	10,536	1.4%	-1.0%	0.7%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		GREGORIO DEL PILAR (CONCEPCION)	4,219	4,875	4,472	4,624	4,713	4,755	4,752	4,700	4,593	2.9%	-1.7%	0.7%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		LIDLIDDA	4,398	4,647	4,705	4,883	4,978	5,021	5,018	4,964	4,851	1.1%	0.2%	0.7%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		MAGSINGAL	28,302	30,792	31,308	32,493	33,121	33,417	33,389	33,028	32,276	1.7%	0.3%	0.7%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		NAGBUKEL	4,938	5,259	5,465	5,676	5,786	5,837	5,832	5,770	5,637	1.3%	0.8%	0.8%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		NARVACAN	42,803	44,006	46,234	48,037	48,967	49,403	49,362	48,829	47,717	0.6%	1.0%	0.8%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		QUIRINO (ANGKAKI)	8,535	8,573	9,306	9,680	9,867	9,955	9,946	9,839	9,615	0.1%	1.7%	0.8%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SALCEDO (BAUGEN)	10,935	11,288	11,110	11,518	11,740	11,845	11,835	11,708	11,441	0.6%	-0.3%	0.7%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SAN EMILIO	7,427	7,407	7,206	7,468	7,612	7,681	7,674	7,591	7,417	-0.1%	-0.5%	0.7%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SAN ESTEBAN	8,072	8,349	8,381	8,694	8,863	8,941	8,933	8,837	8,635	0.7%	0.1%	0.7%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SAN ILDEFONSO	7,075	7,787	8,190	8,509	8,674	8,751	8,743	8,648	8,452	1.9%	1.0%	0.8%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SAN JUAN (LAPOG)	25,199	26,411	26,674	27,677	28,212	28,464	28,440	28,133	27,492	0.9%	0.2%	0.7%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SAN VICENTE	11,720	12,758	13,118	13,620	13,884	14,008	13,996	13,844	13,529	1.7%	0.6%	0.8%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SANTA	15,106	15,340	14,992	15,538	15,838	15,980	15,967	15,795	15,434	0.3%	-0.5%	0.7%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SANTA CATALINA	13,597	13,945	14,493	15,053	15,343	15,480	15,467	15,300	14,952	0.5%	0.8%	0.8%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SANTA CRUZ	37,911	39,868	41,366	42,962	43,793	44,183	44,145	43,670	42,675	1.0%	0.7%	0.8%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SANTA LUCIA	24,981	25,402	25,966	26,955	27,476	27,721	27,698	27,399	26,775	0.3%	0.4%	0.8%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SANTA MARIA	28,597	30,321	30,006	31,112	31,714	31,997	31,971	31,625	30,905	1.2%	-0.2%	0.7%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SANTIAGO	17,958	18,759	19,471	20,222	20,613	20,797	20,780	20,556	20,088	0.9%	0.7%	0.8%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SANTO DOMINGO	27,596	27,975	29,041	30,162	30,745	31,019	30,993	30,659	29,961	0.3%	0.8%	0.8%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SIGAY	2,419	2,737	2,552	2,640	2,691	2,715	2,713	2,684	2,622	2.5%	-1.4%	0.7%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SINAIT	25,427	25,640	25,998	26,980	27,501	27,745	27,722	27,423	26,798	0.2%	0.3%	0.7%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SUGPON	3,820	4,585	4,930	5,126	5,226	5,272	5,268	5,211	5,093	3.7%	1.5%	0.8%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		SUYO	10,622	11,446	10,766	11,141	11,358	11,459	11,448	11,325	11,068	1.5%	-1.2%	0.7%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		TAGUDIN	38,122	39,277	41,538	43,168	44,003	44,396	44,359	43,880	42,881	0.6%	1.1%	0.8%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		CITY OF VIGAN (Capital)	49,747	53,879	53,935	55,947	57,028	57,537	57,489	56,869	55,573	1.6%	0.0%	0.7%	0.4%	0.2%	0.0%	-0.2%	-0.5%
		Sub-total	658,587	689,668	706,009	732,906	747,079	753,743	753,113	744,988	728,016	0.9%	0.5%	0.8%	0.4%	0.2%	0.0%	-0.2%	-0.5%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
ILOCOS	La Union	AGOO	60,596	63,692	66,028	69,306	71,071	72,078	72,107	71,238	69,384	1.0%	0.7%	1.0%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		ARINGAY	44,949	47,458	50,380	52,924	54,271	55,039	55,062	54,399	52,983	1.1%	1.2%	1.0%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		BACNOTAN	40,307	42,078	44,388	46,619	47,807	48,484	48,503	47,920	46,674	0.9%	1.1%	1.0%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		BAGULIN	12,590	13,456	14,428	15,162	15,547	15,767	15,774	15,584	15,179	1.3%	1.4%	1.0%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		BALAOAN	37,910	39,188	40,339	42,332	43,410	44,024	44,042	43,512	42,381	0.7%	0.6%	1.0%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		BANGAR	34,522	35,947	38,041	39,957	40,974	41,554	41,571	41,072	40,004	0.8%	1.1%	1.0%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		BAUANG	70,735	75,032	78,449	82,369	84,467	85,662	85,697	84,667	82,463	1.2%	0.9%	1.0%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		BURGOS	7,850	8,067	9,006	9,477	9,717	9,855	9,860	9,741	9,487	0.5%	2.2%	1.0%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		CABA	21,244	22,039	23,119	24,277	24,895	25,247	25,258	24,955	24,305	0.7%	1.0%	1.0%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		LUNA	35,380	35,802	37,318	39,179	40,176	40,744	40,762	40,272	39,224	0.2%	0.8%	1.0%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		NAGUILIAN	48,407	54,221	52,189	54,638	56,030	56,823	56,847	56,163	54,702	2.3%	-0.8%	0.9%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		PUGO	16,518	19,690	19,337	20,260	20,776	21,070	21,078	20,824	20,283	3.6%	-0.4%	0.9%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		ROSARIO	52,679	55,458	60,278	63,370	64,983	65,903	65,930	65,138	63,442	1.0%	1.7%	1.0%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		CITY OF SAN FERNANDO (Capital)	114,963	121,812	125,640	131,856	135,213	137,127	137,183	135,533	132,008	1.2%	0.6%	1.0%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		SAN GABRIEL	16,628	18,172	18,943	19,888	20,395	20,683	20,691	20,442	19,911	1.8%	0.8%	1.0%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		SAN JUAN	35,098	37,188	40,507	42,588	43,673	44,291	44,308	43,776	42,636	1.2%	1.7%	1.0%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		SANTO TOMAS	35,999	39,092	40,846	42,887	43,979	44,601	44,619	44,083	42,936	1.7%	0.9%	1.0%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		SANTOL	12,007	12,476	14,166	14,912	15,292	15,508	15,515	15,328	14,928	0.8%	2.6%	1.0%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		SUDIPEN	16,531	17,056	17,187	18,023	18,483	18,744	18,753	18,527	18,045	0.6%	0.2%	1.0%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		TUBAO	26,993	28,729	31,763	33,410	34,261	34,746	34,761	34,341	33,449	1.3%	2.0%	1.0%	0.5%	0.3%	0.0%	-0.2%	-0.5%
		Sub-total	741,906	786,653	822,352	863,434	885,420	897,956	898,321	887,518	864,428	1.2%	0.9%	1.0%	0.5%	0.3%	0.0%	-0.2%	-0.5%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
ILOCOS	Pangasinan	AGNO	27,508	28,052	29,947	31,504	33,156	34,506	35,551	36,339	36,854	0.4%	1.3%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		AGUILAR	39,529	41,463	45,100	47,473	49,963	51,995	53,570	54,760	55,535	1.0%	1.7%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		CITY OF ALAMINOS	85,025	89,708	99,397	104,689	110,178	114,660	118,133	120,758	122,468	1.1%	2.1%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		ALCALA	41,077	43,402	48,908	51,538	54,240	56,447	58,158	59,450	60,292	1.1%	2.4%	1.1%	1.0%	0.8%	0.6%	0.4%	0.3%
		ANDA	37,011	39,504	41,548	43,686	45,976	47,845	49,295	50,391	51,104	1.3%	1.0%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		ASINGAN	56,353	57,355	57,811	60,698	63,880	66,478	68,493	70,015	71,006	0.4%	0.2%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		BALUNGAO	26,678	31,106	30,004	31,453	33,102	34,449	35,493	36,281	36,795	3.1%	-0.7%	0.9%	1.0%	0.8%	0.6%	0.4%	0.3%
		BANI	45,758	50,306	52,603	55,299	58,198	60,565	62,400	63,787	64,690	1.9%	0.9%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		BASISTA	30,385	32,959	37,679	39,723	41,806	43,507	44,825	45,821	46,470	1.6%	2.7%	1.1%	1.0%	0.8%	0.6%	0.4%	0.3%
		BAUTISTA	30,193	32,307	35,398	37,269	39,222	40,817	42,055	42,988	43,597	1.4%	1.8%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		BAYAMBANG	111,521	118,205	129,011	135,813	142,933	148,748	153,254	156,660	158,877	1.2%	1.8%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		BINALONAN	52,832	54,555	56,382	59,249	62,355	64,892	66,859	68,344	69,312	0.6%	0.7%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		BINMALEY	78,702	83,052	86,881	91,334	96,123	100,033	103,065	105,355	106,847	1.1%	0.9%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		BOLINAO	74,545	82,084	83,979	88,217	92,841	96,618	99,547	101,759	103,199	1.9%	0.5%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		BUGALLON	64,253	67,348	74,962	78,964	83,104	86,485	89,105	91,086	92,375	0.9%	2.2%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		BURGOS	18,315	21,637	23,749	25,006	26,316	27,388	28,218	28,845	29,254	3.4%	1.9%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		CALASIAO	91,109	95,154	100,471	105,655	111,194	115,717	119,223	121,873	123,598	0.9%	1.1%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		DAGUPAN CITY	163,676	171,271	174,302	183,066	192,664	200,501	206,576	211,167	214,156	0.9%	0.4%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		DASOL	26,991	29,110	31,355	32,995	34,724	36,137	37,232	38,060	38,599	1.5%	1.5%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		INFANTA	23,455	24,584	26,242	27,605	29,053	30,234	31,151	31,843	32,294	0.9%	1.3%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		LABRADOR	21,149	23,201	26,811	28,275	29,758	30,968	31,906	32,615	33,078	1.9%	2.9%	1.1%	1.0%	0.8%	0.6%	0.4%	0.3%
		LINGAYEN (Capital)	98,740	103,278	107,728	113,239	119,177	124,024	127,783	130,622	132,471	0.9%	0.8%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		MABINI	24,011	24,765	26,454	27,829	29,289	30,480	31,403	32,101	32,556	0.6%	1.3%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		MALASIQUI	123,566	130,275	143,094	150,670	158,570	165,020	170,021	173,799	176,260	1.1%	1.9%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		MANAOAG	64,578	69,497	76,045	80,061	84,259	87,686	90,342	92,351	93,659	1.5%	1.8%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		MANGALDAN	98,905	106,331	113,185	119,056	125,298	130,395	134,346	137,330	139,275	1.5%	1.3%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		MANGATAREM	69,969	73,241	79,323	83,485	87,862	91,436	94,207	96,300	97,664	0.9%	1.6%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
ILOCOS	Pangasinan	MAPANDAN	34,439	37,059	38,058	39,984	42,080	43,792	45,119	46,121	46,775	1.5%	0.5%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		NATIVIDAD	22,713	24,299	25,771	27,105	28,526	29,687	30,586	31,266	31,708	1.4%	1.2%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		POZORRUBIO	66,111	69,555	74,729	78,629	82,752	86,118	88,727	90,699	91,983	1.0%	1.4%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		ROSALES	59,687	63,081	66,711	70,156	73,834	76,837	79,167	80,925	82,071	1.1%	1.1%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		SAN CARLOS CITY	175,103	188,571	205,424	216,242	227,579	236,836	244,012	249,436	252,966	1.5%	1.7%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		SAN FABIAN	77,899	83,025	87,428	91,929	96,750	100,685	103,735	106,040	107,543	1.3%	1.0%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		SAN JACINTO	37,737	40,848	44,351	46,682	49,129	51,127	52,676	53,847	54,609	1.6%	1.7%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		SAN MANUEL	46,875	52,939	54,271	57,014	60,003	62,444	64,336	65,766	66,697	2.5%	0.5%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		SAN NICOLAS	34,108	35,574	39,778	41,908	44,105	45,899	47,290	48,340	49,025	0.8%	2.3%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		SAN QUINTIN	32,626	32,945	33,980	35,705	37,577	39,105	40,290	41,185	41,768	0.2%	0.6%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		SANTA BARBARA	76,637	82,012	92,187	97,137	102,230	106,390	109,613	112,049	113,634	1.4%	2.4%	1.1%	1.0%	0.8%	0.6%	0.4%	0.3%
		SANTA MARIA	31,091	33,038	34,220	35,962	37,848	39,387	40,581	41,482	42,069	1.2%	0.7%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		SANTO TOMAS	14,406	15,022	14,878	15,611	16,430	17,098	17,617	18,008	18,263	0.8%	-0.2%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		SISON	43,979	47,518	52,320	55,094	57,983	60,341	62,170	63,552	64,452	1.6%	1.9%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		SUAL	31,216	34,149	39,091	41,213	43,375	45,139	46,507	47,540	48,213	1.8%	2.7%	1.1%	1.0%	0.8%	0.6%	0.4%	0.3%
		TAYUG	40,018	43,149	45,241	47,563	50,057	52,092	53,671	54,864	55,640	1.5%	1.0%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		UMINGAN	67,534	73,252	77,074	81,040	85,289	88,758	91,448	93,480	94,803	1.6%	1.0%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		URBIZTONDO	47,831	50,170	55,557	58,513	61,581	64,086	66,028	67,495	68,450	1.0%	2.1%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		CITY OF URDANETA	125,451	132,940	144,577	152,182	160,161	166,676	171,725	175,541	178,025	1.2%	1.7%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		VILLASIS	59,111	62,333	65,047	68,376	71,961	74,888	77,157	78,871	79,987	1.1%	0.9%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		LAOAC	29,456	31,497	34,128	35,918	37,802	39,339	40,531	41,431	42,018	1.3%	1.6%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		Sub-total	2,779,862	2,956,726	3,163,190	3,327,814	3,502,291	3,644,757	3,755,197	3,838,636	3,892,980	1.2%	1.4%	1.0%	1.0%	0.8%	0.6%	0.4%	0.3%
		Total	4,748,372	5,026,128	5,301,139	5,555,333	5,766,809	5,922,141	6,016,308	6,057,834	6,044,165	1.1%	1.1%	0.9%	0.8%	0.5%	0.3%	0.1%	0.0%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CAGAYAN VALLEY	Batanes	BASCO (Capital)	7,907	8,579	9,517	10,022	10,683	11,531	12,194	12,858	13,399	1.6%	2.1%	1.0%	1.3%	1.5%	1.1%	1.1%	0.8%
		ITBAYAT	2,988	2,867	3,128	3,292	3,509	3,787	4,005	4,223	4,401	-0.8%	1.8%	1.0%	1.3%	1.5%	1.1%	1.1%	0.8%
		IVANA	1,249	1,327	1,407	1,480	1,578	1,703	1,801	1,900	1,980	1.2%	1.2%	1.0%	1.3%	1.5%	1.1%	1.1%	0.8%
		MAHATAO	1,583	1,555	1,703	1,793	1,910	2,063	2,181	2,300	2,396	-0.4%	1.8%	1.0%	1.3%	1.6%	1.1%	1.1%	0.8%
		SABTANG	1,637	1,621	1,696	1,783	1,900	2,052	2,170	2,288	2,384	-0.2%	0.9%	1.0%	1.3%	1.6%	1.1%	1.1%	0.8%
		UYUGAN	1,240	1,297	1,380	1,452	1,546	1,670	1,765	1,862	1,939	0.9%	1.2%	1.0%	1.3%	1.6%	1.1%	1.1%	0.8%
		Sub-total	16,604	17,246	18,831	19,820	21,126	22,804	24,115	25,430	26,500	0.8%	1.8%	1.0%	1.3%	1.5%	1.1%	1.1%	0.8%
	Cagayan	ABULUG	30,675	32,497	34,579	36,572	38,124	39,322	40,183	40,705	40,888	1.2%	1.2%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		ALCALA	37,773	38,883	41,295	43,672	45,527	46,957	47,986	48,610	48,828	0.6%	1.2%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		ALLACAPAN	31,662	33,571	35,234	37,246	38,830	40,050	40,926	41,459	41,644	1.2%	1.0%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		AMULUNG	45,182	47,860	50,336	53,216	55,478	57,220	58,474	59,234	59,500	1.2%	1.0%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		APARRI	61,199	65,649	68,839	72,769	75,862	78,245	79,959	80,999	81,363	1.4%	1.0%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		BAGGAO	78,188	82,782	87,753	92,797	96,740	99,779	101,964	103,291	103,755	1.1%	1.2%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		BALLESTEROS	32,215	34,299	34,488	36,405	37,953	39,144	40,002	40,522	40,704	1.3%	0.1%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		BUGUEY	28,455	30,175	32,148	34,001	35,446	36,560	37,362	37,846	38,016	1.2%	1.3%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		CALAYAN	16,200	16,702	17,410	18,401	19,183	19,786	20,220	20,483	20,576	0.6%	0.8%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		CAMALANIUGAN	23,404	24,923	25,236	26,645	27,778	28,650	29,277	29,658	29,791	1.3%	0.2%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		CLAVERIA	30,482	29,921	31,900	33,739	35,174	36,279	37,074	37,556	37,724	-0.4%	1.3%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		ENRILE	32,553	35,834	36,705	38,770	40,418	41,687	42,600	43,155	43,349	1.9%	0.5%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		GATTARAN	54,848	56,661	58,874	62,217	64,862	66,899	68,366	69,255	69,565	0.7%	0.8%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		GONZAGA	36,303	38,892	41,680	44,092	45,966	47,409	48,448	49,078	49,299	1.4%	1.4%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		IGUIG	25,559	27,862	30,060	31,806	33,159	34,200	34,949	35,404	35,563	1.7%	1.5%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		LAL-LO	41,388	44,506	48,733	51,588	53,780	55,469	56,684	57,421	57,680	1.5%	1.8%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		LASAM	36,994	39,135	41,225	43,586	45,438	46,865	47,892	48,515	48,733	1.1%	1.0%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		PAMPLONA	23,236	23,596	24,781	26,198	27,312	28,170	28,787	29,162	29,292	0.3%	1.0%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		PEÑABLANCA	42,736	48,584	50,300	53,149	55,408	57,148	58,400	59,160	59,424	2.6%	0.7%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		PIAT	22,961	23,597	24,805	26,223	27,338	28,197	28,814	29,189	29,320	0.5%	1.0%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		RIZAL	18,592	17,994	19,077	20,173	21,030	21,690	22,166	22,454	22,555	-0.7%	1.2%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		SANCHEZ-MIRA	23,257	24,541	26,164	27,673	28,850	29,755	30,407	30,802	30,940	1.1%	1.3%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		SANTA ANA	30,458	32,906	35,688	37,768	39,373	40,609	41,499	42,039	42,227	1.6%	1.6%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		SANTA PRAXEDES	3,646	4,154	4,434	4,691	4,890	5,043	5,155	5,222	5,245	2.6%	1.3%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		SANTA TERESITA	17,600	19,038	19,573	20,677	21,557	22,232	22,720	23,016	23,120	1.6%	0.6%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		SANTO NIÑO (FAIRE)	26,126	27,219	28,537	30,166	31,447	32,434	33,144	33,577	33,727	0.8%	1.0%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		SOLANA	76,596	82,502	88,445	93,565	97,541	100,604	102,808	104,146	104,613	1.5%	1.4%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		TUAO	57,620	61,535	63,970	67,603	70,476	72,689	74,282	75,249	75,586	1.3%	0.8%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		TUGUEGARAO CITY (Capital)	138,865	153,502	166,334	176,021	183,503	189,265	193,411	195,927	196,807	2.0%	1.6%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%
		Sub-total	1,124,773	1,199,320	1,268,603	1,341,427	1,398,442	1,442,356	1,473,958	1,493,132	1,499,836	1.3%	1.1%	1.1%	0.8%	0.6%	0.4%	0.3%	0.1%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CAGAYAN VALLEY	Isabela	ALICIA	64,687	71,504	73,874	77,848	80,876	82,987	84,119	84,359	83,708	2.0%	0.7%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%
		ANGADANAN	40,143	43,061	44,977	47,414	49,259	50,544	51,234	51,379	50,984	1.4%	0.9%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%
		AURORA	33,045	35,017	36,621	38,606	40,108	41,155	41,716	41,834	41,511	1.2%	0.9%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%
		BENITO SOLIVEN	27,337	29,624	29,752	31,321	32,538	33,388	33,843	33,939	33,678	1.6%	0.1%	1.0%	0.8%	0.5%	0.3%	0.1%	-0.2%
		BURGOS	22,521	23,784	26,040	27,493	28,563	29,308	29,709	29,793	29,565	1.1%	1.8%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%
		CABAGAN	45,732	50,174	53,897	56,870	59,083	60,624	61,452	61,625	61,152	1.9%	1.4%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%
		CABATUAN	37,299	39,413	39,990	42,114	43,753	44,894	45,507	45,636	45,285	1.1%	0.3%	1.0%	0.8%	0.5%	0.3%	0.1%	-0.2%
		CITY OF CAUAYAN	122,335	129,523	143,403	151,459	157,351	161,456	163,661	164,122	162,862	1.1%	2.1%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%
		CORDON	40,877	42,926	46,477	49,054	50,963	52,292	53,006	53,157	52,749	1.0%	1.6%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%
		DINAPIGUE	5,484	5,005	5,821	6,158	6,398	6,566	6,655	6,674	6,622	-1.8%	3.1%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%
		DIVILACAN	5,034	5,687	5,827	6,138	6,378	6,544	6,633	6,652	6,601	2.5%	0.5%	1.0%	0.8%	0.5%	0.3%	0.1%	-0.2%
		ECHAGUE	74,680	79,094	88,410	93,404	97,038	99,570	100,929	101,214	100,436	1.2%	2.3%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%
		GAMU	28,657	29,904	30,655	32,295	33,551	34,425	34,896	34,995	34,725	0.9%	0.5%	1.0%	0.8%	0.5%	0.3%	0.1%	-0.2%
		ILAGAN CITY (Capital) 1	135,174	145,568	158,218	167,008	173,504	178,030	180,461	180,971	179,579	1.5%	1.7%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%
		JONES	44,218	45,666	45,628	48,026	49,895	51,196	51,895	52,042	51,642	0.6%	0.0%	1.0%	0.8%	0.5%	0.3%	0.1%	-0.2%
		LUNA	18,091	19,326	20,697	21,836	22,686	23,277	23,595	23,662	23,480	1.3%	1.4%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%
		MACONACON	3,615	4,253	3,977	4,176	4,337	4,451	4,511	4,523	4,489	3.3%	-1.3%	1.0%	0.8%	0.5%	0.3%	0.1%	-0.2%
		DELFIN ALBANO (MAGSAYSAY)	25,422	26,614	29,928	31,624	32,854	33,711	34,171	34,268	34,005	0.9%	2.4%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%
		MALLIG	28,345	30,459	32,208	33,967	35,288	36,208	36,703	36,807	36,524	1.4%	1.1%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%
		NAGUILIAN	29,491	31,902	33,788	35,635	37,021	37,987	38,505	38,614	38,317	1.6%	1.2%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%
		PALANAN	16,094	17,260	17,684	18,629	19,355	19,860	20,131	20,188	20,033	1.4%	0.5%	1.0%	0.8%	0.5%	0.3%	0.1%	-0.2%
		QUEZON	24,522	25,860	27,037	28,502	29,611	30,384	30,799	30,886	30,649	1.1%	0.9%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%
		QUIRINO	22,285	24,501	25,023	26,358	27,384	28,098	28,481	28,563	28,342	1.9%	0.4%	1.0%	0.8%	0.5%	0.3%	0.1%	-0.2%
		RAMON	49,812	52,707	56,523	59,637	61,957	63,574	64,442	64,623	64,127	1.1%	1.4%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%
		REINA MERCEDES	23,497	26,998	27,900	29,402	30,545	31,342	31,771	31,861	31,615	2.8%	0.7%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%
		ROXAS	57,699	61,773	65,839	69,453	72,155	74,037	75,048	75,260	74,682	1.4%	1.3%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%
		SAN AGUSTIN	21,797	22,880	22,096	23,228	24,132	24,762	25,100	25,171	24,978	1.0%	-0.7%	1.0%	0.8%	0.5%	0.3%	0.1%	-0.2%
		SAN GUILLERMO	18,423	20,200	20,915	22,041	22,899	23,497	23,817	23,885	23,701	1.9%	0.7%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%
		SAN ISIDRO	22,758	24,861	27,044	28,547	29,658	30,431	30,847	30,934	30,697	1.8%	1.7%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%
		SAN MANUEL	30,407	31,896	34,085	35,960	37,359	38,333	38,857	38,966	38,667	1.0%	1.3%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%
		SAN MARIANO	51,438	55,370	60,124	63,462	65,930	67,650	68,573	68,767	68,238	1.5%	1.7%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%
		SAN MATEO	60,792	64,505	66,663	70,250	72,982	74,886	75,908	76,123	75,538	1.2%	0.7%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%
		SAN PABLO	22,040	25,384	26,320	27,739	28,819	29,571	29,974	30,059	29,827	2.9%	0.7%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%
		SANTA MARIA	22,939	25,382	25,758	27,127	28,182	28,916	29,311	29,394	29,168	2.0%	0.3%	1.0%	0.8%	0.5%	0.3%	0.1%	-0.2%
		CITY OF SANTIAGO	132,804	134,830	148,580	156,903	163,007	167,259	169,543	170,021	168,714	0.3%	2.0%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%
		SANTO TOMAS	21,688	23,005	24,528	25,874	26,881	27,582	27,959	28,037	27,822	1.2%	1.3%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%
		TUMAUINI	58,463	67,650	70,743	74,579	77,480	79,501	80,586	80,814	80,193	3.0%	0.9%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%
		Sub-total	1,489,645	1,593,566	1,697,050	1,790,138	1,859,776	1,908,296	1,934,349	1,939,818	1,924,906	1.4%	1.3%	1.1%	0.8%	0.5%	0.3%	0.1%	-0.2%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CAGAYAN VALLEY	Nueva Vizcaya	AMBAGUIO	13,452	15,250	15,472	16,407	17,267	17,976	18,503	18,861	19,046	2.5%	0.3%	1.2%	1.0%	0.8%	0.6%	0.4%	0.2%
		ARITAO	37,115	37,225	42,197	44,911	47,263	49,203	50,645	51,627	52,136	0.1%	2.5%	1.3%	1.0%	0.8%	0.6%	0.4%	0.2%
		BAGABAG	35,462	35,501	37,985	40,354	42,467	44,211	45,508	46,391	46,849	0.0%	1.4%	1.2%	1.0%	0.8%	0.6%	0.4%	0.2%
		BAMBANG	47,657	53,433	55,789	59,220	62,320	64,881	66,784	68,079	68,751	2.3%	0.9%	1.2%	1.0%	0.8%	0.6%	0.4%	0.2%
		BAYOMBONG (Capital)	57,416	61,512	67,714	72,003	75,773	78,886	81,200	82,775	83,591	1.4%	1.9%	1.2%	1.0%	0.8%	0.6%	0.4%	0.2%
		DIADI	16,484	18,122	19,236	20,429	21,499	22,383	23,040	23,487	23,718	1.9%	1.2%	1.2%	1.0%	0.8%	0.6%	0.4%	0.2%
		DUPAX DEL NORTE	25,697	27,514	33,295	35,505	37,365	38,900	40,041	40,817	41,221	1.4%	3.9%	1.3%	1.0%	0.8%	0.6%	0.4%	0.2%
		DUPAX DEL SUR	18,146	19,111	21,224	22,575	23,757	24,733	25,459	25,952	26,208	1.0%	2.1%	1.2%	1.0%	0.8%	0.6%	0.4%	0.2%
		KASIBU	33,379	37,705	41,776	44,431	46,758	48,679	50,107	51,079	51,583	2.5%	2.1%	1.2%	1.0%	0.8%	0.6%	0.4%	0.2%
		KAYAPA	21,453	23,714	26,469	28,159	29,632	30,851	31,756	32,371	32,690	2.0%	2.2%	1.2%	1.0%	0.8%	0.6%	0.4%	0.2%
		QUEZON	19,385	21,056	24,055	25,608	26,949	28,056	28,879	29,438	29,729	1.7%	2.7%	1.3%	1.0%	0.8%	0.6%	0.4%	0.2%
		SANTA FE	14,427	16,180	18,276	19,450	20,468	21,309	21,934	22,360	22,581	2.3%	2.5%	1.3%	1.0%	0.8%	0.6%	0.4%	0.2%
		SOLANO	56,134	59,517	65,287	69,414	73,049	76,050	78,281	79,798	80,585	1.2%	1.9%	1.2%	1.0%	0.8%	0.6%	0.4%	0.2%
		VILLAVERDE	17,720	18,507	20,118	21,385	22,504	23,428	24,115	24,583	24,825	0.9%	1.7%	1.2%	1.0%	0.8%	0.6%	0.4%	0.2%
		ALFONSO CASTANEDA	7,428	7,940	8,539	9,073	9,548	9,940	10,232	10,430	10,533	1.3%	1.5%	1.2%	1.0%	0.8%	0.6%	0.4%	0.2%
		Sub-total	421,355	452,287	497,432	528,923	556,617	579,484	596,483	608,047	614,045	1.4%	1.9%	1.2%	1.0%	0.8%	0.6%	0.4%	0.2%
	Quirino	AGLIPAY	26,187	27,787	30,714	32,210	34,806	37,218	39,363	41,352	43,254	1.2%	2.0%	1.0%	1.6%	1.3%	1.1%	1.0%	0.9%
		CABARROGUIS (Capital)	29,395	30,582	33,533	35,158	37,991	40,624	42,966	45,136	47,211	0.8%	1.9%	1.0%	1.6%	1.3%	1.1%	1.0%	0.9%
		DIFFUN	48,501	52,569	56,102	58,769	63,505	67,906	71,819	75,447	78,914	1.6%	1.3%	0.9%	1.6%	1.3%	1.1%	1.0%	0.9%
		MADDELA	35,634	38,499	40,943	42,885	46,340	49,553	52,408	55,056	57,586	1.6%	1.2%	0.9%	1.6%	1.3%	1.1%	1.0%	0.9%
		SAGUDAY	14,596	16,070	17,137	17,951	19,398	20,742	21,936	23,044	24,104	1.9%	1.3%	0.9%	1.6%	1.3%	1.1%	1.0%	0.9%
		NAGTIPUNAN	22,473	23,484	25,399	26,617	28,763	30,757	32,528	34,172	35,742	0.9%	1.6%	0.9%	1.6%	1.3%	1.1%	1.0%	0.9%
		Sub-total	176,786	188,991	203,828	213,589	230,803	246,799	261,020	274,205	286,812	1.3%	1.5%	0.9%	1.6%	1.3%	1.1%	1.0%	0.9%
		Total	3,229,163	3,451,410	3,685,744	3,893,897	4,066,765	4,199,740	4,289,925	4,340,633	4,352,099	1.3%	1.3%	1.1%	0.9%	0.6%	0.4%	0.2%	0.1%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL LUZON	Aurora	BALER (Capital)	36,010	39,562	43,785	46,388	52,380	59,106	66,405	74,383	83,071	1.9%	2.0%	1.2%	2.5%	2.4%	2.4%	2.3%	2.2%
		CASIGURAN	23,865	24,313	26,564	28,132	31,767	35,846	40,273	45,110	50,379	0.4%	1.8%	1.2%	2.5%	2.4%	2.4%	2.3%	2.2%
		DILASAG	15,683	15,835	17,102	18,103	20,442	23,066	25,914	29,026	32,416	0.2%	1.6%	1.1%	2.5%	2.4%	2.4%	2.3%	2.2%
		DINALUNGAN	10,988	11,322	12,508	13,251	14,963	16,883	18,969	21,246	23,728	0.6%	2.0%	1.2%	2.5%	2.4%	2.4%	2.3%	2.2%
		DINGALAN	23,554	25,482	27,878	29,523	33,337	37,618	42,264	47,340	52,869	1.6%	1.8%	1.2%	2.5%	2.4%	2.4%	2.3%	2.2%
		DIPACULAO	27,729	29,736	33,131	35,107	39,643	44,733	50,257	56,294	62,868	1.4%	2.2%	1.2%	2.5%	2.4%	2.4%	2.3%	2.2%
		MARIA AURORA	38,128	40,734	44,958	47,625	53,778	60,683	68,176	76,366	85,285	1.3%	2.0%	1.2%	2.5%	2.4%	2.4%	2.3%	2.2%
		SAN LUIS	25,276	27,352	29,824	31,582	35,662	40,239	45,208	50,639	56,554	1.6%	1.7%	1.2%	2.5%	2.4%	2.4%	2.3%	2.2%
		Sub-total	201,233	214,336	235,750	249,711	281,972	318,175	357,464	400,404	447,169	1.3%	1.9%	1.2%	2.5%	2.4%	2.4%	2.3%	2.2%
	Bataan	ABUCAY	37,719	39,880	42,984	46,685	48,674	50,209	51,212	51,515	51,073	1.1%	1.5%	1.7%	0.8%	0.6%	0.4%	0.1%	-0.2%
		BAGAC	25,568	26,936	31,365	34,146	35,601	36,725	37,459	37,681	37,358	1.0%	3.1%	1.7%	0.8%	0.6%	0.4%	0.1%	-0.2%
		CITY OF BALANGA (Capital)	87,920	96,061	104,173	113,162	117,983	121,706	124,135	124,872	123,796	1.8%	1.6%	1.7%	0.8%	0.6%	0.4%	0.1%	-0.2%
		DINALUPIHAN	97,275	106,371	118,209	128,508	133,982	138,210	140,969	141,805	140,583	1.8%	2.1%	1.7%	0.8%	0.6%	0.4%	0.1%	-0.2%
		HERMOSA	56,997	65,862	77,443	84,336	87,929	90,703	92,514	93,063	92,261	2.9%	3.3%	1.7%	0.8%	0.6%	0.4%	0.1%	-0.2%
		LIMAY	57,207	68,071	78,272	85,182	88,811	91,614	93,442	93,997	93,187	3.5%	2.8%	1.7%	0.8%	0.6%	0.4%	0.1%	-0.2%
		MARIVELES	112,707	127,536	149,879	163,217	170,171	175,540	179,045	180,106	178,555	2.5%	3.3%	1.7%	0.8%	0.6%	0.4%	0.1%	-0.2%
		MORONG	26,171	29,901	35,394	38,552	40,195	41,464	42,291	42,541	42,175	2.7%	3.4%	1.7%	0.8%	0.6%	0.4%	0.1%	-0.2%
		ORANI	61,099	66,909	70,342	76,333	79,585	82,096	83,734	84,231	83,505	1.8%	1.0%	1.6%	0.8%	0.6%	0.4%	0.1%	-0.2%
		ORION	51,454	56,002	60,771	66,015	68,827	70,999	72,416	72,847	72,219	1.7%	1.6%	1.7%	0.8%	0.6%	0.4%	0.1%	-0.2%
		PILAR	39,787	41,823	46,239	50,260	52,400	54,054	55,133	55,461	54,982	1.0%	2.0%	1.7%	0.8%	0.6%	0.4%	0.1%	-0.2%
		SAMAL	33,578	35,298	38,302	41,607	43,380	44,749	45,641	45,912	45,517	1.0%	1.6%	1.7%	0.8%	0.6%	0.4%	0.1%	-0.2%
		Sub-total	687,482	760,650	853,373	928,004	967,538	998,069	1,017,994	1,024,031	1,015,213	2.0%	2.3%	1.7%	0.8%	0.6%	0.4%	0.1%	-0.2%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL LUZON	Bulacan	ANGAT	55,332	59,237	65,617	71,560	75,912	79,656	82,599	84,643	85,848	1.4%	2.1%	1.7%	1.2%	1.0%	0.7%	0.5%	0.3%
		BALAGTAS (BIGAA)	65,440	73,929	77,018	83,825	88,921	93,306	96,756	99,149	100,560	2.5%	0.8%	1.7%	1.2%	1.0%	0.7%	0.5%	0.3%
		BALIUAG	143,565	149,954	168,470	183,810	194,986	204,601	212,165	217,413	220,507	0.9%	2.4%	1.8%	1.2%	1.0%	0.7%	0.5%	0.3%
		BOCAUE	106,407	119,675	141,412	154,525	163,921	172,004	178,363	182,775	185,378	2.4%	3.4%	1.8%	1.2%	1.0%	0.7%	0.5%	0.3%
		BULACAN	71,751	76,565	81,232	88,467	93,847	98,474	102,113	104,639	106,130	1.3%	1.2%	1.7%	1.2%	1.0%	0.7%	0.5%	0.3%
		BUSTOS	62,415	67,039	77,199	84,292	89,417	93,825	97,294	99,702	101,120	1.4%	2.9%	1.8%	1.2%	1.0%	0.7%	0.5%	0.3%
		CALUMPIT	101,068	108,757	118,471	129,133	136,984	143,738	149,052	152,739	154,913	1.5%	1.7%	1.7%	1.2%	1.0%	0.7%	0.5%	0.3%
		GUIGUINTO	90,507	99,730	113,415	123,789	131,315	137,791	142,885	146,419	148,504	2.0%	2.6%	1.8%	1.2%	1.0%	0.7%	0.5%	0.3%
		HAGONOY	125,689	129,807	133,448	145,180	154,007	161,601	167,576	171,721	174,166	0.6%	0.6%	1.7%	1.2%	1.0%	0.7%	0.5%	0.3%
		CITY OF MALOLOS (Capital)	234,945	252,074	261,189	284,225	301,506	316,373	328,070	336,185	340,971	1.4%	0.7%	1.7%	1.2%	1.0%	0.7%	0.5%	0.3%
		MARILAO	185,624	221,965	254,453	277,796	294,685	309,215	320,648	328,579	333,257	3.6%	2.8%	1.8%	1.2%	1.0%	0.7%	0.5%	0.3%
		CITY OF MEYCAUAYAN	199,154	209,083	225,673	245,909	260,861	273,723	283,843	290,865	295,005	1.0%	1.5%	1.7%	1.2%	1.0%	0.7%	0.5%	0.3%
		NORZAGARAY	103,095	111,348	136,064	148,826	157,875	165,660	171,783	176,032	178,539	1.6%	4.1%	1.8%	1.2%	1.0%	0.7%	0.5%	0.3%
		OBANDO	58,009	59,197	59,978	65,217	69,183	72,594	75,278	77,140	78,238	0.4%	0.3%	1.7%	1.2%	1.0%	0.7%	0.5%	0.3%
		PANDI	66,650	89,075	155,115	171,108	181,511	190,461	197,502	202,387	205,269	6.0%	11.7%	2.0%	1.2%	1.0%	0.7%	0.5%	0.3%
		PAOMBONG	50,940	53,294	55,696	60,626	64,312	67,483	69,978	71,709	72,730	0.9%	0.9%	1.7%	1.2%	1.0%	0.7%	0.5%	0.3%
		PLARIDEL	101,441	107,805	114,432	124,626	132,203	138,722	143,851	147,409	149,508	1.2%	1.2%	1.7%	1.2%	1.0%	0.7%	0.5%	0.3%
		PULILAN	85,844	97,323	108,836	118,729	125,949	132,158	137,044	140,433	142,432	2.5%	2.3%	1.8%	1.2%	1.0%	0.7%	0.5%	0.3%
		SAN ILDEFONSO	95,000	104,471	115,713	126,193	133,866	140,467	145,660	149,262	151,387	1.9%	2.1%	1.7%	1.2%	1.0%	0.7%	0.5%	0.3%
		CITY OF SAN JOSE DEL MONTE	454,553	574,089	651,813	711,399	754,652	791,863	821,137	841,450	853,429	4.8%	2.6%	1.8%	1.2%	1.0%	0.7%	0.5%	0.3%
		SAN MIGUEL	142,854	153,882	172,073	187,714	199,128	208,947	216,672	222,031	225,192	1.5%	2.3%	1.8%	1.2%	1.0%	0.7%	0.5%	0.3%
		SAN RAFAEL	85,921	94,655	103,097	112,375	119,207	125,085	129,709	132,917	134,810	2.0%	1.7%	1.7%	1.2%	1.0%	0.7%	0.5%	0.3%
		SANTA MARIA	218,351	256,454	289,820	316,269	335,499	352,042	365,056	374,086	379,411	3.3%	2.5%	1.8%	1.2%	1.0%	0.7%	0.5%	0.3%
		DOÑA REMEDIOS TRINIDAD	19,878	22,663	28,656	31,374	33,281	34,922	36,213	37,109	37,637	2.7%	4.8%	1.8%	1.2%	1.0%	0.7%	0.5%	0.3%
		Sub-total	2,924,433	3,292,071	3,708,890	4,046,972	4,293,030	4,504,712	4,671,246	4,786,802	4,854,946	2.4%	2.4%	1.8%	1.2%	1.0%	0.7%	0.5%	0.3%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL LUZON	Nueva Ecija	ALIAGA	57,805	63,543	70,363	78,196	81,428	84,117	86,118	87,328	87,724	1.9%	2.1%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		BONGABON	59,343	64,173	66,839	74,132	77,199	79,747	81,642	82,790	83,167	1.6%	0.8%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		CABANATUAN CITY	272,676	302,231	327,325	363,509	378,544	391,033	400,337	405,965	407,809	2.1%	1.6%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		CABIAO	72,081	79,007	85,862	95,365	99,309	102,586	105,027	106,504	106,987	1.9%	1.7%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		CARRANGLAN	37,124	41,131	42,420	47,033	48,978	50,594	51,798	52,525	52,764	2.1%	0.6%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		CUYAPO	59,396	65,039	68,066	75,505	78,628	81,222	83,155	84,324	84,707	1.8%	0.9%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		GABALDON (BITULOK & SABANI)	32,246	35,383	38,958	43,287	45,078	46,565	47,673	48,343	48,563	1.9%	1.9%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		CITY OF GAPAN	101,488	110,303	122,968	136,687	142,341	147,036	150,536	152,653	153,346	1.7%	2.2%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		GENERAL MAMERTO NATIVIDAD	36,720	41,656	44,311	49,181	51,215	52,904	54,164	54,924	55,175	2.6%	1.2%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		GENERAL TINIO (PAPAYA)	42,634	47,865	55,925	62,254	64,828	66,967	68,561	69,524	69,841	2.3%	3.2%	2.2%	0.8%	0.7%	0.5%	0.3%	0.1%
		GUIMBA	104,894	118,655	127,653	141,734	147,597	152,467	156,095	158,289	159,008	2.5%	1.5%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		JAEN	67,057	73,184	79,189	87,940	91,579	94,599	96,851	98,212	98,659	1.8%	1.6%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		LAUR	32,205	35,656	38,263	42,480	44,236	45,697	46,784	47,442	47,658	2.1%	1.4%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		LICAB	26,187	28,254	29,269	32,458	33,800	34,915	35,745	36,249	36,413	1.5%	0.7%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		LLANERA	36,200	39,701	42,281	46,930	48,871	50,483	51,684	52,411	52,649	1.9%	1.3%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		LUPAO	40,931	43,788	45,917	50,939	53,047	54,796	56,101	56,890	57,149	1.4%	1.0%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		SCIENCE CITY OF MUÑOZ	75,462	81,483	84,308	93,487	97,354	100,566	102,960	104,406	104,880	1.5%	0.7%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		NAMPICUAN	13,303	14,954	14,471	16,009	16,671	17,221	17,631	17,879	17,961	2.4%	-0.7%	2.0%	0.8%	0.7%	0.5%	0.3%	0.1%
		PALAYAN CITY (Capital)	37,219	41,041	45,383	50,433	52,520	54,253	55,543	56,324	56,581	2.0%	2.0%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		PANTABANGAN	27,353	29,925	31,763	35,251	36,708	37,919	38,822	39,368	39,546	1.8%	1.2%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		PEÑARANDA	27,410	29,882	32,269	35,833	37,316	38,546	39,464	40,018	40,200	1.7%	1.5%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		QUEZON	36,660	40,592	41,845	46,395	48,313	49,907	51,095	51,812	52,048	2.1%	0.6%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		RIZAL	57,145	64,087	70,196	77,984	81,209	83,889	85,884	87,092	87,487	2.3%	1.8%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		SAN ANTONIO	73,074	77,836	83,060	92,198	96,011	99,179	101,539	102,967	103,434	1.3%	1.3%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		SAN ISIDRO	47,800	51,612	54,372	60,328	62,823	64,896	66,440	67,375	67,680	1.5%	1.0%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		SAN JOSE CITY	129,424	139,738	150,917	167,585	174,516	180,274	184,564	187,159	188,008	1.5%	1.6%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		SAN LEONARDO	58,120	65,299	68,536	76,034	79,179	81,791	83,738	84,915	85,302	2.4%	1.0%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		SANTA ROSA	64,503	69,467	75,649	84,026	87,502	90,389	92,539	93,840	94,267	1.5%	1.7%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		SANTO DOMINGO	50,983	57,943	61,092	67,785	70,589	72,918	74,654	75,703	76,048	2.6%	1.1%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		TALAVERA	112,515	124,829	132,338	146,865	152,940	157,985	161,745	164,018	164,763	2.1%	1.2%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		TALUGTUG	21,291	23,817	25,236	28,006	29,165	30,126	30,843	31,278	31,419	2.3%	1.2%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		ZARAGOZA	44,124	49,387	53,090	58,944	61,383	63,408	64,917	65,829	66,129	2.3%	1.5%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%
		Sub-total	1,955,373	2,151,461	2,310,134	2,564,798	2,670,878	2,758,997	2,824,652	2,864,359	2,877,371	1.9%	1.4%	2.1%	0.8%	0.7%	0.5%	0.3%	0.1%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL LUZON	Pampanga	APALIT	101,537	107,965	117,160	127,780	133,419	135,957	139,584	141,936	143,125	1.2%	1.6%	1.8%	0.9%	0.4%	0.5%	0.3%	0.2%
		ARAYAT	121,348	133,492	144,875	158,007	164,980	168,117	172,603	175,515	176,984	1.9%	1.7%	1.8%	0.9%	0.4%	0.5%	0.3%	0.2%
		BACOLOR	31,508	39,460	48,066	52,607	54,929	55,974	57,468	58,436	58,925	4.6%	4.0%	1.8%	0.9%	0.4%	0.5%	0.3%	0.2%
		CANDABA	102,399	111,586	119,497	130,274	136,022	138,611	142,309	144,710	145,921	1.7%	1.4%	1.7%	0.9%	0.4%	0.5%	0.3%	0.2%
		FLORIDABLANCA	110,846	125,163	135,542	147,818	154,343	157,279	161,476	164,199	165,573	2.5%	1.6%	1.7%	0.9%	0.4%	0.5%	0.3%	0.2%
		GUAGUA	111,199	117,430	128,893	140,628	146,834	149,628	153,620	156,211	157,519	1.1%	1.9%	1.8%	0.9%	0.4%	0.5%	0.3%	0.2%
		LUBAO	150,843	160,838	173,502	189,193	197,543	201,300	206,671	210,157	211,915	1.3%	1.5%	1.7%	0.9%	0.4%	0.5%	0.3%	0.2%
		MABALACAT CITY 1	215,610	250,799	293,244	320,568	334,714	341,081	350,182	356,089	359,070	3.1%	3.2%	1.8%	0.9%	0.4%	0.5%	0.3%	0.2%
		MACABEBE	70,777	75,850	78,151	85,089	88,845	90,534	92,951	94,518	95,309	1.4%	0.6%	1.7%	0.9%	0.4%	0.5%	0.3%	0.2%
		MAGALANG	103,597	113,147	124,188	135,494	141,475	144,167	148,013	150,508	151,769	1.8%	1.9%	1.8%	0.9%	0.4%	0.5%	0.3%	0.2%
		MASANTOL	52,407	57,063	57,990	63,109	65,895	67,149	68,939	70,102	70,689	1.7%	0.3%	1.7%	0.9%	0.4%	0.5%	0.3%	0.2%
		MEXICO	146,851	154,624	173,403	189,319	197,674	201,433	206,809	210,297	212,058	1.0%	2.3%	1.8%	0.9%	0.4%	0.5%	0.3%	0.2%
		MINALIN	44,001	47,713	48,380	52,645	54,970	56,015	57,510	58,480	58,970	1.6%	0.3%	1.7%	0.9%	0.4%	0.5%	0.3%	0.2%
		PORAC	111,441	124,381	140,751	153,712	160,496	163,549	167,913	170,745	172,175	2.2%	2.5%	1.8%	0.9%	0.4%	0.5%	0.3%	0.2%
		CITY OF SAN FERNANDO (Capital)	285,912	306,659	354,666	387,585	404,690	412,388	423,393	430,534	434,136	1.4%	3.0%	1.8%	0.9%	0.4%	0.5%	0.3%	0.2%
		SAN LUIS	49,311	54,106	58,551	63,853	66,671	67,939	69,753	70,928	71,521	1.9%	1.6%	1.7%	0.9%	0.4%	0.5%	0.3%	0.2%
		SAN SIMON	48,353	53,198	59,182	64,598	67,450	68,731	70,567	71,757	72,358	1.9%	2.2%	1.8%	0.9%	0.4%	0.5%	0.3%	0.2%
		SANTA ANA	52,001	55,178	61,537	67,174	70,137	71,472	73,380	74,617	75,241	1.2%	2.2%	1.8%	0.9%	0.4%	0.5%	0.3%	0.2%
		SANTA RITA	38,762	40,979	48,209	52,710	55,036	56,084	57,580	58,552	59,041	1.1%	3.3%	1.8%	0.9%	0.4%	0.5%	0.3%	0.2%
		SANTO TOMAS	38,062	40,475	42,846	46,692	48,754	49,681	51,006	51,868	52,301	1.2%	1.1%	1.7%	0.9%	0.4%	0.5%	0.3%	0.2%
		SASMUAN (Sexmoan)	27,254	28,004	29,076	31,666	33,063	33,692	34,592	35,175	35,469	0.5%	0.8%	1.7%	0.9%	0.4%	0.5%	0.3%	0.2%
		ANGELES CITY	326,336	411,634	462,928	505,463	527,770	537,808	552,161	561,473	566,172	4.8%	2.4%	1.8%	0.9%	0.4%	0.5%	0.3%	0.2%
		Sub-total	2,340,355	2,609,744	2,900,637	3,165,989	3,305,710	3,368,592	3,458,480	3,516,810	3,546,243	2.2%	2.1%	1.8%	0.9%	0.4%	0.5%	0.3%	0.2%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL LUZON	Tarlac	ANAO	10,873	11,528	12,208	12,974	13,475	13,667	13,966	14,131	14,166	1.2%	1.2%	1.2%	0.8%	0.3%	0.4%	0.2%	0.0%
		BAMBAN	62,413	69,466	78,260	83,330	86,548	115,947	118,477	119,885	120,171	2.2%	2.4%	1.3%	0.8%	6.0%	0.4%	0.2%	0.0%
		CAMILING	80,241	83,248	87,319	92,762	96,342	97,706	99,843	101,035	101,281	0.7%	1.0%	1.2%	0.8%	0.3%	0.4%	0.2%	0.0%
		CAPAS	125,852	140,202	156,056	166,101	172,513	231,111	236,153	238,961	239,527	2.2%	2.2%	1.3%	0.8%	6.0%	0.4%	0.2%	0.0%
		CONCEPCION	139,832	154,188	169,953	180,838	187,818	190,475	194,640	196,965	197,446	2.0%	2.0%	1.2%	0.8%	0.3%	0.4%	0.2%	0.0%
		GERONA	83,084	87,531	94,485	100,469	104,348	105,823	108,136	109,428	109,695	1.0%	1.5%	1.2%	0.8%	0.3%	0.4%	0.2%	0.0%
		LA PAZ	60,982	64,017	68,952	73,314	76,143	77,221	78,909	79,852	80,046	1.0%	1.5%	1.2%	0.8%	0.3%	0.4%	0.2%	0.0%
		MAYANTOC	29,987	32,232	32,597	34,586	35,920	36,428	37,225	37,670	37,762	1.5%	0.2%	1.2%	0.8%	0.3%	0.4%	0.2%	0.0%
		MONCADA	56,183	57,787	62,819	66,813	69,393	70,375	71,913	72,772	72,950	0.6%	1.7%	1.2%	0.8%	0.3%	0.4%	0.2%	0.0%
		PANIQUI	87,730	92,606	103,003	109,631	113,864	115,474	117,999	119,408	119,700	1.1%	2.2%	1.3%	0.8%	0.3%	0.4%	0.2%	0.0%
		PURA	22,949	23,712	25,781	27,420	28,479	28,882	29,512	29,865	29,937	0.7%	1.7%	1.2%	0.8%	0.3%	0.4%	0.2%	0.0%
		RAMOS	20,249	21,350	22,879	24,323	25,262	25,619	26,179	26,492	26,556	1.1%	1.4%	1.2%	0.8%	0.3%	0.4%	0.2%	0.0%
		SAN CLEMENTE	12,510	12,657	13,181	13,999	14,538	14,744	15,067	15,247	15,284	0.2%	0.8%	1.2%	0.8%	0.3%	0.4%	0.2%	0.0%
		SAN MANUEL	24,289	25,504	28,387	30,214	31,381	31,824	32,521	32,908	32,989	1.0%	2.2%	1.3%	0.8%	0.3%	0.4%	0.2%	0.0%
		SANTA IGNACIA	43,787	47,538	51,626	54,906	57,026	57,832	59,097	59,804	59,950	1.7%	1.7%	1.2%	0.8%	0.3%	0.4%	0.2%	0.0%
		CITY OF TARLAC (Capital)	318,332	342,493	385,398	410,347	426,187	432,218	441,669	446,944	448,033	1.5%	2.4%	1.3%	0.8%	0.3%	0.4%	0.2%	0.0%
		VICTORIA	59,987	63,715	69,370	73,783	76,631	77,715	79,413	80,363	80,559	1.2%	1.7%	1.2%	0.8%	0.3%	0.4%	0.2%	0.0%
		SAN JOSE	33,960	36,253	41,182	43,861	45,555	46,197	47,210	47,772	47,890	1.3%	2.6%	1.3%	0.8%	0.3%	0.4%	0.2%	0.0%
		Sub-total	1,273,240	1,366,027	1,503,456	1,599,672	1,661,422	1,767,940	1,806,581	1,828,139	1,832,572	1.4%	1.9%	1.2%	0.8%	1.3%	0.4%	0.2%	0.0%
	Zambales	BOTOLAN	54,434	57,707	66,739	71,935	76,013	79,707	82,967	85,684	88,020	1.2%	3.0%	1.5%	1.1%	1.0%	0.8%	0.6%	0.5%
		CABANGAN	23,082	25,163	28,118	30,275	31,991	33,545	34,918	36,061	37,044	1.7%	2.2%	1.5%	1.1%	1.0%	0.8%	0.6%	0.5%
		CANDELARIA	25,020	27,174	30,263	32,580	34,427	36,101	37,578	38,808	39,866	1.7%	2.2%	1.5%	1.1%	1.0%	0.8%	0.6%	0.5%
		CASTILLEJOS	48,845	64,841	67,889	72,942	77,079	80,824	84,130	86,885	89,255	5.8%	0.9%	1.4%	1.1%	1.0%	0.8%	0.6%	0.5%
		IBA (Capital)	46,761	50,506	55,581	59,815	63,207	66,279	68,990	71,250	73,192	1.6%	1.9%	1.5%	1.1%	1.0%	0.8%	0.6%	0.5%
		MASINLOC	44,342	47,719	54,529	58,752	62,083	65,101	67,764	69,982	71,890	1.5%	2.7%	1.5%	1.1%	1.0%	0.8%	0.6%	0.5%
		PALAUIG	33,286	34,947	39,784	42,861	45,291	47,492	49,435	51,054	52,447	1.0%	2.6%	1.5%	1.1%	1.0%	0.8%	0.6%	0.5%
		SAN ANTONIO	34,217	34,661	37,450	40,279	42,563	44,631	46,458	47,979	49,287	0.3%	1.6%	1.5%	1.1%	1.0%	0.8%	0.6%	0.5%
		SAN FELIPE	22,020	23,183	25,033	26,924	28,451	29,833	31,053	32,070	32,944	1.0%	1.5%	1.5%	1.1%	1.0%	0.8%	0.6%	0.5%
		SAN MARCELINO	31,879	33,665	37,719	40,615	42,917	45,004	46,844	48,379	49,698	1.1%	2.3%	1.5%	1.1%	1.0%	0.8%	0.6%	0.5%
		SAN NARCISO	26,966	28,360	30,759	33,087	34,963	36,663	38,163	39,412	40,487	1.0%	1.6%	1.5%	1.1%	1.0%	0.8%	0.6%	0.5%
		SANTA CRUZ	53,867	58,151	63,839	68,698	72,594	76,121	79,234	81,829	84,061	1.5%	1.9%	1.5%	1.1%	1.0%	0.8%	0.6%	0.5%
		SUBIC	89,724	104,771	111,912	120,322	127,146	133,324	138,778	143,322	147,230	3.1%	1.3%	1.5%	1.1%	1.0%	0.8%	0.6%	0.5%
		OLONGAPO CITY	221,178	233,040	260,317	280,282	296,173	310,566	323,270	333,855	342,958	1.1%	2.2%	1.5%	1.1%	1.0%	0.8%	0.6%	0.5%
		Sub-total	755,621	823,888	909,932	979,369	1,034,897	1,085,189	1,129,580	1,166,567	1,198,378	1.7%	2.0%	1.5%	1.1%	1.0%	0.8%	0.6%	0.5%
		Total	10,137,737	11,218,177	12,422,172	13,534,515	14,215,447	14,801,674	15,265,997	15,587,112	15,771,892	2.0%	2.1%	1.7%	1.0%	0.8%	0.6%	0.4%	0.2%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CALABARZON	Batangas	AGONCILLO	35,794	38,059	39,101	44,607	46,911	48,699	50,025	50,749	50,784	1.2%	0.5%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		ALITAGTAG	23,649	25,300	26,819	30,627	32,209	33,437	34,348	34,844	34,869	1.4%	1.2%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		BALAYAN	81,805	90,699	95,913	109,522	115,181	119,576	122,831	124,608	124,691	2.1%	1.1%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		BALETE	20,214	22,661	24,055	27,472	28,891	29,993	30,809	31,256	31,277	2.3%	1.2%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		BATANGAS CITY (Capital)	305,607	329,874	351,437	401,404	422,142	438,250	450,180	456,693	457,001	1.5%	1.3%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		BAUAN	79,831	91,297	90,819	103,490	108,835	112,989	116,065	117,744	117,822	2.7%	-0.1%	2.6%	1.0%	0.8%	0.5%	0.3%	0.0%
		CALACA	64,966	81,859	87,361	99,788	104,943	108,947	111,913	113,532	113,609	4.7%	1.3%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		CALATAGAN	51,544	56,449	58,719	67,014	70,477	73,166	75,158	76,246	76,297	1.8%	0.8%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		CUENCA	28,581	32,783	36,235	41,436	43,577	45,239	46,471	47,143	47,175	2.8%	2.0%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		IBAAN	45,649	52,970	58,507	66,903	70,360	73,046	75,033	76,119	76,171	3.0%	2.0%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		LAUREL	34,953	39,444	43,210	49,398	51,950	53,932	55,400	56,201	56,238	2.4%	1.8%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		LEMERY	76,090	93,157	93,186	106,207	111,694	115,956	119,112	120,836	120,918	4.1%	0.0%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		LIAN	44,925	52,660	56,280	64,289	67,609	70,190	72,100	73,143	73,193	3.2%	1.3%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		LIPA CITY	283,468	332,386	372,931	426,661	448,702	465,825	478,505	485,429	485,756	3.2%	2.3%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		LOBO	37,070	41,504	40,736	46,397	48,794	50,656	52,034	52,788	52,823	2.3%	-0.4%	2.6%	1.0%	0.8%	0.5%	0.3%	0.0%
		MABINI	44,391	46,211	50,858	58,150	61,154	63,488	65,216	66,160	66,204	0.8%	1.9%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		MALVAR	45,952	56,270	64,379	73,700	77,507	80,465	82,656	83,852	83,908	4.1%	2.7%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		MATAASNAKAHOY	27,177	29,187	30,621	34,957	36,763	38,165	39,204	39,772	39,798	1.4%	1.0%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		NASUGBU	122,483	134,113	136,524	155,696	163,740	169,987	174,614	177,142	177,261	1.8%	0.4%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		PADRE GARCIA	44,877	48,302	51,853	59,240	62,301	64,679	66,439	67,401	67,447	1.5%	1.4%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		ROSARIO	105,561	116,764	128,352	146,750	154,331	160,220	164,582	166,963	167,076	2.0%	1.9%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		SAN JOSE	68,517	76,971	79,868	91,145	95,853	99,510	102,218	103,698	103,768	2.4%	0.7%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		SAN JUAN	94,291	108,585	114,068	130,225	136,953	142,179	146,050	148,163	148,263	2.9%	1.0%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		SAN LUIS	30,701	33,149	36,172	41,348	43,484	45,142	46,372	47,042	47,074	1.5%	1.8%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		SAN NICOLAS	20,599	22,623	23,908	27,300	28,710	29,806	30,617	31,060	31,080	1.9%	1.1%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		SAN PASCUAL	59,598	65,424	69,009	78,795	82,866	86,027	88,369	89,648	89,708	1.9%	1.1%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		SANTA TERESITA	17,415	21,127	21,559	24,589	25,860	26,846	27,577	27,977	27,996	3.9%	0.4%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		SANTO TOMAS	124,740	179,844	218,500	250,576	263,520	273,576	281,023	285,090	285,282	7.6%	4.0%	2.8%	1.0%	0.8%	0.5%	0.3%	0.0%
		TAAL	51,503	56,327	61,460	70,253	73,882	76,702	78,790	79,929	79,984	1.8%	1.8%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		TALISAY	39,600	45,301	46,238	52,736	55,461	57,578	59,145	60,001	60,041	2.7%	0.4%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		CITY OF TANAUAN	152,393	173,366	193,936	221,857	233,318	242,221	248,815	252,415	252,586	2.6%	2.3%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		TAYSAN	35,357	38,007	40,146	45,841	48,210	50,050	51,412	52,157	52,191	1.5%	1.1%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		TINGLOY	16,870	17,919	19,215	21,951	23,085	23,967	24,619	24,975	24,991	1.2%	1.4%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		TUY	40,734	43,743	46,519	53,129	55,874	58,006	59,585	60,448	60,488	1.4%	1.2%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%
		Sub-total	2,377,395	2,694,335	2,908,494	3,323,453	3,495,147	3,628,515	3,727,287	3,781,224	3,783,770	2.5%	1.5%	2.7%	1.0%	0.8%	0.5%	0.3%	0.0%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CALABARZON	Cavite	ALFONSO	48,567	51,839	59,306	66,296	71,098	75,350	79,078	82,123	84,150	1.3%	2.7%	2.3%	1.4%	1.2%	1.0%	0.8%	0.5%
		AMADEO	33,457	37,649	41,901	46,799	50,188	53,189	55,820	57,971	59,402	2.4%	2.2%	2.2%	1.4%	1.2%	1.0%	0.8%	0.5%
		BACOOR CITY	520,216	600,609	664,625	742,173	795,923	843,515	885,267	919,364	942,052	2.9%	2.0%	2.2%	1.4%	1.2%	1.0%	0.8%	0.5%
		CARMONA	74,986	97,557	106,256	118,594	127,182	134,787	141,460	146,908	150,533	5.4%	1.7%	2.2%	1.4%	1.2%	1.0%	0.8%	0.5%
		CAVITE CITY	101,120	102,806	100,674	111,959	120,067	127,247	133,545	138,688	142,111	0.3%	-0.4%	2.1%	1.4%	1.2%	1.0%	0.8%	0.5%
		CITY OF DASMARIÑAS	575,817	659,019	703,141	784,262	841,059	891,351	935,471	971,502	995,478	2.7%	1.3%	2.2%	1.4%	1.2%	1.0%	0.8%	0.5%
		GENERAL EMILIO AGUINALDO	17,507	22,220	23,973	26,749	28,686	30,401	31,906	33,135	33,954	4.9%	1.5%	2.2%	1.4%	1.2%	1.0%	0.8%	0.5%
		CITY OF GENERAL TRIAS 1	243,322	314,303	450,583	506,785	543,486	575,984	604,495	627,778	643,271	5.3%	7.5%	2.4%	1.4%	1.2%	1.0%	0.8%	0.5%
		IMUS CITY	301,624	403,785	496,794	556,524	596,828	632,515	663,824	689,391	706,405	6.0%	4.2%	2.3%	1.4%	1.2%	1.0%	0.8%	0.5%
		INDANG	62,030	65,599	68,699	76,578	82,123	87,034	91,342	94,861	97,201	1.1%	0.9%	2.2%	1.4%	1.2%	1.0%	0.8%	0.5%
		KAWIT	78,209	83,466	107,535	120,618	129,353	137,088	143,874	149,416	153,103	1.3%	5.2%	2.3%	1.4%	1.2%	1.0%	0.8%	0.5%
		MAGALLANES	21,231	22,727	23,851	26,587	28,513	30,217	31,713	32,935	33,748	1.4%	1.0%	2.2%	1.4%	1.2%	1.0%	0.8%	0.5%
		MARAGONDON	35,289	37,720	40,687	45,397	48,684	51,595	54,149	56,234	57,622	1.3%	1.5%	2.2%	1.4%	1.2%	1.0%	0.8%	0.5%
		MENDEZ (MENDEZ-NUÑEZ)	28,570	31,529	34,879	38,949	41,770	44,267	46,458	48,248	49,438	2.0%	2.0%	2.2%	1.4%	1.2%	1.0%	0.8%	0.5%
		NAIC	88,144	111,454	160,987	181,099	194,215	205,828	216,017	224,337	229,874	4.8%	7.6%	2.4%	1.4%	1.2%	1.0%	0.8%	0.5%
		NOVELETA	41,678	45,846	49,452	55,177	59,174	62,711	65,815	68,351	70,037	1.9%	1.5%	2.2%	1.4%	1.2%	1.0%	0.8%	0.5%
		ROSARIO	92,253	110,706	110,807	123,323	132,255	140,163	147,100	152,766	156,536	3.7%	0.0%	2.2%	1.4%	1.2%	1.0%	0.8%	0.5%
		SILANG	213,490	248,085	295,644	330,886	354,849	376,067	394,682	409,884	419,999	3.0%	3.6%	2.3%	1.4%	1.2%	1.0%	0.8%	0.5%
		TAGAYTAY CITY	62,030	71,181	85,330	95,518	102,435	108,560	113,933	118,322	121,243	2.8%	3.7%	2.3%	1.4%	1.2%	1.0%	0.8%	0.5%
		TANZA	188,755	226,188	312,116	350,715	376,114	398,604	418,335	434,448	445,170	3.7%	6.7%	2.4%	1.4%	1.2%	1.0%	0.8%	0.5%
		TERNATE	19,297	23,157	24,653	27,494	29,485	31,249	32,795	34,059	34,899	3.7%	1.3%	2.2%	1.4%	1.2%	1.0%	0.8%	0.5%
		TRECE MARTIRES CITY (Capital)	104,559	155,713	210,503	236,412	253,534	268,694	281,994	292,856	300,082	8.3%	6.2%	2.3%	1.4%	1.2%	1.0%	0.8%	0.5%
		GEN. MARIANO ALVAREZ	138,540	155,143	172,433	192,579	206,526	218,876	229,710	238,558	244,445	2.3%	2.1%	2.2%	1.4%	1.2%	1.0%	0.8%	0.5%
		Sub-total	3,090,691	3,678,301	4,344,829	4,861,473	5,213,547	5,525,292	5,798,783	6,022,135	6,170,753	3.5%	3.4%	2.3%	1.4%	1.2%	1.0%	0.8%	0.5%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CALABARZON	Laguna	ALAMINOS	43,526	47,859	51,619	56,023	59,889	63,296	66,270	68,707	70,556	1.9%	1.5%	1.7%	1.3%	1.1%	0.9%	0.7%	0.5%
		BAY	55,698	62,143	67,182	72,920	77,952	82,385	86,256	89,427	91,835	2.2%	1.6%	1.7%	1.3%	1.1%	0.9%	0.7%	0.5%
		CITY OF BIÑAN	283,396	333,028	407,437	443,904	474,534	501,517	525,080	544,386	559,046	3.3%	4.1%	1.7%	1.3%	1.1%	0.9%	0.7%	0.5%
		CABUYAO CITY 2	248,436	308,745	355,330	386,440	413,104	436,593	457,108	473,915	486,676	4.4%	2.9%	1.7%	1.3%	1.1%	0.9%	0.7%	0.5%
		CITY OF CALAMBA	389,377	454,486	539,671	587,467	628,004	663,712	694,896	720,446	739,847	3.1%	3.5%	1.7%	1.3%	1.1%	0.9%	0.7%	0.5%
		CALAUAN	74,890	80,453	87,693	95,209	101,779	107,566	112,620	116,761	119,905	1.4%	1.7%	1.7%	1.3%	1.1%	0.9%	0.7%	0.5%
		CAVINTI	20,809	21,702	23,980	26,046	27,843	29,426	30,808	31,940	32,801	0.8%	2.0%	1.7%	1.3%	1.1%	0.9%	0.7%	0.5%
		FAMY	15,021	16,587	16,791	18,185	19,439	20,544	21,510	22,301	22,902	2.0%	0.2%	1.6%	1.3%	1.1%	0.9%	0.7%	0.5%
		KALAYAAN	20,944	23,269	24,755	26,856	28,708	30,340	31,766	32,934	33,820	2.1%	1.2%	1.6%	1.3%	1.1%	0.9%	0.7%	0.5%
		LILIW	33,851	36,582	39,491	42,862	45,819	48,424	50,699	52,563	53,978	1.6%	1.5%	1.7%	1.3%	1.1%	0.9%	0.7%	0.5%
		LOS BAÑOS	101,884	112,008	115,353	125,004	133,630	141,228	147,865	153,302	157,430	1.9%	0.6%	1.6%	1.3%	1.1%	0.9%	0.7%	0.5%
		LUISIANA	20,148	19,720	20,859	22,625	24,187	25,562	26,763	27,746	28,494	-0.4%	1.1%	1.6%	1.3%	1.1%	0.9%	0.7%	0.5%
		LUMBAN	29,470	30,652	32,330	35,064	37,483	39,614	41,476	43,000	44,158	0.8%	1.1%	1.6%	1.3%	1.1%	0.9%	0.7%	0.5%
		MABITAC	18,618	20,530	21,275	23,060	24,652	26,053	27,277	28,280	29,041	2.0%	0.7%	1.6%	1.3%	1.1%	0.9%	0.7%	0.5%
		MAGDALENA	22,976	25,266	27,816	30,209	32,293	34,129	35,733	37,046	38,043	1.9%	1.9%	1.7%	1.3%	1.1%	0.9%	0.7%	0.5%
		MAJAYJAY	26,547	27,792	27,893	30,201	32,285	34,120	35,723	37,037	38,034	0.9%	0.1%	1.6%	1.3%	1.1%	0.9%	0.7%	0.5%
		NAGCARLAN	59,726	63,057	64,866	70,290	75,140	79,412	83,143	86,200	88,521	1.1%	0.6%	1.6%	1.3%	1.1%	0.9%	0.7%	0.5%
		PAETE	23,523	25,096	24,945	27,000	28,863	30,504	31,937	33,112	34,004	1.3%	-0.1%	1.6%	1.3%	1.1%	0.9%	0.7%	0.5%
		PAGSANJAN	39,313	42,164	44,327	48,070	51,387	54,308	56,861	58,951	60,538	1.4%	1.0%	1.6%	1.3%	1.1%	0.9%	0.7%	0.5%
		PAKIL	20,822	20,659	23,495	25,543	27,306	28,859	30,215	31,325	32,170	-0.2%	2.6%	1.7%	1.3%	1.1%	0.9%	0.7%	0.5%
		PANGIL	23,201	24,274	25,026	27,121	28,993	30,641	32,081	33,260	34,156	0.9%	0.6%	1.6%	1.3%	1.1%	0.9%	0.7%	0.5%
		PILA	46,534	50,289	54,613	59,287	63,378	66,981	70,128	72,706	74,665	1.6%	1.7%	1.7%	1.3%	1.1%	0.9%	0.7%	0.5%
		RIZAL	15,518	17,253	18,332	19,887	21,260	22,469	23,523	24,389	25,045	2.1%	1.2%	1.6%	1.3%	1.1%	0.9%	0.7%	0.5%
		SAN PABLO CITY	248,890	266,068	285,348	309,642	331,007	349,828	366,265	379,731	389,957	1.3%	1.4%	1.6%	1.3%	1.1%	0.9%	0.7%	0.5%
		CITY OF SAN PEDRO 3	294,310	325,809	326,001	352,927	377,279	398,732	417,466	432,814	444,470	2.1%	0.0%	1.6%	1.3%	1.1%	0.9%	0.7%	0.5%
		SANTA CRUZ (Capital)	110,943	117,605	123,574	134,003	143,251	151,395	158,508	164,336	168,762	1.2%	1.0%	1.6%	1.3%	1.1%	0.9%	0.7%	0.5%
		SANTA MARIA	26,839	30,830	34,511	37,500	40,088	42,368	44,359	45,989	47,227	2.8%	2.3%	1.7%	1.3%	1.1%	0.9%	0.7%	0.5%
		CITY OF SANTA ROSA	284,670	353,767	414,812	451,382	482,529	509,965	533,926	553,557	568,463	4.4%	3.2%	1.7%	1.3%	1.1%	0.9%	0.7%	0.5%
		SINILOAN	35,363	38,067	39,460	42,772	45,722	48,322	50,593	52,453	53,866	1.5%	0.7%	1.6%	1.3%	1.1%	0.9%	0.7%	0.5%
		VICTORIA	34,604	39,321	43,408	47,148	50,401	53,267	55,770	57,820	59,377	2.6%	2.0%	1.7%	1.3%	1.1%	0.9%	0.7%	0.5%
		Sub-total	2,669,847	3,035,081	3,382,193	3,674,647	3,928,205	4,151,560	4,346,625	4,506,434	4,627,787	2.6%	2.2%	1.7%	1.3%	1.1%	0.9%	0.7%	0.5%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CALABARZON	Quezon	AGDANGAN	11,567	12,851	12,764	13,500	14,243	14,830	15,267	15,530	15,615	2.1%	-0.1%	1.1%	1.1%	0.8%	0.6%	0.3%	0.1%
		ALABAT	16,120	15,630	15,936	16,872	17,800	18,533	19,078	19,406	19,513	-0.6%	0.4%	1.1%	1.1%	0.8%	0.6%	0.3%	0.1%
		ATIMONAN	61,587	63,432	64,260	68,018	71,758	74,711	76,906	78,233	78,662	0.6%	0.3%	1.1%	1.1%	0.8%	0.6%	0.3%	0.1%
		BUENAVISTA	29,053	30,047	31,160	33,009	34,823	36,256	37,321	37,966	38,174	0.7%	0.7%	1.2%	1.1%	0.8%	0.6%	0.3%	0.1%
		BURDEOS	24,166	26,760	24,644	25,995	27,424	28,553	29,392	29,899	30,063	2.1%	-1.6%	1.1%	1.1%	0.8%	0.6%	0.3%	0.1%
		CALAUAG	69,223	73,139	71,809	75,925	80,100	83,396	85,846	87,327	87,804	1.1%	-0.4%	1.1%	1.1%	0.8%	0.6%	0.3%	0.1%
		CANDELARIA	110,570	117,434	137,881	146,637	154,699	161,066	165,796	168,658	169,578	1.2%	3.3%	1.2%	1.1%	0.8%	0.6%	0.3%	0.1%
		CATANAUAN	65,832	71,073	72,752	77,034	81,270	84,613	87,099	88,602	89,087	1.5%	0.5%	1.2%	1.1%	0.8%	0.6%	0.3%	0.1%
		DOLORES	27,702	28,891	32,514	34,534	36,433	37,932	39,046	39,721	39,937	0.8%	2.4%	1.2%	1.1%	0.8%	0.6%	0.3%	0.1%
		GENERAL LUNA	25,373	26,494	24,804	26,181	27,620	28,756	29,600	30,112	30,276	0.9%	-1.3%	1.1%	1.1%	0.8%	0.6%	0.3%	0.1%
		GENERAL NAKAR	25,973	29,705	34,225	36,379	38,379	39,958	41,131	41,841	42,070	2.7%	2.9%	1.2%	1.1%	0.8%	0.6%	0.3%	0.1%
		GUINAYANGAN	41,669	45,155	44,045	46,559	49,119	51,140	52,642	53,552	53,844	1.6%	-0.5%	1.1%	1.1%	0.8%	0.6%	0.3%	0.1%
		GUMACA	69,618	73,877	71,942	76,043	80,224	83,525	85,979	87,463	87,940	1.2%	-0.5%	1.1%	1.1%	0.8%	0.6%	0.3%	0.1%
		INFANTA	64,818	69,079	76,186	80,869	85,316	88,826	91,435	93,013	93,521	1.3%	2.0%	1.2%	1.1%	0.8%	0.6%	0.3%	0.1%
		JOMALIG	6,884	7,417	7,667	8,121	8,568	8,920	9,182	9,340	9,392	1.5%	0.7%	1.2%	1.1%	0.8%	0.6%	0.3%	0.1%
		LOPEZ	91,074	95,167	94,657	100,128	105,634	109,981	113,211	115,166	115,794	0.9%	-0.1%	1.1%	1.1%	0.8%	0.6%	0.3%	0.1%
		LUCBAN	46,698	51,475	53,091	56,231	59,322	61,764	63,578	64,675	65,028	2.0%	0.6%	1.2%	1.1%	0.8%	0.6%	0.3%	0.1%
		MACALELON	26,419	28,188	27,312	28,864	30,450	31,702	32,633	33,196	33,378	1.3%	-0.6%	1.1%	1.1%	0.8%	0.6%	0.3%	0.1%
		MAUBAN	61,141	63,819	71,081	75,474	79,623	82,899	85,334	86,807	87,282	0.9%	2.2%	1.2%	1.1%	0.8%	0.6%	0.3%	0.1%
		MULANAY	50,826	53,123	55,576	58,891	62,128	64,685	66,585	67,734	68,104	0.9%	0.9%	1.2%	1.1%	0.8%	0.6%	0.3%	0.1%
		PADRE BURGOS	20,161	22,460	23,488	24,889	26,257	27,337	28,140	28,626	28,782	2.2%	0.9%	1.2%	1.1%	0.8%	0.6%	0.3%	0.1%
		PAGBILAO	65,996	75,023	78,700	83,402	87,987	91,608	94,299	95,926	96,451	2.6%	1.0%	1.2%	1.1%	0.8%	0.6%	0.3%	0.1%
		PANUKULAN	12,511	13,546	16,376	17,430	18,390	19,146	19,708	20,049	20,159	1.6%	3.9%	1.3%	1.1%	0.8%	0.6%	0.3%	0.1%
		PATNANUNGAN	13,865	14,606	15,052	15,941	16,818	17,510	18,024	18,335	18,435	1.0%	0.6%	1.2%	1.1%	0.8%	0.6%	0.3%	0.1%
		PEREZ	12,039	12,173	12,767	13,530	14,274	14,861	15,297	15,562	15,646	0.2%	1.0%	1.2%	1.1%	0.8%	0.6%	0.3%	0.1%
		PITOGO	21,380	23,019	22,798	24,112	25,437	26,484	27,262	27,732	27,883	1.5%	-0.2%	1.1%	1.1%	0.8%	0.6%	0.3%	0.1%
		PLARIDEL	10,238	10,935	10,129	10,687	11,274	11,737	12,082	12,291	12,359	1.3%	-1.5%	1.1%	1.1%	0.8%	0.6%	0.3%	0.1%
		POLILLO	28,125	30,582	31,908	33,808	35,668	37,134	38,225	38,884	39,096	1.7%	0.9%	1.2%	1.1%	0.8%	0.6%	0.3%	0.1%
		QUEZON	15,142	15,228	15,886	16,832	17,758	18,488	19,031	19,360	19,466	0.1%	0.8%	1.2%	1.1%	0.8%	0.6%	0.3%	0.1%
		REAL	35,189	35,979	38,678	41,022	43,278	45,060	46,382	47,183	47,440	0.4%	1.5%	1.2%	1.1%	0.8%	0.6%	0.3%	0.1%
		SAMPALOC	13,107	13,907	13,629	14,409	15,201	15,826	16,291	16,573	16,663	1.2%	-0.4%	1.1%	1.1%	0.8%	0.6%	0.3%	0.1%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CALABARZON	Quezon	SAN ANDRES	33,586	35,780	37,454	39,689	41,872	43,595	44,875	45,650	45,899	1.3%	0.9%	1.2%	1.1%	0.8%	0.6%	0.3%	0.1%
		SAN ANTONIO	31,681	33,467	35,891	38,063	40,156	41,808	43,036	43,779	44,017	1.1%	1.4%	1.2%	1.1%	0.8%	0.6%	0.3%	0.1%
		SAN FRANCISCO (AURORA)	57,979	61,473	62,097	65,722	69,336	72,189	74,310	75,593	76,005	1.2%	0.2%	1.1%	1.1%	0.8%	0.6%	0.3%	0.1%
		SAN NARCISO	45,386	48,461	51,058	54,116	57,091	59,440	61,186	62,242	62,582	1.3%	1.0%	1.2%	1.1%	0.8%	0.6%	0.3%	0.1%
		SARIAYA	138,894	148,980	161,868	171,735	181,179	188,633	194,175	197,526	198,604	1.4%	1.7%	1.2%	1.1%	0.8%	0.6%	0.3%	0.1%
		TAGKAWAYAN	50,833	51,832	54,003	57,216	60,362	62,846	64,692	65,808	66,168	0.4%	0.8%	1.2%	1.1%	0.8%	0.6%	0.3%	0.1%
		CITY OF TAYABAS	91,428	99,779	112,658	119,671	126,252	131,447	135,307	137,643	138,394	1.8%	2.5%	1.2%	1.1%	0.8%	0.6%	0.3%	0.1%
		TIAONG	91,599	99,712	106,265	112,672	118,867	123,759	127,393	129,592	130,299	1.7%	1.3%	1.2%	1.1%	0.8%	0.6%	0.3%	0.1%
		UNISAN	25,186	26,884	25,448	26,871	28,349	29,514	30,381	30,905	31,074	1.3%	-1.1%	1.1%	1.1%	0.8%	0.6%	0.3%	0.1%
		LUCENA CITY (Capital)	246,392	266,248	278,924	295,574	311,827	324,657	334,193	339,961	341,816	1.6%	0.9%	1.2%	1.1%	0.8%	0.6%	0.3%	0.1%
		Sub-total	1,987,030	2,122,830	2,229,383	2,362,655	2,492,566	2,595,125	2,671,350	2,717,461	2,732,300	1.3%	1.0%	1.2%	1.1%	0.8%	0.6%	0.3%	0.1%
	Rizal	ANGONO	102,407	113,283	130,494	142,955	154,200	164,418	173,639	181,538	187,644	2.0%	2.9%	1.8%	1.5%	1.3%	1.1%	0.9%	0.7%
		CITY OF ANTIPOLO	677,741	776,386	887,399	971,913	1,048,367	1,117,839	1,180,538	1,234,236	1,275,752	2.8%	2.7%	1.8%	1.5%	1.3%	1.1%	0.9%	0.7%
		BARAS	32,609	69,300	87,637	96,265	103,837	110,719	116,930	122,249	126,362	16.3%	4.8%	1.9%	1.5%	1.3%	1.1%	0.9%	0.7%
		BINANGONAN	249,872	282,474	313,631	343,191	370,188	394,719	416,859	435,821	450,481	2.5%	2.1%	1.8%	1.5%	1.3%	1.1%	0.9%	0.7%
		CAINTA	311,845	322,128	376,933	413,126	445,624	475,154	501,805	524,631	542,278	0.7%	3.2%	1.9%	1.5%	1.3%	1.1%	0.9%	0.7%
		CARDONA	47,414	49,034	50,143	54,721	59,026	62,937	66,468	69,491	71,828	0.7%	0.4%	1.8%	1.5%	1.3%	1.1%	0.9%	0.7%
		JALA-JALA	30,074	32,254	34,017	37,162	40,085	42,741	45,138	47,191	48,779	1.4%	1.1%	1.8%	1.5%	1.3%	1.1%	0.9%	0.7%
		RODRIGUEZ (MONTALBAN)	280,904	369,222	443,954	486,970	525,277	560,085	591,500	618,408	639,209	5.6%	3.8%	1.9%	1.5%	1.3%	1.1%	0.9%	0.7%
		MORONG	52,194	58,118	71,151	78,086	84,228	89,810	94,847	99,162	102,497	2.2%	4.1%	1.9%	1.5%	1.3%	1.1%	0.9%	0.7%
		PILILLA	59,527	64,812	71,535	78,263	84,419	90,013	95,063	99,387	102,729	1.7%	2.0%	1.8%	1.5%	1.3%	1.1%	0.9%	0.7%
		SAN MATEO	205,255	252,527	273,306	298,822	322,330	343,689	362,967	379,478	392,242	4.2%	1.6%	1.8%	1.5%	1.3%	1.1%	0.9%	0.7%
		TANAY	98,879	117,830	139,420	152,857	164,882	175,808	185,669	194,115	200,645	3.6%	3.4%	1.9%	1.5%	1.3%	1.1%	0.9%	0.7%
		TAYTAY	288,956	319,104	386,451	423,983	457,336	487,642	514,993	538,420	556,530	2.0%	3.9%	1.9%	1.5%	1.3%	1.1%	0.9%	0.7%
		TERESA	47,163	57,755	64,072	70,110	75,625	80,637	85,160	89,033	92,028	4.1%	2.1%	1.8%	1.5%	1.3%	1.1%	0.9%	0.7%
		Sub-total	2,484,840	2,884,227	3,330,143	3,648,424	3,935,424	4,196,211	4,431,576	4,633,160	4,789,004	3.0%	2.9%	1.8%	1.5%	1.3%	1.1%	0.9%	0.7%
		Total	12,609,803	14,414,774	16,195,042	17,870,652	19,064,889	20,096,703	20,975,621	21,660,414	22,103,614	2.7%	2.4%	2.0%	1.3%	1.1%	0.9%	0.6%	0.4%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
MIMAROPA	Marinduque	BOAC (Capital)	52,892	54,730	57,283	59,668	64,356	68,893	73,241	77,263	80,880	0.7%	0.9%	0.8%	1.5%	1.4%	1.2%	1.1%	0.9%
		BUENAVISTA	23,111	23,988	26,043	27,160	29,294	31,360	33,338	35,169	36,814	0.7%	1.7%	0.8%	1.5%	1.4%	1.2%	1.1%	0.9%
		GASAN	33,402	34,828	36,197	37,694	40,657	43,523	46,270	48,810	51,094	0.8%	0.8%	0.8%	1.5%	1.4%	1.2%	1.1%	0.9%
		MOGPOG	33,384	34,043	34,516	35,914	38,736	41,468	44,086	46,505	48,682	0.4%	0.3%	0.8%	1.5%	1.4%	1.2%	1.1%	0.9%
		SANTA CRUZ	55,673	56,408	54,692	56,816	61,281	65,602	69,742	73,571	77,014	0.3%	-0.6%	0.8%	1.5%	1.4%	1.2%	1.1%	0.9%
		TORRIJOS	29,366	30,524	30,476	31,692	34,183	36,593	38,903	41,038	42,959	0.8%	0.0%	0.8%	1.5%	1.4%	1.2%	1.1%	0.9%
		Sub-total	227,828	234,521	239,207	248,944	268,504	287,437	305,580	322,354	337,440	0.6%	0.4%	0.8%	1.5%	1.4%	1.2%	1.1%	0.9%
	Occidental Mindoro	ABRA DE ILOG	29,225	31,306	35,176	37,167	40,129	42,846	45,299	47,392	49,057	1.4%	2.4%	1.1%	1.5%	1.3%	1.1%	0.9%	0.7%
		CALINTAAN	28,148	29,826	30,190	31,790	34,324	36,648	38,746	40,536	41,961	1.2%	0.2%	1.0%	1.5%	1.3%	1.1%	0.9%	0.7%
		LOOC	9,758	10,117	7,802	8,126	8,774	9,368	9,904	10,362	10,725	0.7%	-5.1%	0.8%	1.5%	1.3%	1.1%	0.9%	0.7%
		LUBANG	23,068	18,803	17,437	18,303	19,762	21,100	22,308	23,339	24,160	-4.0%	-1.5%	1.0%	1.5%	1.3%	1.1%	0.9%	0.7%
		MAGSAYSAY	31,969	36,016	39,767	41,995	45,343	48,412	51,183	53,549	55,430	2.4%	2.0%	1.1%	1.5%	1.3%	1.1%	0.9%	0.7%
		MAMBURAO (Capital)	39,237	42,975	47,705	50,385	54,402	58,084	61,409	64,247	66,503	1.8%	2.1%	1.1%	1.5%	1.3%	1.1%	0.9%	0.7%
		PALUAN	15,223	16,025	18,566	19,634	21,200	22,635	23,931	25,037	25,916	1.0%	3.0%	1.1%	1.5%	1.3%	1.1%	0.9%	0.7%
		RIZAL	34,458	38,263	40,429	42,632	46,030	49,147	51,961	54,362	56,271	2.1%	1.1%	1.1%	1.5%	1.3%	1.1%	0.9%	0.7%
		SABLAYAN	76,153	83,169	92,598	97,809	105,607	112,757	119,211	124,719	129,100	1.8%	2.2%	1.1%	1.5%	1.3%	1.1%	0.9%	0.7%
		SAN JOSE	131,188	143,430	153,267	161,680	174,570	186,389	197,059	206,164	213,405	1.8%	1.3%	1.1%	1.5%	1.3%	1.1%	0.9%	0.7%
		SANTA CRUZ	34,544	37,484	42,417	44,827	48,401	51,677	54,635	57,160	59,168	1.6%	2.5%	1.1%	1.5%	1.3%	1.1%	0.9%	0.7%
		Sub-total	452,971	487,414	525,354	554,348	598,543	639,062	675,646	706,865	731,694	1.5%	1.5%	1.1%	1.5%	1.3%	1.1%	0.9%	0.7%
	Oriental Mindoro	BACO	35,060	37,215	39,817	42,320	45,790	49,074	52,168	55,018	57,580	1.2%	1.4%	1.2%	1.6%	1.4%	1.2%	1.1%	0.9%
		BANSUD	38,341	40,992	42,671	45,312	49,026	52,542	55,854	58,906	61,650	1.3%	0.8%	1.2%	1.6%	1.4%	1.2%	1.1%	0.9%
		BONGABONG	66,569	72,073	76,973	81,806	88,509	94,858	100,835	106,347	111,299	1.6%	1.3%	1.2%	1.6%	1.4%	1.2%	1.1%	0.9%
		BULALACAO (SAN PEDRO)	33,754	39,107	44,366	47,243	51,114	54,781	58,233	61,417	64,277	3.0%	2.6%	1.3%	1.6%	1.4%	1.2%	1.1%	0.9%
		CITY OF CALAPAN (Capital)	124,173	133,893	145,786	155,037	167,742	179,773	191,103	201,549	210,935	1.5%	1.7%	1.2%	1.6%	1.4%	1.2%	1.1%	0.9%
		GLORIA	42,012	45,073	50,496	53,749	58,153	62,324	66,253	69,874	73,128	1.4%	2.3%	1.3%	1.6%	1.4%	1.2%	1.1%	0.9%
		MANSALAY	51,705	54,533	59,114	62,857	68,007	72,885	77,479	81,713	85,518	1.1%	1.6%	1.2%	1.6%	1.4%	1.2%	1.1%	0.9%
		NAUJAN	94,497	102,998	109,587	116,454	125,996	135,032	143,544	151,389	158,440	1.7%	1.2%	1.2%	1.6%	1.4%	1.2%	1.1%	0.9%
		PINAMALAYAN	81,666	86,172	90,383	96,001	103,868	111,317	118,332	124,800	130,612	1.1%	1.0%	1.2%	1.6%	1.4%	1.2%	1.1%	0.9%
		POLA	32,984	34,701	35,455	37,625	40,707	43,626	46,377	48,912	51,190	1.0%	0.4%	1.2%	1.6%	1.4%	1.2%	1.1%	0.9%
		PUERTO GALERA	32,521	36,606	41,961	44,696	48,358	51,825	55,092	58,104	60,809	2.4%	2.8%	1.3%	1.6%	1.4%	1.2%	1.1%	0.9%
		ROXAS	49,854	53,201	58,849	62,615	67,746	72,605	77,181	81,399	85,189	1.3%	2.0%	1.2%	1.6%	1.4%	1.2%	1.1%	0.9%
		SAN TEODORO	15,810	17,904	19,121	20,322	21,988	23,566	25,052	26,420	27,651	2.5%	1.3%	1.2%	1.6%	1.4%	1.2%	1.1%	0.9%
		SOCORRO	38,348	39,099	41,585	44,190	47,811	51,239	54,469	57,447	60,121	0.4%	1.2%	1.2%	1.6%	1.4%	1.2%	1.1%	0.9%
		VICTORIA	48,308	50,492	52,175	55,390	59,929	64,227	68,275	72,006	75,359	0.9%	0.7%	1.2%	1.6%	1.4%	1.2%	1.1%	0.9%
		Sub-total	785,602	844,059	908,339	965,620	1,044,745	1,119,676	1,190,245	1,255,301	1,313,758	1.4%	1.5%	1.2%	1.6%	1.4%	1.2%	1.1%	0.9%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
MIMAROPA	Palawan	ABORLAN	32,209	35,091	38,736	42,084	45,639	48,933	51,843	54,311	56,238	1.7%	2.0%	1.7%	1.6%	1.4%	1.2%	0.9%	0.7%
		AGUTAYA	11,906	12,545	12,867	13,945	15,123	16,215	17,180	17,997	18,635	1.1%	0.5%	1.6%	1.6%	1.4%	1.2%	0.9%	0.7%
		ARACELI	14,113	14,909	14,434	15,611	16,930	18,153	19,232	20,147	20,863	1.1%	-0.6%	1.6%	1.6%	1.4%	1.2%	0.9%	0.7%
		BALABAC	35,758	40,142	42,527	46,141	50,040	53,652	56,842	59,547	61,660	2.3%	1.2%	1.6%	1.6%	1.4%	1.2%	0.9%	0.7%
		BATARAZA	63,644	75,468	85,439	92,896	100,746	108,018	114,442	119,885	124,139	3.5%	2.5%	1.7%	1.6%	1.4%	1.2%	0.9%	0.7%
		BROOKE'S POINT	61,301	66,374	73,994	80,413	87,208	93,503	99,064	103,776	107,459	1.6%	2.2%	1.7%	1.6%	1.4%	1.2%	0.9%	0.7%
		BUSUANGA	21,358	22,046	25,617	27,875	30,229	32,412	34,339	35,973	37,250	0.6%	3.0%	1.7%	1.6%	1.4%	1.2%	0.9%	0.7%
		CAGAYANCILLO	7,116	6,285	6,884	7,477	8,109	8,695	9,212	9,651	9,993	-2.5%	1.8%	1.7%	1.6%	1.4%	1.2%	0.9%	0.7%
		CORON	42,941	51,803	65,855	71,844	77,915	83,539	88,508	92,718	96,008	3.8%	4.9%	1.8%	1.6%	1.4%	1.2%	0.9%	0.7%
		CUYO	21,847	22,360	23,489	25,479	27,631	29,626	31,388	32,881	34,048	0.5%	1.0%	1.6%	1.6%	1.4%	1.2%	0.9%	0.7%
		DUMARAN	21,397	23,734	23,528	25,470	27,622	29,616	31,378	32,870	34,036	2.1%	-0.2%	1.6%	1.6%	1.4%	1.2%	0.9%	0.7%
		EL NIDO (BACUIT)	36,191	41,606	50,494	55,015	59,665	63,971	67,776	71,000	73,519	2.8%	3.9%	1.7%	1.6%	1.4%	1.2%	0.9%	0.7%
		LINAPACAN	14,180	15,668	16,424	17,814	19,318	20,713	21,944	22,988	23,804	2.0%	0.9%	1.6%	1.6%	1.4%	1.2%	0.9%	0.7%
		MAGSAYSAY	11,965	12,196	12,603	13,663	14,816	15,887	16,831	17,631	18,257	0.4%	0.7%	1.6%	1.6%	1.4%	1.2%	0.9%	0.7%
		NARRA	65,264	73,212	77,948	84,585	91,732	98,354	104,203	109,160	113,033	2.3%	1.3%	1.6%	1.6%	1.4%	1.2%	0.9%	0.7%
		QUEZON	55,142	60,980	65,283	70,856	76,842	82,389	87,289	91,440	94,686	2.0%	1.4%	1.7%	1.6%	1.4%	1.2%	0.9%	0.7%
		ROXAS	61,058	65,358	69,624	75,555	81,939	87,854	93,079	97,506	100,966	1.4%	1.3%	1.6%	1.6%	1.4%	1.2%	0.9%	0.7%
		SAN VICENTE	30,919	31,232	33,507	36,370	39,442	42,289	44,804	46,935	48,601	0.2%	1.4%	1.7%	1.6%	1.4%	1.2%	0.9%	0.7%
		TAYTAY	70,837	75,165	83,357	90,574	98,227	105,317	111,582	116,889	121,036	1.2%	2.1%	1.7%	1.6%	1.4%	1.2%	0.9%	0.7%
		KALAYAAN	222	184	193	209	226	243	258	270	280	-3.7%	1.0%	1.6%	1.6%	1.5%	1.2%	0.9%	0.7%
		CULION	19,543	20,139	23,213	25,254	27,387	29,364	31,110	32,590	33,746	0.6%	2.9%	1.7%	1.6%	1.4%	1.2%	0.9%	0.7%
		RIZAL (MARCOS)	42,759	50,096	56,162	61,046	66,204	70,983	75,205	78,782	81,577	3.2%	2.3%	1.7%	1.6%	1.4%	1.2%	0.9%	0.7%
		SOFRONIO ESPAÑOLA	29,997	32,876	37,416	40,688	44,125	47,310	50,123	52,507	54,370	1.8%	2.6%	1.7%	1.6%	1.4%	1.2%	0.9%	0.7%
		PUERTO PRINCESA CITY (Capital)	222,673	255,116	307,079	334,493	362,758	388,942	412,075	431,675	446,991	2.8%	3.8%	1.7%	1.6%	1.4%	1.2%	0.9%	0.7%
		Sub-total	994,340	1,104,585	1,246,673	1,355,357	1,469,882	1,575,979	1,669,711	1,749,132	1,811,197	2.1%	2.4%	1.7%	1.6%	1.4%	1.2%	0.9%	0.7%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
MIMAROPA	Romblon	ALCANTARA	15,428	16,351	17,171	17,763	19,246	20,706	22,118	23,454	24,656	1.2%	1.0%	0.7%	1.6%	1.5%	1.3%	1.2%	1.0%
		BANTON	5,963	5,536	5,737	5,931	6,427	6,915	7,386	7,832	8,233	-1.5%	0.7%	0.7%	1.6%	1.5%	1.3%	1.2%	1.0%
		CAJIDIOCAN	21,198	21,861	23,259	24,069	26,081	28,058	29,970	31,780	33,410	0.6%	1.2%	0.7%	1.6%	1.5%	1.3%	1.2%	1.0%
		CALATRAVA	9,776	10,275	11,342	11,751	12,732	13,699	14,632	15,515	16,311	1.0%	2.0%	0.7%	1.6%	1.5%	1.3%	1.2%	1.0%
		CONCEPCION	4,445	4,037	3,561	3,660	3,966	4,267	4,558	4,832	5,080	-1.9%	-2.5%	0.5%	1.6%	1.5%	1.3%	1.2%	1.0%
		CORCUERA	9,935	10,283	10,112	10,435	11,307	12,165	12,994	13,779	14,486	0.7%	-0.3%	0.6%	1.6%	1.5%	1.3%	1.2%	1.0%
		LOOC	21,841	22,262	21,799	22,494	24,374	26,221	28,008	29,699	31,221	0.4%	-0.4%	0.6%	1.6%	1.5%	1.3%	1.2%	1.0%
		MAGDIWANG	13,584	14,142	15,385	15,932	17,265	18,574	19,838	21,036	22,116	0.8%	1.7%	0.7%	1.6%	1.5%	1.3%	1.2%	1.0%
		ODIONGAN	43,676	45,367	49,284	51,034	55,299	59,492	63,547	67,382	70,837	0.8%	1.7%	0.7%	1.6%	1.5%	1.3%	1.2%	1.0%
		ROMBLON (Capital)	37,995	38,758	40,554	41,943	45,449	48,894	52,227	55,380	58,219	0.4%	0.9%	0.7%	1.6%	1.5%	1.3%	1.2%	1.0%
		SAN AGUSTIN	22,116	22,598	24,115	24,957	27,042	29,093	31,076	32,952	34,641	0.4%	1.3%	0.7%	1.6%	1.5%	1.3%	1.2%	1.0%
		SAN ANDRES	15,028	15,589	15,940	16,473	17,850	19,203	20,511	21,749	22,865	0.7%	0.4%	0.7%	1.6%	1.5%	1.3%	1.2%	1.0%
		SAN FERNANDO	22,466	23,271	24,171	24,993	27,083	29,135	31,121	33,000	34,692	0.7%	0.8%	0.7%	1.6%	1.5%	1.3%	1.2%	1.0%
		SAN JOSE	10,294	10,881	11,759	12,175	13,192	14,193	15,161	16,076	16,899	1.1%	1.6%	0.7%	1.6%	1.5%	1.3%	1.2%	1.0%
		SANTA FE	15,700	16,098	17,802	18,445	19,987	21,502	22,968	24,355	25,604	0.5%	2.0%	0.7%	1.6%	1.5%	1.3%	1.2%	1.0%
		FERROL	6,802	6,964	8,005	8,304	8,998	9,680	10,339	10,964	11,526	0.5%	2.8%	0.7%	1.6%	1.5%	1.3%	1.2%	1.0%
		SANTA MARIA (IMELDA)	7,683	8,508	8,989	9,299	10,077	10,840	11,579	12,278	12,907	2.1%	1.1%	0.7%	1.6%	1.5%	1.3%	1.2%	1.0%
		Sub-total	283,930	292,781	308,985	319,660	346,374	372,638	398,033	422,063	443,705	0.6%	1.1%	0.7%	1.6%	1.5%	1.3%	1.2%	1.0%
		Total	2,744,671	2,963,360	3,228,558	3,443,929	3,728,048	3,994,792	4,239,215	4,455,715	4,637,794	1.5%	1.7%	1.3%	1.6%	1.4%	1.2%	1.0%	0.8%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
BICOL	Albay	BACACAY	65,724	68,906	72,485	76,671	82,424	87,689	92,345	96,336	99,483	1.0%	1.0%	1.1%	1.5%	1.2%	1.0%	0.8%	0.6%
		CAMALIG	63,585	66,904	72,042	76,259	81,981	87,217	91,847	95,817	98,948	1.0%	1.5%	1.1%	1.5%	1.2%	1.0%	0.8%	0.6%
		DARAGA (LOCSIN)	115,804	126,595	133,893	141,647	152,279	162,006	170,605	177,981	183,795	1.8%	1.1%	1.1%	1.5%	1.2%	1.0%	0.9%	0.6%
		GUINOBATAN	75,967	82,361	85,786	90,707	97,516	103,746	109,253	113,976	117,698	1.6%	0.8%	1.1%	1.5%	1.2%	1.0%	0.9%	0.6%
		JOVELLAR	16,899	17,308	17,795	18,807	20,219	21,511	22,653	23,632	24,404	0.5%	0.6%	1.1%	1.5%	1.2%	1.0%	0.8%	0.6%
		LEGAZPI CITY (Capital)	182,201	196,639	209,533	221,720	238,363	253,591	267,052	278,597	287,697	1.5%	1.3%	1.1%	1.5%	1.2%	1.0%	0.9%	0.6%
		LIBON	71,527	75,172	75,073	79,266	85,215	90,660	95,472	99,600	102,854	1.0%	0.0%	1.1%	1.5%	1.2%	1.0%	0.9%	0.6%
		CITY OF LIGAO	104,914	111,399	118,096	124,945	134,323	142,905	150,491	156,997	162,125	1.2%	1.2%	1.1%	1.5%	1.2%	1.0%	0.9%	0.6%
		MALILIPOT	35,567	37,785	40,857	43,255	46,502	49,473	52,099	54,352	56,126	1.2%	1.6%	1.1%	1.5%	1.2%	1.0%	0.9%	0.6%
		MALINAO	42,770	45,301	47,395	50,120	53,883	57,325	60,369	62,979	65,035	1.2%	0.9%	1.1%	1.5%	1.2%	1.0%	0.9%	0.6%
		MANITO	22,819	24,707	26,162	27,678	29,755	31,657	33,337	34,778	35,915	1.6%	1.2%	1.1%	1.5%	1.2%	1.0%	0.8%	0.6%
		OAS	64,785	67,960	66,084	69,708	74,940	79,728	83,960	87,590	90,451	1.0%	-0.6%	1.1%	1.5%	1.2%	1.0%	0.9%	0.6%
		PIO DURAN	45,028	46,693	49,070	51,900	55,795	59,361	62,511	65,213	67,343	0.7%	1.0%	1.1%	1.5%	1.2%	1.0%	0.8%	0.6%
		POLANGUI	82,307	88,221	89,176	94,196	101,266	107,736	113,456	118,361	122,226	1.4%	0.2%	1.1%	1.5%	1.2%	1.0%	0.9%	0.6%
		RAPU-RAPU	35,875	36,920	36,151	38,142	41,006	43,626	45,942	47,928	49,494	0.6%	-0.4%	1.1%	1.5%	1.2%	1.0%	0.8%	0.6%
		SANTO DOMINGO (LIBOG)	32,414	34,967	37,765	39,979	42,980	45,726	48,153	50,234	51,876	1.5%	1.6%	1.1%	1.5%	1.2%	1.0%	0.8%	0.6%
		CITY OF TABACO	125,083	133,868	140,961	149,102	160,294	170,535	179,588	187,352	193,472	1.4%	1.0%	1.1%	1.5%	1.2%	1.0%	0.9%	0.6%
		TIWI	50,163	53,120	56,444	59,722	64,206	68,308	71,934	75,045	77,495	1.2%	1.2%	1.1%	1.5%	1.2%	1.0%	0.9%	0.6%
		Sub-total	1,233,432	1,314,826	1,374,768	1,453,824	1,562,947	1,662,800	1,751,067	1,826,768	1,886,437	1.3%	0.9%	1.1%	1.5%	1.2%	1.0%	0.9%	0.6%
	Camarines Norte	BASUD	38,176	41,017	45,133	47,997	52,827	57,640	62,389	66,955	71,280	1.4%	1.9%	1.2%	1.9%	1.8%	1.6%	1.4%	1.3%
		CAPALONGA	31,299	32,215	36,223	38,550	42,429	46,295	50,110	53,777	57,250	0.6%	2.4%	1.3%	1.9%	1.8%	1.6%	1.4%	1.3%
		DAET (Capital)	95,572	104,799	111,700	118,669	130,610	142,510	154,254	165,541	176,233	1.9%	1.3%	1.2%	1.9%	1.8%	1.6%	1.4%	1.3%
		SAN LORENZO RUIZ (IMELDA)	12,592	14,063	15,757	16,767	18,454	20,135	21,795	23,390	24,900	2.2%	2.3%	1.3%	1.9%	1.8%	1.6%	1.4%	1.3%
		JOSE PANGANIBAN	55,557	59,639	63,662	67,637	74,443	81,227	87,920	94,353	100,447	1.4%	1.3%	1.2%	1.9%	1.8%	1.6%	1.4%	1.3%
		LABO	92,041	101,082	109,245	116,113	127,798	139,442	150,932	161,976	172,439	1.9%	1.6%	1.2%	1.9%	1.8%	1.6%	1.4%	1.3%
		MERCEDES	47,674	50,841	55,334	58,826	64,746	70,644	76,466	82,062	87,362	1.3%	1.7%	1.2%	1.9%	1.8%	1.6%	1.4%	1.3%
		PARACALE	53,243	59,149	60,198	63,855	70,280	76,683	83,002	89,075	94,828	2.1%	0.4%	1.2%	1.9%	1.8%	1.6%	1.4%	1.3%
		SAN VICENTE	10,114	10,396	12,579	13,416	14,767	16,112	17,440	18,716	19,925	0.6%	3.9%	1.3%	1.9%	1.8%	1.6%	1.4%	1.3%
		SANTA ELENA	40,828	40,786	43,582	46,305	50,965	55,608	60,191	64,595	68,767	0.0%	1.3%	1.2%	1.9%	1.8%	1.6%	1.4%	1.3%
		TALISAY	23,904	25,841	27,244	28,933	31,844	34,745	37,608	40,361	42,968	1.6%	1.1%	1.2%	1.9%	1.8%	1.6%	1.4%	1.3%
		VINZONS	41,915	43,485	49,042	52,196	57,449	62,683	67,849	72,812	77,515	0.7%	2.4%	1.3%	1.9%	1.8%	1.6%	1.4%	1.3%
		Sub-total	542,915	583,313	629,699	669,264	736,612	803,724	869,956	933,613	993,914	1.4%	1.5%	1.2%	1.9%	1.8%	1.6%	1.4%	1.3%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
BICOL	Camarines Sur	BAAO	54,971	58,849	61,493	64,732	70,675	76,381	81,688	86,484	90,561	1.4%	0.9%	1.0%	1.8%	1.6%	1.4%	1.1%	0.9%
		BALATAN	28,699	30,922	30,669	32,226	35,184	38,024	40,667	43,055	45,085	1.5%	-0.2%	1.0%	1.8%	1.6%	1.4%	1.1%	0.9%
		BATO	48,306	52,137	52,155	54,822	59,855	64,688	69,182	73,245	76,697	1.5%	0.0%	1.0%	1.8%	1.6%	1.4%	1.1%	0.9%
		BOMBON	15,437	16,512	17,995	18,970	20,710	22,383	23,938	25,343	26,538	1.4%	1.7%	1.1%	1.8%	1.6%	1.4%	1.1%	0.9%
		BUHI	73,809	77,143	81,306	85,615	93,474	101,021	108,040	114,384	119,777	0.9%	1.1%	1.0%	1.8%	1.6%	1.4%	1.1%	0.9%
		BULA	68,011	69,430	73,143	77,018	84,087	90,877	97,192	102,899	107,750	0.4%	1.0%	1.0%	1.8%	1.6%	1.4%	1.1%	0.9%
		CABUSAO	18,049	18,397	19,257	20,273	22,133	23,920	25,582	27,084	28,361	0.4%	0.9%	1.0%	1.8%	1.6%	1.4%	1.1%	0.9%
		CALABANGA	78,119	83,033	88,906	93,667	102,264	110,521	118,200	125,140	131,041	1.2%	1.4%	1.0%	1.8%	1.6%	1.4%	1.1%	0.9%
		CAMALIGAN	22,254	24,109	25,036	26,350	28,769	31,092	33,252	35,204	36,864	1.6%	0.8%	1.0%	1.8%	1.6%	1.4%	1.1%	0.9%
		CANAMAN	32,390	34,210	36,205	38,129	41,629	44,991	48,116	50,941	53,342	1.1%	1.1%	1.0%	1.8%	1.6%	1.4%	1.1%	0.9%
		CARAMOAN	44,945	47,605	51,728	54,524	59,529	64,335	68,806	72,847	76,281	1.2%	1.7%	1.1%	1.8%	1.6%	1.4%	1.1%	0.9%
		DEL GALLEGO	23,064	25,397	26,403	27,790	30,340	32,790	35,068	37,127	38,878	1.9%	0.8%	1.0%	1.8%	1.6%	1.4%	1.1%	0.9%
		GAINZA	10,345	11,262	11,584	12,187	13,306	14,381	15,380	16,283	17,052	1.7%	0.6%	1.0%	1.8%	1.6%	1.4%	1.1%	0.9%
		GARCHITORENA	25,204	27,010	29,436	31,030	33,878	36,613	39,157	41,457	43,410	1.4%	1.7%	1.1%	1.8%	1.6%	1.4%	1.1%	0.9%
		GOA	58,503	63,308	71,368	75,313	82,226	88,866	95,040	100,621	105,365	1.6%	2.4%	1.1%	1.8%	1.6%	1.4%	1.1%	0.9%
		IRIGA CITY	105,919	111,757	114,457	120,407	131,459	142,074	151,945	160,867	168,451	1.1%	0.5%	1.0%	1.8%	1.6%	1.4%	1.1%	0.9%
		LAGONOY	51,814	55,465	56,714	59,659	65,134	70,394	75,286	79,706	83,464	1.4%	0.4%	1.0%	1.8%	1.6%	1.4%	1.1%	0.9%
		LIBMANAN	100,002	108,716	112,994	118,927	129,844	140,327	150,078	158,890	166,381	1.7%	0.8%	1.0%	1.8%	1.6%	1.4%	1.1%	0.9%
		LUPI	30,118	32,167	33,897	35,693	38,970	42,116	45,041	47,686	49,934	1.3%	1.1%	1.0%	1.8%	1.6%	1.4%	1.1%	0.9%
		MAGARAO	24,274	25,694	26,742	28,147	30,731	33,213	35,520	37,606	39,379	1.1%	0.8%	1.0%	1.8%	1.6%	1.4%	1.1%	0.9%
		MILAOR	28,474	31,150	33,963	35,803	39,089	42,245	45,181	47,833	50,088	1.8%	1.7%	1.1%	1.8%	1.6%	1.4%	1.1%	0.9%
		MINALABAC	48,162	52,390	53,981	56,799	62,013	67,019	71,676	75,885	79,463	1.7%	0.6%	1.0%	1.8%	1.6%	1.4%	1.1%	0.9%
		NABUA	80,111	83,874	86,490	91,007	99,361	107,384	114,845	121,589	127,320	0.9%	0.6%	1.0%	1.8%	1.6%	1.4%	1.1%	0.9%
		NAGA CITY	174,931	196,003	209,170	220,346	240,571	259,995	278,060	294,387	308,266	2.3%	1.3%	1.0%	1.8%	1.6%	1.4%	1.1%	0.9%
		OCAMPO	43,523	45,934	51,073	53,873	58,818	63,568	67,984	71,976	75,370	1.1%	2.1%	1.1%	1.8%	1.6%	1.4%	1.1%	0.9%
		PAMPLONA	34,471	36,390	39,333	41,452	45,256	48,910	52,308	55,380	57,991	1.1%	1.6%	1.1%	1.8%	1.6%	1.4%	1.1%	0.9%
		PASACAO	45,946	49,035	53,461	56,357	61,529	66,498	71,117	75,294	78,843	1.3%	1.7%	1.1%	1.8%	1.6%	1.4%	1.1%	0.9%
		PILI (Capital)	82,307	89,545	99,196	104,622	114,225	123,449	132,025	139,779	146,368	1.7%	2.1%	1.1%	1.8%	1.6%	1.4%	1.1%	0.9%
		PRESENTACION (PARUBCAN)	20,023	20,996	22,591	23,804	25,989	28,088	30,039	31,804	33,302	1.0%	1.5%	1.1%	1.8%	1.6%	1.4%	1.1%	0.9%
		RAGAY	54,934	58,214	59,770	62,883	68,655	74,198	79,354	84,013	87,974	1.2%	0.5%	1.0%	1.8%	1.6%	1.4%	1.1%	0.9%
		SAGÑAY	31,314	34,546	36,841	38,809	42,371	45,792	48,975	51,851	54,295	2.0%	1.3%	1.0%	1.8%	1.6%	1.4%	1.1%	0.9%
		SAN FERNANDO	33,281	35,258	38,626	40,724	44,463	48,053	51,392	54,410	56,975	1.2%	1.8%	1.1%	1.8%	1.6%	1.4%	1.1%	0.9%
		SAN JOSE	38,523	40,623	43,973	46,344	50,599	54,685	58,484	61,918	64,837	1.1%	1.6%	1.1%	1.8%	1.6%	1.4%	1.1%	0.9%
		SIPOCOT	64,042	64,855	68,169	71,775	78,363	84,690	90,575	95,893	100,414	0.3%	1.0%	1.0%	1.8%	1.6%	1.4%	1.1%	0.9%
		SIRUMA	17,050	17,764	19,419	20,473	22,353	24,158	25,836	27,354	28,642	0.8%	1.8%	1.1%	1.8%	1.6%	1.4%	1.1%	0.9%
		TIGAON	48,611	55,272	60,524	63,811	69,668	75,293	80,525	85,253	89,273	2.6%	1.8%	1.1%	1.8%	1.6%	1.4%	1.1%	0.9%
		TINAMBAC	62,435	67,572	70,176	73,859	80,637	87,150	93,205	98,677	103,329	1.6%	0.8%	1.0%	1.8%	1.6%	1.4%	1.1%	0.9%
		Sub-total	1,822,371	1,952,544	2,068,244	2,178,220	2,378,157	2,570,182	2,748,759	2,910,165	3,047,361	1.4%	1.2%	1.0%	1.8%	1.6%	1.4%	1.1%	0.9%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
BICOL	Catanduanes	BAGAMANOC	11,370	11,551	11,086	11,565	12,821	14,095	15,399	16,710	18,038	0.3%	-0.8%	0.8%	2.1%	1.9%	1.8%	1.6%	1.5%
		BARAS	12,243	12,848	13,484	14,111	15,642	17,197	18,788	20,387	22,007	1.0%	1.0%	0.9%	2.1%	1.9%	1.8%	1.6%	1.5%
		BATO	19,984	21,279	21,748	22,739	25,207	27,713	30,276	32,853	35,464	1.3%	0.4%	0.9%	2.1%	1.9%	1.8%	1.6%	1.5%
		CARAMORAN	28,063	30,056	32,114	33,628	37,277	40,983	44,774	48,583	52,444	1.4%	1.3%	0.9%	2.1%	1.9%	1.8%	1.6%	1.5%
		GIGMOTO	8,003	8,368	8,712	9,115	10,104	11,108	12,134	13,167	14,214	0.9%	0.8%	0.9%	2.1%	1.9%	1.8%	1.6%	1.5%
		PANDAN	19,393	20,516	21,473	22,471	24,908	27,385	29,917	32,463	35,043	1.1%	0.9%	0.9%	2.1%	1.9%	1.8%	1.6%	1.5%
		PANGANIBAN (PAYO)	9,738	9,287	9,713	10,165	11,267	12,387	13,533	14,684	15,852	-0.9%	0.9%	0.9%	2.1%	1.9%	1.8%	1.6%	1.5%
		SAN ANDRES (CALOLBON)	35,779	36,779	38,480	40,267	44,635	49,072	53,611	58,172	62,796	0.6%	0.9%	0.9%	2.1%	1.9%	1.8%	1.6%	1.5%
		SAN MIGUEL	14,107	15,006	15,680	16,407	18,187	19,995	21,844	23,703	25,588	1.2%	0.9%	0.9%	2.1%	1.9%	1.8%	1.6%	1.5%
		VIGA	20,669	21,624	22,869	23,939	26,537	29,175	31,874	34,586	37,335	0.9%	1.1%	0.9%	2.1%	1.9%	1.8%	1.6%	1.5%
		VIRAC (Capital)	66,951	73,650	76,520	80,054	88,739	97,560	106,585	115,654	124,848	1.9%	0.8%	0.9%	2.1%	1.9%	1.8%	1.6%	1.5%
		Sub-total	246,300	260,964	271,879	284,461	315,324	346,670	378,735	410,962	443,629	1.2%	0.8%	0.9%	2.1%	1.9%	1.8%	1.6%	1.5%
	Masbate	AROROY	76,139	86,168	88,351	92,670	101,901	110,983	119,392	127,144	134,182	2.5%	0.5%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%
		BALENO	24,401	26,096	28,855	30,340	33,363	36,336	39,090	41,627	43,933	1.4%	2.0%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%
		BALUD	35,841	38,124	40,155	42,156	46,355	50,487	54,311	57,838	61,040	1.2%	1.0%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%
		BATUAN	13,764	15,086	14,610	15,293	16,816	18,315	19,703	20,983	22,143	1.9%	-0.6%	0.9%	1.9%	1.7%	1.5%	1.3%	1.1%
		CATAINGAN	49,078	50,327	50,623	53,063	58,349	63,550	68,365	72,804	76,835	0.5%	0.1%	0.9%	1.9%	1.7%	1.5%	1.3%	1.1%
		CAWAYAN	63,115	67,033	69,265	72,670	79,908	87,030	93,624	99,704	105,223	1.2%	0.7%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%
		CLAVERIA	41,572	43,693	42,142	44,107	48,501	52,823	56,825	60,516	63,867	1.0%	-0.7%	0.9%	1.9%	1.7%	1.5%	1.3%	1.1%
		DIMASALANG	25,245	26,192	24,909	26,057	28,652	31,206	33,570	35,751	37,730	0.7%	-1.0%	0.9%	1.9%	1.7%	1.5%	1.3%	1.1%
		ESPERANZA	17,357	18,568	17,534	18,337	20,164	21,962	23,625	25,160	26,553	1.4%	-1.1%	0.9%	1.9%	1.7%	1.5%	1.3%	1.1%
		MANDAON	38,161	41,262	44,122	46,344	50,961	55,503	59,708	63,586	67,106	1.6%	1.3%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%
		CITY OF MASBATE (Capital)	85,227	95,389	104,522	109,872	120,817	131,585	141,554	150,747	159,093	2.3%	1.8%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%
		MILAGROS	52,619	57,473	57,538	60,301	66,307	72,217	77,689	82,734	87,314	1.8%	0.0%	0.9%	1.9%	1.7%	1.5%	1.3%	1.1%
		MOBO	34,896	38,813	40,823	42,856	47,124	51,324	55,213	58,799	62,055	2.2%	1.0%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%
		MONREAL	25,366	26,614	25,164	26,318	28,939	31,519	33,907	36,109	38,108	1.0%	-1.1%	0.9%	1.9%	1.7%	1.5%	1.3%	1.1%
		PALANAS	25,501	26,222	27,322	28,673	31,529	34,340	36,941	39,340	41,519	0.6%	0.8%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%
		PIO V. CORPUZ (LIMBUHAN)	23,292	23,236	23,744	24,902	27,383	29,823	32,083	34,167	36,059	0.0%	0.4%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%
		PLACER	55,438	55,826	56,340	59,062	64,944	70,733	76,092	81,034	85,520	0.1%	0.2%	0.9%	1.9%	1.7%	1.5%	1.3%	1.1%
		SAN FERNANDO	21,309	23,057	21,600	22,583	24,832	27,045	29,094	30,984	32,699	1.6%	-1.3%	0.9%	1.9%	1.7%	1.5%	1.3%	1.1%
		SAN JACINTO	27,974	30,372	29,686	31,085	34,182	37,228	40,049	42,650	45,011	1.7%	-0.5%	0.9%	1.9%	1.7%	1.5%	1.3%	1.1%
		SAN PASCUAL	44,753	46,674	44,449	46,500	51,131	55,690	59,909	63,800	67,332	0.8%	-1.0%	0.9%	1.9%	1.7%	1.5%	1.3%	1.1%
		USON	53,602	56,168	57,166	59,946	65,916	71,791	77,230	82,246	86,799	0.9%	0.4%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%
		Sub-total	834,650	892,393	908,920	953,135	1,048,074	1,141,490	1,227,974	1,307,723	1,380,121	1.3%	0.4%	1.0%	1.9%	1.7%	1.5%	1.3%	1.1%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
BICOL	Sorsogon	BARCELONA	20,340	20,990	20,987	22,242	24,419	26,542	28,571	30,464	32,157	0.6%	0.0%	1.2%	1.9%	1.7%	1.5%	1.3%	1.1%
		BULAN	93,943	100,076	105,190	111,674	122,597	133,257	143,442	152,935	161,441	1.3%	1.0%	1.2%	1.9%	1.7%	1.5%	1.3%	1.1%
		BULUSAN	22,089	22,884	23,932	25,403	27,888	30,314	32,631	34,791	36,725	0.7%	0.9%	1.2%	1.9%	1.7%	1.5%	1.3%	1.1%
		CASIGURAN	30,995	32,842	35,602	37,834	41,535	45,146	48,597	51,814	54,696	1.2%	1.6%	1.2%	1.9%	1.7%	1.5%	1.3%	1.1%
		CASTILLA	52,903	57,827	60,635	64,368	70,664	76,808	82,679	88,152	93,054	1.8%	1.0%	1.2%	1.9%	1.7%	1.5%	1.3%	1.1%
		DONSOL	47,563	49,711	50,281	53,310	58,525	63,614	68,476	73,008	77,069	0.9%	0.2%	1.2%	1.9%	1.7%	1.5%	1.3%	1.1%
		GUBAT	57,327	59,534	60,294	63,930	70,184	76,287	82,117	87,553	92,421	0.8%	0.3%	1.2%	1.9%	1.7%	1.5%	1.3%	1.1%
		IROSIN	51,777	56,662	59,267	62,909	69,064	75,069	80,806	86,155	90,946	1.8%	0.9%	1.2%	1.9%	1.7%	1.5%	1.3%	1.1%
		JUBAN	30,335	32,320	35,297	37,519	41,189	44,770	48,191	51,381	54,238	1.3%	1.8%	1.2%	1.9%	1.7%	1.5%	1.3%	1.1%
		MAGALLANES	35,443	37,038	37,411	39,664	43,542	47,328	50,945	54,318	57,339	0.9%	0.2%	1.2%	1.9%	1.7%	1.5%	1.3%	1.1%
		MATNOG	37,641	41,101	41,989	44,534	48,890	53,140	57,203	60,989	64,380	1.8%	0.4%	1.2%	1.9%	1.7%	1.5%	1.3%	1.1%
		PILAR	68,245	74,564	75,793	80,373	88,235	95,907	103,237	110,071	116,192	1.8%	0.3%	1.2%	1.9%	1.7%	1.5%	1.3%	1.1%
		PRIETO DIAZ	20,478	22,442	22,644	24,006	26,355	28,645	30,835	32,876	34,704	1.8%	0.2%	1.2%	1.9%	1.7%	1.5%	1.3%	1.1%
		SANTA MAGDALENA	16,520	16,848	17,096	18,128	19,902	21,632	23,286	24,827	26,207	0.4%	0.3%	1.2%	1.9%	1.7%	1.5%	1.3%	1.1%
		CITY OF SORSOGON (Capital)	155,144	168,110	182,237	193,666	212,610	231,097	248,760	265,224	279,974	1.6%	1.6%	1.2%	1.9%	1.7%	1.5%	1.3%	1.1%
		Sub-total	740,743	792,949	828,655	879,560	965,599	1,049,556	1,129,776	1,204,558	1,271,543	1.4%	0.9%	1.2%	1.9%	1.7%	1.5%	1.3%	1.1%
		Total	5,420,411	5,796,989	6,082,165	6,418,464	7,006,713	7,574,422	8,106,267	8,593,789	9,023,005	1.3%	1.0%	1.1%	1.8%	1.6%	1.4%	1.2%	1.0%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
WESTERN VISAYAS	Aklan	ALTAVAS	23,919	24,619	25,639	26,952	28,653	30,237	31,632	32,849	33,904	0.6%	0.8%	1.0%	1.2%	1.1%	0.9%	0.8%	0.6%
		BALETE	27,197	28,920	30,090	31,628	33,624	35,484	37,121	38,549	39,786	1.2%	0.8%	1.0%	1.2%	1.1%	0.9%	0.8%	0.6%
		BANGA	38,063	39,505	40,318	42,352	45,024	47,514	49,706	51,617	53,275	0.7%	0.4%	1.0%	1.2%	1.1%	0.9%	0.8%	0.6%
		BATAN	30,312	32,032	33,484	35,202	37,423	39,493	41,315	42,904	44,282	1.1%	0.9%	1.0%	1.2%	1.1%	0.9%	0.8%	0.6%
		BURUANGA	16,962	19,003	19,357	20,331	21,615	22,810	23,863	24,780	25,576	2.3%	0.4%	1.0%	1.2%	1.1%	0.9%	0.8%	0.6%
		IBAJAY	45,279	49,564	52,364	55,070	58,544	61,782	64,631	67,117	69,273	1.8%	1.1%	1.0%	1.2%	1.1%	0.9%	0.8%	0.6%
		KALIBO (Capital)	74,619	80,605	89,127	93,871	99,793	105,312	110,170	114,407	118,081	1.6%	2.0%	1.0%	1.2%	1.1%	0.9%	0.8%	0.6%
		LEZO	14,518	15,224	15,639	16,432	17,470	18,435	19,286	20,027	20,671	1.0%	0.5%	1.0%	1.2%	1.1%	0.9%	0.8%	0.6%
		LIBACAO	28,005	28,241	28,272	29,678	31,551	33,296	34,831	36,172	37,333	0.2%	0.0%	1.0%	1.2%	1.1%	0.9%	0.8%	0.6%
		MADALAG	18,168	18,389	18,890	19,847	21,099	22,267	23,294	24,190	24,967	0.2%	0.5%	1.0%	1.2%	1.1%	0.9%	0.8%	0.6%
		MAKATO	25,461	27,262	29,717	31,284	33,258	35,097	36,717	38,128	39,353	1.4%	1.7%	1.0%	1.2%	1.1%	0.9%	0.8%	0.6%
		MALAY	45,811	52,973	60,077	63,324	67,319	71,042	74,319	77,178	79,657	2.9%	2.5%	1.1%	1.2%	1.1%	0.9%	0.8%	0.6%
		MALINAO	24,108	23,194	24,517	25,784	27,410	28,926	30,261	31,424	32,433	-0.8%	1.1%	1.0%	1.2%	1.1%	0.9%	0.8%	0.6%
		NABAS	31,052	36,435	40,632	42,806	45,507	48,023	50,238	52,171	53,847	3.2%	2.2%	1.0%	1.2%	1.1%	0.9%	0.8%	0.6%
		NEW WASHINGTON	42,112	45,007	47,955	50,447	53,629	56,596	59,206	61,483	63,459	1.3%	1.3%	1.0%	1.2%	1.1%	0.9%	0.8%	0.6%
		NUMANCIA	29,862	31,934	35,693	37,604	39,978	42,189	44,133	45,831	47,302	1.4%	2.3%	1.0%	1.2%	1.1%	0.9%	0.8%	0.6%
		TANGALAN	20,277	21,916	23,704	24,947	26,520	27,986	29,277	30,402	31,380	1.6%	1.6%	1.0%	1.2%	1.1%	0.9%	0.8%	0.6%
		Sub-total	535,725	574,823	615,475	647,559	688,417	726,489	760,000	789,229	814,579	1.4%	1.4%	1.0%	1.2%	1.1%	0.9%	0.8%	0.6%
	Antique	ANINI-Y	20,349	21,201	22,018	23,134	25,473	27,859	30,300	32,802	35,401	0.8%	0.8%	1.0%	1.9%	1.8%	1.7%	1.6%	1.5%
		BARBAZA	21,775	22,704	23,359	24,534	27,015	29,544	32,133	34,786	37,541	0.8%	0.6%	1.0%	1.9%	1.8%	1.7%	1.6%	1.5%
		BELISON	12,807	13,539	14,129	14,847	16,348	17,880	19,446	21,052	22,720	1.1%	0.9%	1.0%	1.9%	1.8%	1.7%	1.6%	1.5%
		BUGASONG	32,264	33,642	34,676	36,423	40,106	43,863	47,706	51,644	55,736	0.8%	0.6%	1.0%	1.9%	1.8%	1.7%	1.6%	1.5%
		CALUYA	30,046	35,496	38,908	40,953	45,093	49,316	53,638	58,067	62,669	3.4%	1.9%	1.0%	1.9%	1.8%	1.7%	1.6%	1.5%
		CULASI	39,086	41,228	44,494	46,809	51,540	56,368	61,308	66,369	71,627	1.1%	1.5%	1.0%	1.9%	1.8%	1.7%	1.6%	1.5%
		TOBIAS FORNIER (DAO)	30,669	33,046	33,816	35,512	39,102	42,764	46,511	50,352	54,341	1.5%	0.5%	1.0%	1.9%	1.8%	1.7%	1.6%	1.5%
		HAMTIC	45,983	48,592	52,685	55,433	61,037	66,754	72,603	78,597	84,824	1.1%	1.6%	1.0%	1.9%	1.8%	1.7%	1.6%	1.5%
		LAUA-AN	25,211	26,072	26,580	27,909	30,730	33,609	36,555	39,573	42,708	0.7%	0.4%	1.0%	1.9%	1.8%	1.7%	1.6%	1.5%
		LIBERTAD	15,669	16,429	17,507	18,410	20,272	22,171	24,113	26,104	28,173	1.0%	1.3%	1.0%	1.9%	1.8%	1.7%	1.6%	1.5%
		PANDAN	32,494	34,333	35,965	37,798	41,619	45,516	49,505	53,592	57,839	1.1%	0.9%	1.0%	1.9%	1.8%	1.7%	1.6%	1.5%
		PATNONGON	35,102	37,176	38,329	40,261	44,331	48,484	52,732	57,086	61,609	1.2%	0.6%	1.0%	1.9%	1.8%	1.7%	1.6%	1.5%
		SAN JOSE (Capital)	57,847	62,534	65,140	68,448	75,367	82,426	89,650	97,051	104,740	1.6%	0.8%	1.0%	1.9%	1.8%	1.7%	1.6%	1.5%
		SAN REMIGIO	30,446	31,935	34,045	35,801	39,420	43,112	46,890	50,761	54,783	1.0%	1.3%	1.0%	1.9%	1.8%	1.7%	1.6%	1.5%
		SEBASTE	17,270	17,907	18,816	19,777	21,777	23,816	25,903	28,042	30,264	0.7%	1.0%	1.0%	1.9%	1.8%	1.7%	1.6%	1.5%
		SIBALOM	56,058	60,306	63,833	67,110	73,895	80,816	87,898	95,155	102,695	1.5%	1.1%	1.0%	1.9%	1.8%	1.7%	1.6%	1.5%
		TIBIAO	24,513	26,748	28,703	30,190	33,243	36,357	39,541	42,806	46,197	1.8%	1.4%	1.0%	1.9%	1.8%	1.7%	1.6%	1.5%
		VALDERRAMA	18,442	19,124	19,971	20,987	23,110	25,275	27,489	29,758	32,114	0.7%	0.9%	1.0%	1.9%	1.8%	1.7%	1.6%	1.5%
		Sub-total	546,031	582,012	612,974	644,336	709,478	775,930	843,921	913,597	985,981	1.3%	1.0%	1.0%	1.9%	1.8%	1.7%	1.6%	1.5%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
WESTERN VISAYAS	Capiz	CUARTERO	25,456	27,408	27,993	29,905	31,286	32,499	33,436	34,085	34,323	1.5%	0.4%	1.3%	0.9%	0.8%	0.6%	0.4%	0.1%
		DAO	31,911	32,496	33,842	36,177	37,848	39,316	40,451	41,234	41,523	0.4%	0.8%	1.3%	0.9%	0.8%	0.6%	0.4%	0.1%
		DUMALAG	29,298	29,466	30,098	32,153	33,638	34,942	35,952	36,649	36,905	0.1%	0.4%	1.3%	0.9%	0.8%	0.6%	0.4%	0.1%
		DUMARAO	43,986	46,157	49,506	52,974	55,421	57,570	59,231	60,379	60,802	1.0%	1.4%	1.4%	0.9%	0.8%	0.6%	0.4%	0.1%
		IVISAN	26,763	29,055	31,278	33,473	35,019	36,377	37,427	38,153	38,420	1.7%	1.5%	1.4%	0.9%	0.8%	0.6%	0.4%	0.1%
		JAMINDAN	35,002	36,677	38,670	41,355	43,266	44,943	46,240	47,136	47,468	0.9%	1.1%	1.4%	0.9%	0.8%	0.6%	0.4%	0.1%
		MA-AYON	36,430	38,416	41,226	44,115	46,153	47,942	49,325	50,282	50,633	1.1%	1.4%	1.4%	0.9%	0.8%	0.6%	0.4%	0.1%
		MAMBUSAO	37,672	39,644	40,690	43,476	45,484	47,248	48,611	49,554	49,901	1.0%	0.5%	1.3%	0.9%	0.8%	0.6%	0.4%	0.1%
		PANAY	43,449	46,114	48,890	52,294	54,710	56,831	58,471	59,604	60,022	1.2%	1.2%	1.4%	0.9%	0.8%	0.6%	0.4%	0.1%
		PANITAN	37,895	40,289	42,565	45,523	47,627	49,474	50,901	51,887	52,252	1.2%	1.1%	1.4%	0.9%	0.8%	0.6%	0.4%	0.1%
		PILAR	41,572	45,287	47,100	50,349	52,674	54,716	56,295	57,387	57,789	1.7%	0.8%	1.3%	0.9%	0.8%	0.6%	0.4%	0.1%
		PONTEVEDRA	43,525	46,428	49,725	53,205	55,664	57,822	59,491	60,644	61,070	1.3%	1.4%	1.4%	0.9%	0.8%	0.6%	0.4%	0.1%
		PRESIDENT ROXAS	28,561	29,676	31,269	33,439	34,985	36,341	37,389	38,114	38,381	0.8%	1.1%	1.4%	0.9%	0.8%	0.6%	0.4%	0.1%
		ROXAS CITY (Capital)	156,197	167,003	179,292	191,855	200,718	208,502	214,517	218,675	220,208	1.3%	1.4%	1.4%	0.9%	0.8%	0.6%	0.4%	0.1%
		SAPI-AN	24,779	25,821	26,697	28,532	29,851	31,009	31,904	32,522	32,751	0.8%	0.7%	1.3%	0.9%	0.8%	0.6%	0.4%	0.1%
		SIGMA	29,138	30,134	31,688	33,886	35,452	36,826	37,889	38,623	38,893	0.7%	1.0%	1.4%	0.9%	0.8%	0.6%	0.4%	0.1%
		TAPAZ	48,051	51,313	54,423	58,212	60,902	63,264	65,088	66,350	66,815	1.3%	1.2%	1.4%	0.9%	0.8%	0.6%	0.4%	0.1%
		Sub-total	719,685	761,384	804,952	860,923	900,698	935,622	962,618	981,278	988,156	1.1%	1.1%	1.4%	0.9%	0.8%	0.6%	0.4%	0.1%
	Guimaras	BUENAVISTA	46,703	50,437	52,899	55,876	58,877	61,415	63,461	64,879	65,722	1.6%	1.0%	1.1%	1.1%	0.8%	0.7%	0.4%	0.3%
		JORDAN (Capital)	34,791	36,096	39,566	41,853	44,100	46,002	47,534	48,597	49,228	0.7%	1.9%	1.1%	1.1%	0.8%	0.7%	0.4%	0.3%
		NUEVA VALENCIA	37,852	39,810	42,771	45,214	47,642	49,697	51,352	52,499	53,182	1.0%	1.4%	1.1%	1.1%	0.8%	0.7%	0.4%	0.3%
		SAN LORENZO	24,032	26,112	29,444	31,173	32,847	34,265	35,405	36,197	36,667	1.7%	2.4%	1.1%	1.1%	0.8%	0.7%	0.4%	0.3%
		SIBUNAG	19,565	22,158	23,162	24,463	25,777	26,888	27,782	28,403	28,773	2.5%	0.9%	1.1%	1.1%	0.8%	0.7%	0.4%	0.3%
		Sub-total	162,943	174,613	187,842	198,579	209,243	218,267	225,534	230,575	233,572	1.4%	1.5%	1.1%	1.1%	0.8%	0.7%	0.4%	0.3%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
WESTERN VISAYAS	Iloilo	AJUY	47,248	52,268	53,462	56,342	59,002	61,217	63,007	64,270	64,957	2.0%	0.5%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		ALIMODIAN	37,484	38,408	39,722	41,878	43,855	45,501	46,830	47,769	48,279	0.5%	0.7%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		ANILAO	27,486	28,684	30,520	32,206	33,727	34,993	36,015	36,737	37,130	0.9%	1.2%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		BADIANGAN	26,218	27,005	27,056	28,493	29,838	30,959	31,863	32,502	32,849	0.6%	0.0%	1.0%	0.9%	0.7%	0.6%	0.4%	0.2%
		BALASAN	29,724	33,088	35,064	36,996	38,743	40,197	41,371	42,200	42,651	2.2%	1.2%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		BANATE	29,543	32,532	33,376	35,178	36,838	38,221	39,338	40,127	40,555	1.9%	0.5%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		BAROTAC NUEVO	51,867	54,146	58,176	61,410	64,309	66,723	68,673	70,049	70,797	0.9%	1.4%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		BAROTAC VIEJO	41,470	45,808	48,614	51,296	53,718	55,734	57,363	58,512	59,137	2.0%	1.2%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		BATAD	19,385	21,298	22,157	23,365	24,468	25,386	26,127	26,652	26,935	1.9%	0.8%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		BINGAWAN	13,432	15,199	16,164	17,058	17,863	18,532	19,075	19,457	19,665	2.5%	1.2%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		CABATUAN	54,950	58,442	61,110	64,451	67,493	70,026	72,073	73,517	74,303	1.2%	0.9%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		CALINOG	54,430	60,413	62,853	66,278	69,407	72,012	74,117	75,602	76,409	2.1%	0.8%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		CARLES	62,690	68,160	72,637	76,656	80,275	83,288	85,721	87,439	88,373	1.7%	1.3%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		CONCEPCION	39,617	43,159	44,633	47,056	49,278	51,127	52,621	53,676	54,249	1.7%	0.7%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		DINGLE	43,290	45,335	45,965	48,427	50,713	52,617	54,155	55,239	55,829	0.9%	0.3%	1.0%	0.9%	0.7%	0.6%	0.4%	0.2%
		DUEÑAS	33,671	34,242	34,597	36,444	38,165	39,598	40,756	41,573	42,016	0.3%	0.2%	1.0%	0.9%	0.7%	0.6%	0.4%	0.2%
		DUMANGAS	66,108	69,108	73,899	77,997	81,679	84,745	87,221	88,971	89,920	0.9%	1.3%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		ESTANCIA	42,666	48,546	53,200	56,194	58,847	61,056	62,839	64,099	64,784	2.6%	1.8%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		GUIMBAL	32,325	33,820	35,022	36,924	38,667	40,118	41,290	42,118	42,569	0.9%	0.7%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		IGBARAS	31,347	32,004	32,197	33,912	35,513	36,846	37,922	38,683	39,096	0.4%	0.1%	1.0%	0.9%	0.7%	0.6%	0.4%	0.2%
		JANIUAY	63,031	63,905	66,786	70,434	73,761	76,528	78,765	80,343	81,202	0.3%	0.9%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		LAMBUNAO	69,023	73,640	81,236	85,827	89,879	93,254	95,978	97,902	98,948	1.3%	2.0%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		LEGANES	29,438	32,480	34,725	36,651	38,381	39,821	40,985	41,805	42,253	2.0%	1.3%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		LEMERY	27,441	30,851	31,414	33,102	34,665	35,966	37,017	37,759	38,162	2.4%	0.4%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		LEON	47,522	49,875	51,990	54,826	57,415	59,570	61,311	62,540	63,209	1.0%	0.8%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		MAASIN	35,069	36,922	38,461	40,559	42,474	44,068	45,356	46,265	46,759	1.0%	0.8%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		MIAGAO	64,545	67,565	68,115	71,749	75,135	77,956	80,234	81,841	82,715	0.9%	0.2%	1.0%	0.9%	0.7%	0.6%	0.4%	0.2%
		MINA	21,785	23,546	24,042	25,335	26,531	27,527	28,331	28,899	29,208	1.6%	0.4%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		NEW LUCENA	22,174	23,240	24,314	25,643	26,855	27,863	28,676	29,252	29,563	0.9%	0.9%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		OTON	82,572	89,115	98,509	104,082	108,996	113,087	116,392	118,724	119,992	1.5%	2.0%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		CITY OF PASSI	79,663	80,544	88,873	93,895	98,328	102,018	104,999	107,104	108,248	0.2%	2.0%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		PAVIA	43,614	55,603	70,388	74,669	78,194	81,128	83,499	85,172	86,082	5.0%	4.8%	1.2%	0.9%	0.7%	0.6%	0.4%	0.2%
		POTOTAN	70,955	75,070	78,298	82,571	86,469	89,714	92,336	94,187	95,193	1.1%	0.8%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		SAN DIONISIO	33,650	38,775	39,048	41,129	43,071	44,688	45,994	46,916	47,416	2.9%	0.1%	1.0%	0.9%	0.7%	0.6%	0.4%	0.2%
		SAN ENRIQUE	32,422	33,911	36,911	38,979	40,819	42,352	43,589	44,463	44,937	0.9%	1.7%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		SAN JOAQUIN	51,645	51,892	52,617	55,435	58,053	60,231	61,991	63,233	63,909	0.1%	0.3%	1.0%	0.9%	0.7%	0.6%	0.4%	0.2%
		SAN MIGUEL	25,013	27,686	30,115	31,802	33,304	34,554	35,564	36,277	36,664	2.1%	1.7%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		SAN RAFAEL	14,655	16,532	17,795	18,785	19,672	20,410	21,006	21,427	21,656	2.4%	1.5%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		SANTA BARBARA	55,472	60,215	67,630	71,491	74,866	77,676	79,946	81,548	82,419	1.7%	2.3%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		SARA	46,889	52,631	54,637	57,609	60,328	62,594	64,423	65,714	66,416	2.3%	0.8%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		TIGBAUAN	58,814	62,706	65,245	68,799	72,048	74,753	76,936	78,479	79,316	1.3%	0.8%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		TUBUNGAN	21,540	22,449	23,021	24,263	25,408	26,364	27,135	27,679	27,975	0.8%	0.5%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		ZARRAGA	23,693	25,605	27,305	28,817	30,178	31,311	32,227	32,873	33,223	1.6%	1.3%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		ILOILO CITY (Capital)	424,619	447,992	457,626	482,258	505,028	523,985	539,298	550,109	555,983	1.1%	0.4%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%
		Sub-total	2,230,195	2,384,415	2,509,525	2,647,271	2,772,256	2,876,314	2,960,365	3,019,703	3,051,951	1.3%	1.0%	1.1%	0.9%	0.7%	0.6%	0.4%	0.2%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
WESTERN VISAYAS	Negros Occidental	BAGO CITY	163,045	170,981	191,210	199,245	211,057	221,512	229,853	236,985	243,547	1.0%	2.3%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		BINALBAGAN	65,431	67,270	71,407	74,283	78,686	82,584	85,694	88,353	90,799	0.6%	1.2%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		CADIZ CITY	151,500	154,723	158,544	164,733	174,500	183,145	190,040	195,937	201,362	0.4%	0.5%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		CALATRAVA	79,009	80,624	82,540	85,760	90,844	95,345	98,933	102,003	104,828	0.4%	0.5%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		CANDONI	21,336	21,789	23,751	24,729	26,195	27,493	28,528	29,413	30,227	0.4%	1.7%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		CAUAYAN	96,921	102,165	108,480	112,851	119,540	125,463	130,187	134,227	137,944	1.1%	1.2%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		ENRIQUE B. MAGALONA (SARAVIA)	59,434	62,921	64,290	66,793	70,754	74,259	77,055	79,446	81,645	1.1%	0.4%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		CITY OF ESCALANTE	93,005	94,070	96,159	99,905	105,827	111,071	115,252	118,829	122,119	0.2%	0.4%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		CITY OF HIMAMAYLAN	103,006	106,880	116,240	121,016	128,191	134,541	139,606	143,938	147,924	0.7%	1.7%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		HINIGARAN	81,925	85,602	88,909	92,423	97,903	102,753	106,621	109,929	112,973	0.9%	0.8%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		HINOBA-AN (ASIA)	54,624	56,819	60,865	63,335	67,091	70,414	73,065	75,331	77,418	0.8%	1.4%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		ILOG	54,423	57,389	59,855	62,229	65,919	69,185	71,790	74,017	76,067	1.1%	0.8%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		ISABELA	59,523	62,146	64,516	67,064	71,039	74,559	77,366	79,767	81,976	0.9%	0.8%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		CITY OF KABANKALAN	167,666	181,977	200,198	208,501	220,863	231,803	240,531	247,995	254,862	1.7%	1.9%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		LA CARLOTA CITY	63,852	64,469	66,664	69,288	73,395	77,031	79,931	82,411	84,693	0.2%	0.7%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		LA CASTELLANA	71,013	74,855	79,492	82,695	87,598	91,936	95,399	98,359	101,082	1.1%	1.2%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		MANAPLA	52,687	54,845	55,083	57,193	60,585	63,585	65,979	68,026	69,910	0.8%	0.1%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		MOISES PADILLA (MAGALLON)	39,257	41,386	43,462	45,196	47,876	50,248	52,139	53,757	55,245	1.1%	1.0%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		MURCIA	75,207	81,286	88,868	92,535	98,022	102,878	106,751	110,065	113,111	1.6%	1.8%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		PONTEVEDRA	47,945	51,866	54,502	56,678	60,037	63,011	65,384	67,412	69,279	1.6%	1.0%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		PULUPANDAN	25,350	27,735	30,117	31,354	33,213	34,859	36,171	37,293	38,325	1.8%	1.7%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		SAGAY CITY	140,740	146,264	148,894	154,672	163,842	171,958	178,431	183,969	189,062	0.8%	0.4%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		SAN CARLOS CITY	129,981	132,536	132,650	137,717	145,882	153,108	158,872	163,802	168,338	0.4%	0.0%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		SAN ENRIQUE	23,189	23,907	24,177	25,109	26,598	27,915	28,967	29,866	30,693	0.6%	0.2%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		SILAY CITY	120,999	126,930	130,478	135,586	143,625	150,741	156,415	161,269	165,733	1.0%	0.6%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		CITY OF SIPALAY	67,403	70,070	72,448	75,299	79,764	83,714	86,867	89,562	92,041	0.8%	0.7%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		CITY OF TALISAY	97,571	102,214	108,909	113,309	120,026	125,972	130,715	134,772	138,503	0.9%	1.3%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		TOBOSO	41,658	42,114	43,445	45,152	47,828	50,198	52,088	53,705	55,191	0.2%	0.6%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		VALLADOLID	36,416	37,833	39,996	41,602	44,068	46,251	47,992	49,481	50,852	0.8%	1.1%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		CITY OF VICTORIAS	88,299	87,933	90,101	93,618	99,169	104,082	108,000	111,351	114,433	-0.1%	0.5%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		SALVADOR BENEDICTO	23,624	25,662	26,922	27,995	29,656	31,124	32,298	33,301	34,221	1.7%	1.0%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		BACOLOD CITY (Capital)	511,820	561,875	600,783	625,128	662,188	694,992	721,159	743,539	764,124	1.9%	1.3%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		Sub-total	2,907,859	3,059,136	3,223,955	3,352,993	3,551,781	3,727,730	3,868,079	3,988,110	4,098,527	1.0%	1.1%	0.8%	1.2%	1.0%	0.7%	0.6%	0.5%
		Total	7,102,438	7,536,383	7,954,723	8,351,661	8,831,873	9,260,352	9,620,517	9,922,492	10,172,766	1.2%	1.1%	1.0%	1.1%	1.0%	0.8%	0.6%	0.5%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL VISAYAS	Bohol	ALBURQUERQUE	9,921	10,540	11,246	11,719	12,708	13,700	14,672	15,629	16,586	1.2%	1.3%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		ALICIA	22,285	23,517	24,374	25,375	27,514	29,664	31,765	33,840	35,911	1.1%	0.7%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		ANDA	16,909	16,462	17,778	18,533	20,096	21,667	23,201	24,716	26,228	-0.5%	1.6%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		ANTEQUERA	14,481	14,425	14,990	15,608	16,923	18,245	19,537	20,814	22,088	-0.1%	0.8%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		BACLAYON	18,630	20,591	22,461	23,423	25,398	27,382	29,322	31,238	33,149	2.0%	1.8%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		BALILIHAN	17,147	17,903	18,694	19,467	21,108	22,758	24,369	25,962	27,551	0.9%	0.9%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		BATUAN	12,431	12,767	13,845	14,435	15,653	16,876	18,072	19,252	20,429	0.5%	1.6%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		BILAR	17,098	17,590	18,512	19,282	20,908	22,541	24,137	25,714	27,288	0.6%	1.0%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		BUENAVISTA	27,031	27,261	29,711	30,982	33,594	36,218	38,784	41,317	43,845	0.2%	1.7%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		CALAPE	30,146	30,863	33,079	34,476	37,383	40,302	43,158	45,977	48,790	0.5%	1.4%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		CANDIJAY	29,043	29,475	30,119	31,341	33,984	36,638	39,234	41,797	44,355	0.3%	0.4%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		CARMEN	43,579	46,306	49,191	51,253	55,575	59,916	64,159	68,352	72,533	1.2%	1.2%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		CATIGBIAN	22,686	22,675	23,805	24,793	26,884	28,983	31,035	33,063	35,086	0.0%	1.0%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		CLARIN	20,296	20,301	21,158	22,031	23,888	25,754	27,578	29,380	31,177	0.0%	0.8%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		CORELLA	7,699	8,479	9,479	9,893	10,727	11,565	12,384	13,193	14,000	1.9%	2.3%	0.9%	1.6%	1.5%	1.4%	1.3%	1.2%
		CORTES	15,294	16,954	18,344	19,125	20,737	22,357	23,940	25,505	27,066	2.1%	1.6%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		DAGOHOY	18,868	19,158	19,874	20,691	22,435	24,188	25,901	27,593	29,281	0.3%	0.7%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		DANAO	17,952	17,890	20,245	21,136	22,919	24,709	26,460	28,188	29,912	-0.1%	2.5%	0.9%	1.6%	1.5%	1.4%	1.3%	1.2%
		DAUIS	39,448	45,663	52,492	54,829	59,453	64,096	68,635	73,119	77,592	3.0%	2.8%	0.9%	1.6%	1.5%	1.4%	1.3%	1.2%
		DIMIAO	15,166	14,364	14,889	15,500	16,808	18,121	19,404	20,672	21,936	-1.1%	0.7%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		DUERO	17,580	17,876	18,861	19,647	21,305	22,970	24,596	26,203	27,805	0.3%	1.1%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		GARCIA HERNANDEZ	23,038	24,194	24,430	25,410	27,553	29,705	31,809	33,887	35,961	1.0%	0.2%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		GUINDULMAN	31,789	32,408	34,104	35,523	38,518	41,526	44,468	47,373	50,272	0.4%	1.0%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		INABANGA	43,291	45,880	48,534	50,562	54,825	59,108	63,294	67,429	71,555	1.2%	1.1%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		JAGNA	32,566	33,892	35,832	37,328	40,476	43,637	46,728	49,781	52,826	0.8%	1.1%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL VISAYAS	Bohol	GETAFE	27,788	30,955	33,422	34,841	37,780	40,730	43,615	46,465	49,308	2.2%	1.5%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		LILA	11,985	12,257	12,240	12,725	13,799	14,877	15,931	16,973	18,011	0.4%	0.0%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		LOAY	16,261	16,691	17,855	18,608	20,178	21,754	23,294	24,815	26,333	0.5%	1.4%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		LOBOC	16,312	15,993	17,418	18,163	19,694	21,232	22,736	24,222	25,704	-0.4%	1.7%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		LOON	42,800	43,034	44,224	46,027	49,908	53,806	57,617	61,382	65,136	0.1%	0.5%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		MABINI	28,174	27,171	28,701	29,899	32,420	34,953	37,429	39,874	42,313	-0.7%	1.1%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		MARIBOJOC	20,491	20,688	22,178	23,114	25,064	27,020	28,934	30,824	32,710	0.2%	1.4%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		PANGLAO	28,603	33,553	39,839	41,655	45,167	48,695	52,143	55,551	58,950	3.2%	3.5%	0.9%	1.6%	1.5%	1.4%	1.3%	1.2%
		PILAR	26,887	27,256	28,693	29,886	32,406	34,938	37,412	39,857	42,295	0.3%	1.0%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		PRES. CARLOS P. GARCIA (PITOGO)	23,287	23,356	23,625	24,574	26,646	28,727	30,763	32,773	34,778	0.1%	0.2%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		SAGBAYAN (BORJA)	20,091	22,339	24,335	25,376	27,515	29,665	31,766	33,841	35,912	2.1%	1.7%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		SAN ISIDRO	9,125	8,744	9,909	10,345	11,218	12,095	12,951	13,797	14,640	-0.8%	2.5%	0.9%	1.6%	1.5%	1.4%	1.3%	1.2%
		SAN MIGUEL	23,574	24,135	25,356	26,409	28,636	30,873	33,060	35,220	37,376	0.5%	1.0%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		SEVILLA	10,443	10,661	11,376	11,855	12,855	13,860	14,840	15,810	16,778	0.4%	1.3%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		SIERRA BULLONES	24,698	24,745	26,095	27,182	29,473	31,776	34,026	36,250	38,468	0.0%	1.1%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		SIKATUNA	6,380	6,726	6,906	7,186	7,792	8,400	8,996	9,583	10,169	1.1%	0.5%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		TAGBILARAN CITY (Capital)	96,792	105,051	104,976	109,149	118,352	127,596	136,633	145,561	154,466	1.7%	0.0%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		TALIBON	61,373	66,969	71,272	74,264	80,525	86,815	92,965	99,038	105,098	1.8%	1.3%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		TRINIDAD	28,828	31,956	35,119	36,630	39,720	42,822	45,854	48,849	51,837	2.1%	1.9%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		TUBIGON	44,902	45,893	47,886	49,863	54,067	58,290	62,417	66,495	70,563	0.4%	0.9%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		UBAY	68,578	73,712	81,799	85,348	92,544	99,773	106,837	113,820	120,783	1.5%	2.1%	0.9%	1.6%	1.5%	1.4%	1.3%	1.2%
		VALENCIA	27,586	27,126	28,392	29,566	32,058	34,562	37,008	39,427	41,837	-0.3%	0.9%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		BIEN UNIDO	25,796	27,115	26,666	27,709	30,044	32,391	34,685	36,952	39,210	1.0%	-0.3%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%
		Sub-total	1,255,128	1,313,560	1,394,329	1,452,736	1,575,233	1,698,276	1,818,554	1,937,373	2,055,897	0.9%	1.2%	0.8%	1.6%	1.5%	1.4%	1.3%	1.2%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL VISAYAS	Cebu	ALCANTARA	13,556	15,160	16,910	18,328	19,331	20,140	20,734	21,121	21,320	2.3%	2.2%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		ALCOY	14,757	16,979	19,186	20,803	21,942	22,860	23,534	23,974	24,200	2.8%	2.5%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		ALEGRIA	22,072	23,300	25,620	27,757	29,277	30,502	31,401	31,988	32,289	1.1%	1.9%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		ALOGUINSAN	27,650	32,100	34,466	37,311	39,355	41,001	42,211	43,000	43,405	3.0%	1.4%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		ARGAO	69,503	72,366	78,187	84,658	89,294	93,030	95,774	97,564	98,484	0.8%	1.6%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		ASTURIAS	44,732	47,857	55,397	60,112	63,404	66,058	68,006	69,278	69,930	1.4%	3.0%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		BADIAN	37,699	37,912	43,735	47,453	50,051	52,145	53,683	54,687	55,203	0.1%	2.9%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		BALAMBAN	71,237	87,177	95,136	103,043	108,686	113,233	116,573	118,753	119,873	4.1%	1.8%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		BANTAYAN	74,785	79,084	86,247	93,413	98,529	102,652	105,680	107,655	108,671	1.1%	1.7%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		BARILI	65,524	73,862	80,715	87,427	92,215	96,074	98,907	100,756	101,706	2.4%	1.8%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		CITY OF BOGO	69,911	78,120	88,867	96,379	101,657	105,910	109,034	111,072	112,119	2.2%	2.6%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		BOLJOON	15,027	16,344	17,525	18,971	20,009	20,846	21,462	21,864	22,069	1.7%	1.4%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		BORBON	31,598	35,526	38,187	41,340	43,604	45,428	46,769	47,643	48,093	2.4%	1.5%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		CITY OF CARCAR	107,323	119,664	136,453	147,998	156,102	162,633	167,430	170,561	172,169	2.2%	2.7%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		CARMEN	44,648	51,325	57,897	62,776	66,213	68,983	71,018	72,347	73,028	2.8%	2.4%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		CATMON	28,320	30,471	33,745	36,567	38,569	40,183	41,368	42,140	42,538	1.5%	2.1%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		COMPOSTELA	42,574	47,898	55,874	60,643	63,964	66,640	68,606	69,889	70,548	2.4%	3.1%	1.7%	1.1%	0.8%	0.6%	0.4%	0.2%
		CONSOLACION	106,649	131,528	148,012	160,470	169,257	176,339	181,541	184,934	186,679	4.3%	2.4%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		CORDOVA	50,353	59,712	70,595	76,651	80,849	84,231	86,716	88,337	89,171	3.5%	3.4%	1.7%	1.1%	0.8%	0.6%	0.4%	0.2%
		DAANBANTAYAN	74,897	84,430	93,502	101,321	106,869	111,340	114,624	116,768	117,869	2.4%	2.1%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		DALAGUETE	63,239	67,497	74,596	80,828	85,255	88,821	91,441	93,151	94,029	1.3%	2.0%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		DANAO CITY	119,252	136,471	156,321	169,570	178,856	186,340	191,837	195,422	197,265	2.7%	2.8%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		DUMANJUG	46,754	51,210	57,823	62,696	66,129	68,897	70,928	72,255	72,935	1.8%	2.5%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		GINATILAN	15,327	15,919	16,906	18,295	19,297	20,105	20,698	21,085	21,284	0.8%	1.2%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		LILOAN	100,500	118,753	153,197	166,751	175,881	183,241	188,646	192,172	193,984	3.4%	5.2%	1.7%	1.1%	0.8%	0.6%	0.4%	0.2%
		MADRIDEJOS	34,905	36,429	42,039	45,612	48,110	50,123	51,602	52,566	53,062	0.9%	2.9%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL VISAYAS	Cebu	MALABUYOC	18,426	19,373	19,770	21,366	22,536	23,479	24,171	24,623	24,856	1.0%	0.4%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		MEDELLIN	50,047	55,332	59,605	64,532	68,066	70,914	73,005	74,370	75,072	2.0%	1.5%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		MINGLANILLA	113,178	132,135	151,002	163,789	172,758	179,986	185,295	188,760	190,540	3.1%	2.7%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		MOALBOAL	27,676	31,130	36,930	40,103	42,299	44,069	45,368	46,216	46,653	2.4%	3.5%	1.7%	1.1%	0.8%	0.6%	0.4%	0.2%
		CITY OF NAGA	101,571	115,750	133,184	144,492	152,404	158,781	163,464	166,519	168,090	2.6%	2.8%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		OSLOB	26,116	27,893	29,264	31,656	33,389	34,786	35,812	36,481	36,825	1.3%	1.0%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		PILAR	11,564	11,308	12,506	13,551	14,293	14,892	15,330	15,617	15,765	-0.4%	2.0%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		PINAMUNGAHAN	57,997	65,955	75,131	81,485	85,947	89,542	92,184	93,907	94,792	2.6%	2.6%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		PORO	23,498	25,212	26,232	28,369	29,921	31,174	32,093	32,693	33,002	1.4%	0.8%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		RONDA	18,582	20,360	21,005	22,709	23,953	24,956	25,692	26,172	26,419	1.8%	0.6%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		SAMBOAN	18,613	20,884	20,373	21,982	23,186	24,156	24,868	25,332	25,571	2.3%	-0.5%	1.5%	1.1%	0.8%	0.6%	0.4%	0.2%
		SAN FERNANDO	60,970	66,280	72,224	78,223	82,507	85,960	88,495	90,149	90,999	1.7%	1.7%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		SAN FRANCISCO	47,357	55,180	59,236	64,124	67,635	70,466	72,543	73,900	74,597	3.1%	1.4%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		SAN REMIGIO	51,394	57,557	65,744	71,310	75,215	78,362	80,674	82,182	82,957	2.3%	2.7%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		SANTA FE	27,270	28,603	34,471	37,450	39,500	41,153	42,367	43,159	43,566	1.0%	3.8%	1.7%	1.1%	0.8%	0.6%	0.4%	0.2%
		SANTANDER	16,105	17,857	18,527	20,033	21,131	22,015	22,665	23,088	23,306	2.1%	0.7%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		SIBONGA	43,641	48,186	53,424	57,894	61,065	63,619	65,496	66,720	67,350	2.0%	2.1%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		SOGOD	30,626	35,108	39,447	42,765	45,106	46,993	48,380	49,284	49,749	2.8%	2.4%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		TABOGON	33,024	39,013	41,432	44,835	47,291	49,270	50,723	51,671	52,159	3.4%	1.2%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		TABUELAN	22,292	25,630	28,907	31,342	33,059	34,442	35,459	36,121	36,462	2.8%	2.4%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		CITY OF TALISAY	200,772	227,645	263,048	285,419	301,050	313,646	322,896	328,933	332,035	2.5%	2.9%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		TOLEDO CITY	157,078	170,335	207,314	225,290	237,627	247,571	254,873	259,638	262,087	1.6%	4.0%	1.7%	1.1%	0.8%	0.6%	0.4%	0.2%
		TUBURAN	58,914	63,866	68,167	73,780	77,821	81,078	83,470	85,029	85,831	1.6%	1.3%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		TUDELA	9,859	11,296	11,304	12,207	12,877	13,415	13,811	14,070	14,202	2.8%	0.0%	1.5%	1.1%	0.8%	0.6%	0.4%	0.2%
		CEBU CITY (Capital)	866,171	922,611	964,169	1,042,826	1,099,933	1,145,956	1,179,758	1,201,811	1,213,144	1.3%	0.9%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		LAPU-LAPU CITY (OPON)	350,467	408,112	497,604	540,776	570,391	594,258	611,786	623,222	629,099	3.1%	4.0%	1.7%	1.1%	0.8%	0.6%	0.4%	0.2%
		MANDAUE CITY	331,320	362,654	364,116	393,280	414,817	432,175	444,922	453,240	457,513	1.8%	0.1%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%
		Sub-total	4,167,320	4,632,359	5,151,274	5,582,761	5,888,482	6,134,869	6,315,823	6,433,889	6,494,564	2.1%	2.1%	1.6%	1.1%	0.8%	0.6%	0.4%	0.2%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CENTRAL VISAYAS	Negros Oriental	AMLAN (AYUQUITAN)	22,206	23,624	25,513	26,564	28,452	30,264	31,916	33,516	35,191	1.2%	1.6%	0.8%	1.4%	1.2%	1.1%	1.0%	1.0%
		AYUNGON	46,146	46,303	47,102	48,943	52,422	55,761	58,804	61,753	64,838	0.1%	0.3%	0.8%	1.4%	1.2%	1.1%	1.0%	1.0%
		BACONG	32,286	36,527	41,207	42,963	46,016	48,945	51,617	54,206	56,914	2.5%	2.4%	0.8%	1.4%	1.2%	1.1%	1.0%	1.0%
		BAIS CITY	74,722	76,291	84,317	87,855	94,099	100,089	105,554	110,847	116,386	0.4%	2.0%	0.8%	1.4%	1.2%	1.1%	1.0%	1.0%
		BASAY	24,913	26,566	28,531	29,701	31,812	33,837	35,685	37,475	39,348	1.3%	1.4%	0.8%	1.4%	1.2%	1.1%	1.0%	1.0%
		CITY OF BAYAWAN (TULONG)	114,074	117,900	122,747	127,648	136,720	145,423	153,364	161,054	169,102	0.7%	0.8%	0.8%	1.4%	1.2%	1.1%	1.0%	1.0%
		BINDOY (PAYABON)	39,416	39,819	40,308	41,877	44,854	47,709	50,314	52,837	55,478	0.2%	0.2%	0.8%	1.4%	1.2%	1.1%	1.0%	1.0%
		CANLAON CITY	50,627	54,509	58,822	61,241	65,595	69,771	73,581	77,270	81,131	1.5%	1.5%	0.8%	1.4%	1.2%	1.1%	1.0%	1.0%
		DAUIN	25,239	27,786	30,018	31,254	33,475	35,605	37,550	39,432	41,402	1.9%	1.6%	0.8%	1.4%	1.2%	1.1%	1.0%	1.0%
		DUMAGUETE CITY (Capital)	120,883	131,377	134,103	139,364	149,269	158,772	167,440	175,835	184,623	1.7%	0.4%	0.8%	1.4%	1.2%	1.1%	1.0%	1.0%
		CITY OF GUIHULNGAN	93,675	95,969	102,656	106,850	114,445	121,729	128,376	134,813	141,550	0.5%	1.4%	0.8%	1.4%	1.2%	1.1%	1.0%	1.0%
		JIMALALUD	29,044	30,945	32,256	33,544	35,929	38,216	40,303	42,323	44,438	1.3%	0.8%	0.8%	1.4%	1.2%	1.1%	1.0%	1.0%
		LA LIBERTAD	38,904	38,602	41,089	42,761	45,801	48,716	51,376	53,952	56,648	-0.2%	1.3%	0.8%	1.4%	1.2%	1.1%	1.0%	1.0%
		MABINAY	74,187	78,864	82,953	86,294	92,427	98,311	103,678	108,877	114,317	1.2%	1.0%	0.8%	1.4%	1.2%	1.1%	1.0%	1.0%
		MANJUYOD	41,107	42,332	44,799	46,613	49,926	53,105	56,004	58,812	61,752	0.6%	1.1%	0.8%	1.4%	1.2%	1.1%	1.0%	1.0%
		PAMPLONA	34,906	37,596	39,805	41,417	44,361	47,185	49,761	52,257	54,868	1.5%	1.1%	0.8%	1.4%	1.2%	1.1%	1.0%	1.0%
		SAN JOSE	19,098	20,413	21,956	22,857	24,481	26,039	27,462	28,838	30,279	1.3%	1.5%	0.8%	1.4%	1.2%	1.1%	1.0%	1.0%
		SANTA CATALINA	73,306	75,756	77,501	80,547	86,273	91,764	96,774	101,627	106,706	0.7%	0.5%	0.8%	1.4%	1.2%	1.1%	1.0%	1.0%
		SIATON	73,285	77,696	83,082	86,476	92,623	98,518	103,897	109,106	114,559	1.2%	1.3%	0.8%	1.4%	1.2%	1.1%	1.0%	1.0%
		SIBULAN	51,519	59,455	64,343	66,998	71,760	76,327	80,495	84,531	88,756	2.9%	1.6%	0.8%	1.4%	1.2%	1.1%	1.0%	1.0%
		CITY OF TANJAY	79,098	80,532	82,642	85,899	92,005	97,862	103,205	108,380	113,796	0.4%	0.5%	0.8%	1.4%	1.2%	1.1%	1.0%	1.0%
		TAYASAN	34,609	35,470	38,159	39,724	42,549	45,257	47,727	50,120	52,625	0.5%	1.5%	0.8%	1.4%	1.2%	1.1%	1.0%	1.0%
		VALENCIA (LUZURRIAGA)	31,477	34,852	38,733	40,365	43,233	45,986	48,497	50,928	53,474	2.1%	2.1%	0.8%	1.4%	1.2%	1.1%	1.0%	1.0%
		VALLEHERMOSO	36,943	38,259	40,779	42,440	45,457	48,352	50,991	53,548	56,223	0.7%	1.3%	0.8%	1.4%	1.2%	1.1%	1.0%	1.0%
		ZAMBOANGUITA	24,996	27,552	29,569	30,781	32,969	35,068	36,982	38,836	40,777	2.0%	1.4%	0.8%	1.4%	1.2%	1.1%	1.0%	1.0%
		Sub-total	1,286,666	1,354,995	1,432,990	1,490,976	1,596,953	1,698,611	1,791,353	1,881,173	1,975,181	1.0%	1.1%	0.8%	1.4%	1.2%	1.1%	1.0%	1.0%
	Siquijor	ENRIQUE VILLANUEVA	5,972	6,104	6,790	7,116	7,964	8,897	9,929	11,038	12,204	0.4%	2.2%	0.9%	2.3%	2.2%	2.2%	2.1%	2.0%
		LARENA	12,931	13,847	14,454	15,117	16,917	18,901	21,093	23,451	25,927	1.4%	0.9%	0.9%	2.3%	2.2%	2.2%	2.1%	2.0%
		LAZI	20,024	20,490	22,488	23,560	26,365	29,456	32,872	36,543	40,404	0.5%	1.9%	0.9%	2.3%	2.2%	2.2%	2.1%	2.0%
		MARIA	13,383	13,828	14,385	15,045	16,836	18,810	20,992	23,338	25,803	0.7%	0.8%	0.9%	2.3%	2.2%	2.2%	2.1%	2.0%
		SAN JUAN	13,525	14,854	16,363	17,145	19,187	21,436	23,922	26,595	29,405	1.9%	2.0%	0.9%	2.3%	2.2%	2.2%	2.1%	2.0%
		SIQUIJOR (Capital)	25,231	26,861	28,915	30,275	33,880	37,852	42,240	46,959	51,920	1.3%	1.5%	0.9%	2.3%	2.2%	2.2%	2.1%	2.0%
		Sub-total	91,066	95,984	103,395	108,258	121,149	135,352	151,048	167,924	185,663	1.1%	1.5%	0.9%	2.3%	2.2%	2.2%	2.1%	2.0%
		Total	6,800,180	7,396,898	8,081,988	8,634,731	9,181,817	9,667,108	10,076,778	10,420,359	10,711,305	1.7%	1.8%	1.3%	1.2%	1.0%	0.8%	0.7%	0.6%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
EASTERN VISAYAS	Biliran	ALMERIA	16,495	16,951	17,954	18,781	21,476	24,460	27,726	31,142	34,670	0.5%	1.2%	0.9%	2.7%	2.6%	2.5%	2.4%	2.2%
		BILIRAN	16,183	16,882	17,662	18,469	21,118	24,053	27,265	30,623	34,091	0.8%	0.9%	0.9%	2.7%	2.6%	2.5%	2.4%	2.2%
		CABUCGAYAN	19,621	20,788	21,542	22,518	25,750	29,326	33,242	37,338	41,568	1.2%	0.7%	0.9%	2.7%	2.6%	2.5%	2.4%	2.2%
		CAIBIRAN	21,473	22,524	24,167	25,292	28,921	32,939	37,338	41,938	46,688	1.0%	1.4%	0.9%	2.7%	2.6%	2.5%	2.4%	2.2%
		CULABA	12,252	12,325	12,972	13,568	15,515	17,670	20,029	22,498	25,045	0.1%	1.0%	0.9%	2.7%	2.6%	2.5%	2.4%	2.2%
		KAWAYAN	20,238	20,291	20,455	21,363	24,427	27,821	31,537	35,422	39,434	0.1%	0.2%	0.9%	2.7%	2.6%	2.5%	2.4%	2.2%
		MARIPIPI	6,699	7,159	6,373	6,624	7,575	8,627	9,780	10,985	12,229	1.3%	-2.3%	0.8%	2.7%	2.6%	2.5%	2.4%	2.2%
		NAVAL (Capital)	48,799	54,692	58,187	60,879	69,613	79,284	89,875	100,947	112,377	2.3%	1.2%	0.9%	2.7%	2.6%	2.5%	2.4%	2.2%
		Sub-total	161,760	171,612	179,312	187,491	214,396	244,180	276,793	310,895	346,101	1.2%	0.9%	0.9%	2.7%	2.6%	2.5%	2.4%	2.2%
	Eastern Samar	ARTECHE	15,164	16,026	16,360	17,863	19,462	20,992	22,407	23,722	24,903	1.1%	0.4%	1.8%	1.7%	1.5%	1.3%	1.1%	1.0%
		BALANGIGA	12,756	14,085	14,341	15,656	17,058	18,399	19,639	20,793	21,827	2.0%	0.4%	1.8%	1.7%	1.5%	1.3%	1.1%	1.0%
		BALANGKAYAN	9,046	10,125	10,185	11,114	12,109	13,061	13,941	14,761	15,495	2.3%	0.1%	1.8%	1.7%	1.5%	1.3%	1.1%	1.0%
		CITY OF BORONGAN (Capital)	64,457	69,297	71,961	78,614	85,652	92,387	98,615	104,406	109,600	1.5%	0.8%	1.8%	1.7%	1.5%	1.3%	1.1%	1.0%
		CAN-AVID	19,785	21,015	21,682	23,681	25,801	27,829	29,707	31,451	33,015	1.2%	0.6%	1.8%	1.7%	1.5%	1.3%	1.1%	1.0%
		DOLORES	37,912	42,866	44,626	48,757	53,121	57,298	61,161	64,753	67,974	2.5%	0.8%	1.8%	1.7%	1.5%	1.3%	1.1%	1.0%
		GENERAL MACARTHUR	12,214	14,550	14,411	15,718	17,124	18,471	19,716	20,875	21,913	3.6%	-0.2%	1.8%	1.7%	1.5%	1.3%	1.1%	1.0%
		GIPORLOS	12,040	13,308	13,117	14,303	15,584	16,809	17,942	18,996	19,941	2.0%	-0.3%	1.7%	1.7%	1.5%	1.3%	1.1%	1.0%
		GUIUAN	47,037	52,991	53,361	58,232	63,446	68,434	73,049	77,337	81,186	2.4%	0.1%	1.8%	1.7%	1.5%	1.3%	1.1%	1.0%
		HERNANI	8,070	8,573	8,531	9,306	10,139	10,936	11,674	12,360	12,974	1.2%	-0.1%	1.8%	1.7%	1.5%	1.3%	1.1%	1.0%
		JIPAPAD	7,397	7,885	8,439	9,228	10,055	10,844	11,576	12,256	12,865	1.3%	1.4%	1.8%	1.7%	1.5%	1.3%	1.1%	1.0%
		LAWAAN	11,612	12,742	13,003	14,196	15,468	16,684	17,808	18,855	19,792	1.9%	0.4%	1.8%	1.7%	1.5%	1.3%	1.1%	1.0%
		LLORENTE	19,101	20,149	21,459	23,463	25,564	27,573	29,432	31,161	32,711	1.1%	1.3%	1.8%	1.7%	1.5%	1.3%	1.1%	1.0%
		MASLOG	4,781	5,407	5,463	5,963	6,497	7,007	7,480	7,919	8,313	2.5%	0.2%	1.8%	1.7%	1.5%	1.3%	1.1%	1.0%
		MAYDOLONG	13,614	14,743	15,314	16,729	18,227	19,660	20,986	22,217	23,323	1.6%	0.8%	1.8%	1.7%	1.5%	1.3%	1.1%	1.0%
		MERCEDES	5,369	6,070	6,112	6,670	7,267	7,837	8,367	8,858	9,298	2.5%	0.1%	1.8%	1.7%	1.5%	1.3%	1.1%	1.0%
		ORAS	34,760	36,540	37,451	40,896	44,557	48,060	51,301	54,313	57,015	1.0%	0.5%	1.8%	1.7%	1.5%	1.3%	1.1%	1.0%
		QUINAPONDAN	13,841	14,779	14,507	15,816	17,232	18,588	19,840	21,005	22,051	1.3%	-0.4%	1.7%	1.7%	1.5%	1.3%	1.1%	1.0%
		SALCEDO	19,970	22,532	22,136	24,136	26,297	28,364	30,277	32,055	33,650	2.4%	-0.4%	1.7%	1.7%	1.5%	1.3%	1.1%	1.0%
		SAN JULIAN	13,748	14,498	14,800	16,160	17,606	18,990	20,271	21,461	22,528	1.1%	0.4%	1.8%	1.7%	1.5%	1.3%	1.1%	1.0%
		SAN POLICARPO	13,836	14,687	15,365	16,790	18,293	19,731	21,063	22,299	23,408	1.2%	0.9%	1.8%	1.7%	1.5%	1.3%	1.1%	1.0%
		SULAT	15,184	15,377	15,758	17,208	18,748	20,223	21,588	22,856	23,993	0.3%	0.5%	1.8%	1.7%	1.5%	1.3%	1.1%	1.0%
		TAFT	17,183	18,915	18,786	20,491	22,325	24,082	25,706	27,214	28,568	1.9%	-0.1%	1.8%	1.7%	1.5%	1.3%	1.1%	1.0%
		Sub-total	428,877	467,160	477,168	520,992	567,632	612,264	653,548	691,922	726,345	1.7%	0.4%	1.8%	1.7%	1.5%	1.3%	1.1%	1.0%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
EASTERN VISAYAS	Leyte	ABUYOG	57,146	59,571	61,216	66,966	71,825	76,303	80,228	83,585	86,331	0.8%	0.5%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		ALANGALANG	46,411	55,235	57,185	62,572	67,112	71,296	74,965	78,100	80,666	3.5%	0.7%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		ALBUERA	40,553	46,332	47,151	51,562	55,304	58,752	61,774	64,358	66,473	2.7%	0.4%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		BABATNGON	25,575	27,797	28,823	31,540	33,828	35,937	37,786	39,367	40,660	1.7%	0.7%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		BARUGO	30,092	32,745	34,497	37,769	40,509	43,035	45,249	47,141	48,691	1.7%	1.0%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		BATO	35,610	38,356	38,505	42,087	45,141	47,956	50,422	52,531	54,257	1.5%	0.1%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		CITY OF BAYBAY	102,841	109,432	111,848	122,330	131,207	139,387	146,558	152,687	157,705	1.3%	0.4%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		BURAUEN	48,853	52,732	52,511	57,380	61,544	65,381	68,744	71,620	73,973	1.5%	-0.1%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		CALUBIAN	29,619	31,228	31,646	34,602	37,112	39,426	41,454	43,188	44,608	1.1%	0.3%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		CAPOOCAN	29,834	33,617	33,721	36,858	39,532	41,997	44,158	46,005	47,517	2.4%	0.1%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		CARIGARA	47,444	51,345	54,656	59,860	64,203	68,206	71,714	74,714	77,170	1.6%	1.3%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		DAGAMI	31,490	35,147	36,178	39,578	42,450	45,096	47,416	49,399	51,023	2.2%	0.6%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		DULAG	41,757	47,300	48,992	53,607	57,497	61,082	64,224	66,910	69,109	2.5%	0.7%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		HILONGOS	56,803	63,431	64,514	70,549	75,668	80,385	84,520	88,057	90,950	2.2%	0.3%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		HINDANG	20,179	20,924	20,849	22,782	24,435	25,959	27,293	28,434	29,370	0.7%	-0.1%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		INOPACAN	19,904	20,550	21,389	23,407	25,106	26,672	28,044	29,216	30,177	0.6%	0.8%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		ISABEL	43,593	46,915	46,781	51,121	54,830	58,249	61,246	63,807	65,904	1.5%	-0.1%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		JARO	39,577	43,199	43,758	47,844	51,316	54,515	57,320	59,718	61,680	1.8%	0.3%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		JAVIER (BUGHO)	23,878	25,379	26,658	29,184	31,301	33,253	34,964	36,426	37,622	1.2%	1.0%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		JULITA	13,307	15,114	15,598	17,066	18,304	19,445	20,445	21,301	22,000	2.6%	0.6%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		KANANGA	48,027	56,575	59,696	65,362	70,105	74,476	78,307	81,583	84,264	3.3%	1.1%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		LA PAZ	19,133	19,998	19,174	20,923	22,441	23,841	25,068	26,116	26,974	0.9%	-0.8%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		LEYTE	37,505	40,639	40,397	44,141	47,344	50,296	52,884	55,096	56,906	1.6%	-0.1%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		MACARTHUR	18,724	21,211	21,578	23,597	25,309	26,888	28,271	29,454	30,421	2.5%	0.3%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		MAHAPLAG	26,599	27,823	27,865	30,455	32,664	34,700	36,486	38,011	39,260	0.9%	0.0%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		MATAG-OB	17,089	18,373	17,522	19,116	20,504	21,782	22,903	23,862	24,645	1.5%	-0.9%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		MATALOM	31,097	33,121	32,586	35,592	38,175	40,556	42,641	44,425	45,885	1.3%	-0.3%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		MAYORGA	14,694	17,161	18,071	19,785	21,220	22,542	23,703	24,695	25,506	3.2%	1.0%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		MERIDA	27,224	29,863	31,574	34,573	37,082	39,394	41,420	43,154	44,571	1.9%	1.1%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		ORMOC CITY	191,200	215,031	230,998	253,067	271,432	288,354	303,188	315,869	326,249	2.4%	1.4%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		PALO	62,727	70,052	76,213	83,528	89,590	95,176	100,072	104,258	107,684	2.2%	1.7%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		PALOMPON	54,163	58,108	58,313	63,737	68,363	72,625	76,362	79,556	82,170	1.4%	0.1%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		PASTRANA	16,649	18,002	19,359	21,210	22,750	24,168	25,411	26,474	27,343	1.6%	1.5%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		SAN ISIDRO	28,554	31,641	30,722	33,540	35,975	38,217	40,183	41,864	43,238	2.1%	-0.6%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		SAN MIGUEL	17,561	19,420	19,753	21,601	23,169	24,613	25,880	26,962	27,847	2.0%	0.3%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		SANTA FE	17,427	20,439	22,102	24,218	25,975	27,595	29,014	30,227	31,221	3.2%	1.6%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		TABANGO	31,932	34,195	33,868	37,002	39,687	42,162	44,330	46,184	47,702	1.4%	-0.2%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		TABONTABON	9,838	11,204	11,902	13,034	13,980	14,851	15,614	16,268	16,802	2.6%	1.2%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		TANAUAN	50,119	55,021	57,455	62,885	67,449	71,654	75,339	78,491	81,070	1.9%	0.9%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		TOLOSA	17,921	20,978	20,708	22,622	24,265	25,777	27,103	28,236	29,164	3.2%	-0.3%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		TUNGA	6,516	7,584	7,656	8,371	8,979	9,538	10,029	10,448	10,793	3.1%	0.2%	1.8%	1.4%	1.2%	1.0%	0.8%	0.7%
		VILLABA	38,819	41,891	42,859	46,878	50,279	53,414	56,163	58,511	60,434	1.5%	0.5%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		TACLOBAN CITY (Capital)	221,174	242,089	251,881	275,656	295,658	314,089	330,249	344,064	355,370	1.8%	0.8%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%
		Sub-total	1,789,158	1,966,768	2,028,728	2,219,554	2,380,620	2,529,036	2,659,146	2,770,373	2,861,405	1.9%	0.6%	1.8%	1.4%	1.2%	1.0%	0.8%	0.6%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
EASTERN VISAYAS	Northern Samar	ALLEN	23,738	25,469	25,228	26,576	29,334	31,983	34,524	36,910	39,128	1.4%	-0.2%	1.0%	2.0%	1.7%	1.5%	1.3%	1.2%
		BIRI	10,987	11,767	11,274	11,863	13,094	14,276	15,409	16,474	17,465	1.4%	-0.9%	1.0%	2.0%	1.7%	1.5%	1.3%	1.2%
		BOBON	20,956	23,668	25,964	27,444	30,293	33,026	35,651	38,115	40,406	2.5%	1.9%	1.1%	2.0%	1.7%	1.5%	1.3%	1.2%
		CAPUL	12,659	12,679	12,323	12,973	14,319	15,612	16,853	18,017	19,100	0.0%	-0.6%	1.0%	2.0%	1.7%	1.5%	1.3%	1.2%
		CATARMAN (Capital)	84,833	94,037	97,879	103,282	114,003	124,293	134,169	143,438	152,063	2.1%	0.8%	1.1%	2.0%	1.7%	1.5%	1.3%	1.2%
		CATUBIG	31,723	33,025	32,174	33,872	37,388	40,763	44,001	47,041	49,870	0.8%	-0.5%	1.0%	2.0%	1.7%	1.5%	1.3%	1.2%
		GAMAY	22,425	23,511	23,367	24,617	27,173	29,624	31,979	34,188	36,243	1.0%	-0.1%	1.0%	2.0%	1.7%	1.5%	1.3%	1.2%
		LAOANG	58,037	61,359	60,607	63,837	70,464	76,824	82,928	88,659	93,990	1.1%	-0.2%	1.0%	2.0%	1.7%	1.5%	1.3%	1.2%
		LAPINIG	11,744	13,020	11,844	12,437	13,728	14,968	16,158	17,274	18,311	2.1%	-1.9%	1.0%	2.0%	1.7%	1.5%	1.3%	1.2%
		LAS NAVAS	36,539	37,947	36,621	38,539	42,539	46,380	50,065	53,524	56,742	0.8%	-0.7%	1.0%	2.0%	1.7%	1.5%	1.3%	1.2%
		LAVEZARES	27,464	28,770	29,390	30,993	34,211	37,298	40,262	43,043	45,631	0.9%	0.4%	1.1%	2.0%	1.7%	1.5%	1.3%	1.2%
		MAPANAS	12,423	14,025	14,234	15,006	16,564	18,060	19,495	20,842	22,095	2.5%	0.3%	1.1%	2.0%	1.7%	1.5%	1.3%	1.2%
		MONDRAGON	35,318	38,726	41,415	43,740	48,281	52,639	56,821	60,748	64,400	1.9%	1.4%	1.1%	2.0%	1.7%	1.5%	1.3%	1.2%
		PALAPAG	33,453	34,286	34,034	35,854	39,576	43,148	46,576	49,794	52,789	0.5%	-0.1%	1.0%	2.0%	1.7%	1.5%	1.3%	1.2%
		PAMBUJAN	31,057	33,062	35,532	37,533	41,429	45,169	48,759	52,127	55,262	1.3%	1.5%	1.1%	2.0%	1.7%	1.5%	1.3%	1.2%
		ROSARIO	10,214	10,520	10,949	11,554	12,754	13,904	15,009	16,046	17,011	0.6%	0.8%	1.1%	2.0%	1.7%	1.5%	1.3%	1.2%
		SAN ANTONIO	8,877	9,058	8,882	9,354	10,324	11,256	12,151	12,990	13,771	0.4%	-0.4%	1.0%	2.0%	1.7%	1.5%	1.3%	1.2%
		SAN ISIDRO	24,952	26,650	27,867	29,410	32,464	35,393	38,205	40,844	43,301	1.3%	0.9%	1.1%	2.0%	1.7%	1.5%	1.3%	1.2%
		SAN JOSE	16,079	17,561	17,641	18,592	20,522	22,374	24,153	25,821	27,374	1.8%	0.1%	1.1%	2.0%	1.7%	1.5%	1.3%	1.2%
		SAN ROQUE	26,323	30,580	29,882	31,463	34,728	37,863	40,871	43,695	46,322	3.0%	-0.5%	1.0%	2.0%	1.7%	1.5%	1.3%	1.2%
		SAN VICENTE	7,447	7,856	6,928	7,266	8,020	8,744	9,439	10,092	10,698	1.1%	-2.5%	1.0%	2.0%	1.7%	1.5%	1.3%	1.2%
		SILVINO LOBOS	14,303	15,299	15,100	15,904	17,555	19,140	20,661	22,089	23,416	1.4%	-0.3%	1.0%	2.0%	1.7%	1.5%	1.3%	1.2%
		VICTORIA	13,920	14,817	15,361	16,206	17,888	19,503	21,053	22,506	23,861	1.3%	0.7%	1.1%	2.0%	1.7%	1.5%	1.3%	1.2%
		LOPE DE VEGA	13,542	14,687	14,690	15,479	17,084	18,626	20,106	21,494	22,787	1.6%	0.0%	1.1%	2.0%	1.7%	1.5%	1.3%	1.2%
		Sub-total	589,013	632,379	639,186	673,791	743,731	810,862	875,294	935,770	992,035	1.4%	0.2%	1.1%	2.0%	1.7%	1.5%	1.3%	1.2%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
EASTERN VISAYAS	Samar	ALMAGRO	11,024	8,942	9,273	9,754	10,664	11,538	12,357	13,119	13,810	-4.1%	0.7%	1.0%	1.8%	1.6%	1.4%	1.2%	1.0%
		BASEY	50,423	55,480	56,685	59,585	65,146	70,489	75,491	80,142	84,363	1.9%	0.4%	1.0%	1.8%	1.6%	1.4%	1.2%	1.0%
		CALBAYOG CITY	172,778	183,851	186,960	196,493	214,831	232,455	248,949	264,290	278,206	1.3%	0.3%	1.0%	1.8%	1.6%	1.4%	1.2%	1.0%
		CALBIGA	21,434	22,982	23,310	24,497	26,783	28,980	31,036	32,949	34,684	1.4%	0.3%	1.0%	1.8%	1.6%	1.4%	1.2%	1.0%
		CITY OF CATBALOGAN (Capital)	94,317	103,879	106,440	111,897	122,340	132,376	141,769	150,505	158,429	2.0%	0.5%	1.0%	1.8%	1.6%	1.4%	1.2%	1.0%
		DARAM	41,322	42,879	41,608	43,657	47,731	51,647	55,311	58,719	61,811	0.7%	-0.6%	1.0%	1.8%	1.6%	1.4%	1.2%	1.0%
		GANDARA	31,943	34,434	35,242	37,046	40,504	43,827	46,937	49,829	52,454	1.5%	0.5%	1.0%	1.8%	1.6%	1.4%	1.2%	1.0%
		HINABANGAN	12,651	13,673	13,693	14,384	15,726	17,016	18,223	19,346	20,366	1.6%	0.0%	1.0%	1.8%	1.6%	1.4%	1.2%	1.0%
		JIABONG	17,075	18,342	19,205	20,204	22,089	23,901	25,597	27,174	28,605	1.4%	0.9%	1.0%	1.8%	1.6%	1.4%	1.2%	1.0%
		MARABUT	15,115	16,962	17,842	18,773	20,525	22,209	23,785	25,251	26,580	2.3%	1.0%	1.0%	1.8%	1.6%	1.4%	1.2%	1.0%
		MATUGUINAO	6,746	7,288	7,364	7,738	8,461	9,155	9,804	10,407	10,956	1.6%	0.2%	1.0%	1.8%	1.6%	1.4%	1.2%	1.0%
		MOTIONG	14,829	15,156	15,276	16,051	17,547	18,988	20,335	21,588	22,725	0.4%	0.2%	1.0%	1.8%	1.6%	1.4%	1.2%	1.0%
		PINABACDAO	16,208	18,252	18,136	19,045	20,823	22,531	24,130	25,617	26,967	2.4%	-0.1%	1.0%	1.8%	1.6%	1.4%	1.2%	1.0%
		SAN JOSE DE BUAN	6,563	7,769	7,767	8,158	8,919	9,651	10,335	10,972	11,551	3.4%	0.0%	1.0%	1.8%	1.6%	1.4%	1.2%	1.0%
		SAN SEBASTIAN	7,708	8,057	8,704	9,167	10,022	10,844	11,614	12,330	12,979	0.9%	1.6%	1.0%	1.8%	1.6%	1.4%	1.2%	1.0%
		SANTA MARGARITA	24,850	26,348	26,816	28,184	30,814	33,341	35,708	37,908	39,904	1.2%	0.4%	1.0%	1.8%	1.6%	1.4%	1.2%	1.0%
		SANTA RITA	38,082	41,591	42,384	44,549	48,707	52,702	56,441	59,920	63,075	1.8%	0.4%	1.0%	1.8%	1.6%	1.4%	1.2%	1.0%
		SANTO NIÑO	13,504	12,863	12,519	13,136	14,363	15,541	16,644	17,671	18,601	-1.0%	-0.5%	1.0%	1.8%	1.6%	1.4%	1.2%	1.0%
		TALALORA	7,983	8,057	7,856	8,244	9,014	9,754	10,445	11,090	11,674	0.2%	-0.5%	1.0%	1.8%	1.6%	1.4%	1.2%	1.0%
		TARANGNAN	24,146	24,992	25,713	27,035	29,559	31,983	34,253	36,363	38,278	0.7%	0.6%	1.0%	1.8%	1.6%	1.4%	1.2%	1.0%
		VILLAREAL	26,221	28,230	27,394	28,743	31,426	34,004	36,418	38,662	40,698	1.5%	-0.6%	1.0%	1.8%	1.6%	1.4%	1.2%	1.0%
		PARANAS (WRIGHT)	29,327	30,557	32,374	34,072	37,253	40,308	43,169	45,828	48,241	0.8%	1.2%	1.0%	1.8%	1.6%	1.4%	1.2%	1.0%
		ZUMARRAGA	16,936	16,295	16,279	17,098	18,694	20,227	21,663	22,997	24,208	-0.8%	0.0%	1.0%	1.8%	1.6%	1.4%	1.2%	1.0%
		TAGAPUL-AN	7,828	8,473	8,805	9,262	10,125	10,956	11,733	12,457	13,112	1.6%	0.8%	1.0%	1.8%	1.6%	1.4%	1.2%	1.0%
		SAN JORGE	16,340	17,184	17,579	18,480	20,205	21,862	23,413	24,857	26,166	1.0%	0.5%	1.0%	1.8%	1.6%	1.4%	1.2%	1.0%
		PAGSANGHAN	8,024	7,945	7,959	8,362	9,141	9,892	10,594	11,248	11,839	-0.2%	0.0%	1.0%	1.8%	1.6%	1.4%	1.2%	1.0%
		Sub-total	733,377	780,481	793,183	833,612	911,412	986,179	1,056,155	1,121,238	1,180,277	1.3%	0.3%	1.0%	1.8%	1.6%	1.4%	1.2%	1.0%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
EASTERN VISAYAS	Southern Leyte	ANAHAWAN	7,942	8,211	8,429	8,997	9,609	10,143	10,595	10,933	11,120	0.7%	0.5%	1.3%	1.3%	1.1%	0.9%	0.6%	0.3%
		BONTOC	28,079	28,905	29,799	31,808	33,972	35,865	37,461	38,660	39,318	0.6%	0.6%	1.3%	1.3%	1.1%	0.9%	0.6%	0.3%
		HINUNANGAN	28,415	29,976	29,149	31,052	33,164	35,010	36,569	37,738	38,381	1.1%	-0.6%	1.3%	1.3%	1.1%	0.9%	0.6%	0.3%
		HINUNDAYAN	11,890	12,285	12,398	13,224	14,123	14,910	15,574	16,073	16,346	0.7%	0.2%	1.3%	1.3%	1.1%	0.9%	0.6%	0.3%
		LIBAGON	14,352	15,169	15,244	16,259	17,365	18,332	19,148	19,762	20,098	1.1%	0.1%	1.3%	1.3%	1.1%	0.9%	0.6%	0.3%
		LILOAN	22,817	23,981	24,800	26,476	28,276	29,852	31,180	32,177	32,725	1.0%	0.7%	1.3%	1.3%	1.1%	0.9%	0.6%	0.3%
		CITY OF MAASIN (Capital)	81,250	85,560	87,446	93,316	99,665	105,216	109,898	113,414	115,345	1.0%	0.4%	1.3%	1.3%	1.1%	0.9%	0.6%	0.3%
		MACROHON	25,386	26,244	26,580	28,356	30,285	31,972	33,395	34,464	35,051	0.7%	0.3%	1.3%	1.3%	1.1%	0.9%	0.6%	0.3%
		MALITBOG	22,009	22,923	23,256	24,811	26,498	27,975	29,219	30,155	30,668	0.8%	0.3%	1.3%	1.3%	1.1%	0.9%	0.6%	0.3%
		PADRE BURGOS	10,525	11,091	11,159	11,901	12,710	13,418	14,016	14,465	14,710	1.1%	0.1%	1.3%	1.3%	1.1%	0.9%	0.6%	0.3%
		PINTUYAN	9,261	9,826	10,202	10,892	11,632	12,281	12,826	13,237	13,463	1.2%	0.8%	1.3%	1.3%	1.1%	0.9%	0.6%	0.3%
		SAINT BERNARD	25,169	28,395	28,414	30,299	32,361	34,163	35,684	36,825	37,452	2.4%	0.0%	1.3%	1.3%	1.1%	0.9%	0.6%	0.3%
		SAN FRANCISCO	12,528	13,402	13,436	14,328	15,303	16,156	16,875	17,415	17,711	1.4%	0.1%	1.3%	1.3%	1.1%	0.9%	0.6%	0.3%
		SAN JUAN (CABALIAN)	14,073	14,858	14,912	15,903	16,985	17,930	18,728	19,328	19,657	1.1%	0.1%	1.3%	1.3%	1.1%	0.9%	0.6%	0.3%
		SAN RICARDO	10,078	10,494	10,500	11,196	11,958	12,623	13,186	13,608	13,839	0.8%	0.0%	1.3%	1.3%	1.1%	0.9%	0.6%	0.3%
		SILAGO	12,310	12,775	13,116	13,999	14,952	15,784	16,486	17,013	17,303	0.7%	0.5%	1.3%	1.3%	1.1%	0.9%	0.6%	0.3%
		SOGOD	41,411	44,986	47,552	50,803	54,259	57,282	59,831	61,746	62,797	1.7%	1.1%	1.3%	1.3%	1.1%	0.9%	0.6%	0.3%
		TOMAS OPPUS	15,807	16,608	16,990	18,131	19,366	20,444	21,355	22,037	22,412	1.0%	0.5%	1.3%	1.3%	1.1%	0.9%	0.6%	0.3%
		LIMASAWA	5,835	6,061	6,191	6,607	7,059	7,451	7,782	8,029	8,166	0.8%	0.4%	1.3%	1.3%	1.1%	0.9%	0.6%	0.3%
		Sub-total	399,137	421,750	429,573	458,357	489,539	516,806	539,805	557,078	566,558	1.1%	0.4%	1.3%	1.3%	1.1%	0.9%	0.6%	0.3%
		Total	4,101,322	4,440,150	4,547,150	4,893,797	5,307,330	5,699,327	6,060,741	6,387,276	6,672,721	1.6%	0.5%	1.5%	1.6%	1.4%	1.2%	1.1%	0.9%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
ZAMBOANGA PENINSULA	City of Isabela		97,857	112,788	130,379	144,743	155,423	165,776	174,696	182,849	191,340	2.9%	2.9%	2.1%	1.4%	1.3%	1.1%	0.9%	0.9%
	Zamboanga del Norte	DAPITAN CITY	77,441	82,418	85,202	88,430	94,578	100,171	105,001	108,857	111,519	1.3%	0.7%	0.7%	1.4%	1.2%	0.9%	0.7%	0.5%
		DIPOLOG CITY (Capital)	120,460	130,759	138,141	143,478	153,453	162,528	170,365	176,620	180,942	1.7%	1.1%	0.8%	1.4%	1.2%	0.9%	0.7%	0.5%
		KATIPUNAN	43,339	45,577	44,661	46,266	49,482	52,409	54,935	56,953	58,347	1.0%	-0.4%	0.7%	1.4%	1.2%	0.9%	0.7%	0.5%
		LA LIBERTAD	7,771	8,406	8,119	8,406	8,991	9,522	9,982	10,347	10,601	1.6%	-0.7%	0.7%	1.4%	1.2%	0.9%	0.7%	0.5%
		LABASON	40,375	41,357	43,934	45,639	48,812	51,699	54,192	56,182	57,557	0.5%	1.2%	0.8%	1.4%	1.2%	0.9%	0.7%	0.5%
		LILOY	39,015	39,812	42,213	43,849	46,897	49,670	52,065	53,977	55,297	0.4%	1.2%	0.8%	1.4%	1.2%	0.9%	0.7%	0.5%
		MANUKAN	35,589	36,526	36,887	38,255	40,914	43,333	45,422	47,090	48,242	0.5%	0.2%	0.7%	1.4%	1.2%	0.9%	0.7%	0.5%
		MUTIA	11,975	12,675	11,726	12,122	12,966	13,732	14,395	14,923	15,288	1.1%	-1.5%	0.7%	1.4%	1.2%	0.9%	0.7%	0.5%
		PIÑAN (NEW PIÑAN)	20,088	20,161	20,221	20,966	22,423	23,750	24,894	25,808	26,439	0.1%	0.1%	0.7%	1.4%	1.2%	0.9%	0.7%	0.5%
		POLANCO	37,472	39,347	42,265	43,922	46,976	49,754	52,153	54,067	55,390	1.0%	1.4%	0.8%	1.4%	1.2%	0.9%	0.7%	0.5%
		PRES. MANUEL A. ROXAS	37,611	39,323	39,198	40,632	43,457	46,026	48,245	50,016	51,240	0.9%	-0.1%	0.7%	1.4%	1.2%	0.9%	0.7%	0.5%
		RIZAL	14,111	14,021	15,052	15,641	16,729	17,719	18,573	19,256	19,726	-0.1%	1.4%	0.8%	1.4%	1.2%	0.9%	0.7%	0.5%
		SALUG	31,157	32,204	32,134	33,311	35,626	37,733	39,553	41,005	42,008	0.7%	0.0%	0.7%	1.4%	1.2%	0.9%	0.7%	0.5%
		SERGIO OSMEÑA SR.	29,453	30,220	31,942	33,177	35,483	37,582	39,394	40,840	41,839	0.5%	1.1%	0.8%	1.4%	1.2%	0.9%	0.7%	0.5%
		SIAYAN	34,989	34,966	36,236	37,612	40,226	42,606	44,661	46,300	47,433	0.0%	0.7%	0.7%	1.4%	1.2%	0.9%	0.7%	0.5%
		SIBUCO	31,982	34,620	36,049	37,424	40,025	42,393	44,436	46,068	47,195	1.6%	0.8%	0.8%	1.4%	1.2%	0.9%	0.7%	0.5%
		SIBUTAD	16,783	17,645	17,453	18,086	19,343	20,488	21,476	22,265	22,809	1.0%	-0.2%	0.7%	1.4%	1.2%	0.9%	0.7%	0.5%
		SINDANGAN	94,146	99,435	103,952	107,930	115,434	122,261	128,157	132,862	136,111	1.1%	0.9%	0.8%	1.4%	1.2%	0.9%	0.7%	0.5%
		SIOCON	41,637	46,907	48,524	50,364	53,866	57,051	59,802	61,997	63,514	2.4%	0.7%	0.7%	1.4%	1.2%	0.9%	0.7%	0.5%
		SIRAWAI	24,583	28,799	31,163	32,393	34,644	36,694	38,464	39,875	40,851	3.2%	1.6%	0.8%	1.4%	1.2%	0.9%	0.7%	0.5%
		TAMPILISAN	23,056	24,307	24,680	25,599	27,379	28,998	30,397	31,512	32,284	1.1%	0.3%	0.7%	1.4%	1.2%	0.9%	0.7%	0.5%
		JOSE DALMAN (PONOT)	27,033	27,388	28,881	29,995	32,081	33,978	35,616	36,924	37,828	0.3%	1.1%	0.8%	1.4%	1.2%	0.9%	0.7%	0.5%
		GUTALAC	32,153	34,654	36,090	37,467	40,071	42,441	44,487	46,120	47,249	1.5%	0.8%	0.8%	1.4%	1.2%	0.9%	0.7%	0.5%
		BALIGUIAN	21,190	22,588	23,771	24,687	26,403	27,965	29,312	30,389	31,132	1.3%	1.0%	0.8%	1.4%	1.2%	0.9%	0.7%	0.5%
		GODOD	17,788	17,424	17,510	18,155	19,416	20,565	21,556	22,347	22,894	-0.4%	0.1%	0.7%	1.4%	1.2%	0.9%	0.7%	0.5%
		BACUNGAN (Leon T. Postigo)	24,643	26,221	27,639	28,704	30,699	32,516	34,084	35,335	36,200	1.2%	1.1%	0.8%	1.4%	1.2%	0.9%	0.7%	0.5%
		KALAWIT	22,157	23,633	23,812	24,691	26,406	27,970	29,317	30,395	31,137	1.3%	0.2%	0.7%	1.4%	1.2%	0.9%	0.7%	0.5%
		Sub-total	957,997	1,011,393	1,047,455	1,087,201	1,162,784	1,231,553	1,290,932	1,338,332	1,371,075	1.1%	0.7%	0.7%	1.4%	1.2%	0.9%	0.7%	0.5%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
ZAMBOANGA PENINSULA	Zamboanga del Sur	AURORA	48,434	50,755	52,995	54,798	58,749	62,349	65,502	68,176	70,397	0.9%	0.9%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
		BAYOG	30,048	33,591	34,519	35,674	38,245	40,589	42,641	44,382	45,827	2.3%	0.5%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
		DIMATALING	27,715	30,081	31,340	32,403	34,739	36,868	38,732	40,313	41,627	1.7%	0.8%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
		DINAS	34,768	35,504	36,291	37,499	40,203	42,667	44,824	46,655	48,175	0.4%	0.4%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
		DUMALINAO	30,691	32,013	32,928	34,030	36,484	38,720	40,678	42,338	43,717	0.8%	0.6%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
		DUMINGAG	46,500	47,485	48,881	50,519	54,162	57,481	60,387	62,853	64,900	0.4%	0.6%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
		KUMALARANG	28,210	28,469	29,479	30,473	32,671	34,673	36,425	37,912	39,148	0.2%	0.7%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
		LABANGAN	39,168	41,790	44,262	45,790	49,092	52,100	54,734	56,969	58,825	1.3%	1.2%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
		LAPUYAN	26,175	27,264	27,737	28,656	30,721	32,604	34,253	35,652	36,813	0.8%	0.3%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
		MAHAYAG	45,015	46,516	48,258	49,888	53,485	56,763	59,632	62,067	64,089	0.7%	0.7%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
		MARGOSATUBIG	35,596	37,873	38,660	39,944	42,824	45,449	47,747	49,695	51,314	1.2%	0.4%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
		MIDSALIP	31,467	32,075	33,711	34,865	37,379	39,669	41,674	43,376	44,789	0.4%	1.0%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
		MOLAVE	48,939	52,006	53,140	54,908	58,867	62,474	65,633	68,313	70,539	1.2%	0.4%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
		PAGADIAN CITY (Capital)	186,852	199,060	210,452	217,701	233,397	247,701	260,225	270,850	279,675	1.3%	1.1%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
		RAMON MAGSAYSAY (LIARGO)	26,194	26,606	27,280	28,191	30,223	32,075	33,697	35,073	36,215	0.3%	0.5%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
		SAN MIGUEL	18,258	19,205	19,838	20,505	21,984	23,330	24,510	25,511	26,342	1.0%	0.7%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
		SAN PABLO	26,500	26,106	26,648	27,533	29,518	31,327	32,912	34,256	35,372	-0.3%	0.4%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
		TABINA	24,110	25,061	25,734	26,595	28,512	30,260	31,790	33,087	34,165	0.8%	0.5%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
		TAMBULIG	34,883	36,160	37,480	38,744	41,538	44,084	46,313	48,204	49,775	0.7%	0.7%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
		TUKURAN	37,883	39,820	42,429	43,903	47,068	49,953	52,479	54,621	56,401	1.0%	1.3%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
		LAKEWOOD	19,645	20,374	21,559	22,303	23,910	25,376	26,659	27,747	28,652	0.7%	1.1%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
		JOSEFINA	10,826	11,799	12,205	12,616	13,525	14,354	15,080	15,695	16,206	1.7%	0.7%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
		PITOGO	25,502	27,057	27,516	28,426	30,475	32,342	33,978	35,366	36,517	1.2%	0.3%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
		SOMINOT (DON MARIANO MARCOS)	16,652	18,537	19,061	19,699	21,119	22,413	23,547	24,508	25,307	2.2%	0.6%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
		VINCENZO A. SAGUN	20,583	23,759	24,852	25,698	27,551	29,239	30,718	31,972	33,013	2.9%	0.9%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
		GUIPOS	19,771	20,729	21,738	22,480	24,101	25,578	26,871	27,969	28,879	1.0%	1.0%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
		TIGBAO	19,300	20,979	21,675	22,404	24,020	25,493	26,782	27,876	28,784	1.7%	0.7%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
		ZAMBOANGA CITY	807,129	861,799	977,234	1,013,158	1,086,206	1,152,776	1,211,065	1,260,506	1,301,577	1.3%	2.5%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%
		Sub-total	1,766,814	1,872,473	2,027,902	2,099,403	2,250,766	2,388,705	2,509,489	2,611,939	2,697,040	1.2%	1.6%	0.7%	1.4%	1.2%	1.0%	0.8%	0.6%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
ZAMBOANGA PENINSULA	Zamboanga Sibugay	ALICIA	34,895	36,013	39,456	42,123	45,866	49,459	52,749	55,672	58,243	0.6%	1.8%	1.3%	1.7%	1.5%	1.3%	1.1%	0.9%
		BUUG	35,969	36,634	38,425	40,965	44,605	48,099	51,298	54,140	56,641	0.4%	1.0%	1.3%	1.7%	1.5%	1.3%	1.1%	0.9%
		DIPLAHAN	31,215	32,428	32,585	34,688	37,771	40,729	43,439	45,846	47,964	0.8%	0.1%	1.3%	1.7%	1.5%	1.3%	1.1%	0.9%
		IMELDA	27,903	28,018	26,020	27,619	30,074	32,429	34,586	36,503	38,189	0.1%	-1.5%	1.2%	1.7%	1.5%	1.3%	1.1%	0.9%
		IPIL (Capital)	64,939	74,656	89,401	95,704	104,208	112,371	119,846	126,488	132,329	2.8%	3.7%	1.4%	1.7%	1.5%	1.3%	1.1%	0.9%
		KABASALAN	41,421	44,336	46,884	49,996	54,438	58,703	62,607	66,077	69,128	1.4%	1.1%	1.3%	1.7%	1.5%	1.3%	1.1%	0.9%
		MABUHAY	33,093	36,870	37,390	39,815	43,353	46,749	49,859	52,622	55,053	2.2%	0.3%	1.3%	1.7%	1.5%	1.3%	1.1%	0.9%
		MALANGAS	31,243	33,380	32,022	34,031	37,055	39,958	42,615	44,978	47,056	1.3%	-0.8%	1.2%	1.7%	1.5%	1.3%	1.1%	0.9%
		NAGA	37,814	38,547	41,743	44,548	48,506	52,306	55,786	58,878	61,597	0.4%	1.6%	1.3%	1.7%	1.5%	1.3%	1.1%	0.9%
		OLUTANGA	28,717	33,671	38,438	41,089	44,739	48,244	51,453	54,304	56,812	3.2%	2.7%	1.3%	1.7%	1.5%	1.3%	1.1%	0.9%
		PAYAO	29,755	31,686	34,952	37,323	40,640	43,824	46,738	49,329	51,608	1.3%	2.0%	1.3%	1.7%	1.5%	1.3%	1.1%	0.9%
		ROSELLER LIM	37,216	43,646	43,575	46,377	50,497	54,453	58,075	61,293	64,124	3.2%	0.0%	1.3%	1.7%	1.5%	1.3%	1.1%	0.9%
		SIAY	38,229	41,572	40,585	43,159	46,994	50,675	54,045	57,040	59,675	1.7%	-0.5%	1.2%	1.7%	1.5%	1.3%	1.1%	0.9%
		TALUSAN	25,268	29,969	27,873	29,588	32,217	34,740	37,052	39,105	40,912	3.5%	-1.4%	1.2%	1.7%	1.5%	1.3%	1.1%	0.9%
		TITAY	46,456	49,673	53,994	57,629	62,751	67,668	72,169	76,169	79,687	1.3%	1.7%	1.3%	1.7%	1.5%	1.3%	1.1%	0.9%
		TUNGAWAN	40,552	42,030	46,497	49,656	54,068	58,304	62,184	65,630	68,663	0.7%	2.0%	1.3%	1.7%	1.5%	1.3%	1.1%	0.9%
		Sub-total	584,685	633,129	669,840	714,310	777,781	838,710	894,499	944,076	987,683	1.6%	1.1%	1.3%	1.7%	1.5%	1.3%	1.1%	0.9%
		Total	3,407,353	3,629,783	3,875,576	4,045,657	4,346,754	4,624,744	4,869,616	5,077,196	5,247,138	1.3%	1.3%	0.9%	1.4%	1.2%	1.0%	0.8%	0.7%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
NORTHERN MINDANAO	Bukidnon	BAUNGON	32,868	34,336	37,111	39,427	42,326	43,949	44,980	45,476	45,371	0.9%	1.6%	1.2%	1.4%	0.8%	0.5%	0.2%	0.0%
		DAMULOG	25,538	30,302	39,322	42,002	45,090	46,819	47,917	48,448	48,334	3.5%	5.3%	1.3%	1.4%	0.8%	0.5%	0.2%	0.0%
		DANGCAGAN	22,448	23,723	26,076	27,718	29,756	30,897	31,622	31,972	31,898	1.1%	1.9%	1.2%	1.4%	0.8%	0.5%	0.2%	0.0%
		DON CARLOS	64,334	66,959	69,273	73,490	78,893	81,918	83,839	84,766	84,569	0.8%	0.7%	1.2%	1.4%	0.8%	0.5%	0.2%	0.0%
		IMPASUG-ONG	43,587	47,859	53,863	57,298	61,511	63,870	65,368	66,090	65,935	1.9%	2.4%	1.2%	1.4%	0.8%	0.5%	0.2%	0.0%
		KADINGILAN	31,756	33,778	33,735	35,745	38,373	39,843	40,779	41,229	41,134	1.2%	0.0%	1.2%	1.4%	0.8%	0.5%	0.2%	0.0%
		KALILANGAN	39,847	41,601	43,711	46,396	49,807	51,717	52,931	53,516	53,391	0.9%	1.0%	1.2%	1.4%	0.8%	0.5%	0.2%	0.0%
		KIBAWE	35,767	39,612	41,897	44,481	47,751	49,581	50,744	51,305	51,186	2.1%	1.1%	1.2%	1.4%	0.8%	0.5%	0.2%	0.0%
		KITAOTAO	49,488	50,260	53,796	57,135	61,335	63,687	65,181	65,900	65,748	0.3%	1.4%	1.2%	1.4%	0.8%	0.5%	0.2%	0.0%
		LANTAPAN	55,934	61,776	65,974	70,065	75,215	78,099	79,931	80,815	80,627	2.0%	1.3%	1.2%	1.4%	0.8%	0.5%	0.2%	0.0%
		LIBONA	39,393	43,969	48,965	52,071	55,899	58,042	59,404	60,060	59,920	2.2%	2.2%	1.2%	1.4%	0.8%	0.5%	0.2%	0.0%
		CITY OF MALAYBALAY (Capital)	153,085	174,625	190,712	202,683	217,584	225,925	231,226	233,781	233,238	2.7%	1.8%	1.2%	1.4%	0.8%	0.5%	0.2%	0.0%
		MALITBOG	22,880	24,453	26,741	28,421	30,511	31,681	32,424	32,783	32,707	1.3%	1.8%	1.2%	1.4%	0.8%	0.5%	0.2%	0.0%
		MANOLO FORTICH	91,026	100,210	113,200	120,434	129,289	134,246	137,396	138,914	138,591	1.9%	2.5%	1.2%	1.4%	0.8%	0.5%	0.2%	0.0%
		MARAMAG	90,901	102,089	108,293	114,982	123,435	128,168	131,175	132,623	132,315	2.3%	1.2%	1.2%	1.4%	0.8%	0.5%	0.2%	0.0%
		PANGANTUCAN	48,775	53,126	56,580	60,082	64,499	66,972	68,542	69,300	69,139	1.7%	1.3%	1.2%	1.4%	0.8%	0.5%	0.2%	0.0%
		QUEZON	94,584	104,116	109,624	116,366	124,921	129,709	132,753	134,219	133,908	1.9%	1.0%	1.2%	1.4%	0.8%	0.5%	0.2%	0.0%
		SAN FERNANDO	50,207	56,138	63,045	67,062	71,992	74,752	76,506	77,351	77,172	2.3%	2.3%	1.2%	1.4%	0.8%	0.5%	0.2%	0.0%
		SUMILAO	25,668	27,660	29,531	31,362	33,667	34,958	35,778	36,173	36,089	1.5%	1.3%	1.2%	1.4%	0.8%	0.5%	0.2%	0.0%
		TALAKAG	67,123	71,644	77,027	81,821	87,836	91,204	93,344	94,375	94,155	1.3%	1.5%	1.2%	1.4%	0.8%	0.5%	0.2%	0.0%
		CITY OF VALENCIA	181,556	192,993	216,546	230,335	247,271	256,750	262,774	265,677	265,059	1.2%	2.3%	1.2%	1.4%	0.8%	0.5%	0.2%	0.0%
		CABANGLASAN	32,427	33,997	36,286	38,533	41,368	42,953	43,961	44,446	44,342	1.0%	1.3%	1.2%	1.4%	0.8%	0.5%	0.2%	0.0%
		Sub-total	1,299,192	1,415,226	1,541,308	1,637,909	1,758,329	1,825,740	1,868,575	1,889,219	1,884,828	1.7%	1.7%	1.2%	1.4%	0.8%	0.5%	0.2%	0.0%
	Camiguin	CATARMAN	16,388	16,798	17,569	18,360	19,981	21,024	21,808	22,367	22,708	0.5%	0.9%	0.9%	1.7%	1.0%	0.7%	0.5%	0.3%
		GUINSILIBAN	5,580	6,281	6,685	6,990	7,607	8,004	8,302	8,515	8,645	2.4%	1.3%	0.9%	1.7%	1.0%	0.7%	0.5%	0.3%
		MAHINOG	13,531	14,038	14,634	15,291	16,641	17,509	18,163	18,628	18,912	0.7%	0.8%	0.9%	1.7%	1.0%	0.7%	0.5%	0.3%
		MAMBAJAO (Capital)	36,435	38,735	41,094	42,963	46,759	49,199	51,032	52,342	53,140	1.2%	1.2%	0.9%	1.7%	1.0%	0.7%	0.5%	0.3%
		SAGAY	11,873	12,626	12,826	13,389	14,573	15,333	15,904	16,311	16,560	1.2%	0.3%	0.9%	1.7%	1.0%	0.7%	0.5%	0.3%
		Sub-total	83,807	88,478	92,808	96,993	105,561	111,069	115,209	118,163	119,965	1.1%	1.0%	0.9%	1.7%	1.0%	0.7%	0.5%	0.3%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
NORTHERN MINDANAO	Lanao del Norte	BACOLOD	21,818	23,034	24,367	26,014	28,449	30,185	31,626	32,794	33,663	1.1%	1.1%	1.3%	1.8%	1.2%	0.9%	0.7%	0.5%
		BALOI	50,387	58,383	68,465	73,330	80,194	85,089	89,152	92,442	94,893	3.0%	3.2%	1.4%	1.8%	1.2%	0.9%	0.7%	0.5%
		BAROY	20,948	22,600	24,683	26,380	28,847	30,608	32,069	33,253	34,134	1.5%	1.8%	1.3%	1.8%	1.2%	0.9%	0.7%	0.5%
		KAPATAGAN	53,916	62,853	62,571	66,663	72,901	77,352	81,045	84,035	86,263	3.1%	-0.1%	1.3%	1.8%	1.2%	0.9%	0.7%	0.5%
		SULTAN NAGA DIMAPORO (KAROMATAN)	52,430	56,764	60,904	65,052	71,140	75,482	79,085	82,005	84,180	1.6%	1.4%	1.3%	1.8%	1.2%	0.9%	0.7%	0.5%
		KAUSWAGAN	24,006	26,278	24,193	25,702	28,107	29,823	31,246	32,400	33,259	1.8%	-1.6%	1.2%	1.8%	1.2%	0.9%	0.7%	0.5%
		KOLAMBUGAN	26,445	27,005	28,265	30,166	32,989	35,002	36,673	38,027	39,034	0.4%	0.9%	1.3%	1.8%	1.2%	0.9%	0.7%	0.5%
		LALA	65,355	67,727	73,425	78,453	85,796	91,032	95,378	98,899	101,520	0.7%	1.6%	1.3%	1.8%	1.2%	0.9%	0.7%	0.5%
		LINAMON	17,484	20,341	21,269	22,698	24,823	26,337	27,596	28,614	29,373	3.1%	0.9%	1.3%	1.8%	1.2%	0.9%	0.7%	0.5%
		MAGSAYSAY	16,442	19,019	20,463	21,859	23,904	25,363	26,573	27,555	28,285	3.0%	1.5%	1.3%	1.8%	1.2%	0.9%	0.7%	0.5%
		MAIGO	20,131	21,666	23,337	24,930	27,264	28,927	30,309	31,428	32,262	1.5%	1.5%	1.3%	1.8%	1.2%	0.9%	0.7%	0.5%
		MATUNGAO	12,217	13,975	14,756	15,753	17,226	18,279	19,152	19,858	20,384	2.7%	1.1%	1.3%	1.8%	1.2%	0.9%	0.7%	0.5%
		MUNAI	27,600	32,973	35,020	37,393	40,892	43,389	45,460	47,138	48,388	3.6%	1.2%	1.3%	1.8%	1.2%	0.9%	0.7%	0.5%
		NUNUNGAN	16,304	18,367	18,827	20,079	21,958	23,298	24,410	25,312	25,983	2.4%	0.5%	1.3%	1.8%	1.2%	0.9%	0.7%	0.5%
		PANTAO RAGAT	23,122	27,866	30,247	32,319	35,343	37,501	39,291	40,741	41,822	3.8%	1.7%	1.3%	1.8%	1.2%	0.9%	0.7%	0.5%
		POONA PIAGAPO	23,451	27,018	29,183	31,177	34,095	36,176	37,903	39,302	40,344	2.9%	1.6%	1.3%	1.8%	1.2%	0.9%	0.7%	0.5%
		SALVADOR	27,348	31,845	32,115	34,229	37,434	39,719	41,615	43,151	44,294	3.1%	0.2%	1.3%	1.8%	1.2%	0.9%	0.7%	0.5%
		SAPAD	19,479	21,309	22,974	24,542	26,840	28,479	29,837	30,938	31,759	1.8%	1.5%	1.3%	1.8%	1.2%	0.9%	0.7%	0.5%
		TAGOLOAN	11,674	13,253	15,091	16,148	17,660	18,737	19,631	20,356	20,895	2.6%	2.6%	1.4%	1.8%	1.2%	0.9%	0.7%	0.5%
		TANGCAL	12,588	15,181	16,075	17,162	18,769	19,914	20,864	21,633	22,207	3.8%	1.2%	1.3%	1.8%	1.2%	0.9%	0.7%	0.5%
		TUBOD (Capital)	46,332	47,165	50,073	53,464	58,468	62,036	64,998	67,397	69,184	0.4%	1.2%	1.3%	1.8%	1.2%	0.9%	0.7%	0.5%
		PANTAR	18,440	21,773	26,599	28,523	31,194	33,098	34,679	35,960	36,912	3.4%	4.1%	1.4%	1.8%	1.2%	0.9%	0.7%	0.5%
		ILIGAN CITY	322,821	342,618	363,115	387,686	423,973	449,852	471,328	488,729	501,682	1.2%	1.2%	1.3%	1.8%	1.2%	0.9%	0.7%	0.5%
		Sub-total	930,738	1,019,013	1,086,017	1,159,722	1,268,266	1,345,678	1,409,920	1,461,967	1,500,720	1.8%	1.3%	1.3%	1.8%	1.2%	0.9%	0.7%	0.5%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
NORTHERN MINDANAO	Misamis Occidental	ALORAN	26,630	27,625	27,934	29,090	31,269	32,627	33,724	34,510	34,956	0.7%	0.2%	0.8%	1.5%	0.9%	0.7%	0.5%	0.3%
		BALIANGAO	16,155	17,092	18,433	19,237	20,678	21,577	22,302	22,821	23,115	1.1%	1.5%	0.9%	1.5%	0.9%	0.7%	0.5%	0.3%
		BONIFACIO	30,904	32,345	34,558	36,055	38,755	40,438	41,799	42,774	43,324	0.9%	1.3%	0.9%	1.5%	0.9%	0.7%	0.5%	0.3%
		CALAMBA	21,005	21,676	23,227	24,233	26,050	27,182	28,096	28,751	29,121	0.6%	1.4%	0.9%	1.5%	0.9%	0.7%	0.5%	0.3%
		CLARIN	35,573	37,548	39,356	41,032	44,106	46,022	47,570	48,678	49,306	1.1%	0.9%	0.8%	1.5%	0.9%	0.7%	0.5%	0.3%
		CONCEPCION	7,410	10,937	9,324	9,646	10,369	10,819	11,183	11,443	11,592	8.1%	-3.1%	0.7%	1.5%	0.9%	0.7%	0.5%	0.3%
		JIMENEZ	25,234	27,654	28,909	30,139	32,396	33,803	34,940	35,755	36,216	1.8%	0.9%	0.8%	1.5%	0.9%	0.7%	0.5%	0.3%
		LOPEZ JAENA	23,767	25,055	25,507	26,568	28,558	29,799	30,800	31,517	31,924	1.1%	0.4%	0.8%	1.5%	0.9%	0.7%	0.5%	0.3%
		OROQUIETA CITY (Capital)	68,945	70,757	72,301	75,318	80,959	84,477	87,317	89,352	90,504	0.5%	0.4%	0.8%	1.5%	0.9%	0.7%	0.5%	0.3%
		OZAMIZ CITY 1	131,527	141,828	140,334	146,026	156,963	163,783	169,291	173,234	175,469	1.5%	-0.2%	0.8%	1.5%	0.9%	0.7%	0.5%	0.3%
		PANAON	10,176	10,209	10,797	11,262	12,105	12,631	13,056	13,360	13,532	0.1%	1.1%	0.8%	1.5%	0.9%	0.7%	0.5%	0.3%
		PLARIDEL	35,251	38,900	39,840	41,505	44,614	46,553	48,118	49,238	49,874	2.0%	0.5%	0.8%	1.5%	0.9%	0.7%	0.5%	0.3%
		SAPANG DALAGA	19,431	19,983	20,490	21,349	22,947	23,944	24,750	25,326	25,653	0.6%	0.5%	0.8%	1.5%	0.9%	0.7%	0.5%	0.3%
		SINACABAN	18,597	18,391	19,671	20,523	22,061	23,019	23,794	24,349	24,662	-0.2%	1.4%	0.9%	1.5%	0.9%	0.7%	0.5%	0.3%
		TANGUB CITY	59,892	63,011	68,389	71,386	76,732	80,067	82,760	84,687	85,779	1.0%	1.7%	0.9%	1.5%	0.9%	0.7%	0.5%	0.3%
		TUDELA	27,371	28,932	28,599	29,758	31,985	33,376	34,498	35,302	35,757	1.1%	-0.2%	0.8%	1.5%	0.9%	0.7%	0.5%	0.3%
		DON VICTORIANO CHIONGBIAN (DON MARIANO MARCOS)	9,774	10,183	9,664	10,041	10,793	11,263	11,639	11,911	12,065	0.8%	-1.0%	0.8%	1.5%	0.9%	0.7%	0.5%	0.3%
		Sub-total	567,642	602,126	617,333	643,168	691,340	721,380	745,637	763,008	772,849	1.2%	0.5%	0.8%	1.5%	0.9%	0.7%	0.5%	0.3%
	Misamis Oriental	ALUBIJID	26,648	29,724	32,163	32,575	35,024	36,434	37,482	38,111	38,356	2.2%	1.6%	0.3%	1.5%	0.8%	0.6%	0.3%	0.1%
		BALINGASAG	65,876	67,059	74,385	75,396	81,066	84,331	86,757	88,213	88,779	0.4%	2.1%	0.3%	1.5%	0.8%	0.6%	0.3%	0.1%
		BALINGOAN	10,175	11,051	11,020	11,130	11,968	12,450	12,807	13,022	13,106	1.7%	-0.1%	0.2%	1.5%	0.8%	0.6%	0.3%	0.1%
		BINUANGAN	6,765	7,515	7,441	7,513	8,078	8,403	8,644	8,790	8,846	2.1%	-0.2%	0.2%	1.5%	0.8%	0.6%	0.3%	0.1%
		CLAVERIA	44,544	48,906	52,478	53,134	57,130	59,431	61,139	62,167	62,565	1.9%	1.4%	0.2%	1.5%	0.8%	0.6%	0.3%	0.1%
		CITY OF EL SALVADOR	44,848	50,204	58,771	59,669	64,156	66,739	68,658	69,811	70,258	2.3%	3.2%	0.3%	1.5%	0.8%	0.6%	0.3%	0.1%
		GINGOOG CITY	117,908	124,648	136,698	138,506	148,922	154,920	159,375	162,051	163,088	1.1%	1.9%	0.3%	1.5%	0.8%	0.6%	0.3%	0.1%
		GITAGUM	16,098	16,373	17,920	18,156	19,521	20,308	20,892	21,242	21,379	0.3%	1.8%	0.3%	1.5%	0.8%	0.6%	0.3%	0.1%
		INITAO	29,331	32,370	33,902	34,299	36,879	38,364	39,467	40,129	40,386	2.0%	0.9%	0.2%	1.5%	0.8%	0.6%	0.3%	0.1%
		JASAAN	50,121	54,478	57,055	57,722	62,064	64,563	66,419	67,533	67,967	1.7%	0.9%	0.2%	1.5%	0.8%	0.6%	0.3%	0.1%
		KINOGUITAN	12,761	14,391	14,091	14,222	15,291	15,907	16,365	16,640	16,747	2.4%	-0.4%	0.2%	1.5%	0.8%	0.6%	0.3%	0.1%
		LAGONGLONG	19,303	21,659	24,190	24,524	26,369	27,430	28,219	28,693	28,878	2.3%	2.2%	0.3%	1.5%	0.8%	0.6%	0.3%	0.1%
		LAGUINDINGAN	21,822	24,405	26,363	26,699	28,707	29,863	30,722	31,237	31,438	2.3%	1.6%	0.3%	1.5%	0.8%	0.6%	0.3%	0.1%
		LIBERTAD	11,586	12,354	12,948	13,100	14,086	14,654	15,075	15,327	15,425	1.3%	0.9%	0.2%	1.5%	0.8%	0.6%	0.3%	0.1%
		LUGAIT	18,639	19,758	20,559	20,795	22,359	23,259	23,927	24,329	24,485	1.2%	0.8%	0.2%	1.5%	0.8%	0.6%	0.3%	0.1%
		MAGSAYSAY (LINUGOS)	33,047	34,605	36,803	37,253	40,054	41,667	42,866	43,585	43,864	0.9%	1.2%	0.2%	1.5%	0.8%	0.6%	0.3%	0.1%
		MANTICAO	26,786	28,422	29,469	29,804	32,045	33,336	34,295	34,871	35,094	1.2%	0.7%	0.2%	1.5%	0.8%	0.6%	0.3%	0.1%
		MEDINA	31,154	32,907	35,612	36,068	38,780	40,341	41,502	42,199	42,470	1.1%	1.6%	0.3%	1.5%	0.8%	0.6%	0.3%	0.1%
		NAAWAN	18,895	21,213	22,444	22,714	24,422	25,405	26,135	26,575	26,744	2.3%	1.1%	0.2%	1.5%	0.8%	0.6%	0.3%	0.1%
		OPOL	52,108	61,503	66,327	67,168	72,218	75,127	77,287	78,584	79,088	3.4%	1.5%	0.3%	1.5%	0.8%	0.6%	0.3%	0.1%
		SALAY	27,591	28,705	29,998	30,346	32,629	33,942	34,919	35,506	35,733	0.8%	0.9%	0.2%	1.5%	0.8%	0.6%	0.3%	0.1%
		SUGBONGCOGON	8,745	9,226	9,764	9,882	10,624	11,053	11,371	11,562	11,635	1.1%	1.1%	0.2%	1.5%	0.8%	0.6%	0.3%	0.1%
		TAGOLOAN	63,850	73,150	80,319	81,385	87,505	91,029	93,648	95,219	95,829	2.8%	1.9%	0.3%	1.5%	0.8%	0.6%	0.3%	0.1%
		TALISAYAN	23,289	24,505	25,761	26,066	28,026	29,155	29,993	30,496	30,692	1.0%	1.0%	0.2%	1.5%	0.8%	0.6%	0.3%	0.1%
		VILLANUEVA	31,966	39,378	40,419	40,865	43,937	45,706	47,021	47,810	48,115	4.3%	0.5%	0.2%	1.5%	0.8%	0.6%	0.3%	0.1%
		CAGAYAN DE ORO CITY (Capital)	602,088	675,950	728,402	737,619	793,086	825,026	848,751	862,999	868,526	2.3%	1.5%	0.3%	1.5%	0.8%	0.6%	0.3%	0.1%
		Sub-total	1,415,944	1,564,459	1,685,302	1,706,610	1,834,946	1,908,843	1,963,736	1,996,701	2,009,493	2.0%	1.5%	0.3%	1.5%	0.8%	0.6%	0.3%	0.1%
		Total	4,297,323	4,689,302	5,022,768	5,244,402	5,658,442	5,912,710	6,103,077	6,229,058	6,287,855	1.8%	1.4%	0.9%	1.5%	0.9%	0.6%	0.4%	0.2%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
DAVAO	Davao de Oro	COMPOSTELA	81,934	87,474	89,884	94,337	100,936	106,579	111,211	114,531	116,257	1.3%	0.5%	1.0%	1.4%	1.1%	0.9%	0.6%	0.3%
		LAAK (SAN VICENTE)	70,856	73,874	79,744	83,832	89,698	94,711	98,827	101,779	103,311	0.8%	1.5%	1.0%	1.4%	1.1%	0.9%	0.6%	0.3%
		MABINI (DOÑA ALICIA)	36,807	41,102	43,552	45,758	48,959	51,695	53,941	55,552	56,388	2.2%	1.2%	1.0%	1.4%	1.1%	0.9%	0.6%	0.3%
		MACO	72,235	81,277	83,237	87,352	93,462	98,686	102,974	106,049	107,646	2.4%	0.5%	1.0%	1.4%	1.1%	0.9%	0.6%	0.3%
		MARAGUSAN (SAN MARIANO)	55,503	60,842	64,412	67,671	72,404	76,452	79,774	82,156	83,393	1.9%	1.1%	1.0%	1.4%	1.1%	0.9%	0.6%	0.3%
		MAWAB	35,698	37,065	39,631	41,650	44,564	47,055	49,100	50,566	51,328	0.8%	1.3%	1.0%	1.4%	1.1%	0.9%	0.6%	0.3%
		MONKAYO	94,827	94,908	93,937	98,463	105,351	111,239	116,074	119,539	121,339	0.0%	-0.2%	0.9%	1.4%	1.1%	0.9%	0.6%	0.3%
		MONTEVISTA	39,602	43,706	46,558	48,924	52,347	55,272	57,675	59,396	60,290	2.0%	1.3%	1.0%	1.4%	1.1%	0.9%	0.6%	0.3%
		NABUNTURAN (Capital)	73,196	82,234	84,340	88,512	94,704	99,998	104,345	107,461	109,078	2.4%	0.5%	1.0%	1.4%	1.1%	0.9%	0.6%	0.3%
		NEW BATAAN	47,470	47,726	51,466	54,103	57,888	61,123	63,780	65,684	66,673	0.1%	1.5%	1.0%	1.4%	1.1%	0.9%	0.6%	0.3%
		PANTUKAN	79,067	85,899	90,786	95,374	102,045	107,748	112,430	115,786	117,529	1.7%	1.1%	1.0%	1.4%	1.1%	0.9%	0.6%	0.3%
		Sub-total	687,195	736,107	767,547	805,976	862,358	910,558	950,131	978,499	993,232	1.4%	0.8%	1.0%	1.4%	1.1%	0.9%	0.6%	0.3%
	Davao del Norte	ASUNCION (SAUG)	55,844	59,322	61,893	64,425	68,284	71,592	74,313	76,403	77,958	1.2%	0.9%	0.8%	1.2%	1.0%	0.7%	0.6%	0.4%
		CARMEN	69,199	74,679	82,018	85,518	90,639	95,031	98,642	101,417	103,481	1.5%	1.9%	0.8%	1.2%	1.0%	0.7%	0.6%	0.4%
		KAPALONG	68,261	76,334	81,068	84,435	89,492	93,828	97,394	100,134	102,170	2.3%	1.2%	0.8%	1.2%	1.0%	0.7%	0.6%	0.4%
		NEW CORELLA	50,699	54,844	57,913	60,307	63,919	67,015	69,562	71,519	72,974	1.6%	1.1%	0.8%	1.2%	1.0%	0.7%	0.6%	0.4%
		CITY OF PANABO	174,364	184,599	209,230	218,372	231,451	242,664	251,885	258,972	264,240	1.1%	2.5%	0.9%	1.2%	1.0%	0.7%	0.6%	0.4%
		ISLAND GARDEN CITY OF SAMAL	95,874	104,123	116,771	121,834	129,130	135,387	140,531	144,485	147,423	1.7%	2.3%	0.9%	1.2%	1.0%	0.7%	0.6%	0.4%
		SANTO TOMAS	109,269	118,750	128,667	134,099	142,129	149,015	154,678	159,030	162,265	1.7%	1.6%	0.8%	1.2%	1.0%	0.7%	0.6%	0.4%
		CITY OF TAGUM (Capital)	242,801	259,444	296,202	309,214	327,733	343,609	356,667	366,702	374,161	1.3%	2.7%	0.9%	1.2%	1.0%	0.7%	0.6%	0.4%
		TALAINGOD	25,566	27,482	28,333	29,481	31,247	32,761	34,005	34,962	35,673	1.5%	0.6%	0.8%	1.2%	1.0%	0.7%	0.6%	0.4%
		BRAULIO E. DUJALI	28,339	30,104	35,729	37,340	39,578	41,495	43,072	44,284	45,185	1.2%	3.5%	0.9%	1.2%	1.0%	0.7%	0.6%	0.4%
		SAN ISIDRO	25,548	26,651	27,233	28,326	30,023	31,478	32,675	33,593	34,275	0.8%	0.4%	0.8%	1.2%	1.0%	0.7%	0.6%	0.4%
		Sub-total	945,764	1,016,332	1,125,057	1,173,351	1,243,625	1,303,875	1,353,424	1,391,501	1,419,805	1.4%	2.1%	0.8%	1.2%	1.0%	0.7%	0.6%	0.4%
	Davao del Sur	BANSALAN	56,496	60,440	62,737	70,746	76,102	81,133	85,678	89,669	93,150	1.4%	0.7%	2.4%	1.5%	1.3%	1.1%	0.9%	0.8%
		CITY OF DIGOS (Capital)	149,891	169,393	188,376	212,898	229,018	244,159	257,835	269,847	280,319	2.5%	2.1%	2.5%	1.5%	1.3%	1.1%	0.9%	0.8%
		HAGONOY	49,107	53,309	56,919	64,244	69,109	73,678	77,805	81,429	84,590	1.7%	1.3%	2.5%	1.5%	1.3%	1.1%	0.9%	0.8%
		KIBLAWAN	44,618	48,897	49,381	55,631	59,844	63,801	67,375	70,513	73,250	1.8%	0.2%	2.4%	1.5%	1.3%	1.1%	0.9%	0.8%
		MAGSAYSAY	49,141	53,876	56,263	63,458	68,263	72,776	76,852	80,432	83,555	1.9%	0.9%	2.4%	1.5%	1.3%	1.1%	0.9%	0.8%
		MALALAG	35,295	38,731	40,158	45,282	48,710	51,931	54,839	57,394	59,622	1.9%	0.7%	2.4%	1.5%	1.3%	1.1%	0.9%	0.8%
		MATANAO	51,382	56,755	60,493	68,275	73,443	78,299	82,685	86,536	89,896	2.0%	1.3%	2.4%	1.5%	1.3%	1.1%	0.9%	0.8%
		PADADA	25,724	26,587	29,878	33,778	36,336	38,738	40,909	42,814	44,477	0.7%	2.4%	2.5%	1.5%	1.3%	1.1%	0.9%	0.8%
		SANTA CRUZ	81,093	90,987	101,125	114,287	122,940	131,068	138,410	144,858	150,480	2.3%	2.1%	2.5%	1.5%	1.3%	1.1%	0.9%	0.8%
		SULOP	32,163	33,613	35,151	39,648	42,649	45,468	48,015	50,253	52,203	0.9%	0.9%	2.4%	1.5%	1.3%	1.1%	0.9%	0.8%
		DAVAO CITY	1,449,296	1,632,991	1,776,949	2,006,877	2,158,844	2,301,565	2,430,483	2,543,709	2,642,437	2.4%	1.7%	2.5%	1.5%	1.3%	1.1%	0.9%	0.8%
		Sub-total	2,024,206	2,265,579	2,457,430	2,775,124	2,985,258	3,182,616	3,360,886	3,517,454	3,653,979	2.3%	1.6%	2.5%	1.5%	1.3%	1.1%	0.9%	0.8%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
DAVAO	Davao Occidental	DON MARCELINO 2	41,942	44,554	45,540	48,425	52,469	56,273	59,736	62,810	65,491	1.2%	0.4%	1.2%	1.6%	1.4%	1.2%	1.0%	0.8%
		JOSE ABAD SANTOS (TRINIDAD) 2	69,631	76,332	73,381	77,860	84,362	90,477	96,047	100,988	105,298	1.9%	-0.8%	1.2%	1.6%	1.4%	1.2%	1.0%	0.8%
		MALITA 2	109,568	117,746	118,197	125,605	136,095	145,961	154,946	162,917	169,871	1.5%	0.1%	1.2%	1.6%	1.4%	1.2%	1.0%	0.8%
		SANTA MARIA 2	49,349	53,671	57,526	61,267	66,383	71,195	75,578	79,467	82,859	1.7%	1.4%	1.3%	1.6%	1.4%	1.2%	1.0%	0.8%
		SARANGANI 2	23,290	24,039	22,515	23,867	25,862	27,735	29,444	30,960	32,281	0.6%	-1.3%	1.2%	1.6%	1.4%	1.2%	1.0%	0.8%
		Sub-total	293,780	316,342	317,159	337,024	365,171	391,641	415,751	437,142	455,800	1.5%	0.1%	1.2%	1.6%	1.4%	1.2%	1.0%	0.8%
	Davao Oriental	BAGANGA	53,426	56,241	58,714	62,647	67,676	72,521	77,049	81,000	84,201	1.0%	0.9%	1.3%	1.6%	1.4%	1.2%	1.0%	0.8%
		BANAYBANAY	39,121	41,117	44,451	47,484	51,295	54,969	58,400	61,395	63,821	1.0%	1.6%	1.3%	1.6%	1.4%	1.2%	1.0%	0.8%
		BOSTON	12,670	13,535	14,618	15,614	16,868	18,076	19,204	20,189	20,988	1.3%	1.6%	1.3%	1.6%	1.4%	1.2%	1.0%	0.8%
		CARAGA	36,912	40,379	39,704	42,275	45,669	48,939	51,994	54,660	56,820	1.8%	-0.3%	1.3%	1.6%	1.4%	1.2%	1.0%	0.8%
		CATEEL	38,579	40,704	44,207	47,229	51,021	54,674	58,087	61,067	63,480	1.1%	1.7%	1.3%	1.6%	1.4%	1.2%	1.0%	0.8%
		GOVERNOR GENEROSO	50,372	55,109	59,891	63,988	69,124	74,074	78,698	82,734	86,003	1.8%	1.7%	1.3%	1.6%	1.4%	1.2%	1.0%	0.8%
		LUPON	61,723	65,785	66,979	71,405	77,136	82,661	87,820	92,325	95,974	1.3%	0.4%	1.3%	1.6%	1.4%	1.2%	1.0%	0.8%
		MANAY	40,577	42,690	39,572	42,044	45,419	48,671	51,709	54,362	56,510	1.0%	-1.5%	1.2%	1.6%	1.4%	1.2%	1.0%	0.8%
		CITY OF MATI (Capital)	126,143	141,141	147,547	157,436	170,075	182,255	193,630	203,562	211,606	2.3%	0.9%	1.3%	1.6%	1.4%	1.2%	1.0%	0.8%
		SAN ISIDRO	32,424	36,032	33,664	35,778	38,651	41,418	44,004	46,261	48,089	2.1%	-1.4%	1.2%	1.6%	1.4%	1.2%	1.0%	0.8%
		TARRAGONA	25,671	26,225	26,996	28,791	31,102	33,329	35,411	37,227	38,698	0.4%	0.6%	1.3%	1.6%	1.4%	1.2%	1.0%	0.8%
		Sub-total	517,618	558,958	576,343	614,691	664,036	711,587	756,006	794,782	826,190	1.5%	0.6%	1.3%	1.6%	1.4%	1.2%	1.0%	0.8%
		Total	4,468,563	4,893,318	5,243,536	5,706,166	6,120,448	6,500,277	6,836,198	7,119,378	7,349,006	1.8%	1.4%	1.7%	1.4%	1.2%	1.0%	0.8%	0.6%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
SOCCSKSARGEN	Cotabato (North Cotabato)	ALAMADA	56,813	64,596	68,659	74,784	81,070	87,165	92,825	97,851	102,047	2.6%	1.2%	1.7%	1.6%	1.5%	1.3%	1.1%	0.8%
		CARMEN	82,469	95,921	79,140	85,381	92,558	99,516	105,979	111,715	116,506	3.1%	-3.8%	1.5%	1.6%	1.5%	1.3%	1.1%	0.8%
		KABACAN	81,282	89,161	77,164	83,416	90,427	97,225	103,538	109,143	113,822	1.9%	-2.8%	1.6%	1.6%	1.5%	1.3%	1.1%	0.8%
		CITY OF KIDAPAWAN (Capital)	125,447	140,195	160,791	175,557	190,314	204,621	217,910	229,704	239,555	2.2%	2.8%	1.8%	1.6%	1.5%	1.3%	1.1%	0.8%
		LIBUNGAN	45,295	48,768	56,269	61,447	66,611	71,619	76,271	80,399	83,847	1.5%	2.9%	1.8%	1.6%	1.5%	1.3%	1.1%	0.8%
		MAGPET	45,183	49,201	53,800	58,653	63,583	68,364	72,803	76,745	80,035	1.7%	1.8%	1.7%	1.6%	1.5%	1.3%	1.1%	0.8%
		MAKILALA	77,508	83,851	87,927	95,727	103,775	111,576	118,822	125,254	130,623	1.6%	1.0%	1.7%	1.6%	1.5%	1.3%	1.1%	0.8%
		MATALAM	74,034	79,361	81,355	88,504	95,944	103,156	109,856	115,801	120,767	1.4%	0.5%	1.7%	1.6%	1.5%	1.3%	1.1%	0.8%
		MIDSAYAP	134,170	151,684	117,365	126,261	136,874	147,164	156,720	165,203	172,287	2.5%	-5.0%	1.5%	1.6%	1.5%	1.3%	1.1%	0.8%
		M'LANG	87,749	95,070	98,195	106,852	115,833	124,542	132,629	139,808	145,803	1.6%	0.6%	1.7%	1.6%	1.5%	1.3%	1.1%	0.8%
		PIGKAWAYAN	59,975	66,796	52,744	56,794	61,568	66,196	70,495	74,311	77,498	2.2%	-4.6%	1.5%	1.6%	1.5%	1.3%	1.1%	0.8%
		PIKIT	113,014	154,441	67,024	69,517	75,362	81,026	86,289	90,959	94,860	6.4%	-15.4%	0.7%	1.6%	1.5%	1.3%	1.1%	0.8%
		PRESIDENT ROXAS	44,229	47,575	52,512	57,266	62,079	66,747	71,081	74,928	78,141	1.5%	2.0%	1.7%	1.6%	1.5%	1.3%	1.1%	0.8%
		TULUNAN	54,884	56,513	60,978	66,451	72,036	77,452	82,482	86,947	90,674	0.6%	1.5%	1.7%	1.6%	1.5%	1.3%	1.1%	0.8%
		ANTIPAS	25,242	25,304	26,817	29,206	31,662	34,041	36,252	38,213	39,853	0.0%	1.2%	1.7%	1.6%	1.5%	1.3%	1.1%	0.8%
		BANISILAN	39,914	43,677	46,995	51,207	55,512	59,686	63,562	67,001	69,875	1.8%	1.5%	1.7%	1.6%	1.5%	1.3%	1.1%	0.8%
		ALEOSAN	35,746	39,405	36,892	40,004	43,367	46,626	49,655	52,341	54,586	2.0%	-1.3%	1.6%	1.6%	1.5%	1.3%	1.1%	0.8%
		ARAKAN	43,554	48,228	50,558	55,042	59,670	64,155	68,321	72,018	75,106	2.1%	0.9%	1.7%	1.6%	1.5%	1.3%	1.1%	0.8%
		Sub-total	1,226,508	1,379,747	1,275,185	1,382,069	1,498,245	1,610,877	1,715,490	1,808,341	1,885,885	2.4%	-1.6%	1.6%	1.6%	1.5%	1.3%	1.1%	0.8%
	Cotabato City		271,786	299,438	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Sarangani	ALABEL (Capital)	75,477	80,359	88,294	94,238	100,962	106,594	111,133	114,058	114,974	1.3%	1.9%	1.3%	1.4%	1.1%	0.8%	0.5%	0.2%
		GLAN	106,518	118,263	109,547	116,230	124,522	131,468	137,068	140,674	141,804	2.1%	-1.5%	1.2%	1.4%	1.1%	0.8%	0.5%	0.2%
		KIAMBA	54,871	61,058	65,774	70,158	75,163	79,355	82,734	84,911	85,593	2.2%	1.5%	1.3%	1.4%	1.1%	0.8%	0.5%	0.2%
		MAASIM	52,933	59,468	64,940	69,299	74,243	78,384	81,723	83,874	84,547	2.4%	1.8%	1.3%	1.4%	1.1%	0.8%	0.5%	0.2%
		MAITUM	41,675	44,595	44,185	46,997	50,350	53,159	55,422	56,880	57,337	1.4%	-0.2%	1.2%	1.4%	1.1%	0.8%	0.5%	0.2%
		MALAPATAN	72,386	76,914	80,741	86,049	92,188	97,330	101,475	104,145	104,982	1.2%	1.0%	1.3%	1.4%	1.1%	0.8%	0.5%	0.2%
		MALUNGON	95,044	103,604	105,465	112,282	120,292	127,001	132,409	135,892	136,983	1.7%	0.4%	1.3%	1.4%	1.1%	0.8%	0.5%	0.2%
		Sub-total	498,904	544,261	558,946	595,253	637,720	673,291	701,964	720,434	726,220	1.8%	0.5%	1.3%	1.4%	1.1%	0.8%	0.5%	0.2%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
SOCCSKSARGEN	South Cotabato	BANGA	76,343	83,989	89,164	96,097	102,969	109,086	114,337	118,531	121,426	1.9%	1.2%	1.5%	1.4%	1.2%	0.9%	0.7%	0.5%
		CITY OF KORONADAL (Capital)	158,273	174,942	195,398	210,935	226,016	239,444	250,970	260,176	266,529	2.0%	2.2%	1.5%	1.4%	1.2%	0.9%	0.7%	0.5%
		NORALA	44,635	46,642	46,682	50,210	53,801	56,997	59,741	61,932	63,444	0.9%	0.0%	1.5%	1.4%	1.2%	0.9%	0.7%	0.5%
		POLOMOLOK	138,273	152,589	172,605	186,402	199,730	211,595	221,782	229,916	235,530	2.0%	2.5%	1.5%	1.4%	1.2%	0.9%	0.7%	0.5%
		SURALLAH	76,035	84,539	89,340	96,272	103,156	109,284	114,545	118,746	121,645	2.1%	1.1%	1.5%	1.4%	1.2%	0.9%	0.7%	0.5%
		TAMPAKAN	36,254	39,525	41,018	44,174	47,332	50,144	52,559	54,486	55,817	1.7%	0.7%	1.5%	1.4%	1.2%	0.9%	0.7%	0.5%
		TANTANGAN	40,461	43,245	45,744	49,295	52,820	55,958	58,651	60,802	62,288	1.3%	1.1%	1.5%	1.4%	1.2%	0.9%	0.7%	0.5%
		T'BOLI	79,175	91,453	101,049	109,048	116,844	123,785	129,745	134,503	137,788	2.9%	2.0%	1.5%	1.4%	1.2%	0.9%	0.7%	0.5%
		TUPI	61,843	69,976	73,459	79,141	84,800	89,838	94,164	97,617	100,000	2.5%	1.0%	1.5%	1.4%	1.2%	0.9%	0.7%	0.5%
		SANTO NIÑO	39,738	40,947	39,796	42,760	45,817	48,539	50,876	52,742	54,029	0.6%	-0.6%	1.4%	1.4%	1.2%	0.9%	0.7%	0.5%
		LAKE SEBU	76,170	87,442	81,221	87,123	93,353	98,899	103,660	107,462	110,085	2.8%	-1.5%	1.4%	1.4%	1.2%	0.9%	0.7%	0.5%
		GENERAL SANTOS CITY (DADIANGAS)	538,086	594,446	697,315	753,884	807,788	855,775	896,970	929,871	952,580	2.0%	3.2%	1.6%	1.4%	1.2%	0.9%	0.7%	0.5%
		Sub-total	1,365,286	1,509,735	1,672,791	1,805,341	1,934,426	2,049,344	2,148,000	2,226,784	2,281,161	2.0%	2.1%	1.5%	1.4%	1.2%	0.9%	0.7%	0.5%
	Sultan Kudarat	BAGUMBAYAN	63,700	67,061	68,947	72,432	78,067	83,279	87,983	92,218	96,174	1.0%	0.6%	1.0%	1.5%	1.3%	1.1%	0.9%	0.8%
		COLUMBIO	27,440	33,258	33,527	35,198	37,935	40,469	42,755	44,812	46,735	3.9%	0.2%	1.0%	1.5%	1.3%	1.1%	0.9%	0.8%
		ESPERANZA	63,207	66,095	74,696	78,714	84,836	90,500	95,611	100,214	104,512	0.9%	2.5%	1.1%	1.5%	1.3%	1.1%	0.9%	0.8%
		ISULAN (Capital)	86,602	90,682	97,490	102,571	110,550	117,930	124,591	130,590	136,192	0.9%	1.5%	1.0%	1.5%	1.3%	1.1%	0.9%	0.8%
		KALAMANSIG	46,408	49,059	50,900	53,491	57,652	61,501	64,974	68,102	71,023	1.1%	0.7%	1.0%	1.5%	1.3%	1.1%	0.9%	0.8%
		LEBAK	83,280	88,868	91,344	95,962	103,426	110,332	116,564	122,176	127,417	1.3%	0.6%	1.0%	1.5%	1.3%	1.1%	0.9%	0.8%
		LUTAYAN	56,179	63,029	65,644	68,993	74,360	79,324	83,805	87,839	91,607	2.3%	0.8%	1.0%	1.5%	1.3%	1.1%	0.9%	0.8%
		LAMBAYONG (MARIANO MARCOS)	65,557	77,013	79,739	83,790	90,308	96,337	101,778	106,678	111,255	3.3%	0.7%	1.0%	1.5%	1.3%	1.1%	0.9%	0.8%
		PALIMBANG	83,265	90,424	92,828	97,516	105,101	112,118	118,451	124,153	129,480	1.7%	0.5%	1.0%	1.5%	1.3%	1.1%	0.9%	0.8%
		PRESIDENT QUIRINO	38,753	41,408	42,244	44,368	47,819	51,012	53,893	56,488	58,911	1.3%	0.4%	1.0%	1.5%	1.3%	1.1%	0.9%	0.8%
		CITY OF TACURONG	89,188	98,316	109,319	115,140	124,097	132,383	139,860	146,593	152,882	2.0%	2.1%	1.0%	1.5%	1.3%	1.1%	0.9%	0.8%
		SEN. NINOY AQUINO	43,508	46,882	47,374	49,739	53,609	57,187	60,418	63,327	66,046	1.5%	0.2%	1.0%	1.5%	1.3%	1.1%	0.9%	0.8%
		Sub-total	747,087	812,095	854,052	897,914	967,760	1,032,372	1,090,683	1,143,190	1,192,234	1.7%	1.0%	1.0%	1.5%	1.3%	1.1%	0.9%	0.8%
		Total	4,109,571	4,545,276	4,360,974	4,680,577	5,038,151	5,365,884	5,656,137	5,898,749	6,085,500	2.0%	-0.8%	1.4%	1.5%	1.3%	1.1%	0.8%	0.6%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CARAGA	Agusan del Norte	BUENAVISTA	56,139	61,614	68,892	73,339	80,111	86,956	93,710	100,190	106,245	1.9%	2.3%	1.3%	1.8%	1.7%	1.5%	1.3%	1.2%
		CITY OF CABADBARAN	69,241	73,639	80,354	85,477	93,370	101,347	109,218	116,772	123,828	1.2%	1.8%	1.2%	1.8%	1.7%	1.5%	1.3%	1.2%
		CARMEN	19,781	20,839	23,172	24,665	26,941	29,243	31,515	33,695	35,731	1.0%	2.1%	1.3%	1.8%	1.7%	1.5%	1.3%	1.2%
		JABONGA	23,833	23,184	24,855	26,424	28,865	31,330	33,764	36,099	38,281	-0.6%	1.4%	1.2%	1.8%	1.7%	1.5%	1.3%	1.2%
		KITCHARAO	17,377	18,659	21,278	22,666	24,758	26,873	28,960	30,962	32,833	1.4%	2.7%	1.3%	1.8%	1.7%	1.5%	1.3%	1.2%
		LAS NIEVES	26,856	28,414	30,240	32,141	35,110	38,110	41,070	43,909	46,563	1.1%	1.3%	1.2%	1.8%	1.7%	1.5%	1.3%	1.2%
		MAGALLANES	21,481	21,007	22,293	23,693	25,881	28,092	30,274	32,367	34,322	-0.4%	1.2%	1.2%	1.8%	1.7%	1.5%	1.3%	1.2%
		NASIPIT	40,663	41,957	44,822	47,648	52,047	56,493	60,881	65,091	69,024	0.6%	1.3%	1.2%	1.8%	1.7%	1.5%	1.3%	1.2%
		SANTIAGO	20,955	24,200	28,657	30,560	33,381	36,232	39,048	41,748	44,271	2.9%	3.4%	1.3%	1.8%	1.7%	1.5%	1.3%	1.2%
		TUBAY	20,426	24,932	25,785	27,381	29,909	32,464	34,985	37,404	39,665	4.1%	0.7%	1.2%	1.8%	1.7%	1.5%	1.3%	1.2%
		REMEDIOS T. ROMUALDEZ	15,735	16,058	17,155	18,235	19,919	21,621	23,300	24,912	26,417	0.4%	1.3%	1.2%	1.8%	1.7%	1.5%	1.3%	1.2%
		BUTUAN CITY (Capital)	309,709	337,063	372,910	396,857	433,499	470,538	507,083	542,149	574,908	1.7%	2.0%	1.3%	1.8%	1.7%	1.5%	1.3%	1.2%
		Sub-total	642,196	691,566	760,413	809,086	883,791	959,299	1,033,808	1,105,298	1,172,088	1.5%	1.9%	1.2%	1.8%	1.7%	1.5%	1.3%	1.2%
	Agusan del Sur	CITY OF BAYUGAN	99,361	103,202	109,499	114,913	128,838	143,130	157,602	171,985	186,184	0.8%	1.2%	1.0%	2.3%	2.1%	1.9%	1.8%	1.6%
		BUNAWAN	37,482	45,151	47,512	49,849	55,889	62,088	68,366	74,605	80,765	3.8%	1.0%	1.0%	2.3%	2.1%	1.9%	1.8%	1.6%
		ESPERANZA	51,897	54,801	59,353	62,330	69,883	77,635	85,484	93,286	100,987	1.1%	1.6%	1.0%	2.3%	2.1%	1.9%	1.8%	1.6%
		LA PAZ	28,562	28,217	30,969	32,536	36,479	40,525	44,623	48,695	52,715	-0.2%	1.9%	1.0%	2.3%	2.1%	1.9%	1.8%	1.6%
		LORETO	39,474	42,501	43,880	46,007	51,583	57,304	63,099	68,858	74,542	1.5%	0.6%	1.0%	2.3%	2.1%	1.9%	1.8%	1.6%
		PROSPERIDAD (Capital)	76,628	82,631	88,321	92,711	103,946	115,476	127,152	138,756	150,211	1.5%	1.3%	1.0%	2.3%	2.1%	1.9%	1.8%	1.6%
		ROSARIO	38,280	46,683	49,610	52,066	58,376	64,852	71,408	77,924	84,358	4.0%	1.2%	1.0%	2.3%	2.1%	1.9%	1.8%	1.6%
		SAN FRANCISCO	70,986	74,542	80,760	84,811	95,088	105,635	116,316	126,931	137,411	1.0%	1.6%	1.0%	2.3%	2.1%	1.9%	1.8%	1.6%
		SAN LUIS	32,733	32,109	35,196	36,975	41,456	46,054	50,709	55,337	59,906	-0.4%	1.9%	1.0%	2.3%	2.1%	1.9%	1.8%	1.6%
		SANTA JOSEFA	25,156	26,729	26,432	27,672	31,025	34,468	37,953	41,416	44,835	1.2%	-0.2%	0.9%	2.3%	2.1%	1.9%	1.8%	1.6%
		TALACOGON	37,224	38,374	39,678	41,604	46,647	51,821	57,060	62,268	67,408	0.6%	0.7%	1.0%	2.3%	2.1%	1.9%	1.8%	1.6%
		TRENTO	47,193	51,565	54,492	57,180	64,109	71,220	78,420	85,578	92,642	1.8%	1.1%	1.0%	2.3%	2.1%	1.9%	1.8%	1.6%
		VERUELA	40,457	43,706	39,708	41,441	46,464	51,617	56,836	62,023	67,144	1.6%	-1.9%	0.9%	2.3%	2.1%	1.9%	1.8%	1.6%
		SIBAGAT	30,985	30,442	33,957	35,693	40,018	44,456	48,953	53,419	57,829	-0.4%	2.2%	1.0%	2.3%	2.1%	1.9%	1.8%	1.6%
		Sub-total	656,418	700,653	739,367	775,788	869,801	966,281	1,063,981	1,161,081	1,256,937	1.3%	1.1%	1.0%	2.3%	2.1%	1.9%	1.8%	1.6%
	Dinagat Islands	BASILISA (RIZAL)	33,880	36,880	36,911	38,045	41,442	44,809	48,191	51,499	54,688	1.7%	0.0%	0.6%	1.7%	1.6%	1.5%	1.3%	1.2%
		CAGDIANAO	15,047	16,808	18,350	18,969	20,663	22,341	24,027	25,677	27,267	2.2%	1.8%	0.7%	1.7%	1.6%	1.5%	1.3%	1.2%
		DINAGAT	12,786	10,632	10,621	10,947	11,924	12,893	13,867	14,818	15,736	-3.6%	0.0%	0.6%	1.7%	1.6%	1.5%	1.3%	1.2%
		LIBJO (ALBOR)	17,567	17,760	18,051	18,615	20,278	21,924	23,579	25,197	26,758	0.2%	0.3%	0.6%	1.7%	1.6%	1.5%	1.3%	1.2%
		LORETO	8,920	9,309	9,690	10,001	10,894	11,779	12,669	13,538	14,376	0.9%	0.8%	0.6%	1.7%	1.6%	1.5%	1.3%	1.2%
		SAN JOSE (Capital)	31,035	27,487	26,375	27,144	29,568	31,970	34,383	36,742	39,018	-2.4%	-0.8%	0.6%	1.7%	1.6%	1.5%	1.3%	1.2%
		TUBAJON	7,568	8,276	8,119	8,363	9,108	9,850	10,592	11,320	12,021	1.8%	-0.4%	0.6%	1.7%	1.6%	1.5%	1.3%	1.2%
		Sub-total	126,803	127,152	128,117	132,084	143,877	155,566	167,308	178,791	189,864	0.1%	0.2%	0.6%	1.7%	1.6%	1.5%	1.3%	1.2%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CARAGA	Surigao del Norte	ALEGRIA	14,539	16,011	16,184	17,836	18,913	19,846	20,643	21,269	21,704	1.9%	0.2%	2.0%	1.2%	1.0%	0.8%	0.6%	0.4%
		BACUAG	13,211	14,486	14,881	16,409	17,400	18,259	18,992	19,567	19,968	1.9%	0.5%	2.0%	1.2%	1.0%	0.8%	0.6%	0.4%
		BURGOS	4,058	4,034	4,185	4,616	4,894	5,136	5,342	5,504	5,617	-0.1%	0.7%	2.0%	1.2%	1.0%	0.8%	0.6%	0.4%
		CLAVER	23,702	32,773	36,033	39,823	42,226	44,309	46,091	47,486	48,459	6.7%	1.9%	2.0%	1.2%	1.0%	0.8%	0.6%	0.4%
		DAPA	23,492	23,787	29,006	32,157	34,097	35,779	37,216	38,342	39,127	0.2%	4.0%	2.1%	1.2%	1.0%	0.8%	0.6%	0.4%
		DEL CARMEN	17,136	18,392	20,127	22,241	23,584	24,746	25,741	26,520	27,063	1.4%	1.8%	2.0%	1.2%	1.0%	0.8%	0.6%	0.4%
		GENERAL LUNA	15,014	16,771	22,853	25,412	26,945	28,275	29,412	30,303	30,923	2.2%	6.4%	2.1%	1.2%	1.0%	0.8%	0.6%	0.4%
		GIGAQUIT	18,784	20,864	21,849	24,110	25,565	26,825	27,904	28,749	29,337	2.1%	0.9%	2.0%	1.2%	1.0%	0.8%	0.6%	0.4%
		MAINIT	25,596	26,741	28,019	30,918	32,784	34,401	35,783	36,866	37,621	0.9%	0.9%	2.0%	1.2%	1.0%	0.8%	0.6%	0.4%
		MALIMONO	18,316	18,054	18,852	20,800	22,054	23,141	24,072	24,801	25,309	-0.3%	0.9%	2.0%	1.2%	1.0%	0.8%	0.6%	0.4%
		PILAR	9,456	9,752	10,374	11,454	12,144	12,744	13,257	13,658	13,937	0.6%	1.2%	2.0%	1.2%	1.0%	0.8%	0.6%	0.4%
		PLACER	24,600	27,094	29,616	32,725	34,699	36,411	37,875	39,021	39,820	2.0%	1.8%	2.0%	1.2%	1.0%	0.8%	0.6%	0.4%
		SAN BENITO	5,505	5,404	5,663	6,249	6,626	6,954	7,232	7,452	7,605	-0.4%	0.9%	2.0%	1.2%	1.0%	0.8%	0.6%	0.4%
		SAN FRANCISCO (ANAO-AON)	13,335	14,552	15,347	16,938	17,962	18,847	19,605	20,198	20,612	1.8%	1.1%	2.0%	1.2%	1.0%	0.8%	0.6%	0.4%
		SAN ISIDRO	6,973	7,325	8,519	9,431	10,001	10,494	10,916	11,246	11,477	1.0%	3.1%	2.1%	1.2%	1.0%	0.8%	0.6%	0.4%
		SANTA MONICA (SAPAO)	8,715	8,808	9,423	10,406	11,033	11,578	12,043	12,407	12,662	0.2%	1.4%	2.0%	1.2%	1.0%	0.8%	0.6%	0.4%
		SISON	11,377	13,155	14,290	15,788	16,739	17,565	18,272	18,824	19,210	2.9%	1.7%	2.0%	1.2%	1.0%	0.8%	0.6%	0.4%
		SOCORRO	20,304	22,314	25,942	28,720	30,454	31,956	33,239	34,245	34,946	1.9%	3.1%	2.1%	1.2%	1.0%	0.8%	0.6%	0.4%
		SURIGAO CITY (Capital)	140,540	154,137	171,107	189,163	200,575	210,469	218,929	225,555	230,175	1.9%	2.1%	2.0%	1.2%	1.0%	0.8%	0.6%	0.4%
		TAGANA-AN	15,366	16,428	17,323	19,119	20,272	21,272	22,126	22,795	23,262	1.3%	1.1%	2.0%	1.2%	1.0%	0.8%	0.6%	0.4%
		TUBOD	12,569	14,206	15,043	16,603	17,604	18,473	19,215	19,796	20,202	2.5%	1.2%	2.0%	1.2%	1.0%	0.8%	0.6%	0.4%
		Sub-total	442,588	485,088	534,636	590,918	626,571	657,480	683,905	704,604	719,036	1.9%	2.0%	2.0%	1.2%	1.0%	0.8%	0.6%	0.4%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
CARAGA	Surigao del Sur	BAROBO	43,663	49,730	53,146	55,709	60,196	64,521	68,675	72,561	76,103	2.6%	1.3%	0.9%	1.6%	1.4%	1.3%	1.1%	1.0%
		BAYABAS	7,779	8,164	8,979	9,421	10,180	10,911	11,613	12,271	12,870	1.0%	1.9%	1.0%	1.6%	1.4%	1.3%	1.1%	1.0%
		CITY OF BISLIG	96,578	94,535	99,290	104,018	112,396	120,473	128,228	135,483	142,099	-0.4%	1.0%	0.9%	1.6%	1.4%	1.3%	1.1%	1.0%
		CAGWAIT	18,899	20,384	21,747	22,795	24,630	26,400	28,100	29,690	31,139	1.5%	1.3%	0.9%	1.6%	1.4%	1.3%	1.1%	1.0%
		CANTILAN	30,231	31,492	34,060	35,716	38,593	41,367	44,029	46,520	48,792	0.8%	1.6%	1.0%	1.6%	1.4%	1.3%	1.1%	1.0%
		CARMEN	10,287	10,347	11,720	12,308	13,299	14,256	15,173	16,031	16,814	0.1%	2.5%	1.0%	1.6%	1.4%	1.3%	1.1%	1.0%
		CARRASCAL	16,529	22,479	24,586	25,791	27,869	29,872	31,794	33,593	35,233	6.3%	1.8%	1.0%	1.6%	1.4%	1.3%	1.1%	1.0%
		CORTES	15,541	15,912	17,924	18,820	20,335	21,796	23,200	24,512	25,709	0.5%	2.4%	1.0%	1.6%	1.4%	1.3%	1.1%	1.0%
		HINATUAN	38,731	39,842	43,841	45,998	49,703	53,274	56,704	59,913	62,838	0.6%	1.9%	1.0%	1.6%	1.4%	1.3%	1.1%	1.0%
		LANUZA	11,857	12,001	13,642	14,328	15,483	16,595	17,664	18,664	19,575	0.2%	2.6%	1.0%	1.6%	1.4%	1.3%	1.1%	1.0%
		LIANGA	28,905	29,493	33,869	35,584	38,450	41,212	43,865	46,345	48,609	0.4%	2.8%	1.0%	1.6%	1.4%	1.3%	1.1%	1.0%
		LINGIG	31,544	31,485	35,142	36,888	39,859	42,723	45,474	48,047	50,392	0.0%	2.2%	1.0%	1.6%	1.4%	1.3%	1.1%	1.0%
		MADRID	14,888	15,223	16,653	17,470	18,876	20,232	21,534	22,753	23,864	0.4%	1.8%	1.0%	1.6%	1.4%	1.3%	1.1%	1.0%
		MARIHATAG	17,926	18,518	19,441	20,367	22,006	23,588	25,107	26,527	27,822	0.7%	1.0%	0.9%	1.6%	1.4%	1.3%	1.1%	1.0%
		SAN AGUSTIN	20,655	22,779	22,855	23,906	25,831	27,688	29,470	31,136	32,658	2.0%	0.1%	0.9%	1.6%	1.4%	1.3%	1.1%	1.0%
		SAN MIGUEL	36,287	39,340	41,809	43,817	47,345	50,749	54,015	57,071	59,858	1.6%	1.2%	0.9%	1.6%	1.4%	1.3%	1.1%	1.0%
		TAGBINA	34,812	38,833	41,051	43,016	46,481	49,820	53,027	56,027	58,764	2.2%	1.1%	0.9%	1.6%	1.4%	1.3%	1.1%	1.0%
		TAGO	33,993	35,329	39,831	41,823	45,192	48,439	51,559	54,475	57,136	0.8%	2.4%	1.0%	1.6%	1.4%	1.3%	1.1%	1.0%
		CITY OF TANDAG (Capital)	52,114	56,364	62,669	65,775	71,071	76,179	81,083	85,669	89,854	1.6%	2.1%	1.0%	1.6%	1.4%	1.3%	1.1%	1.0%
		Sub-total	561,219	592,250	642,255	673,550	727,795	780,095	830,314	877,288	920,129	1.1%	1.6%	1.0%	1.6%	1.4%	1.3%	1.1%	1.0%
		Total	2,429,224	2,596,709	2,804,788	2,981,426	3,251,835	3,518,721	3,779,316	4,027,062	4,258,054	1.3%	1.6%	1.2%	1.8%	1.6%	1.4%	1.3%	1.1%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
BARMM	Basilan	CITY OF LAMITAN	68,996	74,782	100,150	114,230	129,232	144,968	161,160	177,801	194,508	1.6%	6.0%	2.7%	2.5%	2.3%	2.1%	2.0%	1.8%
		LANTAWAN	20,087	24,594	31,040	35,348	39,990	44,860	49,871	55,020	60,190	4.1%	4.8%	2.6%	2.5%	2.3%	2.1%	2.0%	1.8%
		MALUSO	33,803	40,646	45,730	51,900	58,716	65,866	73,223	80,783	88,375	3.8%	2.4%	2.6%	2.5%	2.3%	2.1%	2.0%	1.8%
		SUMISIP	37,031	41,730	47,345	53,749	60,807	68,210	75,829	83,660	91,521	2.4%	2.6%	2.6%	2.5%	2.3%	2.1%	2.0%	1.8%
		TIPO-TIPO	16,978	19,163	25,531	29,115	32,939	36,950	41,077	45,318	49,577	2.5%	5.9%	2.7%	2.5%	2.3%	2.1%	2.0%	1.8%
		TUBURAN	18,988	20,207	24,742	28,152	31,849	35,726	39,717	43,818	47,935	1.3%	4.1%	2.6%	2.5%	2.3%	2.1%	2.0%	1.8%
		AKBAR	13,369	17,531	23,098	26,333	29,792	33,418	37,151	40,987	44,838	5.6%	5.7%	2.7%	2.5%	2.3%	2.1%	2.0%	1.8%
		AL-BARKA	19,523	20,905	23,736	26,946	30,486	34,197	38,017	41,942	45,884	1.4%	2.6%	2.6%	2.5%	2.3%	2.1%	2.0%	1.8%
		HADJI MOHAMMAD AJUL	15,962	19,307	24,625	28,052	31,736	35,600	39,577	43,663	47,765	3.9%	5.0%	2.6%	2.5%	2.3%	2.1%	2.0%	1.8%
		UNGKAYA PUKAN	17,701	18,441	24,016	27,372	30,968	34,738	38,617	42,605	46,608	0.8%	5.4%	2.7%	2.5%	2.3%	2.1%	2.0%	1.8%
		HADJI MUHTAMAD	12,249	25,085	26,867	30,445	34,443	38,637	42,953	47,387	51,840	15.4%	1.4%	2.5%	2.5%	2.3%	2.1%	2.0%	1.8%
		TABUAN-LASA	18,635	24,188	29,327	33,361	37,742	42,338	47,068	51,927	56,806	5.4%	3.9%	2.6%	2.5%	2.3%	2.1%	2.0%	1.8%
		Sub-total	293,322	346,579	426,207	485,003	548,702	615,510	684,260	754,914	825,849	3.4%	4.2%	2.6%	2.5%	2.3%	2.1%	2.0%	1.8%

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			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
BARMM	Lanao del Sur	BACOLOD-KALAWI (BACOLOD GRANDE)	18,555	20,841	23,129	25,777	29,045	32,373	35,745	39,165	42,548	2.4%	2.1%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		BALABAGAN	25,139	26,819	29,863	33,286	37,509	41,806	46,162	50,577	54,945	1.3%	2.2%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		BALINDONG (WATU)	26,007	29,180	32,573	36,308	40,915	45,602	50,354	55,170	59,935	2.3%	2.2%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		BAYANG	21,472	23,965	28,023	31,281	35,249	39,286	43,380	47,528	51,633	2.2%	3.2%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		BINIDAYAN	19,493	22,079	25,965	28,988	32,666	36,408	40,201	44,046	47,851	2.5%	3.3%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		BUBONG	19,455	22,336	26,514	29,610	33,367	37,189	41,064	44,991	48,877	2.8%	3.5%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		BUTIG	16,642	19,302	22,768	25,422	28,646	31,928	35,256	38,628	41,965	3.0%	3.4%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		GANASSI	20,205	23,016	30,802	34,513	38,892	43,346	47,864	52,441	56,971	2.6%	6.0%	2.3%	2.4%	2.2%	2.0%	1.8%	1.7%
		KAPAI	17,370	18,894	20,581	22,923	25,832	28,791	31,791	34,831	37,839	1.7%	1.7%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		LUMBA-BAYABAO (MAGUING)	32,412	36,151	45,909	51,368	57,884	64,515	71,237	78,052	84,791	2.2%	4.9%	2.3%	2.4%	2.2%	2.0%	1.8%	1.7%
		LUMBATAN	16,719	19,105	22,780	25,443	28,672	31,956	35,285	38,660	41,999	2.7%	3.6%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		MADALUM	20,243	23,127	26,478	29,538	33,286	37,099	40,965	44,883	48,760	2.7%	2.7%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		MADAMBA	15,542	17,756	22,050	24,658	27,786	30,969	34,196	37,468	40,703	2.7%	4.4%	2.3%	2.4%	2.2%	2.0%	1.8%	1.7%
		MALABANG	38,724	43,957	49,088	54,718	61,661	68,724	75,885	83,143	90,323	2.6%	2.2%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		MARANTAO	28,550	32,974	37,763	42,127	47,471	52,909	58,421	64,009	69,537	2.9%	2.7%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		MARAWI CITY (Capital)	187,106	201,785	207,010	230,115	259,306	289,009	319,123	349,648	379,846	1.5%	0.5%	2.1%	2.4%	2.2%	2.0%	1.8%	1.7%
		MASIU	25,181	29,176	33,580	37,468	42,220	47,056	51,959	56,929	61,846	3.0%	2.9%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		MULONDO	14,065	16,067	19,932	22,288	25,115	27,992	30,908	33,865	36,789	2.7%	4.4%	2.3%	2.4%	2.2%	2.0%	1.8%	1.7%
		PAGAYAWAN (TATARIKAN)	11,349	13,139	15,057	16,797	18,927	21,096	23,294	25,522	27,726	3.0%	2.8%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		PIAGAPO	21,974	25,440	30,132	33,649	37,917	42,261	46,665	51,128	55,543	3.0%	3.4%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		POONA BAYABAO (GATA)	19,229	22,227	31,141	34,933	39,365	43,874	48,445	53,080	57,664	2.9%	7.0%	2.3%	2.4%	2.2%	2.0%	1.8%	1.7%
		PUALAS	11,163	12,866	14,526	16,197	18,253	20,343	22,463	24,612	26,738	2.9%	2.5%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		DITSAAN-RAMAIN	20,208	22,299	24,406	27,188	30,636	34,145	37,704	41,310	44,878	2.0%	1.8%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		SAGUIARAN	22,673	24,619	26,712	29,749	33,522	37,362	41,255	45,201	49,105	1.7%	1.6%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		TAMPARAN	22,367	25,874	32,074	35,864	40,413	45,042	49,735	54,493	59,199	3.0%	4.4%	2.3%	2.4%	2.2%	2.0%	1.8%	1.7%
		TARAKA	20,881	23,644	27,184	30,329	34,177	38,091	42,060	46,082	50,063	2.5%	2.8%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		TUBARAN	12,933	14,749	16,896	18,847	21,239	23,672	26,138	28,639	31,112	2.7%	2.8%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		TUGAYA	22,235	23,814	24,778	27,558	31,054	34,610	38,216	41,872	45,488	1.4%	0.8%	2.1%	2.4%	2.2%	2.0%	1.8%	1.7%
		WAO	40,479	45,862	50,366	56,114	63,232	70,476	77,819	85,263	92,626	2.5%	1.9%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		MAROGONG	18,541	21,319	30,118	33,793	38,079	42,441	46,864	51,347	55,781	2.8%	7.2%	2.3%	2.4%	2.2%	2.0%	1.8%	1.7%
		CALANOGAS	11,988	13,750	14,985	16,691	18,808	20,963	23,147	25,362	27,553	2.8%	1.7%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		BUADIPOSO-BUNTONG	15,662	16,130	18,046	20,116	22,669	25,266	27,898	30,567	33,207	0.6%	2.3%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		MAGUING	21,444	24,531	30,436	34,033	38,351	42,744	47,198	51,712	56,178	2.7%	4.4%	2.3%	2.4%	2.2%	2.0%	1.8%	1.7%
		PICONG (SULTAN GUMANDER)	14,136	16,615	18,907	21,088	23,763	26,485	29,244	32,041	34,809	3.3%	2.6%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		LUMBAYANAGUE	14,308	16,372	19,091	21,309	24,012	26,764	29,552	32,378	35,175	2.7%	3.1%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		BUMBARAN	8,734	10,401	12,124	13,532	15,248	16,996	18,767	20,562	22,338	3.6%	3.1%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		TAGOLOAN II	9,843	11,169	12,602	14,052	15,834	17,647	19,487	21,351	23,194	2.6%	2.4%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		KAPATAGAN	13,432	15,521	20,498	22,961	25,872	28,835	31,841	34,887	37,900	2.9%	5.7%	2.3%	2.4%	2.2%	2.0%	1.8%	1.7%
		SULTAN DUMALONDONG	10,522	11,298	12,500	13,929	15,696	17,493	19,316	21,164	22,990	1.4%	2.0%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		LUMBACA-UNAYAN	6,279	7,260	8,131	9,065	10,213	11,383	12,569	13,773	14,962	2.9%	2.3%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%
		Sub-total	933,260	1,045,429	1,195,518	1,333,627	1,502,803	1,674,946	1,849,474	2,026,380	2,201,389	2.3%	2.7%	2.2%	2.4%	2.2%	2.0%	1.8%	1.7%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
BARMM	Maguindanao	AMPATUAN	17,800	24,801	28,941	33,214	36,669	39,975	43,052	45,843	48,299	6.9%	3.1%	2.8%	2.0%	1.7%	1.5%	1.3%	1.0%
		BULDON	33,729	35,282	39,684	45,493	50,223	54,754	58,967	62,791	66,156	0.9%	2.4%	2.8%	2.0%	1.7%	1.5%	1.3%	1.0%
		BULUAN	38,106	50,008	57,406	65,851	72,700	79,257	85,357	90,892	95,761	5.6%	2.8%	2.8%	2.0%	1.7%	1.5%	1.3%	1.0%
		Cotabato City	-	-	325,079	337,494	362,930	387,015	409,849	430,537	447,855	-	-	0.8%	1.5%	1.3%	1.2%	1.0%	0.8%
		DATU PAGLAS	20,290	28,387	33,682	38,675	42,697	46,548	50,130	53,381	56,239	6.9%	3.5%	2.8%	2.0%	1.7%	1.5%	1.3%	1.0%
		DATU PIANG	28,492	25,600	28,380	32,519	35,901	39,139	42,153	44,886	47,291	-2.1%	2.1%	2.8%	2.0%	1.7%	1.5%	1.3%	1.0%
		DATU ODIN SINSUAT (DINAIG)	76,332	99,210	116,768	134,045	147,986	161,334	173,752	185,019	194,929	5.4%	3.3%	2.8%	2.0%	1.7%	1.5%	1.3%	1.0%
		SHARIFF AGUAK (MAGANOY) (Capital)	34,376	31,692	33,982	38,897	42,942	46,816	50,419	53,689	56,565	-1.6%	1.4%	2.7%	2.0%	1.7%	1.5%	1.3%	1.0%
		MATANOG	23,269	29,770	36,034	41,400	45,706	49,828	53,664	57,143	60,204	5.1%	3.9%	2.8%	2.0%	1.7%	1.5%	1.3%	1.0%
		PAGALUNGAN	31,891	39,653	46,277	53,109	58,632	63,921	68,840	73,305	77,231	4.5%	3.1%	2.8%	2.0%	1.7%	1.5%	1.3%	1.0%
		PARANG	73,328	89,194	102,914	118,070	130,349	142,105	153,044	162,969	171,698	4.0%	2.9%	2.8%	2.0%	1.7%	1.5%	1.3%	1.0%
		SULTAN KUDARAT (NULING)	82,758	95,201	105,121	120,438	132,964	144,957	156,114	166,238	175,143	2.8%	2.0%	2.8%	2.0%	1.7%	1.5%	1.3%	1.0%
		SULTAN SA BARONGIS (LAMBAYONG)	22,547	22,425	24,476	28,032	30,949	33,739	36,336	38,693	40,766	-0.1%	1.8%	2.8%	2.0%	1.7%	1.5%	1.3%	1.0%
		KABUNTALAN (TUMBAO)	16,794	17,276	25,439	29,376	32,431	35,357	38,078	40,546	42,718	0.6%	8.0%	2.9%	2.0%	1.7%	1.5%	1.3%	1.0%
		UPI	45,444	53,583	59,004	67,595	74,625	81,356	87,617	93,299	98,297	3.3%	1.9%	2.8%	2.0%	1.7%	1.5%	1.3%	1.0%
		TALAYAN	16,042	30,032	34,156	39,169	43,243	47,143	50,772	54,064	56,960	13.4%	2.6%	2.8%	2.0%	1.7%	1.5%	1.3%	1.0%
		SOUTH UPI	35,990	40,178	43,197	49,450	54,592	59,515	64,096	68,253	71,909	2.2%	1.5%	2.7%	2.0%	1.7%	1.5%	1.3%	1.0%
		BARIRA	19,686	30,004	36,143	41,518	45,836	49,970	53,815	57,305	60,375	8.8%	3.8%	2.8%	2.0%	1.7%	1.5%	1.3%	1.0%
		GEN. S.K. PENDATUN	24,004	28,103	31,263	35,827	39,554	43,120	46,439	49,451	52,099	3.2%	2.2%	2.8%	2.0%	1.7%	1.5%	1.3%	1.0%
		MAMASAPANO	22,354	24,800	27,807	31,875	35,190	38,364	41,316	43,995	46,352	2.1%	2.3%	2.8%	2.0%	1.7%	1.5%	1.3%	1.0%
		TALITAY	13,328	14,863	17,463	20,045	22,130	24,127	25,984	27,669	29,151	2.2%	3.3%	2.8%	2.0%	1.7%	1.5%	1.3%	1.0%
		PAGAGAWAN	31,265	34,820	37,314	42,711	47,153	51,406	55,363	58,953	62,110	2.2%	1.4%	2.7%	2.0%	1.7%	1.5%	1.3%	1.0%
		PAGLAT	11,207	15,920	18,727	21,497	23,733	25,875	27,866	29,673	31,263	7.3%	3.3%	2.8%	2.0%	1.7%	1.5%	1.3%	1.0%
		SULTAN MASTURA	21,712	22,261	25,331	29,050	32,071	34,963	37,654	40,095	42,242	0.5%	2.6%	2.8%	2.0%	1.7%	1.5%	1.3%	1.0%
		GUINDULUNGAN	16,071	19,911	24,933	28,673	31,655	34,510	37,166	39,576	41,696	4.4%	4.6%	2.8%	2.0%	1.7%	1.5%	1.3%	1.0%
		DATU SAUDI-AMPATUAN	20,330	26,427	31,060	35,655	39,363	42,913	46,216	49,212	51,849	5.4%	3.3%	2.8%	2.0%	1.7%	1.5%	1.3%	1.0%
		DATU UNSAY	12,490	11,813	12,890	14,764	16,298	17,769	19,135	20,377	21,468	-1.1%	1.8%	2.8%	2.0%	1.7%	1.5%	1.3%	1.0%
		DATU ABDULLAH SANGKI	17,079	23,878	30,117	34,641	38,244	41,693	44,902	47,813	50,374	6.9%	4.8%	2.8%	2.0%	1.7%	1.5%	1.3%	1.0%
		RAJAH BUAYAN	17,423	23,652	27,832	31,951	35,273	38,455	41,415	44,100	46,463	6.3%	3.3%	2.8%	2.0%	1.7%	1.5%	1.3%	1.0%
		DATU BLAH T. SINSUAT	16,533	25,024	28,243	32,381	35,749	38,973	41,973	44,695	47,089	8.6%	2.4%	2.8%	2.0%	1.7%	1.5%	1.3%	1.0%
		DATU ANGGAL MIDTIMBANG	13,339	25,016	28,224	32,360	35,724	38,948	41,945	44,665	47,058	13.4%	2.4%	2.8%	2.0%	1.7%	1.5%	1.3%	1.0%
		MANGUDADATU	14,864	25,046	26,203	29,969	33,086	36,070	38,845	41,365	43,580	11.0%	0.9%	2.7%	2.0%	1.7%	1.5%	1.3%	1.0%
		PANDAG	13,795	25,057	26,356	30,150	33,285	36,287	39,080	41,614	43,842	12.7%	1.0%	2.7%	2.0%	1.7%	1.5%	1.3%	1.0%
		NORTHERN KABUNTALAN	14,251	25,232	26,277	30,049	33,174	36,166	38,950	41,475	43,697	12.1%	0.8%	2.7%	2.0%	1.7%	1.5%	1.3%	1.0%
		DATU HOFFER AMPATUAN	16,295	25,012	26,660	30,510	33,683	36,721	39,546	42,112	44,368	8.9%	1.3%	2.7%	2.0%	1.7%	1.5%	1.3%	1.0%
		DATU SALIBO	15,062	14,947	18,795	21,615	23,864	26,016	28,019	29,838	31,437	-0.2%	4.7%	2.8%	2.0%	1.7%	1.5%	1.3%	1.0%
		SHARIFF SAYDONA MUSTAPHA	16,442	19,855	25,080	28,847	31,849	34,720	37,394	39,819	41,953	3.8%	4.8%	2.8%	2.0%	1.7%	1.5%	1.3%	1.0%
		Sub-total	944,718	1,173,933	1,667,258	1,923,659	2,123,727	2,315,270	2,493,473	2,655,171	2,797,398	4.4%	7.3%	2.9%	2.0%	1.7%	1.5%	1.3%	1.0%

Region	Province	City/ Municipality	Census Results			Population Projection (High) updated by 2020 census						Average Annual Growth Rate							
			2010	2015	2020 (updated by 2020 census)	2025	2030	2035	2040	2045	2050	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045	2045-2050
BARMM	Sulu	INDANAN	65,858	80,883	93,168	105,023	115,728	126,096	136,130	145,655	154,640	4.2%	2.9%	2.4%	2.0%	1.7%	1.5%	1.4%	1.2%
		JOLO (Capital)	118,307	125,564	137,266	154,482	170,229	185,479	200,239	214,249	227,464	1.2%	1.8%	2.4%	2.0%	1.7%	1.5%	1.4%	1.2%
		KALINGALAN CALUANG	26,848	31,567	39,549	44,691	49,247	53,659	57,928	61,982	65,805	3.3%	4.6%	2.5%	2.0%	1.7%	1.5%	1.4%	1.2%
		LUUK	29,897	32,162	37,873	42,720	47,075	51,292	55,374	59,248	62,903	1.5%	3.3%	2.4%	2.0%	1.7%	1.5%	1.4%	1.2%
		MAIMBUNG	28,445	37,914	59,597	67,725	74,629	81,315	87,786	93,927	99,721	5.9%	9.5%	2.6%	2.0%	1.7%	1.5%	1.4%	1.2%
		HADJI PANGLIMA TAHIL (MARUNGGAS)	5,850	6,375	7,906	8,932	9,842	10,724	11,577	12,386	13,151	1.7%	4.4%	2.5%	2.0%	1.7%	1.5%	1.4%	1.2%
		OLD PANAMAO	37,933	40,998	49,849	56,283	62,019	67,576	72,953	78,057	82,872	1.6%	4.0%	2.5%	2.0%	1.7%	1.5%	1.4%	1.2%
		PANGUTARAN	28,461	30,613	36,374	41,040	45,224	49,276	53,197	56,919	60,430	1.5%	3.5%	2.4%	2.0%	1.7%	1.5%	1.4%	1.2%
		PARANG	58,028	62,172	71,495	80,589	88,803	96,759	104,458	111,766	118,661	1.4%	2.8%	2.4%	2.0%	1.7%	1.5%	1.4%	1.2%
		PATA	14,918	22,163	24,736	27,856	30,696	33,445	36,106	38,632	41,015	8.2%	2.2%	2.4%	2.0%	1.7%	1.5%	1.4%	1.2%
		PATIKUL	42,036	62,287	79,564	89,956	99,125	108,005	116,600	124,759	132,454	8.2%	5.0%	2.5%	2.0%	1.7%	1.5%	1.4%	1.2%
		SIASI	64,229	67,705	81,689	92,211	101,610	110,712	119,521	127,883	135,772	1.1%	3.8%	2.5%	2.0%	1.7%	1.5%	1.4%	1.2%
		TALIPAO	75,173	80,255	100,088	113,086	124,613	135,777	146,581	156,836	166,511	1.3%	4.5%	2.5%	2.0%	1.7%	1.5%	1.4%	1.2%
		TAPUL	16,370	18,197	20,799	23,439	25,828	28,141	30,381	32,507	34,512	2.1%	2.7%	2.4%	2.0%	1.7%	1.5%	1.4%	1.2%
		TONGKIL	17,802	24,161	35,616	40,415	44,535	48,525	52,386	56,051	59,507	6.3%	8.1%	2.6%	2.0%	1.7%	1.5%	1.4%	1.2%
		PANGLIMA ESTINO (NEW PANAMAO)	27,724	28,817	34,249	38,643	42,583	46,398	50,091	53,595	56,902	0.8%	3.5%	2.4%	2.0%	1.7%	1.5%	1.4%	1.2%
		LUGUS	19,839	21,897	29,043	32,871	36,221	39,467	42,606	45,588	48,400	2.0%	5.8%	2.5%	2.0%	1.7%	1.5%	1.4%	1.2%
		PANDAMI	22,474	25,885	33,177	37,513	41,337	45,040	48,624	52,026	55,235	2.9%	5.1%	2.5%	2.0%	1.7%	1.5%	1.4%	1.2%
		OMAR	18,098	25,116	28,070	31,612	34,833	37,954	40,975	43,841	46,544	6.8%	2.2%	2.4%	2.0%	1.7%	1.5%	1.4%	1.2%
		Sub-total	718,290	824,731	1,000,108	1,129,088	1,244,181	1,355,639	1,463,510	1,565,904	1,662,495	2.8%	3.9%	2.5%	2.0%	1.7%	1.5%	1.4%	1.2%
	Tawi-Tawi	PANGLIMA SUGALA (BALIMBING)	38,704	44,184	48,055	50,805	56,703	62,750	68,920	75,181	81,538	2.7%	1.7%	1.1%	2.2%	2.0%	1.9%	1.8%	1.6%
		BONGAO (Capital)	79,362	100,527	116,118	122,994	137,274	151,913	166,850	182,007	197,399	4.8%	2.9%	1.2%	2.2%	2.0%	1.9%	1.8%	1.6%
		MAPUN (CAGAYAN DE TAWI-TAWI)	24,168	26,597	30,038	31,795	35,487	39,272	43,133	47,052	51,030	1.9%	2.5%	1.1%	2.2%	2.0%	1.9%	1.8%	1.6%
		SIMUNUL	34,538	31,223	34,245	36,214	40,419	44,730	49,127	53,590	58,122	-2.0%	1.9%	1.1%	2.2%	2.0%	1.9%	1.8%	1.6%
		SITANGKAI	30,514	33,334	37,319	39,491	44,076	48,776	53,572	58,439	63,382	1.8%	2.3%	1.1%	2.2%	2.0%	1.9%	1.8%	1.6%
		SOUTH UBIAN	27,741	25,935	29,583	31,322	34,960	38,688	42,492	46,353	50,273	-1.3%	2.7%	1.1%	2.2%	2.0%	1.9%	1.8%	1.6%
		TANDUBAS	27,748	29,390	34,316	36,360	40,582	44,910	49,325	53,807	58,358	1.2%	3.1%	1.2%	2.2%	2.0%	1.9%	1.8%	1.6%
		TURTLE ISLANDS	3,772	4,727	5,683	6,027	6,728	7,445	8,178	8,921	9,676	4.6%	3.8%	1.2%	2.2%	2.0%	1.9%	1.8%	1.6%
		LANGUYAN	42,690	33,494	37,096	39,241	43,798	48,469	53,234	58,071	62,982	-4.7%	2.1%	1.1%	2.2%	2.0%	1.9%	1.8%	1.6%
		SAPA-SAPA	28,781	30,917	33,580	35,500	39,621	43,845	48,157	52,533	56,976	1.4%	1.7%	1.1%	2.2%	2.0%	1.9%	1.8%	1.6%
		SIBUTU	28,532	30,387	34,243	36,241	40,449	44,764	49,165	53,631	58,167	1.3%	2.4%	1.1%	2.2%	2.0%	1.9%	1.8%	1.6%
		Sub-total	366,550	390,715	440,276	465,992	520,096	575,561	632,154	689,585	747,902	1.3%	2.4%	1.1%	2.2%	2.0%	1.9%	1.8%	1.6%
	Interim Province	CARMEN CLUSTER	-	-	28,463	31,160	33,780	36,319	38,678	40,771	42,519	-	-	1.8%	1.6%	1.5%	1.3%	1.1%	0.8%
		KABACAN CLUSTER	-	-	16,658	18,237	19,770	21,256	22,636	23,861	24,885	-	-	1.8%	1.6%	1.5%	1.3%	1.1%	0.8%
		MIDSAYAP CLUSTER I	-	-	25,573	27,996	30,350	32,631	34,751	36,631	38,202	-	-	1.8%	1.6%	1.5%	1.3%	1.1%	0.8%
		MIDSAYAP CLUSTER II	-	-	22,438	24,564	26,629	28,631	30,490	32,141	33,519	-	-	1.8%	1.6%	1.5%	1.3%	1.1%	0.8%
		PIGKAWAYAN CLUSTER	-	-	19,627	21,487	23,293	25,044	26,671	28,114	29,320	-	-	1.8%	1.6%	1.5%	1.3%	1.1%	0.8%
		PIKIT CLUSTER I	-	-	38,795	42,471	46,042	49,503	52,718	55,571	57,954	-	-	1.8%	1.6%	1.5%	1.3%	1.1%	0.8%
		PIKIT CLUSTER II	-	-	34,341	37,595	40,756	43,819	46,665	49,191	51,300	-	-	1.8%	1.6%	1.5%	1.3%	1.1%	0.8%
		PIKIT CLUSTER III	-	-	29,538	32,337	35,055	37,691	40,138	42,311	44,125	-	-	1.8%	1.6%	1.5%	1.3%	1.1%	0.8%
		Sub-total	-	-	215,433	235,848	255,674	274,894	292,746	308,591	321,824	-	-	1.8%	1.6%	1.5%	1.3%	1.1%	0.8%
		Total	3,256,140	3,781,387	4,944,800	5,573,218	6,195,184	6,811,820	7,415,618	8,000,545	8,556,857	3.0%	5.5%	2.4%	2.1%	1.9%	1.7%	1.5%	1.4%

Source: JICA Study Team

ANNEX C

Organizations and Legal Frameworks

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Annex C-1 MAIN REPORT - Organizations and Legal Frameworks

1. Introduction

In the Philippines, organizations and legal frameworks related to water resources have existed in a complicated form. Based on the JICA Survey Team's understanding, the current information on organizations and legal frameworks related to water resources in the Philippines are organized in the following ways:

(1) List of Organizations, Legal Frameworks and Plans on Water Resources (Section 2, 3 and 4)

The current organizations, legal frameworks and plans on water resources are listed into the tables, based on the literature survey and questionnaire survey of the relevant organizations in the Philippines. In addition, the organizations and legal frameworks for public private partnership (PPP) are also listed into the other tables.

(2) Analysis of Previous Recommendations and Current Situations (Section 5)

Analyses on organizations and legal frameworks have been often conducted by some organizations including JICA, the Asian Development Bank (ADB), The World Bank (WB), and other Philippine agencies. In this survey, reports/documents related to water resources previously issued by such organizations were checked, by which the review of the previous analytical findings and recommendations related to organizations and legal frameworks was conducted and their current status were confirmed.

(3) Major Issues on Organization and Legal Framework Related to Water Resources in the Philippines (Section 6)

The major issues on organizations and legal frameworks related to water resources in the Philippines organized based on the literature survey and questionnaire survey are shown in Section 6.

(4) Current Actions for Improving the Issues in the Philippines (Section 7)

The collected information on the current actions for improving the issues on organizations and legal frameworks related to water resources is shown, which mainly focuses on i) the Executive Order (E.O.No.22 2023) to create the Water Resources Management Office (WRMO) and ii) the example of the drafted Bill (House Bill No.9948 filed in August 2022) to create the Department of Water Resources and the Water Regulatory Commission.

The reference materials for preparing this report are shown in Annex-C-2.

2. Organizations

(1) Water Resources

The current organizations in the Philippines related to water resources development, management, and utilization are listed in Table C-1**Error! Reference source not found.**, Table C-2 and Table C-3 . In this tables, the organizations are classified into three categories: Central Government and related agencies, local government agencies, and water service providers.

Table C-1 Central Government Agencies Related to Water Resources

Organizations	Roles/Functions/Mandates
National Economic and Development Authority（NEDA）	Socioeconomic planning body with the following roles. - Coordinating the preparation of national development plan and investment programs, - Formulation of sector policies and strategies, and - Monitoring implementation of policies, programs, and projects.
Department of Environment and Natural Resources（DENR）	Responsible for - Conservation, management, development, and proper use of the country's environment and natural resources, such as promulgating the rules and regulations for pollution control of water, air and land, and - Management and Rehabilitation of crucial watersheds.
River Basin Control Office (RBCO), DENR	Lead government agency for integrated planning, management, rehabilitation and development of the country's river basins
National Water Resources Board（NWRB） - Under DENR	Manages and regulates water resources and services in the Philippines with the following functions: - Formulate and coordinate policy in line with the concept of IWRM. - Regulate water resource through the issuance of water permit and water use conflict resolution, and - Regulate water service providers through the issuance of Certificate of Public Convenience (CPC) or setting of water tariffs
Laguna Lake Development Authority (LLDA) - Under DENR	Responsible for the development, management and regulation over the Laguna De Lake basin's surface water.
Department of Interior and Local Government （DILG）	With regard to water services, it supports LGUs including: - Capacity building support to LGUs. - Provide capacity building training programs to LGUs. - Coordinate LGU master plan preparation, and - Provide information to LGUs on available sector programs and financing.
Department of Public Works and Highways（DPWH）	- Plan infrastructure, such as national roads and bridges, flood control, water resources projects, and other public works, and - Design, construct, and maintain national roads and bridges and major flood control systems, and provide technical support to LGUs upon requests.
Metropolitan Waterworks and Sewerage System （MWSS） - Under DPWH	- Service provider to construct, maintain and operate the water supply and sewerage system in Metro Manila, and - Regulator for private operators in Metro Manila, the Manila Water Company Inc. (MWCI) and the Maynilad Water Services Inc.

Organizations	Roles/Functions/Mandates
	(MWSI)
Local Water User Administration (LWUA) - Under DPWH	A government-owned and controlled corporation (GOCC) with a specialized lending funding to promote and oversee the development of water supply systems in provincial cities and municipalities outside Metro Manila with the following roles: - Provide technical advisory services and financial assistance of water districts, - Provide technical and institutional support to LGUs and water supply providers (WSPs), and - Set design standards for water supplies operated by water districts and other WSPs.
Department of Health (DOH)	- Monitor drinking water quality and effluent quality of sewerage system, and - Formulate and implement programs and strategies to avoid environment-related diseases.
Department of Science and Technology (DOST)	- Oversee and manage national technology development and acquisition, and - Conduct technological and scientific research and promote public consciousness of science and technology.
Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA)	Attached agency of DOST, tasked with meteorological conservation, operating weather stations in the whole country, and managing the database consisting of information collected in the stations.
Department of Agriculture (DA)	Responsible for the promotion of agricultural development.
National Irrigation Administration (NIA) - Under DA	Attached agency of DA, tasked with development and management of irrigation water. * The jurisdiction on NIA was moved to DA from OP on 25th April 2022 (Executive Order No.168, 2022).
Department of Energy (DOE)	Prepare, integrate, coordinate, supervise and control all plans, programs, projects and activities of the government relative to energy exploration, development, utilization, distribution and conservation.
National Power Corporation (NPC)	Attached agency of the DOE, tasked with implementing electric power projects including hydropower generation.
Department of Social Welfare and Development	Implement community-based projects that include Level 1 and Level II water systems, sanitary toilets, drainage systems and communal irrigation systems through Comprehensive and Integrated Delivery of Social Services (KALAHI-CIDSS) Program.
Department of Finance (DOF)	- Provide financial support for the water supply sector, and - Oversee performance of government financial institutions (GFIs) including the Development Bank of the Philippines (DBP), Land Bank of the Philippines (LBP), and LWUA.
Department of Budget and Management (DBM)	Assess and approve the budget for each department.

Source: JICA Survey Team

Table C-2 Local Government Agency

Organizations	Roles/Functions/Mandates
Local Government Units（LGUs）	- Plan and implement the water supply and sanitation programs, - Prepare water and sanitation master plans, - Monitor local water and sanitation coverage and update sector profile, and - Provide support to RWSAs, BWSAs, or Cooperatives such as funding from Internal Revenue Allotment (LGUs' share of revenues from the national government). *More detailed information is organized in Annex C-4

Source: JICA Survey Team

Table C-3 Water Service Providers

Organizations		Roles/Functions/Mandates
Private Operator		Enterprises that operate water services in a variety of forms such as: - Large-scale operators such as MWCI and MWSI in Metro Manila in their designated concession areas, and - Small-scale operators to manage and operate privately-owned water supply systems based on the Certificate of Public Convenience (CPC) issued by NWRB.
LGU-run Utilities		Based on the Local Government Code, LGUs themselves can provide water services through their water supply and sewerage systems.
Water Districts（WDs）		Local corporate entity that operates and maintains a water supply system in one or more provincial cities or municipalities. It is established on a local option basis and classified as GOCC.
Community based Organizations (CBOs)	Cooperatives	A membership organization formed under the Cooperative Code of the Philippines to operate and maintain water supply systems and is registered with the Cooperative Development Authority
	Rural Water and Sanitation Associations (RWSAs)	Non-stock and non-profit organizations formed by a group of persons in a defined area such as a street, a group of houses, a sitio, or a purok to establish and maintain water supply and sanitation.
	Barangay Water and Sanitation Associations (BWSAs)	Non-stock and non-profit organization that owns, operates and maintains a water system and sanitation facilities in the barangay.

Source: JICA Survey Team

(2) PPP

The current organizations related to PPP are listed in Table C-4.

Table C-4 Organizations Related to PPP

Organizations	Roles/Functions/Mandates
National Economic and Development Authority （NEDA）	- Oversee the affairs on PPP, and - Give approval on PPP projects costing more than PHP300 million on submission to the NEDA Board for approval.
Investment Coordination Committee (ICC), NEDA	- Formulate policy and guidelines for PPP projects - Give approvals in line with the followings: 1. For projects of national line agencies and GOCCs implemented through the BOT and its variant schemes. a. Those costing up to PHP300 million shall be submitted to the ICC for its approval; and b. Those costing more than PHP300 million shall be submitted to the NEDA Board for its approval, upon recommendation of the ICC. 2. For local BOT projects to be implemented by LGUs costing above PHP200 million 3. Negotiated projects shall be submitted to the NEDA Board for approval upon recommendation by the ICC, regardless of amount
PPP Governing Board (PPPGB), NEDA	- Set the strategic direction of the PPP Program, and - Create an enabling policy and institutional environment for PPPs.
Project Development and Monitoring Facility Committee (PDMF Committee), NEDA	Provide funding and facilitate preparation and monitoring of PPP projects. It provides financing to engage external consultants and transaction advisors to assist implementing agencies in their pre-investment activities for potential PPP projects and develop a pipeline of viable, bankable projects. The PDMF Committee is responsible for approving applications for PDMF support. Subject to the approval of the PPP Governing Board, the PDMF Committee also formulates, prescribes and recommends policies, procedures and guidelines for the use of the PDMF, as well as recovery of costs charged to the fund.
PPP Center, NEDA	Facilitate PPP programs and projects, and act as the secretariat of the PPPGB and PDMF Committee.
Department of Budget Management (DBM)	With regard to PPP, DBM is tasked with the followings: - Prepare national budget proposals and allocate budget allocation for PPP projects, and - Approval of the agency is required in the issuance of Letter of Commitment as requested by implementing agencies
Department of Finance (DOF)	With regard to PPP, DOF is tasked with the followings: - Conduct financial and risk evaluations and government guarantee of PPP projects during project appraisal and approval - For solicited proposals, after the completion of the final selection of the project proponent, informal consent from the DOF may need to be secured, and - Issues an opinion on the draft contract within ten days upon receipt of the draft contract as submitted by an agency/LGU

Source: JICA Survey Team

3. Legal Frameworks

(1) Water Resources

The current legal frameworks related to water resources are listed in Table C-5, Table C-6, Table-C-7 and Table-C-8. In these tables, the legal frameworks are classified into four categories: legal framework related to water resources development and management, water supply service, irrigation and flood management.

Table C-5 gal Frameworks Related to Water Resources Development and Management

Name	Outline
Water Code of the Philippines (Presidential Decree No.1067)	Basic legal framework on water resources in the Philippines.
Water Code of The Philippines Amended Implementing Rules and Regulations	1. Implementing rules and regulations for the Water Code. 2. Stipulates the procedures of water permit and water charge regulated by NWRB.
Creating a National Water Resources Council, Reconstituting Its Membership, Vesting the Same with Powers to Coordinate and Integrate Water Resources Development, and Providing Funds Therefore Presidential Decree No.424, 1974	It is the legal basis for creating the National Water Resources Council (NWRC), which is the predecessor organization of present NWRB.
Executive Order No.123, 2002	It stipulated the transfer of the jurisdiction on NWRB from DPWH to DENR.
Executive Order No.816, 2009	Declaring the River Basin Control Office under DENR as the lead government agency for the integrated planning, management, rehabilitation and development of the country's river basins.
Executive Order No.860, 2010	1. Reorganize the NWRB board members. 2. Transfer the jurisdiction on regulation of tariff affair of WDs from NWRB to LWUA.
4	Creating the Water Resources Management Office under DENR

Source: JICA Survey Team

Table C-6 Legal Framework Related to Water Supply Service

Name	Outline
An Act Creating the Metropolitan Waterworks and Sewerage System and Dissolving the National Waterworks and Sewerage Authority; and For Other Purposes (Republic Act 6234(1971))	1. Establish the MWSS by dissolving the NWSA. 2. Make MWSS the organization responsible for water services in Metro Manila, and local water services returned to the jurisdiction of LGUs.
Provincial Water Utilities Act of 1973 (Presidential Decree No.198)	- Stipulates the status of WDs including the procedure for establishing them and their powers. - Stipulates the issue on LWUA as the supportive organization for WDs technically and financially.
Creating the Department of Energy (Presidential Decree No.1206, 1977)	It stipulates that the powers and functions relative to waterworks were transferred to the National Water Resources Council (NWRC) from the Board and Energy and Waterworks, which was abolished by the PD.
Executive Order No.62, 2011	Stipulates the transfer of the jurisdiction over LWUA from DOH to DPWH.
Local Government Code of 1991 (Republic Act No.7160)	It provides the necessary frameworks for local administration including structures, roles and functions, election of officials, and financial schemes for LGUs. It also stipulates the roles/functions/mandates of the LGUs related to water supply service, which are organized in the Annex C-4.
Water Crisis Act of 1995 (Republic Act No.8041)	- Declares the policy to adopt urgent and effective measures to address the nationwide water crisis. - Mandates the reorganization of MWSS and LWUA including their privatization.
Executive Order No.311 (1996)	Approves private sector participation to the water service which MWSS operates and manages in Metro Manila.

Source: JICA Study Team

Table C-7 Legal Framework Related to Irrigation

Name	Outline
Free Irrigation Service Act (Republic Act No.10969)	Stipulates mainly - Provision of irrigation service fee (ISF) exemption for all farmers with landholdings of eight (8) hectares and below - Provision of condonation, and writing off from the book of NIA of"all unpaid ISF and the corresponding penalties of farmers with eight (8) ha and below to NIA, and all loans, past due accounts and the corresponding interests and penalties of IAs to NIA"
Agriculture and Fisheries Modernization Act of 1997 (Republic of Act No.8435)	Aims to modernize the agriculture and fishery sectors to technology-based, advanced and competitive industry. With regard to irrigation, it mainly stipulates; - Promotion of research and development in the area of irrigation - Irrigation development schemes for National Irrigation System, Communal Irrigation System, minor irrigation schemes and PPP-based irrigation system. - The role of organizations related to irrigation
Local Government Code of 1991 (Republic Act No.7160)	It provides the necessary frameworks for local administration including structures, roles and functions, election of officials, and financial schemes for LGUs. It also stipulates the roles/functions/mandates of the LGUs related to irrigation, which are organized in the Annex C-3.

Source: JICA Study Team

Table C-8 Legal Framework Related to Flood Management

Name	Outline
Strengthening the Philippines Disaster Control, Capability and Establishing the National Program on Community Disaster Preparedness (Presidential Decree No.1566)	Stipulates mainly; - Roles of National Government and Local Government related to disaster prevention - Setting up the National Disaster Coordinating Council - Setting up the Disaster Coordinating Council at LGU level - Plans for disaster management operations
Philippines Disaster Risk Reduction and Management Act of 2010 (Republic Act No.10121)	Maps out the frame of disaster prevention based on the idea of Disaster Risk Reduction and Management (DRRM), and mainly stipulates - Structure, powers and functions of the organizations related to DRRM at national and local level (i.e., the Disaster Risk Reduction and Management Council and the Office of Civil Defense) - Institutionalization of plans for DRRM - Funding and allocation scheme for DRRM at national and local level
Water Code of the Philippines (Presidential Decree No.1067) Water Code of The Philippines Amended Implementing Rules and Regulations	Stipulates, with regard to flood management; - The authority of the Secretary of DPWH to declare flood control areas, and promulgate guidelines for governing flood plain management plans or rules and regulations to prohibit or control activities in these areas - A legal easement as wide as may be needed along and adjacent to the river bank and outside the bed or channel of the river
Climate Change Act of 2009 (Republic Act No.9729)	Stipulates mainly; - Creation of the Climate Change Commission (CCC) and the structure, powers and functions of CCC - Framework Strategy and Program on Climate Change which shall be formulated by CCC (amended by RA No.10174) - Climate Change Action Plan at national and local level

Name	Outline
	- Role of the government agencies related to climate change (amended by RA No.10174) - Funding and allocation scheme for climate change (amended by RA No.10174)
The People's Survival Fund Act (Republic Act No.10174)	Stipulates mainly; - Creation of the People's Survival Fund (PSF) for climate change adaptation programs and projects - The scheme for funding, allocation and management of PSF - Necessary amendments of the Climate Change Act of 2009 (RA No.9729)
Local Government Code of 1991 (Republic Act No.7160)	It provides the necessary frameworks for local administration including structures, roles and functions, election of officials, and financial schemes for LGUs. It also stipulates the roles/functions/mandates of the LGUs related to flood management, which are organized in the Annex C-3.

Source: JICA Study Team

The legal frameworks for PPP related to water projects are listed in Table C-9.

Table C-9 Legal Frameworks Related to PPP

Name	Outline
BOT Law (Republic Act No.7718) and Revised IRR	1. The main legal framework related to PPP projects in the Philippines. 2. Provides the PPP modality and also the types of procurement (solicited and unsolicited).
Local Government Code of 1991 (Republic Act 7160)	Provides the legal basis to allow LGUs to enter into PPP projects such as: Section 22 (a) (5) allows LGUs to enter into contracts as a corporation; Section 35 allows LGUs to enter into joint ventures and such other cooperative arrangements with people's and non-governmental organizations.
Executive Order, No.8 2010	Provides the legal basis for establishing the PPP Center under NEDA in the Philippines.
Executive Order No.68 1999	Provides the process for the approval of BOT and other similar types of water utility projects, which stipulates the implementing agency, and the process of unsolicited PPP projects (including the review by LWUA and others).
Executive Order No.78 2012	Provides for the use of alternative dispute resolution schemes in all contracts including PPP, BOT, and joint venture agreements between government and private entities, and those entered into by LGUs.
NEDA Revised Guidelines and Procedures for Entering into Joint Venture Agreements between Government and Private Entities, 2013	Guidelines to form joint venture between government organizations and private entities (The 1st version was released in 2008, and revised in 2013.).
Guidebook on Joint Venture for Local Government Units (LGUs), 2019	Guidebook to form joint venture between LGUs and private entities (Drafted by the PPP Center).

Source: JICA Survey Team

4. Plans

Current plans related to water resources are organized in the below Table C-10.

Table C-10 Plans Related to Water Resources

(1) Comprehensive Plan	
Philippines Development Plan (PDP)	It is the mid-term development plan at national level, which is prepared in the beginning of each presidential administration. With regard to the water resources, it indicates the following directions; - Pursue institutional reforms such as streamlining processes in involved agencies to encourage and guide investments in water supply, sewerage, and sanitation. - Formulate an irrigation master plan to set the direction for irrigation development and a framework for capital and operations and maintenance financing of irrigation projects. - Continue flood management initiatives. - Create an apex body that will a) address the fragmented structure of water resources and b) formulate masterplans that will foster coordination efforts in the country.
Regional Development Plan (RDP)	It is the mid-term development plan prepared for each region, which is anchored on the PDP, the Ambisyon Nasin 2040 etc., Specific infrastructure projects may be included in the RDP.
(2) Water Supply and Sanitation	
Philippines Water Supply and Sanitation Plan 2019-2030 (PWSSP)	It serves as the national action plan to achieve universal access to safe, sufficient, affordable and sustainable water supply, hygiene and sanitation by 2030. It defines the activities, responsible agencies, and the budget necessary to grow the WSS sector to match the scale of the country's need, and propose policies as well as economic, environmental and engineering solutions have all factored in different levels of development to match the specific realities and requirements on the ground.
(3) Irrigation	
National Irrigation Master Plan 2020-2030	It is the national level master plan intended to provide national guidelines for irrigation development in the Philippines for 2020-2030, whose general objective is to achieve food security and poverty reduction through enhanced farmers' competitiveness with accelerated and sustained irrigation development under diversified crop production systems.
(4) Flood Management	
National Disaster Risk Reduction and Management Plan (NDRRMP)	It fulfills the requirement of Republic Act No. 10121 of 2010, which provides the legal basis for policies, plans and programs to deal with disasters. It covers four thematic areas, namely, (1) Disaster Prevention and Mitigation; (2) Disaster Preparedness; (3) Disaster Response; and (4) Disaster Rehabilitation and Recovery, and sets down the expected outcomes, outputs, key activities, indicators, lead agencies, implementing partners and timelines under each of the four distinct yet mutually reinforcing thematic areas.
Local Disaster Risk Reduction and Management Plan (LDRRMP)	It is the plan that serves as the basis for the implementation of DRRM programs, projects and activities at the local level. Its formulation in every local government unit is required by Republic Act No. 10121. It shall be the basis in the allocation of the Local Risk Reduction and Management Fund.
(5) Integrated Water Resources Management (IWRM)	
Integrated River Basin Management and Development Master plan	They are the basic management plans for 18 major river basins in the Philippines. Other basin plans than the 18 major river basins have been also prepared as needed.

Source: JICA Survey Team

5. Previous Recommendations and Current Situation

In order to analyse the previous recommendations and current situations on organizations and legal frameworks related to water resources in the Philippines, the following reports/documents were reviewed (Table C-11) and the current situation was confirmed through the questionnaire survey. The results of the questionnaire survey are shown as ANNEX-C-3. In summary, the current situation on actions taken for improving the issues corresponding to the previous recommendations are shown in Table C-12.

Table C-11 Report/Documents (Already Reviewed)

Title	Issued by	Issued Date
Master Plan Study on Water Resources Management in the Republic of the Philippines - Final Report -	JICA	Aug-1998
Report on Preliminary Survey for The Master Plan and Feasibility Study for Improvement of Water Supply and Sanitation in Metro Cebu	JICA	Jan-2005
The Study on Integrated Water Resources Management for Poverty Alleviation and Economic Development in the Pampanga River Basin in the Republic of the Philippines	JICA	Jan-2011
Data Collection Survey for Formulating Development Policy of Water and Sewerage System in the Philippines	JICA	Feb-2018
Water Supply and Sanitation in the Philippines Turning Finance into Services for the Future	World Bank	Feb-2015
Private Sector Provision of Water and Sanitation Services in Rural Areas and Small Towns: The Role of the Public Sector	World Bank	Mar-2016
Water Supply and Sanitation Sector, Assessment, Strategy, and Roadmap	ADB	Jan-2013
Philippines Development Plan 2017 - 2022	NEDA	Feb-2017

Source: JICA Survey Team

Table C-12 Recommendations and Current Situation (Action for Improvement Taken)

Recommendation	Current Situation
Creation of the Water Resources Authority of the Philippines (WRAP) (1998 M/P JICA)	- President Mr. Marcos Jr. declared that the establishment of the Department of Water Resources (DWR) is one of the priorities in his first State of Nation Address (SONA) on July 25 2022. - Bills for Creating the Department of Water Resources (DWR) and the Water Regulatory Commission (WRC) have been filed in Congress. Also, the bills have been deliberated, but not approved as of April 2023. - If the act is enacted, DWR shall function as the overall apex body. WRC shall function as an independent and quasi-judicial regulatory body for the water supply and sanitation sub-sector. - The Executive Order No.22 2023 was issued for creating the Water Resources Management Office under the DENR on 27th April 2023.
Implement new institutional arrangement including an expanded role of NWRB as the sector regulator and its translation to National Water Resources Management Office … (2016 World Bank)	
Enactment of a Law Creating an Apex Body for the Water Resources Sub sector (PDP 2017-2022)	
Enactment of a Law Creating an Independent Economic or Financial Regulator for Water Supply and Sanitation (PDP 2017-2022)	

Recommendation	Current Situation
Establish regional offices to effectively regulate and monitor the water resources activities on site rather from a distant central office … (1998 M/P JICA)	NWRB extension offices have been established in the Visayas and Mindanao in 2018, specifically in Cebu City and Davao City.
Revenue from water charge or fine to be allocated for research activity and data collection on water resources… (1998 M/P JICA)	House Bill of An Act for Creating the Department of Water Resources (DWR) and the Water Regulatory Commission (WRC) includes an article of creating a "Water Trust Fund" from water charge and others, utilized for water development and water sustainability programs.

Source: JICA Survey Team

6. Major Issues on Organizations and Legal Frameworks Related to Water Resources in the Philippines

(1) Introduction

According to the previous reports/documents, there are two major issues related to water resources in the Philippines: 1) institutional fragmentation/lack of coordination and 2) necessity to strengthen the regulatory functions. These issues are indicated in the Philippines Development Plan (PDP) 2017-2022, which implies the common understanding that the two major issues exist in the Philippines. In the succeeding paragraphs, information related to these two major issues derived from the literature survey is shown.

(2) Institutional Fragmentation/Lack of Coordination

In this section, the information on the practical case of institutional fragmentation related to the regulation against water utilities in the Philippines, which is found in literature survey, are also shown.

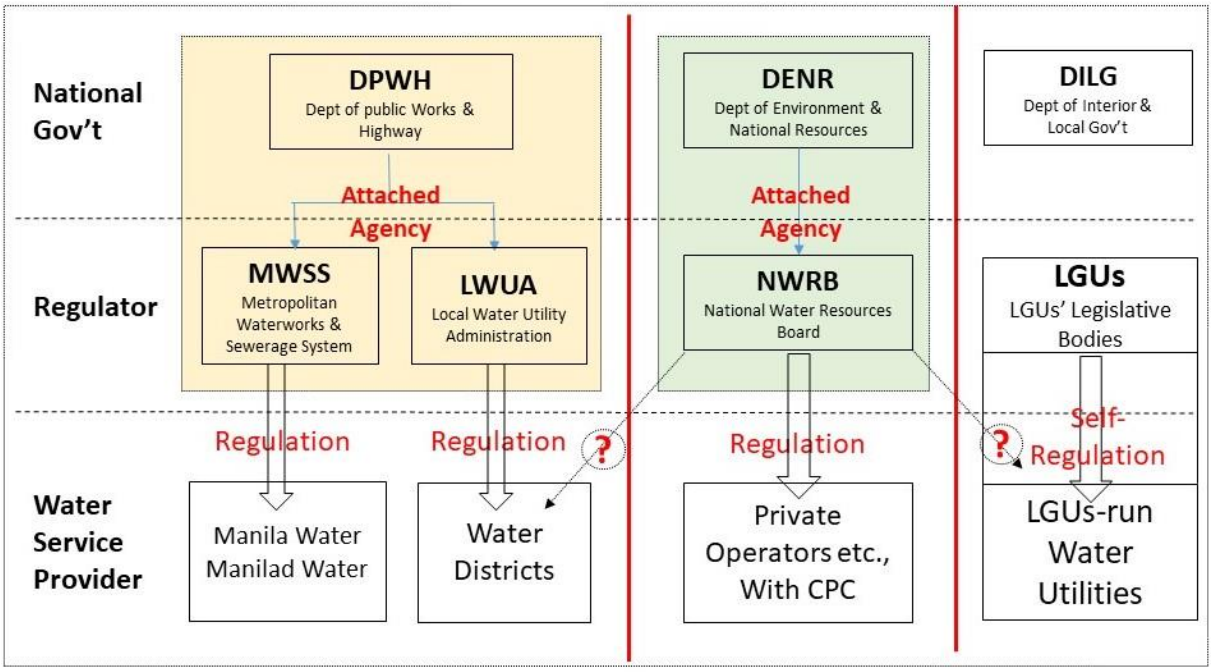
The correspondence relationship between the major water utilities (MWCI and MWSI, WDs, private operators, LGU-run utilities) and regulatory agencies is shown below:

Water Utilities		Regulatory Agency
MWCI and MWSI	⟷	MWSS (Under DPWH)
WDs	⟷	LWUA (Under DPWH)
Other private operators	⟷	NWRB (Under DENR)
LGU-run utilities	⟷	LGUs themselves

Furthermore, technical operating standards and the water tariff principles are established by the respective regulatory agencies, so they are different from each other. This is the so-called vertical administrative structure.

In addition, NWRB's Memorandum Circular 2019-001 opened the opportunity for WDs or LGU-run utilities to subject themselves to NWRB's economic regulation voluntarily. However, technical standards are inseparable from water tariff principles because the levels of the

technical standards for water utilities give effect on the water tariff. Thus, it is not certain whether WDs and LGU-run utilities can follow the technical operating standards of NWRB even if they opt to be subject to the economic regulation of NWRB, and there is a view that this uncertainty may create confusion (PIDS Report).



Source: JICA Survey Team

Figure C-1 Fragmentation on Regulatory Function for Water Utilities

On the other hand, according to the interview session with NEDA, a Supreme Court ruling in 2011 (Supreme Court Decision En Banc - G.R. NO. 168914 dated July 4, 2007) upheld the Constitution which prohibits the exclusivity of public utility franchise, other types of water service providers (LGU-run water utilities, RWSA, BWSA, private operators) are empowered to provide water supply and sanitation services in areas with operational WDs but have limited coverage in order for addressing service provision gaps immediately. However, it is also reported that the proliferation of such utilities regulated by different water utility regulators have created frictions among regulatory agencies (e.g., Tourism Infrastructure and Enterprise Zone Authority (TIEZA) vs. NWRB in regulating water services in Boracay Island, and LWUA vs. NWRB in regulating private water utilities under joint venture with water districts).

In this survey, the regional collaboration among water utilities by merging multiple water utilities is proposed as one of the prioritized projects. In that case, the abovementioned cases of fragmentation should be noted because there may be frictions in technical operating standards or water tariff principles among targeted water utilities of the proposed projects, which can be an obstacle for the regional collaboration among water utilities.

(3) Necessity to Strengthen Regulatory Functions

The weakness of regulatory functions for water resources in the Philippines has been often stated in the related reports/documents. In this section, the confirmed affairs out of the literature survey and questionnaire survey were organized from the viewpoint of the three items, namely NWRB as a regulatory organization, resources regulation and economic regulation.

1) NWRB as a Regulatory Organization

The situation of the regulation on water resources conducted by NWRB, which is one of the major agencies for regulation, are shown in the NWRB Annual Report. In the tables below, the situation on "Adjudication for Water Permit Application" and "Adjudication for Water Use Conflicts" are summarized according to the NWRB Annual Report 2015 – 2018 (Table C-13 and Table C-14).

Table C-13 Adjudication for Water Permit Application

	2015	2016	2017	2018
(a) Water Permit Application Received	1,856	1,971	2,594	2,632
(b) Applications Carried over from Previous Years	3,413	4,320	5,192	6,630
(c) Conditional Water Permit Issued	692	712	801	823
(d) Denied Water Permit	257	387	355	391
(e) Processed Water Permit Application for Approval [(a) + (b) - ((c) + (d))]	4,320	5,192	6,630	8,048
(f) Water Permits Issued out of conditional Water Permit Approved	238	N/A	271	263

Source: NWRB Annual Report

Table C-14 Adjudication for Water Use Conflicts

	2015	2016	2017	2018
(a) Case Received	218	210	271	260
(b) Case Carried over from Previous Years	508	609	696	788
(c)Disposed/Resolved	117	123	179	193
(d) Still Under Various Stages of Investigation [(a) + (b) - (c)]	609	696	788	855

Source: NWRB Annual Report

According to the above tables, the number of applications and cases processed by NWRB has been increasing, but the number of applications and cases carried over to the next year has also been increasing more than that. This implies that NWRB has committed to process the applications and the cases they received, but their efforts cannot catch up because the number of applications and cases is on the more intensive increase. Also, PWSSMP 2019-2030 indicates that NWRB does not have the appropriate institutional structure to effectively implement its mandate.

The NWRB Annual Report 2018 reported that NWRB opened its extension offices in Visayas and Mindanao in October 2018, so NWRB has made efforts to expand its organizational structure, but it is further necessary to continuously strengthen its organizational structure, human resources, and budget for the future.

2) Resource Regulation

In this report, "Resource Regulation" includes the issuance of water permit, resolution of water use conflicts and related functions on monitoring and enforcement, in which NWRB takes the central role in the Philippines with regard to resource regulations:

- According to the NWRB Annual Report 2017, the Monitoring and Enforcement Division of the NWRB administered the inspection and verification of structures and operation of non-permittee appropriators and users involving 2,635 sources.
- Also, according to the NWRB Annual Report 2018, NWRB found 40 establishments operating without necessary water permits for their groundwater sources when it conducted the inventory water users in Boracay Island from March to May 15, 2018.

These facts imply that the issues on illegal water intakes or extractions have remained in the Philippines to some extent, although NWRB has dedicated to conduct monitoring and enforcement activities.

Furthermore, with regard to irrigation water use, the PWSSMP 2019-2030 indicates the items below as one of the reform agenda:

- Review water permits granted to NIA to free up water sources for water supply

This implies the recognition that there is room for rationalization in irrigation water uses in the Philippines. Thus, the project of water transfer through the rationalization of irrigation water use may be one of the candidates when considering the prioritized projects later.

3) Economic Regulation

In this report, "economic regulation" means the regulation on water tariff collected by water utilities. With regard to economic regulation, the following recognitions are shown in the PWSSMP 2019-2030;

- Only 27% of piped water supply providers (WSPs), mostly WDs and private WSPs, are subject to economic regulation, and leaving 73% without any standard guidelines for tariff setting or oversight on performance.
- There is no lead agency for the sector that grants and revokes licenses and sets standards for public and private WSPs. Several agencies act as economic regulators for water in the absence of a lead regulatory agency.

Regarding the above two recognition: first one implies that WSPs besides WDs or private ones (namely LGU-run, BWSA, RWSA etc.) may not be covered by adequate economic regulation

because their regulatory bodies and authorities are ambiguous; and second one may cause the issues such as the overlapping of water supply areas among multiple WSPs.

Furthermore, PWSSMP 2019-2030 especially indicates the following points with regard to economic regulation for LGU-run utilities.

- For some LGU-run utilities, tariffs cannot recover operation and maintenance (O&M) costs. These utilities are dependent on local government subsidies to compensate for O&M costs and capital expenditures.
- The structure for LGU-run utilities varies from decreasing to increasing block rates. For lower service levels, majority of tariffs are virtually non-existent. Local governments invest in replacements and maintenance. An addition of connection fees does not recover the full connection costs.
- Most LGU-run utilities perform poorly because they are not required to adhere to set national standards or targets and have limited access to financing.

The above recognition implies that some of LGU-run utilities do not receive enough revenue for operation and maintenance. Also, this recognition should be noted in consideration of the project implementation system for prioritized projects, especially if the candidates for the implementation body are LGU-run utilities.

(4) Other Issue

The issue on non-existence of allocation rules for cost and reservoir capacity in implementing multiple dam construction projects can be indicated, other than the aforementioned two major ones. This issue was indicated in the report of the 1998 Master Plan (M/P) by JICA, and such rules have not been prepared yet according to the questionnaire survey. This issue can be a hindrance when multiple dam projects are proposed for water resources development.

7. Current Actions for Improving the Issues in the Philippines

(1) The Water Resources Management Office

The Executive Order No.22 2023 for newly creating the Water Resources Management Office (WRMO) was issued on 27th April 2023. WRMO is created under the DENR and will serve as a transitory body pending the creation of the Department of Water Resources, which will be introduced in the following section.

According to the Section 1 of the draft E.O., the WRMO, in coordination with all stakeholders, shall primarily be responsible for the integration and harmonization of all government efforts and regulatory activities to ensure availability and sustainable management of water resources in the whole country. Towards this end, WRMO shall ensure the immediate implementation of

the IWRM in line with the United Nations Sustainable Development Goals, and formulate a corresponding Integrated Water Resources Master Plan (IWMP), explained later.

The outline of the E.O. is summarized in the below, and the full text of the E.O. can be obtained from the website https://www.officialgazette.gov.ph/2023/04/27/executive-order-no-22-s-2023/.

1) Functions of WRMO (Section 2)

The E.O. No.22 stipulates the function of WRMO as follows;

a. Shepard and champion, together with the Presidential Legislative Liaison Office, the passage of a law creating an apex body such as the proposed Department of Water and/or a regulatory commission on water;
b. Ensure the immediate implementation of IWRM, in line with the United Nations Sustainable Development Goals and formulate a corresponding IWMP.
c. Integrate into the IWMP the various plans of agencies including, but not limited to, the Philippine Development Plan, the Philippine Water Supply and Sanitation Master Plan, and the National Water Resource Board Water Security Master Plan;
d. Generate and maintain credible and timely water and sanitation data to aid in evidence-based policy-making, regulations, planning and implementation;
e. Collaborate closely with all relevant government agencies, LGUs, civil society, and the private sector in undertaking the above mandate and functions; and
f. Perform such other functions as the DENR Secretary assign.

2) Attached water-related agencies to the DENR (Section 3)

The following agencies are hereby attached to the DENR, and are directed to closely coordinate and collaborate with WRMO to the extent allowed by their respective mandates;

a. NWRB
b. MWSS (Corporate and Regulatory Offices)
c. LWUA and the network of local water districts; and
d. LLDA

3) Integrated Water Resources Master Plan (IWMP) (Section 4)

The IWMP, which will be formulated by WRMO, shall serve as the comprehensive national policy for the management of water resources. The objectives of the IWMP shall be as follows:

a. To harness the Philippine water supply in order to capitalize on its maximum benefit to society and the environment;
b. To effectively manage water resources by harmonizing the plans and policies of various government agencies with water-related functions;

c. To ensure that programs, including planned water infrastructure and water demand management, are resilient to extreme events and address the forecasted changes in availability, accessibility and affordability of water; and
d. To engage LGUs, the private sector and civil society organizations in crafting new policies that will result in better management of water resources.

4) Organizational Set-Up (Section 5)

The DENR Secretary, through the WRMO Undersecretary, shall formulate the organizational structure and staffing pattern of the WRMO, based on the following considerations:

a. Harmonizing of all water-related functions within the DENR
b. Strengthening the coordination functions of the WRMO with other relevant national government agencies;
c. Exercise administrative oversight functions over MWSS, LWUA and local water districts, for purpose of policy and program coordination, monitoring and evaluation;
d. Establishment of Decision Support System and a central repository of water data, as well as effect inter-sectoral, inter-agency, and inter-departmental coordination on data gathering and management, including knowledge and learning management systems; and
e. Integration of climate change and disaster and risk management in water policies, plans and programs.

Also, the DENR Regional Offices (ROs), headed by Regional Directors (RDs), shall implement the mandates, powers and function of the WRMO at the regional and field level. The existing Water Resources Utilization Section (WRUS) of the DENR ROs shall be strengthened through the hiring of additional personnel.

(2) Movement to create the Department of Water Resources (Apex Body) – and the Water Regulatory Commission (Independent Economic Regulatory Body)

In the Philippines, the creation of an apex body for water supply, sewerage, and sanitation sectors to address the institutional fragmentation has often been suggested in the past. Also, the establishment of the Department of Water Resources (DWR) as an "Apex Body" was considered by the former Duterte administration, and current President Marcos Jr. declared the creation of the DWR as one of his priorities in his first State of the Nation address in July 2022. Also, at the same time, the creation of the independent economic regulatory body in the water sector was also suggested in the Philippines.

On the other hand, the current situation is that several congress men/women have prepared and submitted bills to Congress for the establishment of DWR, but the bills have yet to be passed (as of the end of April 2023). It is expected that consultation and coordination will be enhanced towards the enactment of the bill for the future.

Here, JST introduces the House Bill No.9948, which was filed to the Congress in August 2021, as an example of such bills for establishment of DWR for your information. It should be surely noted that House Bill No.9948 is shown as one of the examples of the bills, and House Bill No.9948 itself are NOT under deliberation at present.

Meanwhile, the submitted House Bill NO. 9948 can be obtained from the below website of House of Representatives;
https://hrep-website.s3.ap-southeast-1.amazonaws.com/legisdocs/first_18/CR01115.pdf.

1) Example of Proposal for Creation of Department of Water Resources

According to the House Bill No.9948:

- The DWR shall be the primary agency responsible for the comprehensive and integrated identification and mapping of all water resources, planning policy formulation and management of ownership, appropriation, utilization, exploitation, development, and protection of water resources in the Philippines to ensure the optimal use thereof for domestic and municipal water supply, sanitation, irrigation, hydropower, industry, navigation, flood management, and recreation except fisheries or aquaculture (Section 5).
- In regard to the integration of the fragmented water related agencies:
  - LWUA, MWSS, NIA, and LLDA are supervised by the DWR as its attached agencies (Section 13 (b)).
  - The offices, functions, personnel, applicable funds and appropriations, records, equipment and property of following organizations are subsumed under the DWR (Section 13 (c)):
    - NWRB,
    - RBCO of the DENR,
    - MBCO of the DENR,
    - The Water Resources Management Division of the Bureau of Soils and Water Management of the DA,
    - The Water Supply and Sanitation Unit of the DILG, and
    - The Water Quality Management Section of the Environmental Management Bureau of the DENR.
  - ➢ The following functions of the respective agencies, bureaus, and units are transferred to the DWR (Section 13 (d)):
    - The hydrological surveys and groundwater mapping function of the Mines and Geosciences Bureau of the DENR of conducting hydrological surveys and groundwater mapping

- The hydrological surveys monitoring of stream flow and water data collection function of the Bureau of Design and Bureau of Research and Standards of the DPWH
- The protection and conservation of natural wetlands such as lakes, marshes, swamps of the Biodiversity Management Bureau of the DENR
- The planning, programming, administrating, monitoring, and management of the National Sewerage and Septage Management Program by the DPWH
- The flood management planning and sediment management function of the Flood Control Management Cluster of the DPWH
- The Water Resource Management Division and the water research functions of the Soils and Water Research Division of the Bureau of Soil and Water Management (BSWM) under DA.

- The National Water Sector Policy Board (NWSPB) shall be created to perform policymaking, coordination, integration, supervision, monitoring and evaluation functions. The NWSPB shall be composed of the Secretary of the DWR as Chairperson, the Secretary of the NEDA as Vice-Chairperson, the Secretaries of DOH, DILG, DOE, DA, DSWD, DPWH, DBM, OP, DENR, NCIP as members (Section 16 & 17).

2) Example of Proposal for Creation of an Independent Economic Regulatory Body –Water Regulatory Commission –

The House Bill No.9948 also include the proposal for the establishment of the Water Regulatory Commission (WRC), which is an independent body for economic regulation in the water sector. Here, JST introduces the outline of the proposed WRC in the House Bill.

According to the House Bill No.9948:

- The WRC, as an independent, quasi-judicial regulatory body, shall be placed under the administrative supervision of DWR, and shall have a Board of Commissioners (Section 19).
- The economic regulatory units and functions of the MWSS, NWRB, LWUA, Subic Bay Metropolitan Authority (SBMA), Philippine Economic Zone Authority (PEZA), and TIEZA are transferred to the WRC, and will collectively comprise its central regulatory unit for water supply and sanitation services, which provides services to more than one province and are owned, operated and/or maintained by special economic zones and Metro Manila concessionaires (Section 20).
- The WRC shall be subrogated with all the rights and will assume all the obligations of the Water Utilities Division of the NWRB, the regulatory offices of MWSS and LWUA, the regulatory units of all special economic zones, and all other government agencies and units and all other government agencies and units whose powers and functions have been transferred to the WRC (Section 37).

- The current employees of the Water Utilities Division of the NWRB, the regulatory offices of MWSS and LWUA, the regulatory units of all special economic zones, and all other government agencies and units whose powers and functions have been transferred to the WRC (Section 38).
- Performance audit of all water-related agencies and institutions, including LWUA and the water districts, MWSS, MWSS-RO and its concessionaires, LGU-run utilities, TIEZA, PEZA, BCDA, SBMA, DILG and NIA, shall be conducted by the DWR (Section 41).

Also, the regulatory units of the WRC shall have the powers and functions such as:

- Issue licenses authorizing the operation of water supply and sanitation services in any specified area or areas within the Philippines (Section 22 (a));
- Impose fines, charges and other penalties upon any provider and/or its officers and stockholders who shall fail or refuse to register or obtain a license prior to operation or commencement of business (Section 22 (b)); and
- Review, determine, fix and approve, consistent with the rules, guidelines, procedures and methodologies which the WRC shall provide, proposed water and sewerage and septage management tariffs, rates and charges that licensees may impose upon consumers (Section 22 (c)).

Thus, the House Bill proposes to consolidate the regulatory agencies and functions on water resources, which are now existing in a fragmented form, to WRC in order to improve economic regulation.

Meanwhile, the point to be noted is that the House Bill proposes the creation of a Water Trust Fund.

- There is hereby created a Water Trust Fund in the Bureau of Treasury of the WRC. All non-tax revenues, including raw water pricing, permit fees, registration fees, supervision and regulation enforcement fees, filing fees, testing fees, and other service income from the use of water resources shall be remitted to the Water Trust Fund. The trust fund shall be accounted separately from the government's general revenues and shall be automatically appropriated to the DWR. Proceeds from the trust fund shall be utilized for water development, water sanitation, and waste water treatment and management, and water sustainability programs and projects authorized under the Act (Section 39).

The weakness in the financial basis of NWRB has been often indicated, which is recognized as one of the reasons for the weakness of the regulatory function for water resources. In this regard, the proposal for establishing the Water Trust Fund in the House Bill should be

noted as the initiative to strengthen the financial basis for the WRC, the integrated regulatory organization.

(3) Other Actions for Coordination between Water-related Agencies

According to the NWRB annual reports, good practices for coordination between water-related agencies are introduced as follows:

1) Listahang Tubig Database

Listahang Tubig is a program to register the information on water providers covering all service levels in the Philippines and formulate the database, which is administered by NWRB in partnership with DILG and LWUA from 2014. For enhancing the program,

- In 2017, LWUA issued a Memorandum Circular reminding all WDs and RWSAs to annually update their data online at the Listahang Tubig website.
- Also in 2017, DILG issued a Memorandum to all DILG Regional Office to provide assistance to NWRB in its conducting of Re-Orientation Workshops for upgrading of the Listahang Tubig Database.

2) Development of Groundwater Management Plan and Establishment of Monitoring Wells

NWRB is working on development of Groundwater Management Plan in groundwater constraint areas or highly urbanized water constraint cities, in collaboration with LGUs, National Government Agencies (NGAs), and private and academic institutions. LGUs are involved in the identification of monitoring well's site and provision of land area to NWRB for the installation of well.

Annex-C-2 References

Laws, Decrees and Ordinances

- WATER CODE OF THE PHILIPPINES and Amended Implementing Rules and Regulations (PD No.1067)
- Reconstituting the National Water Resources Board (E.O. No.123, 2002)
- Redefining the Composition and Powers of the National Water Resources Board (E.O.No.860, 2010)
- National Water Crisis Act of 1995 (RA No.8041)
- An Act Creating the Metropolitan Waterworks and Sewerage System and Dissolving the National Waterworks and Sewerage Authority (RA No.6234)
- Transferring LWUA from DOH to DPWH (E.O.No.62, 2011)
- Provincial Water Utilities Act of 1973 (PD No.198, 1973)
- Encouraging Private Sector Participation in the Operations and Facilities of the Metropolitan Waterworks and Sewerage System (E.O. No.311, 1996)
- Revised Tariff Methodology (NWRB Resolution No.25-0818)
- the House Bill for and Act Establishing the National Framework For Water Resource Management And Creating The Department Of Water Resources And The Water Regulatory Commission, Defining Their Mandates, Powers And Functions, And Appropriatings Funds Therefore (House Bill No.9948)
- Local Government Code 1991 (RA No.7160)
- BOT Law (Republic Act N0.7718) and revised IRR
- Prescribing Procedures for Review by the Local Water Utilities Administration (LWUA) of BOT and Similar Proposals on Water Supply Projects (E.O. No68, 1999)
- Reorganizing and Renaming the BOT Center to the PPP Center of the Philippines and Transferring Its Attachment from the DTI to the NEDA and for Other Purposes (E.O.No8, 2010)
- Mandating the Inclusion of Provisions on the Use of Alternative Dispute Resolution Mechanisms in All Contracts Involving PPP Projects, BOT Projects, Joint Venture Agreements Between the Government and Private Entities and Those Entered into by LGUs (E.O No.78, 2012)
- NEDA Revised Guidelines and Procedures for Entering into Joint Venture Agreements between Government and Private Entities, 2013
- Creating the Water Resources Management Office in the Department of Environment and Natural Resources (Executive Order No.22, 2023)

Documents/Reports

- Final Report - Master plan study on water resources management in the Republic of the Philippines – (1998 JICA)
- Report on Preliminary Survey for The Master Plan and Feasibility Study for Improvement of Water Supply and Sanitation in Metro Cebu (2005 JICA)
- The Study on Integrated Water Resources Management for Poverty Alleviation and Economic Development in The Pampanga River Basin in The Republic of The Philippines (2011 JICA)
- Water Supply and Sanitation Sector, Assessment, Strategy, and Roadmap (2013 ADB)
- Water Supply and Sanitation in the Philippines Turning Finance into Services for the Future (2015 WB)
- Private Sector Provision of Water and Sanitation Services in Rural Areas and Small Towns: The Role of the Public Sector (2016 WB)
- Data Collection Survey for Formulating Development Policy of Water and Sewerage System in the Philippines (2018 JICA)
- Philippines Development Plan 2017 – 2022 (NEDA)
- The Philippine Local Government Water Sector (2020 The Philippines Institute for Development Study)
- Philippines Water Supply and Sanitation Master Plan 2019 – 2030 (NEDA)
- NWRB Annual Report 2015-2018 (NWRB)

Annex-C-3 Questionnaire on Previous Recommendation and Current Situation

1. Master Plan Study on Water Resources Management in the Republic of Philippines (August 1998)

1) Tentative Recommendation: Strengthening NWRB to Improve Water Resources Management

No	Recommendations in the report	Japan side understanding on the current situations	Comments/Answers by the Philippines side	Remarks
1	*Attach NWRB to the Office of the President and later on to the DENR as an interim measure.*	Currently, NWRB is the attached agency of DENR, transferred from DPWH, so that **this recommendation was realized**.	***NWRB Response**: By virtue of E.O. 123 issued in 2002, the NWRB was transferred from DPWH to the Office of the President. In 2010 by virtue of E.O. 860, the NWRB was transferred from the Office of the President to the DENR. ****NEDA Response**: NEDA's recent proposal to strengthen the NWRB as mentioned in the draft Executive Order (EO) on Integrating and Coordinating Management of Water Resources by Transforming and Strengthening the NWRB into the NWMC submitted to the OP-OES is to elevate the leadership of the NWRB, transform it into a Council (to be headed by the President), and lodge it to the OP to increase its clout. This, however, is still in discussion with OP-OES as the latter deems it more appropriate to retain the NWRB's leadership with DENR.	*Actual write-up emailed by Engr. Susan Abaño last May 24, 2021 ***Actual write-up emailed by NEDA on 2nd Aug 2021
2	*Replace the member representatives to the NWRB Board (such as MWSS, NIA, LWUA, etc.) who are actually stakeholders in water resources management with other agencies who have no stake in water resources.*	As per EO 860, s. 2010, board members include the secretary of DENR, NEDA, DOJ, DOST, and academia. In this regard, **this recommendation was realized**.	****NWRB Response**: This recommendation was realized. We already changed the membership of the NWRB Board due to conflict of interest. National Hydraulic Research Centre (NHRC) was added as member of the Board.	**Noted based on the Validation Meeting with NWRB last May 28, 2021
3	*Strengthen prosecution arm of NWRB by assigning Department of Justice lawyers to the agency for fixed periods and on rotation basis.*	Please tell us the current situation, whether lawyers of DOJ have been dispatched to NWRB as a prosecution arm or not.	***NWRB Response**: This has not been realized.	*Actual write-up emailed by Engr. Susan Abaño last May 24, 2021
No	**Recommendations in the report**	**Japan side understanding on the current situations**	**Comments/Answers by the Philippines side**	**Remarks**

No	Recommendations in the report	Japan side understanding on the current situations	Comments/Answers by the Philippines side	Remarks
4	Establish regional offices to effectively regulate and monitor the water resources activities on site rather from a distant central office with adequate budget.	Establishment of the regional offices of NWRB was not confirmed, so **this recommendation was NOT realized**.	****NWRB Response**: For NWRB to have regional presence, NWRB Extension Offices have been established in Visayas and Mindanao in 2018, specifically in Cebu City and Davao City, respectively as provided for in NWRB Res. No. 19-0118.	**Noted based on the Validation Meeting with NWRB last May 28, 2021
5	Approval of plans and programs of water resources agencies before its submission to the Investment Coordinating Committee (ICC) for final approval	Neither NWRB nor DENR commit to ICC, so **this recommendation was NOT realized.**	****NWRB Response**: (Engr. Abaño) I am not so sure with our policy if we're submitting to the ICC. Our plans and programs are being submitted to DENR and DBM for approval. *****NEDA Response**: Water resources agencies that submit their major programs and projects to ICC include DPWH (for flood control projects), NIA (for irrigation projects), MWSS, LWUA, and DOH (for water supply and sanitation programs and projects). These programs and projects should be aligned with the strategies as espoused in the PDP and hence, should be included in the PIP/TRIP. Thus, one of the key points in ICC project appraisal and preparation of the project evaluation reports (PERs) is to ensure the responsiveness of the proposed project to the current PDP and other sectoral programs of the government as well as inclusion in the Public Investment Plan/Three-year Rolling Infrastructure Plan. **Meanwhile, approval of master plans are under the purview of the INFRACOM.**	**Noted based on the Validation Meeting with NWRB last May 28, 2021 ***Actual write-up emailed by NEDA on 2nd Aug 2021
6	Policy making role in water resources management shall be vested in the board members of NWRB while the regulatory function of the agency should be delegated to the Executive Director and his officers.	Please let us know the current situations on the regulatory function of NWRB, whether delegated to the Executive Director and his/her officers or not.	***NWRB Response**: As per NWRB Res. No, 005-1008, the Executive Director is authorized to approve/disapprove Water Permit Applications (WPAs) for 100 lps and below, petitions for increase of volume of water granted totaling 100 lps and below and extension of Conditional Water Permit (CWP) not exceeding six months, among others. However, a monthly report of approved applications for water permit and petitions of volume granted by the Executive Director (with 100 lps and below) shall be submitted	*Actual write-up emailed by Engr. Susan Abaño last May 24, 2021

No	Recommendations in the report	Japan side understanding on the current situations	Comments/Answers by the Philippines side	Remarks
			to the Board for notation. On the other hand, WPAs for more than 100 lps, request for increase of volume of water granted or amendment of water discharge granted totaling more than 100 lps and requests for extension of CWP totaling more than six months shall have to be submitted to the Board for appropriate action. Division Chiefs of the Water Rights Division, Water Utilities Division and Monitoring and Enforcement Division are also authorized to sign certain documents (Notice of Hearings, Orders, Subpoena, etc.).	
7	Policy making function shall cover formulation and approval of guidelines, advisory role related to the day to day activities of the agencies, approval of plans and programs of NWRB and the framework of Water Resources Master Plan. This will require mobilizing offices the engineers including those specialized in dam engineering.	Please let us know the current situation on the policy making functions belong to NWRB, referring the recommendation.	***NEDA Response**: NWRB's policy-making function focuses on the following areas: resource regulation, economic and financial regulation of private WSPs, and reservoir operation of Angat Dam, and other concerns such as Integrated Water Resource Management (IWRM) and those relative to NWRB's operations. On the other hand, policy-making on water resources that would require inputs, concurrence and interventions by other agencies are deliberated in the INFRACOM-SCWR and INFRACOM-Technical Board prior to endorsing to the INFRACOM for approval/adoption. NEDA and NWRB serve as Co-Chairpersons of the INFRACOM-SCWR while NEDA and DPWH act as Co-Chairpersons of the INFRACOM-Technical Board. ***NWRB Response**: We formulate policies for water resources management and regulation. Based on the issues that arise from the different operations of NWRB, we formulate policies to be implemented so these issues will be resolved. We implement policies as solutions to resolve the issues. We submit our plans, programs, and activities to DENR for budget approval and to DBM for final approval. For dam engineering, we are only focusing on monitoring the water level of certain dams in the Philippines. We do not do the design. We only issue Water Permit for the allocation of the dams.	**Noted based on the Validation Meeting with NWRB last May 28, 2021 ***Actual write-up emailed by NEDA on 6th Aug 2021

No	Recommendations in the report	Japan side understanding on the current situations	Comments/Answers by the Philippines side	Remarks
8	Regulatory functions shall include issuance and enforcement of water rights, water allocation and water utility regulation and granting CPC and other regulatory responsibilities.	Currently, NWRB has regulatory functions for issuing water permits, and granting CPC for some kind of water service providers. On the other hand, some reports indicates that NWRB has rooms for improvement in implementing regulatory functions because of lacking manpower and financial resource.	****NWRB Response**: There is a need to improve our existing regulatory functions. It is true that we are lacking in manpower. We are only around 130 staff that regulates the entire country. For now, since we do not have regional offices, we have established extension offices (one in Cebu and one in Davao) that cater to water permit applications including investigations and monitoring. About financial resource, for now we've been improving a bit as regards our annual budget although it is not yet enough. We are still looking forward to additional budget. We have some grants from foreign aids due to the lack of budget. The grants that we have would really go to our projects especially with regard to water assessment and the actual status of our dams. These are the areas we are looking into so that we can improve our functions as a water resource regulatory body.	**Noted based on the Validation Meeting with NWRB last May 28, 2021
9	Raise water charge and impose fine on violation Revenue from water charge or fine to be allocated for the research activity and data collection on water resources	Please tell us the current situation on: 1) The collection on water charge and fine on violation. 2) How to allocate the collected water charge or fine for?	*NWRB Response: All collections of NWRB from fees and charges are remitted to the National Treasury.	*Actual write-up emailed by Engr. Susan Abaño last May 24, 2021

2) Final Recommendation: Creation of the Water Resources Authority of the Philippines (WRAP)

No	Recommendations in the report	Japan side understanding on the current situations	Comments/Answers by the Philippines side	Remarks
1	WRAP will be in the same level of authority of the National Economic Development Authority (NEDA).	The organization like the Water Resources Authority for the Philippines (WRAP) has not been created yet.	***NWRB Response**: Bills towards the creation of WRAP were filed during the 10th congress, 12th congress, 13th congress and 14th congress but were never passed. ***NEDA Response**: The functions of the said body is similar to the DWR and WRC, the creation of which is currently being deliberated in Congress. **[View from JST]** JST realized that ; 1) House Bill of an Act for creating the Department of Water Resources (DWR) and the Water Regulatory Commission (WRC) are filed to the Congress in 2019 (Not Approved at August 2021). 2) If the act is approved, DWR shall function as the overall apex body. WRC shall function as the independent and quasi-judicial regulatory body of the water supply and sanitation sub-sector.	*Actual write-up emailed by Engr. Susan Abaño last May 24, 2021 ***Actual write-up emailed by NEDA on 2nd Aug 2021
2	The Director General will have the rank of a Cabinet Secretary.			
3	WRAP can also create river basin and watershed authorities as needed by the sector.			
4	WRAP will also have field offices which will implement regulatory policies, issue licenses to parties requiring permits, monitor compliance, accumulate pertinent water data, resolved conflicts and conduct community based consultations in planning and resource allocation.			
5	The WRAP organization will have units for legal services, regulatory services, information systems and finance. Besides, the office of the Authority should be mobilized by the engineers who are specialized in dam engineering and other relevant disciplines, in order to undertake or have a strong initiative in the preparation of a Water Resources Master Plan.			
6	The field offices will carry out the operating functions of WRAP on water resources management in accordance with the guidelines provided by the national office. The field offices shall also be responsible mobilizing community based decisions on planning studies for the development and management of the water resources in their respective communities.			
7	The legislation creating the WRAP will also contain provisions which will abolish NWRB.			

2. Preliminary Survey on the Master Plan and Feasibility Study for Improvement of Water Supply and Sanitation in Metro Cebu (2005)

No	Recommendations in the report	Japan side understanding on the current situations	Comments/Answers by the Philippines side	Remarks
1	**Fragmented organizational framework**: More than 30 organizations separately deal with a lot of water issues including water supply, irrigation, hydropower generation, flood management, environmental protection. It results problems like duplication of works or friction between organizations, and water management plans are not sustainable.	The situation described in the report has not changed so much according to the other reports.	***NWRB Response**: About the difference in technical standards: - Right now, NWRB is formulating a policy (Modified Standard Rules and Regulations for Water Service Providers) that will standardize technical parameters (i.e., water pressure, liters per capita per day, and no. of hours of operation). - Upcoming stakeholders' consultation with water service providers on June ****NEDA Response**: We agree to this observation. Hence, NEDA is championing the rationalization of mandates concerning water resources, towards the creation of the apex body for the sector, i.e., the Department of Water Resources.	**Noted based on the Validation Meeting with NWRB last May 28, 2021 ***Actual write-up emailed by NEDA on 2nd Aug 2021
2	**Lack of water allocation method:** A lot of frictions stemmed from water utilization or water allocation are occurring. The current principle of Water Code, "First in time, First in right" is not suitable for fair solution for water uses at all, and the current idea of water allocation in the Philippines is not appropriate.	1) Please let us know the actual case of "friction" derived from the lack of water allocation method. 2) The report of Metro Cebu in 2005 described that Principle of water allocation in the Water Code is "First in time, first in right". Is this recognition correct?	***NWRB Response**: 2) Art. 22 of the Water Code states that "Between two or more appropriators of water from the same source of supply, priority in time of appropriation shall give the better right, except that in times of emergency the use of water for domestic and municipal purposes shall have a better right over all other uses; provided, that where water shortage is recurrent and the appropriator for municipal use has a lower priority in time of appropriation, then it shall be his duty to find an alternative source of supply in accordance with conditions prescribed by the Board". ****NEDA Response 1**: While the NWRB indeed practices the "first in time, first in right" in terms of application for water rights (further information on the operational side of the same may be inquired from NWRB), emergencies such as water scarcity would put priority on domestic water use. Such has caused problems for farmers in Bulacan relying on water supply from Angat Dam, as	*Actual write-up emailed by Engr. Susan Abaño last May 24, 2021 ***Actual write-up emailed by NEDA on 2nd Aug 2021

			low reservoir levels would reduce water releases for irrigation as releases for MWSS is prioritized. ***NEDA Response 2**: The prioritization of water resource allocation in the context of IWRM is one of the main functions of the proposed DWR. As indicated in the substitute House Bill, priority projects for water infrastructure development within a river basin, including those for WSS, irrigation, flood control and urban drainage, drought risk management, etc., shall be identified based on river basin master plans that will be developed by the DWR. Through this, inter-agency convergence on implementing multipurpose projects (e.g., dam projects for WSS, irrigation and flood control) would be easier to identify. Such will also determine possible transboundary sharing of water resources where necessary.	
8	**Vulnerability of the water use regulation:** Research activity and procedure for water permit in the jurisdiction of NWRB are not conducted appropriately because of lack of manpower and financial resources. Compulsory execution and penalties stipulated in Water Code are not implemented. The orders by NWRB are ignored in most cases, so NWRB is lacking the ability of compulsory execution.	This is the situation about 20 years ago (2005). Please let us know the view of the current situation on water use regulation by NWRB referring the recommendation.	****NWRB Response**: Fifteen years ago is a long time ago. At present, we have tremendously improved in our regulation (e.g., faster processing of water permit applications). About the implementation of penalties, we have also improved. Another issue aside from the lack of manpower is executing its order with regards to the closure of deep wells (illegal water users), the power of NWRB to enforce its order through filing of cases.	**Noted based on the Validation Meeting with NWRB last May 28, 2021
9	**Ineffective water management plan:** Important water management plans are not shared between the water related organizations.	This is the situation about 20 years ago (2005). Please let us know the current situation in view of the information sharing of water management plans between water related organizations.	****NWRB Response**: When we formulate a plan or implement a project, we conduct stakeholders' consultation with the stakeholders/users in the area where we will implement a certain plan/project. The reports containing the plan are provided to the stakeholders, who are also informed on how they could use the plan for their operation. About	**Noted based on the Validation Meeting with NWRB last May 28, 2021 ***Actual write-up emailed by NEDA on 2nd Aug 2021

			information sharing, we have the website wherein the public can view the reports and all the plans, programs, and activities of the NWRB. We have improved our relationship with our partners. ***NEDA Response**: Preparation and formulation of various master plans remain with the agencies concerned, but it is usual to create inter-agency steering committees to involve other agencies during the preparatory stages. Examples are the preparation of river basin master plans (RBMP) by the River Basin Control Office (RBCO) and flood management master plans by DPWH. The preparation of Philippine Water Supply and Sanitation Master Plan (PWSSMP) by NEDA was likewise participated by concerned agencies in the WSS sub-sector. However, while the creation of the INFRACOMSCWR provides for a single coordinating body among various agencies and organizations wherein important water management plans are discussed and shared, some master plans prepared are still not discussed in the SCWR, and the preparation of these master plans remain focused on a sectoral basis. Notwithstanding, there is a proposed national policy, to be enacted through a draft NEDA Board Resolution, wherein all major infrastructure sector master plans will undergo INFRACOM processing and approval. Said policy was discussed during the 6 April 2021 meeting of the INFRACOM-TB wherein members of the TB were requested to provide inputs on the draft NEDA Board resolution towards its refinement or concurrence thereon.	

5	**Lack of consideration of economic aspect of water:** Economic value of water is not considered with regard to the current water charge system in the Philippines, so that the system does not motivate people to use water efficiently or protect water resources.	This is the situation about 20 years ago. Please let us know the current situation on NWRB's regulatory function on water rate of water utilities, 1) Is current NWRB guideline on water rate based on the cost recovery principle? 2) Do water utilities follow the cost recovery principle when deciding water rates?	****NWRB Response**: NWRB has formulated a policy (Economic Regulatory Framework) wherein the NWRB determines the profile of the water utility during the application for a CPC. Also, we have classified the tariff increase into categories to determine how they are to be calculated and regulated. The tariff is computed depending on the category of the water utility. We have also improved in terms of the cost recovery principle. *****NEDA Response**: Section 8 of the Water Code IRR allows the Board to impose water charges based on the maximum volume of water that can be extracted or the actual volume abstracted based on metering. However, we defer to the NWRB Secretariat as regards its policy on the computation of water charges. The water rate based on cost recovery principle, on the other hand, is applied to the computation of water tariff that is imposed to the customers of private WSP. The revised Economic Regulatory Framework of NWRB allows private sector WSPs to recover capital and O&M costs and earn a return of maximum 12 percent. However, as there are multiple economic regulatory frameworks, the method of computation as well as documentary requirements and processes are not the same for all regulators.	**Noted based on the Validation Meeting with NWRB last May 28, 2021 ***Actual write-up emailed by NEDA on 2nd Aug 2021

3. "The study on integrated water resources management for poverty alleviation and economic development in the Pampanga River basin in the Republic of the Philippines" (2011)

https://openjicareport.jica.go.jp/pdf/12018974_01.pdf

No	Recommendations in the report	Japan side understanding on the current situations	Comments/Answers by the Philippines side	Remarks
1	**Strengthening of Regulation Capacity for Water Use Permits** - Required to specify the seasonal variations of allowable maximum limits of water uses, and the minimum water supply security level for water uses. - Monitoring on the actual water uses and enforcement for the proper water uses shall be strengthened.	Please let us know the current situation on regulatory functions of NWRB referring the recommendation.	****NWRB Response**: In the Water Permits that we issue, we indicate the volume or the amount of water that is allowed to be extracted from the source. It is in liters per second. It is a condition in the permit that the grantee is only allowed to get the maximum amount stated in the permit. About monitoring on the actual water uses, this is one of the functions being performed by our Monitoring and Enforcement Division, wherein they determine the actual water usage of the grantee/permitee and then validate the same with the Water Permit issued to them. If they determine that the grantee is using more than the volume stated in the permit, then that is a violation that will be subject for payment of penalty.	**Noted based on the Validation Meeting with NWRB last May 28, 2021
2	**Enhancement of Efficient Water Use and Re-allocation of Water Use Permits** - IRR shall be prepared to clarify the rules, processes, compensation and all other necessary conditions for lease and transfer of the water use permit so as to enhance the more efficient water uses.	The Water Code (Article 19) provides the lease and transfer of water permit. Does this article work in reality? If not working well, please let us know the reason.	****NWRB Response**: (Does this article work in reality?) - Yes. We have several cases wherein a Water Permit grantee requests for the transfer of the permit for reasons such as: sale of the land where the water source/deep well is located. Other entities enter in to a deed of assignment or deed of transfer contract, wherein the permitee transfers or assigns the Water Permit in whole to the other entity.	**Noted based on the Validation Meeting with NWRB last May 28, 2021

No	Recommendations in the report	Japan side understanding on the current situations	Comments/Answers by the Philippines side	Remarks
3	**Modification of Overlapping Water Charge Systems** - Required to unify the overlapping provisions on the water charges in the Water Code (NWRB is entitled to collect.) and the Local Government Code (LGU is entitled to collect.).	Japan side cannot confirm the water charge by LGUs in the literature survey. Does the Philippine have duplication in authority for water charge between multiple laws as indicated in the report?	***NWRB Response**: There are several entities in the water sector that have been given authority by law to impose fees for water such as NWRB, Laguna Lake Development Authority, Environmental Management Bureau, Protected Area Management Board , Water Districts, LGUs. The collection is not coordinated and leads to overlapping charges. There is a need to rationalize all the water fees and charges. ****NEDA Response**: the water charges (for raw water allocation) NWRB is entitled to collect is different from the fees (retail charges) imposed by an LGU-run utility for water supply and sanitation services provided. In theory, however, these should be linked inasmuch as the water charge being paid to NWRB may be a recoverable cost to the utility/water service provider in determining water tariffs.	*Actual write-up emailed by Engr. Susan Abaño last May 24, 2021 ***Actual write-up emailed by NEDA on 2nd Aug 2021
4	**Introduction of Specific Law to Enhance Multipurpose Dam Projects** - Required to establish the legal basis on the allocation rule of cost and reservoir volume for the multipurpose dam.	The recommended rules for allocating the cost and reservoir capacity for multipurpose dams between stakeholders have not been created.	****NWRB Response**: Actually we do not have yet a policy on this one, but we are working with National Irrigation Administration (NIA) and some consultants on the allocation of certain dams. We will be having a project with the University of the Philippines - Los Baños (UPLB) in terms of the Angat operation.	**Noted based on the Validation Meeting with NWRB last May 28, 2021

4. "Water Supply and Sanitation in the Philippines (Turning Finance into Services for the Future)" (2016) – World Bank

http://documents1.worldbank.org/curated/en/469111467986375600/pdf/100894-WSP-P131116-AUTHOR-Susanna-Smets-Box393244B-PUBLIC-WSP-SERIES-WSP-Philippines-WSS-Turning-Finance-into-Service-for-the-Future.pdf

No	Recommendations in the report	Japan side understanding on the current situations	Comments/Answers by the Philippines side	Remarks
1	Implement new institutional arrangement including an expanded role of NWRB as the sector regulator and its translation to National Water Resources Management Office, and the establishment of a dedicated Water and Sanitation Unit as a lead agency.	This recommended institutional arrangement has NOT realized.	****NWRB Response** :House Bill entitled "An Act Establishing the National Framework for Water Resources Management and Creating the Department of Water Resources and the Water Regulatory Commission" was filed in Congress on Oct. 2, 2019 and is pending with the Committee on Government Reorganization for final approval of the House Bill version. Once approved, crafting and approval of the Senate Bill version shall follow after which bicameral deliberation shall commence. *****NEDA Response**: The proposed creation of the NWRMO in 2012 was later tweaked after the change in administration, into the "Executive Order (EO) on Integrating and Coordinating Management of Water Resources by Transforming and Strengthening NWRB into the National Water Management Council (NWMC)". The draft EO, which was submitted to the OES in 2019, aims to strengthen the powers of the NWRB by transforming it into the NWMC and provide it with additional resources for the agency to fully carry its mandates in accordance with the Philippine Water Code. The EO, in the interim, and in the absence of an apex body for the sector and an independent economic/financial regulator for the WSS subsector, shall, among others, address the fragmentation in the water sector by providing the overarching framework for an integrated and coordinated policymaking planning and implementation of programs and projects.	**Noted based on the Validation Meeting with NWRB last May 28, 2021 ***Actual write-up emailed by NEDA on 2nd Aug 2021

No	Recommendations in the report	Japan side understanding on the current situations	Comments/Answers by the Philippines side	Remarks
2	Improve coordination mechanisms between actors at provincial and municipal levels.	Please indicate the actions for improving the coordination between provincial and municipal levels if any in the area of water resources in the Philippines.	****NWRB Response**: We also have some coordination mechanisms for the provincial and municipal levels (i.e., Listahang Tubig - a national survey of all water service providers including technical data). *****NEDA Response**: As part of the Key Reform Agenda (KRA) 1 - Establishing Effective WSS Sector Institutions of the PWAAMP, the DILG and DOH will promote the formulation of a rights-based Provincial Master Plan as the basis for the preparation of local/municipal WSS Development Plans.	**Noted based on the Validation Meeting with NWRB last May 28, 2021 ***Actual write-up emailed by NEDA on 2nd Aug 2021
3	Establish a comprehensive regulatory framework covering all types of service providers, including local government-run systems, water districts plus private and independent operators, both large and small, and consolidate these roles gradually within a national regulator.	This recommended institutional arrangement has NOT realized.	****NWRB Response**: This is still not realized. *****NEDA Response**: This issue will be addressed by consolidating agency mandates relative to economic regulation of WSS services through the creation of an independent economic regulator, the WRC.	**Noted based on the Validation Meeting with NWRB last May 28, 2021 ***Actual write-up emailed by NEDA on 2nd Aug 2021
4	Establish a dedicated rural water supply section within the "lead water and sanitation unit "to spearhead subsector strategy development, monitoring and coordination.	This recommended institutional arrangement has NOT realized.	****NWRB Response**: This is still not realized. *****NEDA Response**: The House Bill version creating the DWR proposes the inclusion of an Undersecretary for Missionary Water, which shall address water supply or services to areas that have no existing safe water supply services due to geographic limitation or absence of economic and market viability, which is common in rural areas.	**Noted based on the Validation Meeting with NWRB last May 28, 2021 ***Actual write-up emailed by NEDA on 2nd Aug 2021

5. ADB Water Supply and Sanitation Sector Assessment, Strategy, and Road Map (2013) (P11)

https://www.adb.org/sites/default/files/institutional-document/33810/files/philippines-water-supply-sector-assessment.pdf

No	Recommendations in the report	Japan side understanding on the current situations	Comments/Answers by the Philippines side	Remarks
1	More effective interagency coordination for sector planning and monitoring is thus imperative for sustainable development to become reality. **Below is the recognition at the time of issuing the ADB paper:** More than 30 different agencies in the Philippines have some role in water supply and sanitation, but there is currently no single department or body with overall responsibility for sector policy and coordination, or for overseeing implementation of sector reforms, especially outside Metro Manila. For example, the DILG, the DOH, the DPWH, and the LWUA have all at one time or another started to pursue rural water supply improvement programs based on various parameters.	In October 2011, E.O 62 created the interagency committee (Lead Agency: DPWH, Member: NEDA, DBM, DILG, the Office of the President, and other concerned agency) that was to draft master plan addressing all water sector issues.	**[View from JST]** JST looked into websites and other materials to research the activities of the inter-agency committee, but any information has been obtained. Also, any information has been obtained from the interview session to the NEDA respondent. This question should be answered from DPWH, the lead agency of the inter-agency committee, but JST could not contact DPWH about this affair. This inter-agency committee have not been worked probably.	

6. Philippines Development Plan 2017 to 2022 Water and Sanitation Targets (P19-31)

http://pdp.neda.gov.ph/wp-content/uploads/2017/01/PDP-2017-2022-10-03-2017.pdf

No	Recommendations in the report	Japan side understanding on the current situations	Comments/Answers by the Philippines side	Remarks
1	Enactment of a Law Creating an Apex Body for the Water Resources Sub sector	Japan side cannot confirm the recommended enactment of laws or establishment of new institutions like "Apex Body".	***NWRB Response**: The Department of Water Resources (DWR) proposed to be created shall function as the overall apex body for the entire water sector responsible for water resources planning, policy formulation and management of the ownership, appropriation, utilization, exploitation, development, sustainability and protection of water resources in the Philippines, except fisheries or aquaculture.	*Actual write-up emailed by Engr. Susan Abaño last May 24, 2021
2	Enactment of a Law Creating an Independent Economic or Financial Regulator for Water Supply and Sanitation		***NWRB Response**: The proposed creation of a Water Regulatory Commission (WRC) is the independent and quasi-judicial regulatory body of the water supply and sanitation sub-sector.	*Actual write-up emailed by Engr. Susan Abaño last May 24, 2021

Annex C-4 More detailed information on Water-Related Roles / Functions / Mandates of LGUs

The roles, functions and mandated of LGUs (Barangay, Municipality, City and Province) related to water which are stipulated in the Local Government Code of 1991 (Republic Act No. 7160) are organized in the below table.

Types	Roles/Functions/Mandates
Barangay	✓ Maintenance of Barangay … water supply system (Section 17 (b)(1)(v)) ✓ The Sangguniang Barangay, as the legislative body of the Barangay, shall regulate the use of … Barangay waterworks … constructed with government funds within the jurisdiction of the Barangay and charge reasonable fees for the use thereof; (Section 391 (a)(7))
Municipality	✓ Infrastructure facilities intended primarily to service the needs of the residents of the municipality and which are funded out of municipal funds including, but not limited to, … communal irrigation, small water impounding projects and other similar projects; … ; artesian wells, spring development, rainwater collectors and water supply systems; seawalls, dikes, drainage and sewerage, and flood control; … (Section 17 (b)(2)(viii)) ✓ The Sangguniang Bayan, as the legislative body of the Municipality, shall approve ordinances which shall ensure the efficient and effective delivery of the basic services as provided for under Section 17 of this Code, and in addition to said services and facilities, shall; - Provide for the establishment, maintenance, protection and conservation of communal forests and watersheds, … (Section 447 (a)(5)(i)) - Subject to existing laws, provide for the establishment, operation, maintenance, and repair of an efficient waterworks system to supply water for the inhabitants; regulate the construction, maintenance, repair and use of hydrants, pumps, cisterns and reservoirs; protect the purity and quantity of the water supply of the municipality and, for this purpose, extend the coverage of appropriate ordinances over all territory within the drainage area of said water supply and within 100 meters of the reservoir, conduit, canal, aqueduct, pumping station, or watershed used in connection with the water service; and regulate the consumption, use of wastage of water; (Section 447 (a)(5)(vii)) - Regulate the drilling and excavation of the ground for the laying of water, … (Section 447 (a)(5)(viii))
City	✓ All the services and facilities of the municipality and province … (Section 17(b)(4)) ✓ The Sungguniang Panlungsod, as the legislative body of the city, shall approve ordinances which shall ensure the efficient and effective delivery of the basic services and facilities as provided for under Section 17 of this Code, and in addition to said services and facilities, shall; - Provide for the establishment, maintenance, protection and conservation of communal forests and watersheds, …(Section 458 (a)(5)(i)) - Subject to existing laws, establish and provide for the maintenance, repair and operation of an efficient waterworks system to supply water for the inhabitants and to purify the source of the water supply; regulate the construction, maintenance, repair and use of hydrants, pumps, cisterns and reservoirs; protect purity and quantity of the water supply of the city and for this purpose, extend the coverage of appropriate ordinances over all territory within the drainage area of said water supply and within 100 meters of the reservoir, conduit, canal, aqueduct, pumping station or watershed used in connection with the water service; and regulate the consumption, use or wastage of water and fix and collect charges therefor; (Section 458 (a)(5)(vii)) - Regulate the drilling and excavation of the ground for the laying of water, … (Section 458 (a)(5)(viii))
Province	✓ Infrastructure facilities intended to service the needs of the residents of the province and which are funded out of provincial funds including, but not limited to, …; inter-municipal waterworks, drainage and sewerage, flood control, and irrigation systems; …

	(Section 17 (b)(3)(vii)) ✓ The Sungguniang Panlalawigan, as the legislative body of the province, shall approve ordinances which shall ensure the efficient and effective delivery of the basic services and facilities as provided for under Section 17 of this Code, and in addition to said services and facilities, shall; - Subject to applicable laws, facilitate or provide for the establishment and maintenance of a waterworks system or district waterworks for supplying water to inhabitants of component cities and municipalities; (Section 468 (a)(5)(ii))
Others	✓ All powers, functions, and attributes granted by Presidential Decree No. 198, otherwise known as "The Provincial Water Utility Act of 1973" to the Local Water Utilities Administration (LWUA) may be devolved in toto to the existing local water districts should they opt or choose to exercise, in writing, such powers, functions and attributes: Provided, That all obligations of the local government unit concerned to the LWUA shall first be settled prior to said devolution.

Source: Local Government Code of 1991

Annex C-5 Categorization of Local Water Districts

* Excerpted from the "Revised Local Water District Manual on Categorization, Re-Categorization and Other Related Matters (LWD-MaCRO)" issued by LWUA

A. OBJECTIVES

1. To categorize LWDs based on active service connections, assets, financial position and staff productivity;
2. To provide guidelines in determining the organizational structure, staffing pattern, position classification and salary grade allocation of positions in an LWD based on its category;
3. Streamline the categorization process for easier implementation and better monitoring by oversight agencies

B. BASES FOR CATEGORIZATION

1. LWDs are categorized into four (4), namely: A, B, C & D.
2. The categorization is a two-stage process. The initial stage is categorization based on the Number of Active Service Connections in accordance with Table 1 below:

Table C-15 SERVICE CONNECTION CATEGORY

Category	Number of Active Service Connections
A	At least 30,000
B	At least 10,000
C	At least 3,000
D	Below 3,000

Source: LWUA

3. The second stage of categorization considers the following factors: Gross Revenues, Total Assets, Net Income before Interest and Depreciation, and Staff Productivity Index. These factors will determine the Point-Rating Category. The points for each factor are shown in the following table.

Table C-16 Point Rating Category Factors/Points/Definition/Significance

Factors	Points	Definition	Significance
1. Gross Revenues	40	Gross Revenues include all cash receipts collected by the LWD from water bills and other miscellaneous service revenues.	Gross Revenues indicates the capacity of the LWD to generate revenue as well as its collection efficiency. The greater is the Gross Revenue, the greater also is the financial

Factors	Points	Definition	Significance
			responsibility of the LWD.
2. Total Assets	40	This factor includes value of assets used to carry out its operations.	This is a measure of the amount of investment on physical assets. It is indicative of the commitment to expand and improve its service.
3. Net Income Before Interest and Depreciation	15	This is the remaining amount after deducting operating expenses from operating revenues.	This provides an estimate of the amount available for debt servicing, for expansion/improvement and for reserve build-up.
4. Staff Productivity Index	5	This is the ratio of the total number of active service connections to the total number of permanent and casual employees as of December 31 of a given year.	This ratio indicates the manpower efficiency of the water district.

Source:LWUA

4. From the data on each LWD, the equivalent point rating for each factor is computed based on the tables of point ratings for the above four (4) factors specified separately. The total points earned for all factors determine the Point-Rating Category as indicated in Table 3 below:

Table C-17 POINT-RATING CATEGORY

Points Earned	Category
75 - 100	A
50 - 74	B
25 - 49	C
0 - 24	D

Source: LWUA

5. The resulting Point-Rating Category is compared with the Service Connection Category; whichever is lower, is the FINAL CATEGORY of the LWD.

Annex C-6 IWRM Experience in Japan

1. Measures against rapidly growing water demand during the period of high economic growth

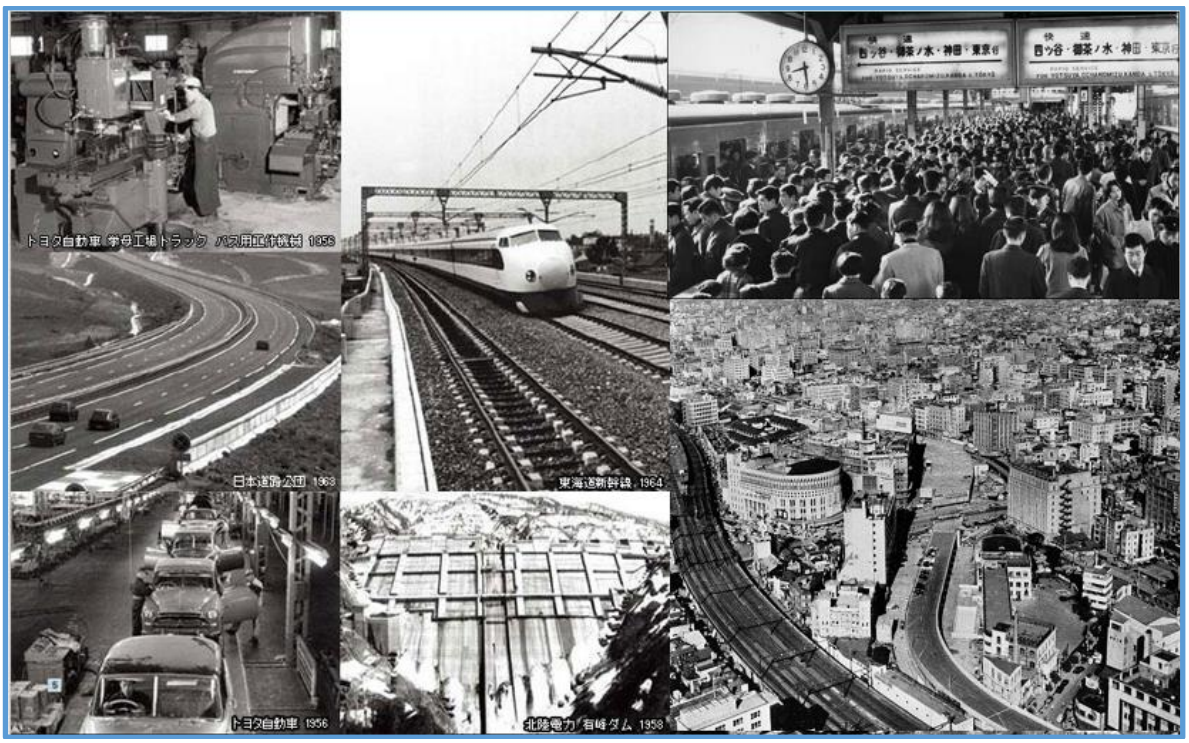
After the post-war reconstruction period ended around 1955, there was a period of high economic growth from around 1955 up to around 1973 in Japan. As a result of the significant progress in industrial development along with unprecedented urban population growth and improved living standards, the urban water demand for domestic and industrial uses also so rapidly increased that water shortage crisis emerged in many megacities especially Tokyo metropolitan area. In addition, land subsidence due to excessive groundwater extraction mainly for industrial water use became a serious concern especially in large cities like Tokyo and Osaka. In order to overcome such water shortages in large urban areas, comprehensive basin-wide planning for water resources development as well as its speedy implementation arrangement turned out to be one of the priority policy agenda of the Government of Japan (Figures 1 and 2).

2. Enactment of the Water Resources Development Promotion Law (1961)

With the backdrop mentioned above, **the Water Resources Development Promotion Law** (the Promotion Law) was enacted in 1961. In formulating this law, it was commonly understood that water resources development should be consistent with the overall framework of national economic plan and national land use plan. Furthermore, the implementation of water resources development projects for respective water users should be coordinated and be consistent with the national plans. However, in reality, there was little coordination among the four ministries*) concerned with water since the ministries made proposals, tending to cling to their own implementation arrangements being based on their vested interests. The final decision making on the institutional arrangement to execute the proposed Promotion Law was entrusted to political leadership of the incumbent Prime Minister.

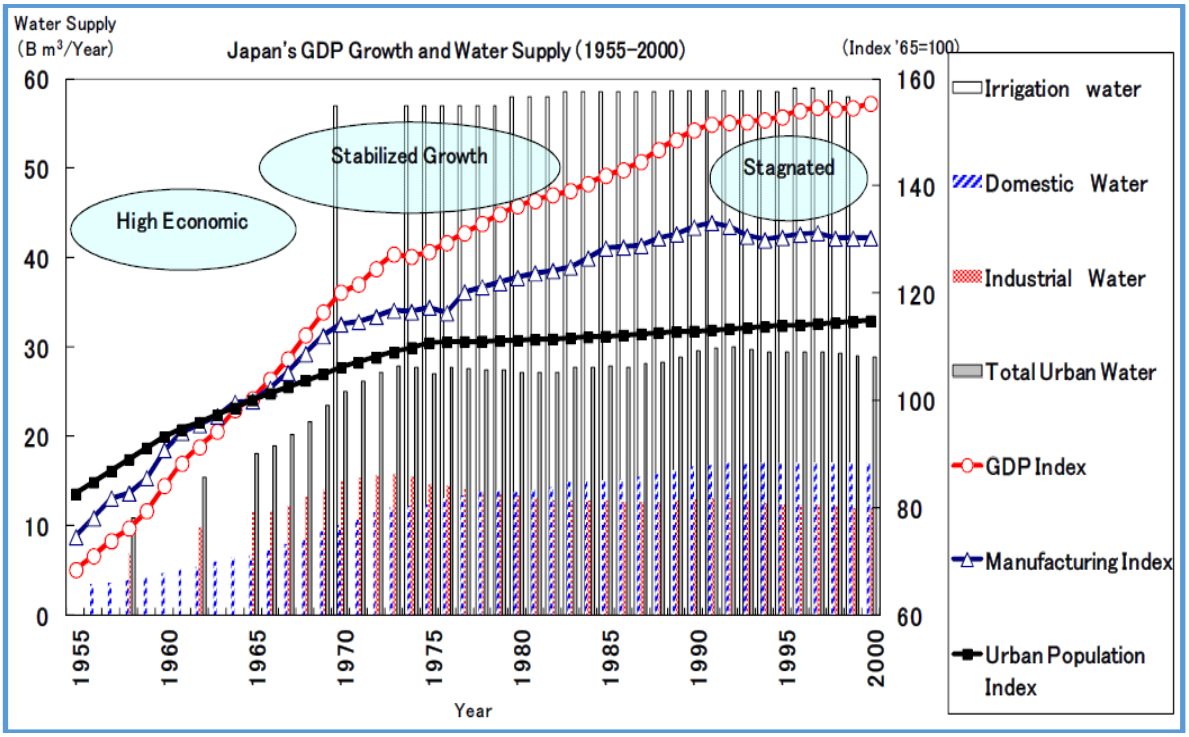
*) Four Ministries:

- The Ministry of Construction : predecessor to “the Ministry of Land, Infrastructure, Transport and Tourism (MLIT)” in charge of river management
- The Ministry of Health and Welfare : predecessor to “the Ministry of Health, Labor and Welfare (MHLW)” in charge of domestic water supply
- The Ministry of International Trade and Industry : predecessor to “the Ministry of Economy, Trade and Industry (METI)” in charge of industrial water
- The Ministry of Agriculture and Forestry : predecessor to “the Ministry of Agriculture, Forestry and Fisheries (MAFF)” in charge of agricultural water



Source: IWRM Experience in Japan

Figure C-2 Japan's Period of Rapid Economic Growth



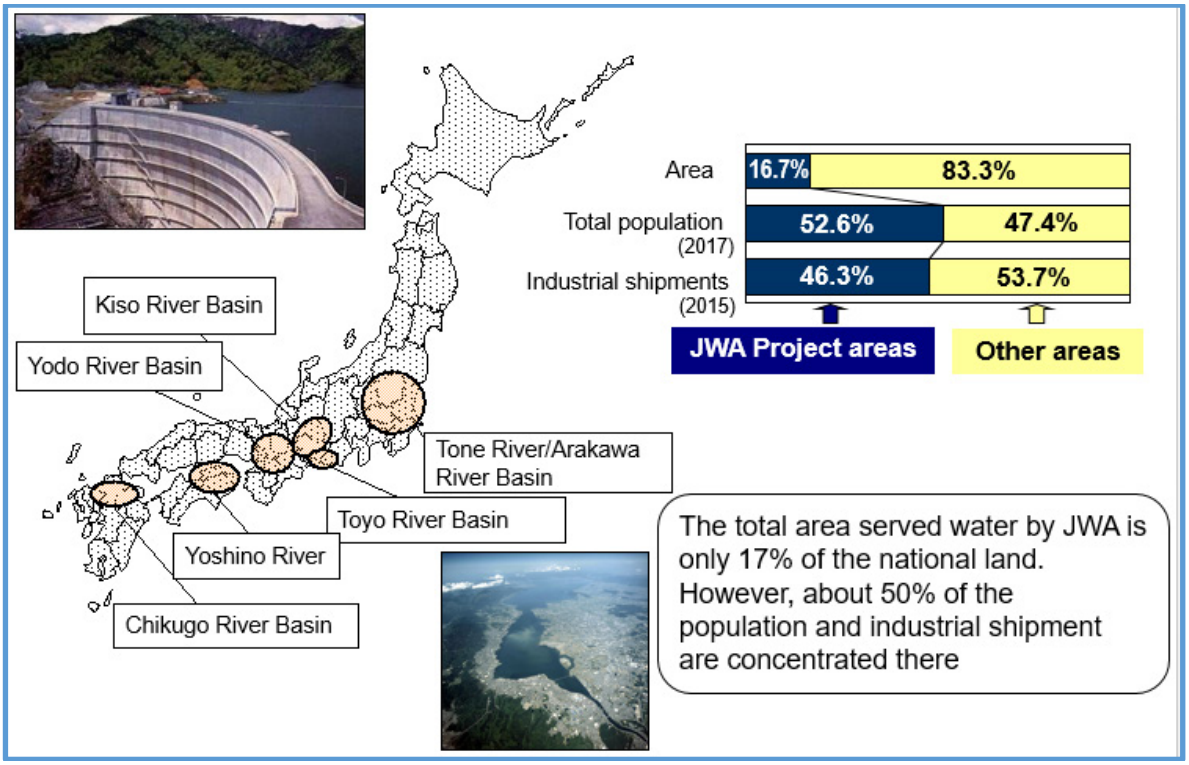
Source: IWRM Experience in Japan

Figure C-3 Japan's ODA and Water Supply (1955-2000)

Under the Promotion Law, the Minister of LIT (Minister of Construction at that time) designated river basins where water supply and demand were tight over a wide area as "River basin for water resources development" and formulated "**the Basic Plan for Water Resources Development (the Full Plan)**" for each designated river basin by 1990.

These Full Plans are based on comprehensive studies and analysis, and future water demand for various uses is predicted and facilities of water resource development including dams, canals and weirs, to meet that demand. The Full Plans is drafted by the Minister of LIT, consulted with the Minister of HLW, the Minister of AFF, the Minister of ETI, and the heads of other relevant administrative agencies. Then it is drawn up by the Minister of LIT through a cabinet decision after hearing opinions from relevant prefectural governors and the Water Resources Development Subcommittee of the National Land Development Council.

The seven designated water systems form the core of the Japanese economy: the Tone and Arakawa river basins located in the Kanto region, including the capital Tokyo; the Kiso and Toyokawa river basins located in the Tokai region, including Nagoya City; the Yodo river basin, including Osaka and Kyoto City; the Yoshino river basin in Shikoku; and the Chikugo river basin, including Fukuoka City in Kyushu. The total area of these river basins accounts for only about 17% of Japan, but they hold about 50% of the total population and GDP of Japan (Figure-3).



Source: Japan Water Agency

Figure C-4 Percentage of Japan's population and industrial shipments in the designated river basins

3. Establishment of Water Resources Public Corporation

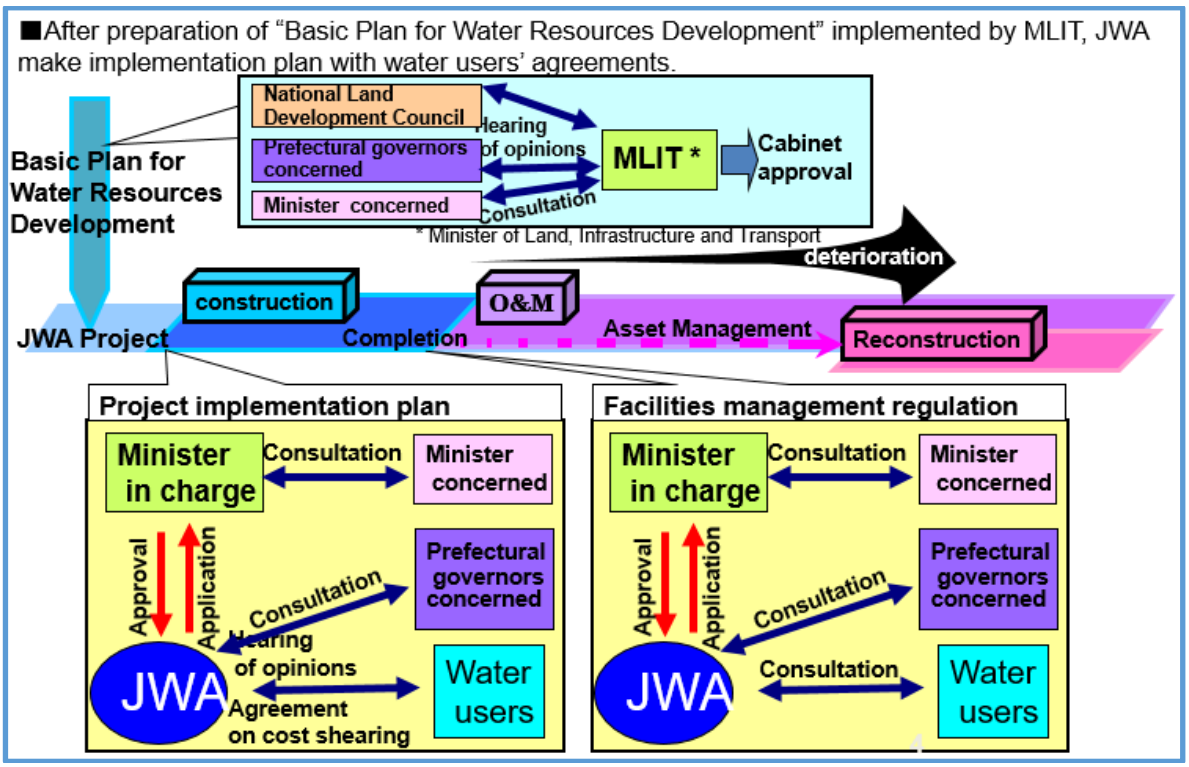
Since the 1950s, various water projects being carried out by different ministries with different implementation arrangements were found to be ineffective and be often contradictive. So it was increasingly recognized that water resources development projects such as a large -scale dam, canal and barrage, etc. should be planned and implemented in an integrated manner. Likewise, to implement the construction assignments, an intensive coordination at prefectural, inter-prefectural, and national levels became crucial and a lot of competent engineers were required. To meet these requirements, the project implementing agency that was able to mobilize necessary funds for projects from various sources including state fiscal investment, loans and subsidies of the government, and by which all the water users got involved in the implementation of projects at the request of the relevant ministries.

To this end, **the Water Resources Development Public Corporation Law (the Corporation Law)** was enacted in 1961 in conjunction with the Promotion Law, and in 1962, the Water Resources Development Public Corporation (WARDEC: the predecessor of JWA) was established as the project implementing agency.

Since the 1960s, WARDEC/JWA has been responsible for the construction and renovation works and O&M facilities specified by the Full Plans in the seven river basins under the coordination with water related ministries and stakeholders, etc. This also includes contract management of facilities that contribute to the rational use of water resources. Figure-4 illustrates procedures of these project implementations.

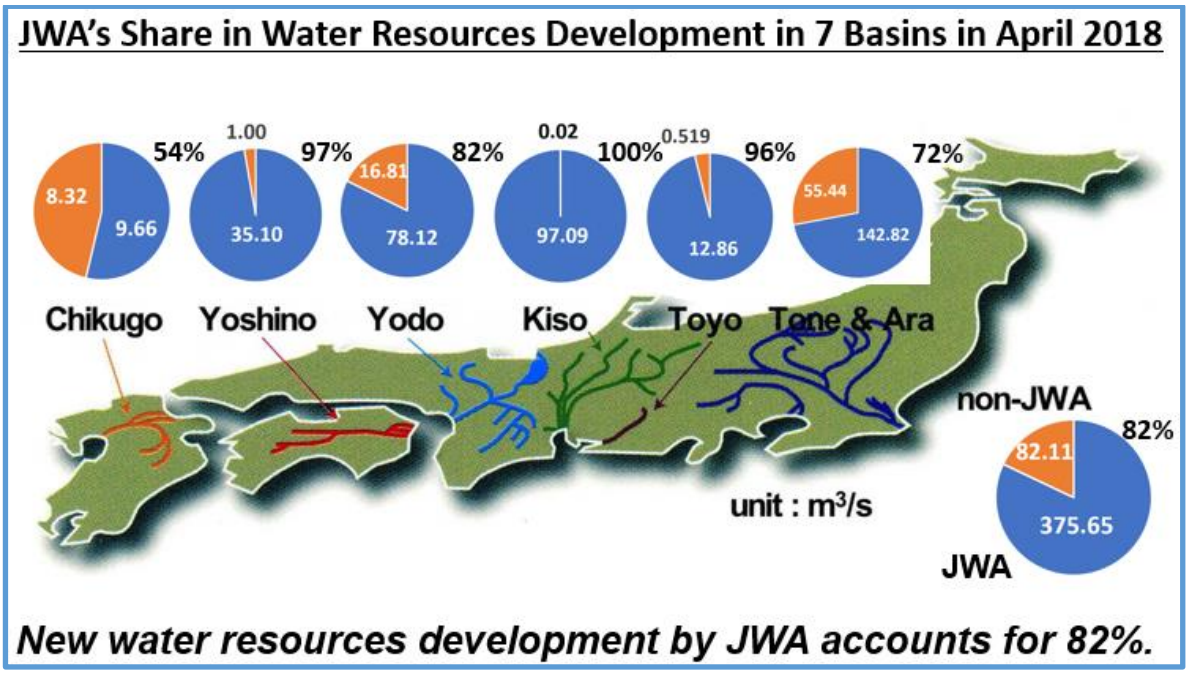
The amount of water resources developed by WARDEC/JWA in the seven river basins has been steadily increasing and now its holds more than 80% share of the total water resources, which shows that WARDEC/JWA has been playing a key role in meeting the growing water demand and, thereby has been supporting the advancement of the economy and society in Japan (Figure 5).

With respect to flood control, WARDEC/JWA' share of the total capacity of flood retention with completed reservoirs/dams in the designated river basins has been over 60%, which indicates WARDEC/JWA has made a great contribution to the mitigation of flood damage in key economic regions of Japan.



Source: Japan Water Agency

Figure C-5 Procedures for implementing construction projects and O&M operations



Source: Japan Water Agency

Figure C-6 Percentage of water resources developed by JWA in the amount of water resources developed in the seven designated river basins (as of April 2018).

Thus, JWA, as the implementing agency involved in water resources management, which is particularly important for the lives and economy of the Japanese people, has been contributing to the creation of safe and prosperous society by delivering safe, high-quality water to the people in a stable and inexpensive manner and protecting local communities from flood damage. In addition, as a group of professional water engineers, JWA is responding to the increasing extreme events that have emerged in recent years, such as extraordinary drought and flood due to recent climate change, large-scale disasters caused by earthquakes, and progress of deteriorating facilities, and is thereby supporting Japan's prosperity.

4. Project financing

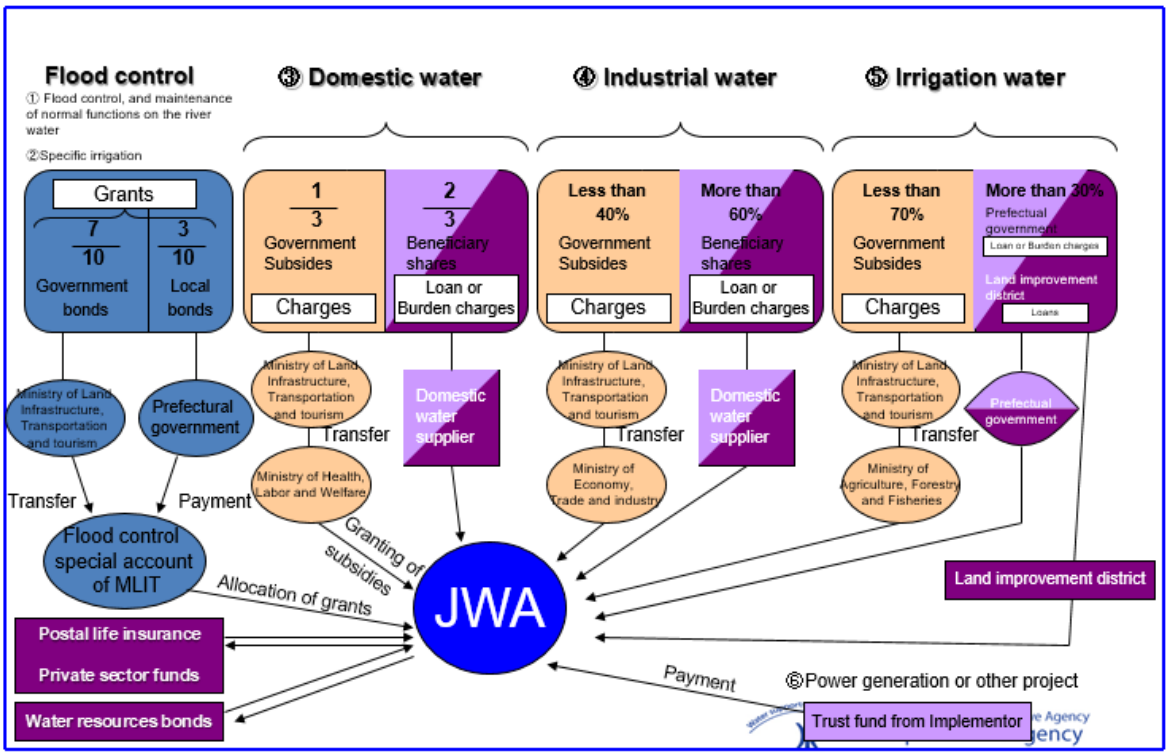
As for the financial resources for the projects implemented by JWA, a system has been established to raise the necessary project funds from various sources, including borrowings such as fiscal loan funds, government grants and subsidies, and beneficiary contributions, which allows all beneficiaries to be involved in the project implementation process.

In principle, the construction and operation costs of the facilities are borne by the beneficiaries of each project (water users, etc.), and the allocation of the cost burden is determined according to their benefits. The detailed method of cost allocation among beneficiaries relies on the “Separate Cost Replacement and Reasonable Expenditure Method” adopted from TVA (Tennessee Valley Authority), which was accorded with the Corporation Law in 1961. Regarding the construction cost of the facilities, the construction cost for flood control purposes is paid as grant from the Special Account for Social Infrastructure Development Projects operated by the Minister of LIT. This disbursed grant consists of national and local expenditures, with local expenditures financed by the general budgets of the prefectures that benefit from the flood control works. The grant for the operation of flood control facilities is financed by the full expenditure of the national government.

With regard to water utilities, subsidies are provided to construction costs, such as for those pertaining to domestic water from the MHWL, industrial water from the METI and agricultural water from the MAFF. However, in view of the degree of public nature of respective water utilities, JWA’s project is eligible for subsidies with the purpose of reducing the burden of the water consumers to some extent. In terms of the expenses required to operate and maintain the facilities, no subsidy is provided except for those relating to agricultural (irrigation) water. Subsidies eligible for agricultural water are limited to major water works such as main canals, control gates and intake facilities, and other facilities are excluded from any subsidies and the expenses are borne by the beneficiary farmers. Needless to say, the subsidies passing to JWA are all subject to strict auditing under the supervision of the respective ministers as the subsidies are sourced from national taxes that require transparency and sound accountability.

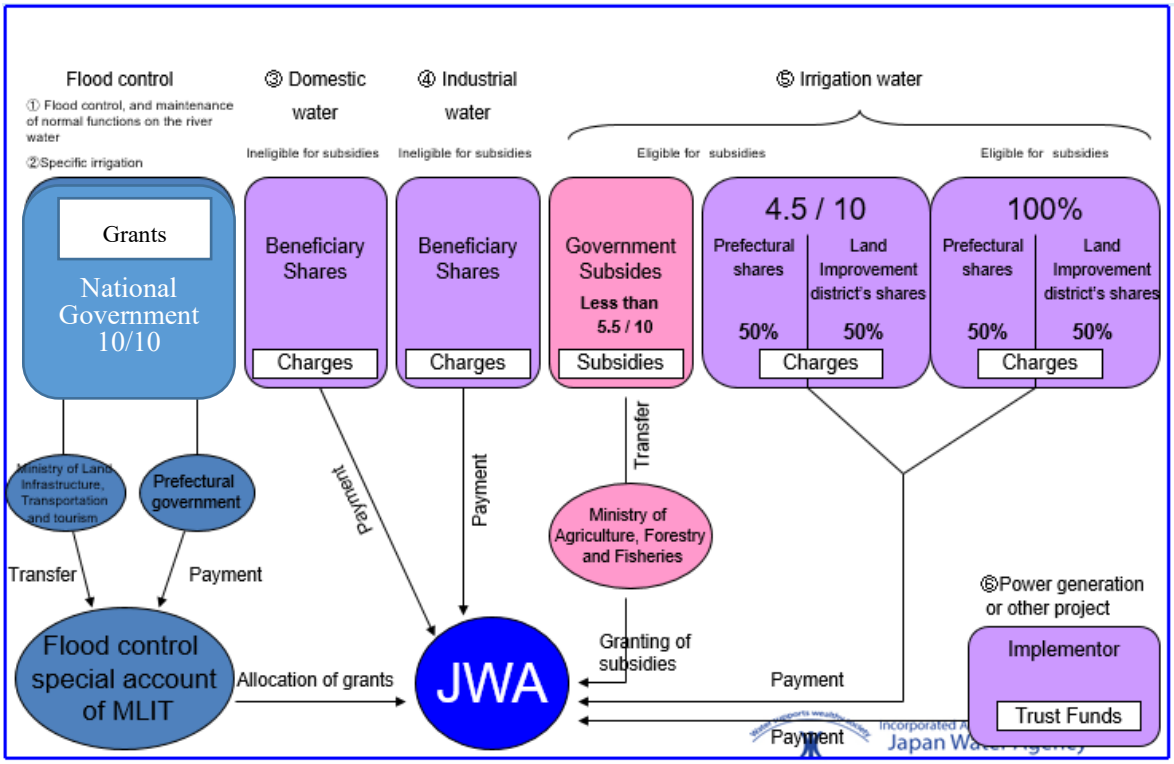
Borrowings (fiscal loan funds, etc.) for various types of water use during the construction project period will be fully borrowed by JWA on behalf of the beneficiaries, and will be repaid by the beneficiaries after the completion of the construction project. The beneficiaries can choose the repayment method,

such as installment payment, lump-sum payment, etc., according to their convenience.



Source: Japan Water Agency

Figure C-7 Allocation of financial resources for construction projects



Source: Japan Water Agency

Figure C-8 Allocation of financial resources for facility management

ANNEX E

Detailed Municipal & Industrial Water Demand Forecast

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Table E- 5 Detailed Industrial Water Demand Forecast Result of WRR VII 6

Table E- 6 Detailed Industrial Water Demand Forecast Result of WRR XI 7

1. Detailed Municipal Water Demand Forecast Result

Table E- 1 Detailed Municipal Water Demand Forecast Result of WRR V

Region	Province	City/ Municipality	Domestic Water Demand Forecast MCM/Year							Commercial Water Demand Forecast MCM/Year							Institutional Water Demand Forecast MCM/Year							Municipal Water Demand Forecast MCM/Year						
			2020	2025	2030	2035	2040	2045	2050	2020	2025	2030	2035	2040	2045	2050	2020	2025	2030	2035	2040	2045	2050	2020	2025	2030	2035	2040	2045	2050
Region IV-A CALABARZON	Quezon	TAGKAWAYAN	1.4	1.5	1.5	1.5	1.6	1.6	1.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	1.7	1.6	1.7	1.8	1.8	1.8
		Sub-total	**1.4**	**1.5**	**1.5**	**1.5**	**1.6**	**1.6**	**1.6**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**2**	**2**	**2**	**2**	**2**	**2**	**2**
		Total	**1.4**	**1.5**	**1.5**	**1.5**	**1.6**	**1.6**	**1.6**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**2**	**2**	**2**	**2**	**2**	**2**	**2**
Region V _ BICOL	Albay	BACACAY	1.9	2.0	2.0	2.1	2.3	2.4	2.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.1	2.2	2.2	2.4	2.5	2.6	2.7
		CAMALIG	1.9	2.0	2.0	2.1	2.2	2.3	2.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.1	2.2	2.2	2.4	2.5	2.6	2.7
		DARAGA (LOCSIN)	7.3	7.6	7.7	8.2	8.6	9.0	9.3	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	7.8	8.2	8.3	8.8	9.2	9.6	10.0
		GUINOBATAN	2.3	2.4	2.4	2.5	2.7	2.8	2.9	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.5	2.6	2.6	2.8	3.0	3.1	3.2
		JOVELLAR	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.6	0.6	0.6	0.7
		LEGAZPI CITY (Capital)	9.0	11.6	12.0	12.8	13.4	14.0	14.5	1.8	2.4	2.5	2.6	2.8	2.9	3.0	1.0	1.2	1.3	1.4	1.4	1.5	1.5	11.8	15.2	15.7	16.7	17.6	18.4	19.0
		LIBON	2.0	2.1	2.1	2.2	2.3	2.4	2.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.2	2.3	2.3	2.5	2.6	2.7	2.8
		CITY OF LIGAO	6.4	6.7	6.8	7.2	7.6	7.9	8.2	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	6.9	7.2	7.3	7.7	8.2	8.5	8.8
		MALILIPOT	1.1	1.1	1.1	1.2	1.3	1.3	1.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.3	1.3	1.3	1.4	1.5	1.5
		MALINAO	1.2	1.3	1.3	1.4	1.5	1.5	1.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.5	1.6	1.6	1.7	1.8
		MANITO	0.7	0.7	0.7	0.8	0.8	0.8	0.9	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.9	0.9	0.9	1.0
		OAS	1.7	1.8	1.8	1.9	2.0	2.1	2.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.1	0.1	0.1	0.1	1.9	2.0	2.0	2.2	2.3	2.4	2.5
		PIO DURAN	1.3	1.4	1.4	1.4	1.5	1.6	1.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.5	1.5	1.6	1.7	1.8	1.8
		POLANGUI	2.3	2.5	2.5	2.6	2.8	2.9	3.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.6	2.7	2.7	2.9	3.1	3.2	3.3
		RAPU-RAPU	1.0	1.0	1.0	1.1	1.1	1.2	1.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.2	1.2	1.3	1.3
		SANTO DOMINGO (LIBOG)	1.0	1.0	1.0	1.1	1.2	1.2	1.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.2	1.2	1.2	1.3	1.4	1.4
		CITY OF TABACO	7.7	8.0	8.1	8.6	9.0	9.4	9.7	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	8.2	8.6	8.7	9.2	9.7	10.2	10.5
		TIWI	1.5	1.6	1.6	1.7	1.8	1.8	1.9	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.7	1.7	1.7	1.9	1.9	2.0	2.1
		Sub-total	**50.7**	**55.2**	**55.9**	**59.5**	**62.7**	**65.4**	**67.5**	**4.9**	**5.5**	**5.7**	**6.0**	**6.3**	**6.6**	**6.8**	**1.8**	**2.1**	**2.1**	**2.3**	**2.4**	**2.5**	**2.6**	**57.4**	**62.8**	**63.7**	**67.8**	**71.4**	**74.5**	**76.9**
	Camarines Norte	BASUD	1.2	1.2	1.3	1.4	1.5	1.6	1.7	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.4	1.4	1.6	1.7	1.8	1.9
		CAPALONGA	1.0	1.0	1.0	1.1	1.2	1.3	1.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.3	1.4	1.5	1.6
		DAET (Capital)	6.1	6.4	6.6	7.2	7.8	8.3	8.9	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	6.5	6.9	7.1	7.7	8.4	9.0	9.6
		SAN LORENZO RUIZ (IMELDA)	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.6	0.6	0.7
		JOSE PANGANIBAN	1.7	1.8	1.8	2.0	2.1	2.3	2.5	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.1	0.1	0.1	0.1	1.9	2.0	2.0	2.2	2.4	2.6	2.7
		LABO	5.9	6.2	6.4	7.0	7.6	8.2	8.7	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	6.4	6.7	6.9	7.6	8.2	8.8	9.3
		MERCEDES	1.5	1.5	1.6	1.7	1.9	2.0	2.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.1	1.6	1.7	1.8	1.9	2.1	2.2	2.4
		PARACALE	1.6	1.7	1.7	1.9	2.0	2.2	2.3	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.1	1.8	1.8	1.9	2.1	2.2	2.4	2.6
		SAN VICENTE	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.5	0.5	0.5
		SANTA ELENA	1.1	1.2	1.2	1.4	1.5	1.6	1.7	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.4	1.5	1.6	1.8	1.9
		TALISAY	0.7	0.8	0.8	0.8	0.9	1.0	1.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.9	0.9	1.0	1.1	1.2
		VINZONS	1.3	1.4	1.4	1.5	1.7	1.8	1.9	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.4	1.5	1.6	1.7	1.8	2.0	2.1
		Sub-total	**22.8**	**23.9**	**24.7**	**26.9**	**29.2**	**31.3**	**33.3**	**1.6**	**1.7**	**1.8**	**1.9**	**2.1**	**2.3**	**2.4**	**0.4**	**0.5**	**0.5**	**0.5**	**0.6**	**0.6**	**0.7**	**24.9**	**26.1**	**27.0**	**29.4**	**31.8**	**34.2**	**36.4**
	Camarines Sur	BAAO	1.6	1.7	1.7	1.9	2.0	2.1	2.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.1	1.8	1.9	1.9	2.1	2.2	2.3	2.5
		BALATAN	0.8	0.8	0.9	0.9	1.0	1.1	1.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	1.0	1.0	1.1	1.2	1.2
		BATO	1.4	1.4	1.5	1.6	1.7	1.8	1.9	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.6	1.6	1.8	1.9	2.0	2.1
		BOMBON	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.6	0.6	0.6	0.7	0.7
		BUHI	2.1	2.2	2.3	2.5	2.6	2.8	2.9	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.4	2.5	2.5	2.7	2.9	3.1	3.2
		BULA	1.9	2.0	2.1	2.2	2.4	2.5	2.6	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.1	2.2	2.3	2.5	2.6	2.8	2.9
		CABUSAO	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.7	0.7	0.8
		CALABANGA	2.3	2.4	2.5	2.7	2.9	3.1	3.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.6	2.7	2.8	3.0	3.2	3.4	3.6
		CAMALIGAN	1.8	1.7	1.8	2.3	2.4	2.6	2.7	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.2	2.1	2.3	2.8	3.0	3.2	3.3
		CANAMAN	0.9	0.8	0.9	1.0	1.1	1.1	1.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.1	1.1	1.0	1.1	1.2	1.3	1.4	1.4
		CARAMOAN	1.4	1.4	1.5	1.6	1.7	1.8	1.9	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.6	1.6	1.7	1.9	2.0	2.1
		DEL GALLEGO	0.7	0.7	0.7	0.8	0.9	0.9	0.9	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.9	1.0	1.0	1.1
		GAINZA	0.8	0.8	0.8	1.0	1.1	1.2	1.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.1	1.0	1.0	1.1	1.3	1.4	1.5	1.5
		GARCHITORENA	0.8	0.8	0.8	0.9	1.0	1.0	1.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9	1.0	1.1	1.1	1.2
		GOA	1.9	2.0	2.0	2.2	2.3	2.5	2.6	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.1	2.2	2.2	2.4	2.6	2.7	2.9
		IRIGA CITY	6.2	6.5	6.6	7.2	7.7	8.1	8.5	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	6.7	7.0	7.1	7.7	8.2	8.7	9.1
		LAGONOY	1.5	1.6	1.6	1.7	1.8	1.9	2.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.1	1.7	1.7	1.8	1.9	2.0	2.2	2.3
		LIBMANAN	6.1	6.4	6.5	7.1	7.6	8.0	8.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	6.6	6.9	7.0	7.6	8.1	8.6	9.0
		LUPI	0.9	0.9	1.0	1.0	1.1	1.2	1.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.1	1.1	1.2	1.3	1.4
		MAGARAO	1.9	1.8	2.0	2.4	2.6	2.7	2.9	0.4	0.3	0.4	0.5	0.5	0.5	0.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.4	2.2	2.4	3.0	3.2	3.4	3.6
		MILAOR	0.9	0.9	1.0	1.0	1.1	1.2	1.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.1	1.1	1.2	1.3	1.4
		MINALABAC	1.4	1.5	1.5	1.6	1.8	1.9	1.9	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.6	1.6	1.7	1.8	1.9	2.1	2.2
		NABUA	2.3	2.4	2.4	2.6	2.8	3.0	3.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.5	2.6	2.7	2.9	3.1	3.3	3.5
		NAGA CITY	15.0	14.1	15.3	19.0	20.3	21.5	22.5	2.9	2.7	3.0	3.7	3.9	4.2	4.4	0.7	0.6	0.7	0.9	0.9	1.0	1.0	18.6	17.4	19.0	23.5	25.1	26.6	27.8
		OCAMPO	1.3	1.4	1.4	1.6	1.7	1.8	1.8	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.6	1.6	1.7	1.8	2.0	2.0
		PAMPLONA	1.0	1.1	1.1	1.2	1.3	1.4	1.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.3	1.4	1.5	1.6
		PASACAO	1.4	1.5	1.5	1.6	1.7	1.8	1.9	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.6	1.6	1.7	1.8	1.9	2.0	2.1
		PILI (Capital)	2.6	2.7	2.8	3.0	3.2	3.4	3.6	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.9	3.0	3.1	3.3	3.6	3.8	4.0
		PRESENTACION (PARUBCAN)	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.8	0.8	0.9	0.9
		RAGAY	1.6	1.6	1.7	1.8	1.9	2.1	2.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.1	1.7	1.8	1.9	2.0	2.2	2.3	2.4
		SAGÑAY	1.0	1.0	1.0	1.1	1.2	1.3	1.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.2	1.3	1.4	1.5
		SAN FERNANDO	1.0	1.1	1.1	1.2	1.3	1.3	1.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.2	1.2	1.3	1.4	1.5	1.5
		SAN JOSE	1.2	1.2	1.2	1.3	1.4	1.5	1.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.4	1.5	1.6	1.7	1.8
		SIPOCOT	1.8	1.9	1.9	2.1	2.2	2.3	2.5	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.1	0.1	0.1	0.1	0.1	2.0	2.1	2.1	2.3	2.5	2.6	2.7
		SIRUMA	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.7	0.7	0.7	0.8
		TIGAON	1.6	1.7	1.7	1.8	2.0	2.1	2.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.1	1.8	1.8	1.9	2.0	2.2	2.3	2.4
		TINAMBAC	1.8	1.9	2.0	2.1	2.3	2.4	2.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.1	0.1	0.1	0.1	0.1	0.1	2.1	2.1	2.2	2.4	2.5	2.7	2.8
		Sub-total	**73.2**	**74.0**	**77.1**	**86.4**	**92.4**	**97.8**	**102.4**	**8.1**	**8.0**	**8.5**	**9.7**	**10.4**	**11.0**	**11.5**	**2.2**	**2.2**	**2.3**	**2.6**	**2.8**	**2.9**	**3.1**	**83.5**	**84.2**	**87.8**	**98.7**	**105.6**	**111.8**	**117.1**
	Catanduanes	BAGAMANOC	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.4	0.4	0.5	0.5
		BARAS	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.5	0.5	0.6	0.6
		BATO	0.6	0.6	0.6	0.7	0.7	0.8	0.9	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.7	0.7	0.8	0.8	0.9	1.0
		CARAMORAN	0.8	0.9	0.9	1.0	1.1	1.2	1.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.0	1.0	1.1	1.2	1.3	1.4
		GIGMOTO	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.3	0.4	0.4
		PANDAN	0.6	0.6	0.6	0.7	0.7	0.8	0.9	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.7	0.7	0.8	0.9	0.9
		PANGANIBAN (PAYO)	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.4	0.4	0.4
		SAN ANDRES (CALOLBON)	1.0	1.0	1.1	1.2	1.3	1.4	1.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.2	1.2	1.3	1.5	1.6	1.7
		SAN MIGUEL	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.6	0.6	0.7
		VIGA	0.6	0.6	0.6	0.7	0.8	0.8	0.9	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.8	0.9	0.9	1.0
		VIRAC (Capital)	4.0	4.0	4.2	4.6	5.0	5.3	5.6	0.8	0.8	0.9	0.9	1.0	1.1	1.1	0.4	0.4	0.4	0.5	0.5	0.6	0.6	5.2	5.2	5.6	6.0	6.5	7.0	7.3
		Sub-total	**9.1**	**9.3**	**9.8**	**10.7**	**11.6**	**12.5**	**13.4**	**1.2**	**1.3**	**1.3**	**1.5**	**1.6**	**1.7**	**1.8**	**0.6**	**0.6**	**0.6**	**0.7**	**0.7**	**0.8**	**0.8**	**10.9**	**11.1**	**11.7**	**12.8**	**13.9**	**15.0**	**16.0**

Region	Province	City/ Municipality	Domestic Water Demand Forecast MCM/Year							Commercial Water Demand Forecast MCM/Year							Institutional Water Demand Forecast MCM/Year							Municipal Water Demand Forecast MCM/Year						
			2020	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
Region V_ BICOL	Masbate	AROROY	2.3	2.4	2.5	2.7	2.9	3.1	3.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.6	2.7	2.8	3.0	3.2	3.4	3.6
		BALENO	0.8	0.8	0.8	0.9	1.0	1.0	1.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.9	0.9	1.0	1.1	1.1	1.2
		BALUD	1.1	1.1	1.1	1.2	1.3	1.4	1.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.3	1.4	1.5	1.6	1.7
		BATUAN	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.5	0.5	0.5	0.6	0.6
		CATAINGAN	1.3	1.4	1.4	1.6	1.7	1.8	1.9	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.5	1.5	1.6	1.7	1.9	2.0	2.1
		CAWAYAN	1.8	1.9	2.0	2.1	2.3	2.4	2.6	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.1	0.1	0.1	0.1	0.1	0.1	2.0	2.1	2.2	2.4	2.5	2.7	2.9
		CLAVERIA	1.1	1.1	1.2	1.3	1.4	1.5	1.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.3	1.3	1.4	1.5	1.6	1.7
		DIMASALANG	0.7	0.7	0.7	0.8	0.8	0.9	0.9	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.8	0.8	0.8	0.9	1.0	1.0
		ESPERANZA	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.6	0.6	0.7	0.7
		MANDAON	1.2	1.2	1.2	1.4	1.5	1.6	1.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.4	1.5	1.6	1.7	1.8
		CITY OF MASBATE (Capital)	5.5	4.9	4.6	4.5	4.9	5.2	5.5	1.1	1.0	0.9	0.9	1.0	1.1	1.1	0.6	0.5	0.5	0.5	0.5	0.6	0.6	7.2	6.4	6.1	5.9	6.4	6.8	7.2
		MILAGROS	1.5	1.6	1.6	1.8	1.9	2.0	2.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.1	1.7	1.7	1.8	2.0	2.1	2.2	2.4
		MOBO	2.1	1.9	1.8	1.8	1.9	2.0	2.1	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	2.8	2.5	2.4	2.3	2.5	2.7	2.8
		MONREAL	0.7	0.7	0.7	0.8	0.8	0.9	0.9	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.8	0.8	0.9	0.9	1.0	1.0
		PALANAS	0.7	0.7	0.8	0.8	0.9	1.0	1.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.9	0.9	1.0	1.1	1.1
		PIO V. CORPUZ (LIMBUHAN)	0.6	0.6	0.7	0.7	0.8	0.8	0.9	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.8	0.9	0.9	1.0
		PLACER	1.5	1.5	1.6	1.7	1.9	2.0	2.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.1	1.6	1.7	1.8	1.9	2.1	2.2	2.3
		SAN FERNANDO	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.7	0.7	0.7	0.8	0.8	0.9
		SAN JACINTO	0.8	0.8	0.8	0.9	1.0	1.0	1.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9	1.0	1.1	1.2	1.2
		SAN PASCUAL	1.2	1.2	1.2	1.4	1.5	1.6	1.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.4	1.5	1.6	1.7	1.8
		USON	1.5	1.6	1.6	1.8	1.9	2.0	2.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.1	1.7	1.7	1.8	1.9	2.1	2.2	2.4
		Sub-total	**27.7**	**27.6**	**27.9**	**29.7**	**32.0**	**34.0**	**35.9**	**3.2**	**3.1**	**3.1**	**3.2**	**3.5**	**3.7**	**3.9**	**1.3**	**1.3**	**1.3**	**1.3**	**1.4**	**1.5**	**1.6**	**32.3**	**32.0**	**32.3**	**34.2**	**36.8**	**39.2**	**41.4**
	Sorsogon	BARCELONA	0.6	0.6	0.6	0.6	0.7	0.7	0.8	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.7	0.7	0.8	0.8	0.9
		BULAN	5.7	6.0	6.2	6.7	7.2	7.7	8.1	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	6.2	6.5	6.6	7.2	7.8	8.3	8.8
		BULUSAN	0.6	0.7	0.7	0.7	0.8	0.8	0.9	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.8	0.8	0.9	0.9	1.0
		CASIGURAN	0.9	1.0	1.0	1.1	1.2	1.3	1.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.1	1.1	1.2	1.3	1.4	1.5
		CASTILLA	1.6	1.7	1.7	1.9	2.0	2.2	2.3	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.1	0.1	0.1	0.1	1.8	1.9	1.9	2.1	2.2	2.4	2.5
		DONSOL	1.3	1.4	1.4	1.6	1.7	1.8	1.9	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.5	1.5	1.6	1.7	1.9	2.0	2.1
		GUBAT	1.6	1.7	1.7	1.9	2.0	2.1	2.3	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.1	1.8	1.8	1.9	2.1	2.2	2.4	2.5
		IROSIN	1.6	1.6	1.7	1.8	2.0	2.1	2.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.1	1.7	1.8	1.9	2.0	2.2	2.3	2.5
		JUBAN	0.9	1.0	1.0	1.1	1.2	1.3	1.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.1	1.1	1.2	1.3	1.4	1.5
		MAGALLANES	1.0	1.0	1.1	1.2	1.2	1.3	1.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.2	1.3	1.4	1.5	1.6
		MATNOG	1.1	1.2	1.2	1.3	1.4	1.5	1.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.3	1.3	1.4	1.6	1.7	1.7
		PILAR	2.0	2.1	2.2	2.3	2.5	2.7	2.8	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.2	2.3	2.4	2.6	2.8	3.0	3.1
		PRIETO DIAZ	0.6	0.6	0.6	0.7	0.8	0.8	0.8	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.8	0.8	0.9	0.9
		SANTA MAGDALENA	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.6	0.6	0.7	0.7
		CITY OF SORSOGON (Capital)	9.9	10.4	10.7	11.6	12.5	13.4	14.1	0.6	0.7	0.7	0.7	0.8	0.8	0.9	0.1	0.1	0.1	0.2	0.2	0.2	0.2	10.7	11.2	11.5	12.5	13.5	14.4	15.2
		Sub-total	**29.9**	**31.4**	**32.3**	**35.1**	**37.8**	**40.3**	**42.5**	**2.2**	**2.3**	**2.3**	**2.5**	**2.7**	**2.9**	**3.1**	**0.6**	**0.6**	**0.6**	**0.7**	**0.7**	**0.8**	**0.8**	**32.6**	**34.3**	**35.3**	**38.3**	**41.2**	**44.0**	**46.4**
		Total	**213.4**	**221.5**	**227.7**	**248.3**	**265.5**	**281.3**	**295.1**	**21.3**	**22.0**	**22.7**	**24.9**	**26.7**	**28.2**	**29.6**	**6.9**	**7.2**	**7.4**	**8.0**	**8.6**	**9.1**	**9.5**	**241.6**	**250.6**	**257.7**	**281.3**	**300.8**	**318.6**	**334.2**
		Grand Total for WRR V	**214.8**	**222.9**	**229.1**	**249.8**	**267.1**	**282.9**	**296.7**	**21.4**	**22.1**	**22.8**	**25.1**	**26.8**	**28.4**	**29.7**	**6.9**	**7.2**	**7.4**	**8.1**	**8.6**	**9.1**	**9.6**	**243.2**	**252.3**	**259.4**	**283.0**	**302.5**	**320.4**	**335.9**

Source: JICA Study Team

Table E- 2 Detailed Municipal Water Demand Forecast Result of WRR VII

Region	Province	City/ Municipality	Domestic Water Demand Forecast MCM/Year							Commercial Water Demand Forecast MCM/Year							Institutional Water Demand Forecast MCM/Year							Municipal Water Demand Forecast MCM/Year						
			2020	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
Region VI WESTERN VISAYAS	Negros Occidental	CANDONI	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.8	0.8	0.8
		HINOBA-AN (ASIA)	1.6	1.6	1.6	1.7	1.8	1.8	1.9	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.8	1.8	1.8	1.9	2.0	2.0	2.1
		ILOG	1.6	1.6	1.6	1.7	1.8	1.8	1.9	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	1.8	1.8	1.9	1.9	2.0	2.1
		Sub-total	3.9	4.0	4.0	4.2	4.4	4.5	4.6	**0.3**	**0.3**	**0.3**	**0.3**	**0.4**	**0.4**	**0.4**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	4.2	4.3	4.3	4.5	4.7	4.8	5.0
		Total	**3.9**	**4.0**	**4.0**	**4.2**	**4.4**	**4.5**	**4.6**	**0.3**	**0.3**	**0.3**	**0.3**	**0.4**	**0.4**	**0.4**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**4.2**	**4.3**	**4.3**	**4.5**	**4.7**	**4.8**	**5.0**
Region VII_CENTRAL VISAYAS	Bohol	ALBURQUERQUE	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.4	0.4	0.4	0.4
		ALICIA	0.6	0.7	0.7	0.7	0.8	0.8	0.9	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.8	0.9	0.9	1.0
		ANDA	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.6	0.6	0.7	0.7
		ANTEQUERA	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.5	0.5	0.5	0.5	0.6	0.6
		BACLAYON	1.4	1.4	1.6	1.7	2.0	2.1	2.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.1	0.1	0.1	0.1	0.2	0.2	0.2	1.7	1.8	2.1	2.2	2.5	2.7	2.8
		BALILIHAN	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.6	0.6	0.6	0.7	0.7	0.7
		BATUAN	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.5	0.5	0.5	0.6
		BILAR	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.6	0.6	0.6	0.7	0.7	0.7
		BUENAVISTA	0.8	0.8	0.8	0.9	0.9	1.0	1.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9	1.0	1.1	1.1	1.2
		CALAPE	0.9	0.9	0.9	1.0	1.1	1.1	1.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.1	1.2	1.2	1.3
		CANDIJAY	0.8	0.8	0.8	0.9	1.0	1.0	1.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9	1.0	1.1	1.1	1.2
		CARMEN	1.3	1.3	1.4	1.5	1.6	1.7	1.8	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.5	1.5	1.6	1.7	1.9	2.0
		CATIGBIAN	0.6	0.6	0.7	0.7	0.8	0.8	0.9	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.8	0.8	0.9	1.0
		CLARIN	0.6	0.6	0.6	0.6	0.7	0.7	0.8	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.7	0.7	0.8	0.8
		CORELLA	0.6	0.6	0.7	0.7	0.8	0.9	0.9	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.7	0.8	0.9	0.9	1.1	1.1	1.2
		CORTES	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.6	0.6	0.6	0.6	0.7	0.7
		DAGOHOY	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.7	0.7	0.7	0.8
		DANAO	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.7	0.7	0.8	0.8
		DAUIS	3.2	3.3	3.8	4.1	4.6	4.9	5.2	0.6	0.6	0.7	0.8	0.8	0.9	1.0	0.3	0.3	0.3	0.3	0.4	0.4	0.4	4.1	4.2	4.8	5.2	5.8	6.2	6.6
		DIMIAO	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.5	0.5	0.5	0.6	0.6
		DUERO	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.7	0.7	0.8
		GARCIA HERNANDEZ	0.6	0.7	0.7	0.7	0.8	0.8	0.9	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.8	0.9	0.9	1.0
		GUINDULMAN	0.9	0.9	0.9	1.0	1.1	1.2	1.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.1	1.2	1.3	1.4
		INABANGA	1.3	1.3	1.3	1.4	1.5	1.6	1.7	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.5	1.5	1.6	1.7	1.8	1.9
		JAGNA	0.9	1.0	1.0	1.1	1.1	1.2	1.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.1	1.1	1.2	1.3	1.3	1.4
		GETAFE	0.9	0.9	0.9	1.0	1.1	1.1	1.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.1	1.2	1.3	1.3
		LILA	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.5	0.5
		LOAY	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.6	0.6	0.7	0.7
		LOBOC	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.6	0.6	0.7	0.7
		LOON	1.2	1.2	1.2	1.3	1.4	1.5	1.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.4	1.5	1.6	1.7	1.8
		MABINI	0.8	0.8	0.8	0.9	0.9	1.0	1.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.9	0.9	0.9	1.0	1.1	1.1
		MARIBOJOC	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.7	0.7	0.7	0.8	0.8	0.9
		PANGLAO	1.1	1.1	1.1	1.2	1.3	1.4	1.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.3	1.4	1.5	1.6
		PILAR	0.8	0.8	0.8	0.9	0.9	1.0	1.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.9	0.9	0.9	1.0	1.1	1.1
		PRES. CARLOS P. GARCIA (PITOGO)	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.8	0.8	0.9	0.9
		SAGBAYAN (BORJA)	0.6	0.7	0.7	0.7	0.8	0.8	0.9	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.8	0.9	0.9	1.0
		SAN ISIDRO	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.4	0.4	0.4
		SAN MIGUEL	0.7	0.7	0.7	0.8	0.8	0.9	0.9	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.8	0.8	0.8	0.9	1.0	1.0
		SEVILLA	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.4	0.4	0.4	0.5
		SIERRA BULLONES	0.7	0.7	0.7	0.8	0.8	0.9	0.9	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.9	0.9	1.0	1.0
		SIKATUNA	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.2	0.3	0.3
		TAGBILARAN CITY (Capital)	6.4	6.6	7.6	8.2	9.2	9.8	10.4	1.2	1.2	1.4	1.5	1.7	1.8	1.9	0.5	0.5	0.6	0.7	0.7	0.8	0.8	8.1	8.4	9.6	10.3	11.6	12.4	13.1

Region	Province	City/ Municipality	Domestic Water Demand Forecast MCM/Year							Commercial Water Demand Forecast MCM/Year							Institutional Water Demand Forecast MCM/Year							Municipal Water Demand Forecast MCM/Year						
			2020	2025	2030	2035	2040	2045	2050	2020	2025	2030	2035	2040	2045	2050	2020	2025	2030	2035	2040	2045	2050	2020	2025	2030	2035	2040	2045	2050
Region VII_CENTRAL VISAYAS	Bohol	TALIBON	1.9	1.9	2.0	2.1	2.3	2.4	2.6	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.1	2.1	2.2	2.4	2.5	2.7	2.8
		TRINIDAD	0.9	1.0	1.0	1.0	1.1	1.2	1.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.1	1.1	1.2	1.2	1.3	1.4
		TUBIGON	1.3	1.3	1.3	1.4	1.5	1.6	1.7	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.5	1.6	1.7	1.8	1.9
		UBAY	2.2	2.2	2.3	2.4	2.6	2.8	2.9	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.4	2.5	2.5	2.7	2.9	3.1	3.3
		VALENCIA	0.7	0.8	0.8	0.8	0.9	1.0	1.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.9	0.9	0.9	1.0	1.1	1.1
		BIEN UNIDO	0.7	0.7	0.7	0.8	0.8	0.9	1.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.9	1.0	1.1
		Sub-total	**43.4**	**44.6**	**46.9**	**50.6**	**55.0**	**58.6**	**62.2**	**4.8**	**4.9**	**5.3**	**5.7**	**6.3**	**6.7**	**7.1**	**1.8**	**1.8**	**2.0**	**2.1**	**2.4**	**2.5**	**2.7**	**49.9**	**51.4**	**54.2**	**58.4**	**63.6**	**67.7**	**71.9**
	Cebu	ALCANTARA	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.6	0.6	0.6
		ALCOY	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6	0.7
		ALEGRIA	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.9	0.9	0.9
		ALOGUINSAN	0.9	1.0	1.0	1.0	1.0	1.0	1.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.1	1.1	1.1	1.1	1.2	1.2
		ARGAO	2.1	2.2	2.2	2.3	2.3	2.4	2.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.3	2.4	2.4	2.5	2.6	2.6	2.7
		ASTURIAS	1.5	1.6	1.5	1.6	1.7	1.7	1.7	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	1.7	1.7	1.8	1.8	1.9	1.9
		BADIAN	1.2	1.2	1.2	1.3	1.3	1.3	1.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.4	1.4	1.4	1.5	1.5	1.5
		BALAMBAN	2.5	2.7	2.7	2.8	2.8	2.9	2.9	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.8	3.0	2.9	3.1	3.2	3.2	3.2
		BANTAYAN	2.3	2.4	2.4	2.5	2.6	2.6	2.7	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.5	2.7	2.7	2.8	2.9	2.9	2.9
		BARILI	2.1	2.3	2.3	2.3	2.4	2.5	2.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.4	2.5	2.5	2.6	2.7	2.7	2.8
		CITY OF BOGO	2.3	2.5	2.5	2.6	2.7	2.7	2.7	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.6	2.8	2.8	2.9	3.0	3.0	3.0
		BOLJOON	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.6	0.6	0.6	0.6
		BORBON	1.0	1.1	1.1	1.1	1.1	1.2	1.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.2	1.2	1.2	1.3	1.3	1.3
		CITY OF CARCAR	7.4	8.0	7.9	8.2	8.4	8.6	8.7	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	8.0	8.6	8.5	8.8	9.1	9.2	9.3
		CARMEN	1.5	1.6	1.6	1.7	1.7	1.8	1.8	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.8	1.8	1.9	1.9	2.0	2.0
		CATMON	0.9	1.0	0.9	1.0	1.0	1.0	1.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.1	1.0	1.1	1.1	1.1	1.2
		COMPOSTELA	2.6	3.0	2.9	3.0	3.1	3.2	3.2	1.3	1.5	1.5	1.5	1.6	1.6	1.6	0.2	0.2	0.2	0.2	0.2	0.2	0.3	4.1	4.6	4.6	4.8	4.9	5.0	5.1
		CONSOLACION	6.9	7.8	7.7	8.0	8.3	8.4	8.5	3.5	3.9	3.8	4.0	4.1	4.2	4.2	0.5	0.6	0.6	0.6	0.6	0.7	0.7	10.9	12.3	12.2	12.7	13.0	13.3	13.4
		CORDOVA	3.3	3.7	3.7	3.8	4.0	4.0	4.1	1.6	1.9	1.8	1.9	2.0	2.0	2.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	5.2	5.9	5.8	6.1	6.2	6.3	6.4
		DAANBANTAYAN	2.5	2.6	2.6	2.7	2.8	2.9	2.9	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.7	2.9	2.9	3.0	3.1	3.2	3.2
		DALAGUETE	2.0	2.1	2.1	2.2	2.2	2.3	2.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.2	2.3	2.3	2.4	2.5	2.5	2.5
		DANAO CITY	8.5	9.1	9.0	9.4	9.7	9.8	9.9	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	9.2	9.8	9.7	10.1	10.4	10.6	10.7
		DUMANJUG	1.5	1.6	1.6	1.7	1.7	1.8	1.8	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.8	1.8	1.9	1.9	2.0	2.0
		GINATILAN	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.6	0.6	0.6
		LILOAN	7.2	8.1	8.0	8.4	8.6	8.8	8.9	3.6	4.0	4.0	4.2	4.3	4.4	4.4	0.6	0.6	0.6	0.7	0.7	0.7	0.7	11.4	12.8	12.6	13.2	13.6	13.8	13.9
		MADRIDEJOS	1.1	1.2	1.2	1.2	1.3	1.3	1.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.3	1.3	1.4	1.4	1.4	1.4
		MALABUYOC	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.7	0.7	0.7
		MEDELLIN	1.6	1.7	1.7	1.7	1.8	1.8	1.8	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.9	1.8	1.9	2.0	2.0	2.0
		MINGLANILLA	8.2	8.8	8.7	9.1	9.3	9.5	9.6	0.5	0.6	0.5	0.6	0.6	0.6	0.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	8.9	9.5	9.4	9.8	10.0	10.2	10.3
		MOALBOAL	1.0	1.0	1.0	1.1	1.1	1.1	1.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.2	1.1	1.2	1.2	1.3	1.3
		CITY OF NAGA	7.3	7.8	7.7	8.0	8.2	8.4	8.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	7.8	8.4	8.3	8.6	8.9	9.0	9.1
		OSLOB	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9	0.9	1.0	1.0	1.0
		PILAR	0.3	0.4	0.3	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4
		PINAMUNGAHAN	2.0	2.1	2.1	2.2	2.3	2.3	2.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.2	2.4	2.3	2.4	2.5	2.5	2.6
		PORO	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.9	0.9	0.9
		RONDA	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.7	0.6	0.7	0.7	0.7	0.7
		SAMBOAN	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.7	0.7	0.7	0.7
		SAN FERNANDO	1.9	2.0	2.0	2.1	2.2	2.2	2.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.1	2.3	2.2	2.3	2.4	2.4	2.5
		SAN FRANCISCO	1.6	1.7	1.7	1.7	1.8	1.8	1.8	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.9	1.8	1.9	2.0	2.0	2.0
		SAN REMIGIO	1.7	1.9	1.8	1.9	2.0	2.0	2.0	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.1	0.1	0.1	0.1	1.9	2.1	2.0	2.1	2.2	2.2	2.2
		SANTA FE	0.9	1.0	1.0	1.0	1.0	1.1	1.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.1	1.1	1.1	1.1	1.2	1.2
		SANTANDER	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.6	0.6	0.6	0.6	0.6	0.6
		SIBONGA	1.4	1.5	1.5	1.6	1.6	1.6	1.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	1.7	1.7	1.7	1.8	1.8	1.8
		SOGOD	1.0	1.1	1.1	1.1	1.2	1.2	1.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.3	1.3	1.3	1.3
		TABOGON	1.1	1.2	1.2	1.2	1.2	1.3	1.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.3	1.3	1.3	1.4	1.4	1.4
		TABUELAN	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.9	0.9	0.9	1.0	1.0	1.0
		CITY OF TALISAY	12.4	13.9	13.7	14.3	14.7	15.0	15.1	6.1	6.9	6.8	7.1	7.3	7.5	7.5	1.0	1.1	1.1	1.1	1.2	1.2	1.2	19.5	21.9	21.6	22.5	23.2	23.6	23.9
		TOLEDO CITY	11.3	12.1	12.0	12.5	12.8	13.1	13.2	0.7	0.8	0.7	0.8	0.8	0.8	0.8	0.2	0.2	0.2	0.2	0.2	0.2	0.2	12.2	13.0	12.9	13.4	13.8	14.1	14.2
		TUBURAN	1.8	1.9	1.9	2.0	2.0	2.1	2.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.1	0.1	0.1	0.1	0.1	0.1	2.0	2.1	2.1	2.2	2.3	2.3	2.3
		TUDELA	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.3	0.4	0.4	0.4	0.4
		CEBU CITY (Capital)	45.1	50.7	50.2	52.3	53.8	54.8	55.3	22.4	25.2	24.9	26.0	26.7	27.2	27.5	3.5	4.0	3.9	4.1	4.2	4.3	4.3	71.1	79.9	79.0	82.3	84.8	86.4	87.2
		LAPU-LAPU CITY (OPON)	23.4	26.3	26.0	27.1	27.9	28.4	28.7	11.6	13.1	12.9	13.5	13.9	14.1	14.3	1.8	2.1	2.0	2.1	2.2	2.2	2.2	36.9	41.5	41.0	42.7	44.0	44.8	45.2
		MANDAUE CITY	17.0	19.1	18.9	19.7	20.3	20.7	20.9	8.5	9.5	9.4	9.8	10.1	10.3	10.4	1.3	1.5	1.5	1.5	1.6	1.6	1.6	26.8	30.1	29.8	31.1	32.0	32.6	32.9
		Sub-total	**209.6**	**230.7**	**228.1**	**237.6**	**244.6**	**249.2**	**251.6**	**65.4**	**73.1**	**72.3**	**75.4**	**77.6**	**79.0**	**79.8**	**11.1**	**12.4**	**12.2**	**12.7**	**13.1**	**13.4**	**13.5**	**286.1**	**316.2**	**312.6**	**325.7**	**335.3**	**341.6**	**344.8**
	Negros Oriental	AMLAN (AYUQUITAN)	0.7	0.7	0.7	0.7	0.8	0.8	0.9	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.8	0.8	0.8	0.9	0.9	1.0
		AYUNGON	1.2	1.3	1.3	1.4	1.4	1.5	1.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.4	1.5	1.6	1.7	1.8
		BACONG	3.1	2.5	2.6	2.7	2.9	3.0	3.2	0.6	0.5	0.5	0.5	0.5	0.6	0.6	0.2	0.2	0.2	0.2	0.2	0.2	0.3	3.9	3.2	3.3	3.4	3.6	3.8	4.0
		BAIS CITY	2.2	2.3	2.3	2.4	2.6	2.7	2.8	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.5	2.5	2.6	2.7	2.9	3.0	3.2
		BASAY	0.8	0.8	0.8	0.8	0.9	0.9	1.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.9	0.9	0.9	1.0	1.0	1.1
		CITY OF BAYAWAN (TULONG)	6.7	6.9	6.9	7.3	7.7	8.1	8.5	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	7.2	7.4	7.4	7.9	8.3	8.7	9.2
		BINDOY (PAYABON)	1.1	1.1	1.1	1.2	1.2	1.3	1.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.3	1.4	1.4	1.5
		DAUIN	0.8	0.8	0.8	0.9	0.9	1.0	1.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9	1.0	1.0	1.1	1.1
		DUMAGUETE CITY (Capital)	10.1	8.2	8.6	8.8	9.3	9.7	10.2	1.8	1.5	1.6	1.6	1.7	1.8	1.9	0.8	0.7	0.7	0.7	0.7	0.8	0.8	12.7	10.4	10.9	11.1	11.7	12.3	12.9
		CITY OF GUIHULNGAN	5.6	5.7	5.8	6.1	6.5	6.8	7.1	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	6.0	6.2	6.2	6.6	7.0	7.3	7.7
		JIMALALUD	0.8	0.9	0.9	0.9	1.0	1.0	1.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.0	1.0	1.0	1.1	1.1	1.2
		LA LIBERTAD	1.1	1.1	1.1	1.2	1.3	1.3	1.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.3	1.4	1.5	1.5
		MANJUYOD	1.2	1.2	1.2	1.3	1.4	1.4	1.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.4	1.4	1.5	1.6	1.7
		PAMPLONA	1.0	1.1	1.1	1.2	1.2	1.3	1.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.3	1.3	1.4	1.5
		SAN JOSE	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.7	0.7	0.7	0.7	0.8	0.8
		SANTA CATALINA	2.0	2.1	2.1	2.2	2.4	2.5	2.6	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.3	2.3	2.3	2.5	2.6	2.8	2.9
		SIATON	2.2	2.3	2.3	2.4	2.5	2.7	2.8	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.4	2.5	2.5	2.7	2.8	3.0	3.1
		SIBULAN	4.8	4.0	4.1	4.2	4.5	4.7	4.9	0.9	0.7	0.8	0.8	0.8	0.9	0.9	0.4	0.3	0.3	0.3	0.4	0.4	0.4	6.1	5.0	5.2	5.3	5.6	5.9	6.2
		CITY OF TANJAY	2.2	2.2	2.2	2.4	2.5	2.6	2.8	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.4	2.5	2.5	2.7	2.8	2.9	3.1
		TAYASAN	1.0	1.0	1.0	1.1	1.2	1.2	1.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.2	1.2	1.3	1.4	1.4
		VALENCIA (LUZURRIAGA)	2.9	2.4	2.5	2.5	2.7	2.8	3.0	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	3.7	3.0	3.1	3.2	3.4	3.6	3.7
		VALLEHERMOSO	1.1	1.1	1.1	1.2	1.2	1.3	1.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.3	1.4	1.5	1.5
		ZAMBOANGUITA	0.8	0.8	0.8	0.9	0.9	0.9	1.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9	1.0	1.0	1.1	1.1
		Sub-total	**53.9**	**51.1**	**51.9**	**54.5**	**57.5**	**60.4**	**63.4**	**6.3**	**5.7**	**5.9**	**6.1**	**6.4**	**6.8**	**7.1**	**2.4**	**2.1**	**2.2**	**2.3**	**2.4**	**2.5**	**2.6**	**62.6**	**58.9**	**60.0**	**62.9**	**66.3**	**69.6**	**73.1**
	Siquijor	ENRIQUE VILLANUEVA	0.3	0.3	0.4	0.4	0.5	0.6	0.6	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.5	0.6	0.7	0.7
		LARENA	0.7	0.7	0.8	0.9	1.0	1.2	1.3	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.8	0.9	1.0	1.1	1.2	1.4	1.6
		LAZI	1.1	1.1	1.2	1.4	1.6	1.9	2.0	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.3	1.3	1.5	1.7	1.9	2.2	2.5
		MARIA	0.7	0.7	0.8	0.9	1.0	1.2	1.3	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.8	0.9	1.0	1.1	1.2	1.4	1.6
		SAN JUAN	0.8	0.8	0.9	1.0	1.2	1.3	1.5	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.9	1.0	1.1	1.2	1.4	1.6	1.8
		SIQUIJOR (Capital)	1.4	1.4	1.6	1.8	2.1	2.4	2.6	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.1	0.1	0.1	0.1	0.1	0.2	0.2	1.6	1.7	1.9	2.2	2.5	2.9	3.2
		Sub-total	**4.9**	**5.1**	**5.7**	**6.5**	**7.4**	**8.5**	**9.4**	**0.7**	**0.7**	**0.8**	**0.9**	**1.0**	**1.1**	**1.3**	**0.3**	**0.3**	**0.4**	**0.4**	**0.5**	**0.6**	**0.6**	**5.9**	**6.1**	**6.8**	**7.8**	**8.9**	**10.2**	**11.3**
		Total	**311.8**	**331.4**	**332.6**	**349.2**	**364.5**	**376.7**	**386.5**	**77.2**	**84.5**	**84.2**	**88.0**	**91.3**	**93.6**	**95.2**	**15.6**	**16.7**	**16.8**	**17.6**	**18.4**	**18.9**	**19.4**	**404.6**	**432.6**	**433.6**	**454.8**	**474.1**	**489.2**	**501.2**
		Grand Total for WRR VII	**315.7**	**335.5**	**336.6**	**353.4**	**368.9**	**381.2**	**391.2**	**77.5**	**84.8**	**84.6**	**88.4**	**91.6**	**94.0**	**95.6**	**15.7**	**16.8**	**16.9**	**17.7**	**18.5**	**19.1**	**19.5**	**408.8**	**436.9**	**437.9**	**459.4**	**478.8**	**494.1**	**506.1**

Source: JICA Study Team

Table E- 3 Detailed Municipal Water Demand Forecast Result of WRR XI

Region	Province	City/ Municipality	Domestic Water Demand Forecast MCM/Year							Commercial Water Demand Forecast MCM/Year							Institutional Water Demand Forecast MCM/Year							Municipal Water Demand Forecast MCM/Year						
			2020	2025	2030	2035	2040	2045	2050	2020	2025	2030	2035	2040	2045	2050	2020	2025	2030	2035	2040	2045	2050	2020	2025	2030	2035	2040	2045	2050
Region X_NORTHERN MINDANAO	Bukidnon	QUEZON	6.0	6.3	6.3	6.5	6.7	6.8	6.7	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	6.4	6.7	6.8	7.0	7.2	7.3	7.3
		SAN FERNANDO	1.7	1.7	1.8	1.8	1.9	1.9	1.9	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.1	1.8	1.9	2.0	2.0	2.1	2.1	2.1
		Sub-total	**7.6**	**8.0**	**8.1**	**8.4**	**8.6**	**8.7**	**8.6**	**0.5**	**0.5**	**0.5**	**0.6**	**0.6**	**0.6**	**0.6**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**8.3**	**8.7**	**8.7**	**9.1**	**9.3**	**9.4**	**9.3**
		Total	**8**	**8**	**8**	**8**	**9**	**9**	**9**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**9**	**9**	**9**	**9**	**9**	**9**
Region XI_ DAVAO	Davao de Oro	COMPOSTELA	2.4	2.5	2.5	2.6	2.7	2.8	2.8	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.6	2.7	2.7	2.9	3.0	3.1	3.2
		LAAK (SAN VICENTE)	2.1	2.2	2.2	2.3	2.4	2.5	2.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.3	2.4	2.4	2.6	2.7	2.8	2.8
		MABINI (DOÑA ALICIA)	1.1	1.2	1.2	1.3	1.3	1.4	1.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.4	1.5	1.5	1.5
		MACO	2.2	2.3	2.3	2.4	2.5	2.6	2.6	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.4	2.5	2.5	2.7	2.8	2.9	2.9
		MARAGUSAN (SAN MARIANO)	1.7	1.8	1.8	1.9	1.9	2.0	2.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.1	1.9	2.0	2.0	2.1	2.2	2.2	2.3
		MAWAB	1.0	1.1	1.1	1.1	1.2	1.2	1.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.3	1.3	1.4	1.4
		MONKAYO	2.5	2.6	2.6	2.7	2.8	2.9	3.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.7	2.8	2.9	3.0	3.1	3.2	3.3
		MONTEVISTA	1.2	1.3	1.3	1.3	1.4	1.5	1.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.4	1.5	1.6	1.6	1.6
		NABUNTURAN (Capital)	2.2	2.3	2.3	2.4	2.5	2.6	2.7	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.5	2.6	2.6	2.7	2.8	2.9	3.0
		NEW BATAAN	1.4	1.4	1.4	1.5	1.6	1.6	1.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.6	1.6	1.7	1.7	1.8	1.8
		PANTUKAN	2.4	2.5	2.5	2.6	2.7	2.8	2.9	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.7	2.8	2.8	2.9	3.0	3.1	3.2
		Sub-total	**20.2**	**21.0**	**21.1**	**22.2**	**23.2**	**23.9**	**24.3**	**1.7**	**1.7**	**1.8**	**1.9**	**1.9**	**2.0**	**2.0**	**0.5**	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	**22.4**	**23.3**	**23.4**	**24.7**	**25.7**	**26.5**	**26.9**
	Davao del Norte	ASUNCION (SAUG)	1.6	1.7	1.7	1.7	1.8	1.9	1.9	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.8	1.9	1.9	1.9	2.0	2.1	2.1
		CARMEN	2.2	2.2	2.2	2.3	2.4	2.5	2.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.4	2.5	2.5	2.6	2.7	2.7	2.8
		KAPALONG	2.1	2.2	2.2	2.3	2.4	2.4	2.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.4	2.4	2.4	2.5	2.6	2.7	2.8
		NEW CORELLA	1.5	1.6	1.6	1.6	1.7	1.7	1.8	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.7	1.7	1.8	1.9	1.9	2.0
		CITY OF PANABO	11.4	11.7	11.7	12.2	12.7	13.0	13.3	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.2	0.2	0.2	0.2	0.2	0.2	0.2	12.3	12.6	12.5	13.2	13.7	14.0	14.3
		ISLAND GARDEN CITY OF SAMAL	6.4	6.5	6.5	6.8	7.1	7.3	7.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	6.8	7.0	7.0	7.3	7.6	7.8	8.0
		SANTO TOMAS	7.0	7.2	7.2	7.5	7.8	8.0	8.2	0.4	0.5	0.4	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	7.5	7.8	7.7	8.1	8.4	8.6	8.8
		CITY OF TAGUM (Capital)	16.1	16.6	16.5	17.3	18.0	18.5	18.9	1.0	1.0	1.0	1.1	1.1	1.2	1.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	17.4	17.9	17.8	18.6	19.3	19.9	20.3
		TALAINGOD	0.7	0.8	0.8	0.8	0.8	0.9	0.9	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.9	0.8	0.9	0.9	0.9	1.0
		BRAULIO E. DUJALI	0.9	1.0	1.0	1.0	1.1	1.1	1.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.1	1.1	1.1	1.2	1.2	1.2
		SAN ISIDRO	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.9	0.9	0.9	0.9
		Sub-total	**50.8**	**52.3**	**51.9**	**54.4**	**56.5**	**58.1**	**59.3**	**3.4**	**3.5**	**3.5**	**3.6**	**3.8**	**3.9**	**3.9**	**0.8**	**0.8**	**0.8**	**0.9**	**0.9**	**0.9**	**0.9**	**55.0**	**56.6**	**56.2**	**58.9**	**61.2**	**62.9**	**64.2**
	Davao del Sur	BANSALAN	1.7	1.8	1.9	2.0	2.1	2.2	2.3	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.1	0.1	0.1	0.1	1.8	2.0	2.1	2.2	2.3	2.4	2.5
		CITY OF DIGOS (Capital)	10.3	11.4	11.5	12.3	13.0	13.6	14.1	0.6	0.7	0.7	0.8	0.8	0.8	0.9	0.1	0.2	0.2	0.2	0.2	0.2	0.2	11.0	12.3	12.4	13.2	14.0	14.6	15.2
		HAGONOY	1.5	1.7	1.7	1.8	1.9	2.0	2.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.1	1.7	1.9	1.9	2.0	2.1	2.2	2.3
		KIBLAWAN	1.3	1.4	1.5	1.6	1.6	1.7	1.8	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.6	1.6	1.7	1.8	1.9	2.0
		MAGSAYSAY	1.5	1.7	1.7	1.8	1.9	2.0	2.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.1	1.6	1.8	1.9	2.0	2.1	2.2	2.3
		MALALAG	1.1	1.2	1.2	1.3	1.3	1.4	1.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.3	1.3	1.4	1.5	1.6	1.6
		MATANAO	1.6	1.8	1.8	1.9	2.0	2.1	2.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.1	0.1	0.1	0.1	1.8	2.0	2.0	2.1	2.2	2.3	2.4
		PADADA	0.8	0.9	0.9	0.9	1.0	1.0	1.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.0	1.0	1.0	1.1	1.2	1.2
		SANTA CRUZ	5.5	6.1	6.2	6.6	7.0	7.3	7.6	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	5.9	6.6	6.7	7.1	7.5	7.9	8.2
		SULOP	0.9	1.0	1.0	1.1	1.2	1.2	1.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.1	1.2	1.2	1.3	1.4	1.4
		DAVAO CITY	###	###	###	###	###	###	###	25.2	26.7	29.3	31.0	34.3	37.8	41.4	4.2	4.4	4.9	5.1	5.7	6.2	6.8	145.7	154.3	169.7	179.1	198.4	218.4	239.3
		Sub-total	**142.4**	**152.3**	**164.8**	**174.2**	**191.4**	**209.0**	**226.9**	**27.0**	**28.7**	**31.4**	**33.2**	**36.6**	**40.2**	**43.9**	**4.7**	**5.0**	**5.4**	**5.7**	**6.3**	**6.9**	**7.5**	**174.1**	**186.0**	**201.6**	**213.1**	**234.3**	**256.1**	**278.4**
	Davao Occidental	DON MARCELINO 2	1.2	1.3	1.3	1.4	1.5	1.5	1.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.4	1.4	1.5	1.6	1.7	1.8
		JOSE ABAD SANTOS (TRINIDAD) 2	1.9	2.0	2.1	2.2	2.3	2.5	2.6	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.1	2.3	2.3	2.5	2.6	2.7	2.9
		MALITA 2	6.4	6.8	6.9	7.4	7.8	8.2	8.6	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	6.9	7.3	7.4	7.9	8.4	8.8	9.2
		SANTA MARIA 2	1.5	1.6	1.6	1.7	1.8	1.9	2.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.1	1.7	1.8	1.8	1.9	2.0	2.2	2.2
		SARANGANI 2	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.8	0.8	0.8	0.9
		Sub-total	**11.7**	**12.3**	**12.4**	**13.4**	**14.2**	**14.9**	**15.5**	**0.8**	**0.9**	**0.9**	**1.0**	**1.0**	**1.1**	**1.1**	**0.2**	**0.2**	**0.2**	**0.3**	**0.3**	**0.3**	**0.3**	**12.7**	**13.4**	**13.6**	**14.6**	**15.5**	**16.3**	**17.0**
	Davao Oriental	BAGANGA	1.5	1.6	1.7	1.8	1.9	2.0	2.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.1	1.7	1.8	1.8	2.0	2.1	2.2	2.3
		BANAYBANAY	1.2	1.2	1.3	1.3	1.4	1.5	1.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.4	1.4	1.5	1.6	1.7	1.7
		BOSTON	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.5	0.5	0.5	0.5	0.5	0.6
		CARAGA	1.0	1.1	1.1	1.2	1.3	1.3	1.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.3	1.4	1.5	1.5
		CATEEL	1.2	1.2	1.2	1.3	1.4	1.5	1.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.4	1.4	1.5	1.6	1.7	1.7
		GOVERNOR GENEROSO	1.6	1.7	1.7	1.8	1.9	2.0	2.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.1	1.8	1.8	1.9	2.0	2.1	2.2	2.3
		LUPON	1.8	1.9	1.9	2.0	2.1	2.3	2.3	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.1	0.1	0.1	0.1	0.1	2.0	2.1	2.1	2.2	2.4	2.5	2.6
		MANAY	1.0	1.1	1.1	1.2	1.3	1.3	1.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.3	1.4	1.5	1.5
		CITY OF MATI (Capital)	8.0	8.5	8.6	9.2	9.8	10.3	10.7	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.1	0.1	0.1	0.1	0.1	0.1	0.1	8.6	9.1	9.2	9.9	10.5	11.0	11.5
		SAN ISIDRO	0.9	0.9	0.9	1.0	1.1	1.1	1.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.1	1.2	1.3	1.3
		TARRAGONA	0.7	0.7	0.8	0.8	0.9	0.9	0.9	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.9	1.0	1.0	1.0
		Sub-total	**19.3**	**20.4**	**20.6**	**22.1**	**23.5**	**24.7**	**25.7**	**1.4**	**1.5**	**1.5**	**1.7**	**1.8**	**1.8**	**1.9**	**0.4**	**0.4**	**0.4**	**0.5**	**0.5**	**0.5**	**0.5**	**21.2**	**22.3**	**22.6**	**24.2**	**25.7**	**27.1**	**28.1**
		Total	**244.3**	**258.2**	**270.9**	**286.4**	**308.8**	**330.5**	**351.7**	**34.4**	**36.4**	**39.1**	**41.3**	**45.1**	**49.0**	**52.9**	**6.6**	**7.0**	**7.5**	**7.9**	**8.6**	**9.3**	**9.9**	**285.4**	**301.6**	**317.4**	**335.5**	**362.5**	**388.8**	**414.5**
Region XII_ SOCCSKSARGEN	Cotabato (North Cotabato)	MAGPET	1.4	1.5	1.6	1.7	1.8	1.9	2.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.6	1.7	1.7	1.9	2.0	2.1	2.2
		MAKILALA	2.3	2.5	2.5	2.7	2.9	3.1	3.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.6	2.8	2.8	3.0	3.2	3.4	3.5
		TULUNAN	1.6	1.7	1.8	1.9	2.0	2.1	2.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.0	0.0	0.1	0.1	0.1	0.1	0.1	1.8	1.9	2.0	2.1	2.2	2.4	2.5
		ARAKAN	1.3	1.4	1.5	1.6	1.7	1.8	1.8	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.6	1.6	1.7	1.9	2.0	2.0
		Sub-total	**7**	**7**	**7**	**8**	**8**	**9**	**9**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**8**	**8**	**9**	**9**	**10**	**10**
	Sarangani	ALABEL (Capital)	2.3	2.5	2.5	2.6	2.7	2.8	2.8	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.6	2.7	2.7	2.9	3.0	3.1	3.1
		GLAN	5.9	6.2	6.3	6.6	6.9	7.1	7.1	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	6.4	6.7	6.7	7.1	7.4	7.6	7.7
		KIAMBA	1.7	1.8	1.8	1.9	2.0	2.1	2.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.1	0.1	0.1	0.1	1.9	2.0	2.0	2.2	2.2	2.3	2.3
		MAASIM	1.7	1.8	1.8	1.9	2.0	2.0	2.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.1	0.1	0.1	0.1	1.9	2.0	2.0	2.1	2.2	2.3	2.3
		MALAPATAN	2.1	2.2	2.3	2.4	2.5	2.5	2.6	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.4	2.5	2.5	2.6	2.8	2.8	2.8
		MALUNGON	5.7	6.0	6.1	6.4	6.7	6.8	6.9	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	6.2	6.5	6.5	6.9	7.2	7.4	7.4
		Sub-total	**19.6**	**20.6**	**20.7**	**21.9**	**22.8**	**23.4**	**23.6**	**1.4**	**1.5**	**1.5**	**1.5**	**1.6**	**1.7**	**1.7**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**0.4**	**21.3**	**22.5**	**22.6**	**23.8**	**24.8**	**25.5**	**25.7**
	South Cotabato	POLOMOLOK	9.4	10.0	10.1	10.7	11.2	11.6	11.9	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.1	0.1	0.1	0.1	0.1	0.2	0.2	10.1	10.8	10.8	11.5	12.0	12.5	12.8
		T'BOLI	5.5	5.9	5.9	6.2	6.5	6.8	6.9	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	5.9	6.3	6.3	6.7	7.0	7.3	7.5
		GENERAL SANTOS CITY (DADIANGAS)	51.8	53.6	55.9	57.7	59.0	60.4	61.8	11.2	11.6	12.1	12.5	12.8	13.1	13.4	1.9	1.9	2.0	2.1	2.1	2.2	2.2	64.9	67.2	70.1	72.3	73.9	75.6	77.4
		Sub-total	**67**	**70**	**72**	**75**	**77**	**79**	**81**	**12**	**13**	**13**	**14**	**14**	**14**	**15**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**81**	**84**	**87**	**90**	**93**	**95**	**98**
		Total	**92.9**	**97.3**	**99.9**	**104.3**	**107.8**	**110.9**	**113.4**	**14.1**	**14.7**	**15.2**	**15.8**	**16.2**	**16.6**	**17.0**	**2.6**	**2.7**	**2.8**	**2.9**	**3.0**	**3.1**	**3.2**	**109.6**	**114.7**	**117.9**	**123.0**	**127.0**	**130.6**	**133.6**
Region XIII_ CARAGA	Surigao del Sur	BAROBO	1.4	1.5	1.5	1.6	1.7	1.8	1.9	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	1.6	1.6	1.7	1.9	2.0	2.1
		BAYABAS	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3
		CITY OF BISLIG	2.6	2.7	2.7	2.9	3.1	3.3	3.5	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.9	3.0	3.0	3.3	3.5	3.7	3.9
		CAGWAIT	0.6	0.6	0.6	0.6	0.7	0.7	0.8	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.7	0.7	0.7	0.8	0.8	0.8
		CANTILAN	0.9	0.9	0.9	1.0	1.1	1.1	1.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.1	1.2	1.3	1.3
		CARMEN	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.4	0.4	0.4	0.4	0.5
		CORTES	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.6	0.6	0.6	0.7	0.7
		HINATUAN	1.2	1.2	1.2	1.3	1.4	1.5	1.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.4	1.5	1.6	1.7
		LANUZA	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.5	0.5	0.5
		LIANGA	0.9	0.9	0.9	1.0	1.1	1.1	1.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.1	1.2	1.3	1.3
		LINGIG	0.9	1.0	1.0	1.0	1.1	1.2	1.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.1	1.1	1.2	1.2	1.3	1.4
		MADRID	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.6	0.6	0.6
		MARIHATAG	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.7	0.7	0.8
		SAN AGUSTIN	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.8	0.8	0.8	0.9
		SAN MIGUEL	1.1	1.1	1.2	1.2	1.3	1.4	1.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.3	1.3	1.4	1.5	1.5	1.6
		TAGBINA	1.1	1.1	1.1	1.2	1.3	1.4	1.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.3	1.4	1.4	1.5	1.6
		TAGO	1.1	1.1	1.1	1.2	1.3	1.3	1.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.3	1.4	1.5	1.5
		CITY OF TANDAG (Capital)	1.7	1.7	1.7	1.9	2.0	2.1	2.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.1	1.8	1.9	1.9	2.1	2.2	2.3	2.4
		Sub-total	**16.3**	**16.9**	**17.1**	**18.3**	**19.5**	**20.6**	**21.6**	**1.4**	**1.4**	**1.4**	**1.5**	**1.6**	**1.7**	**1.8**	**0.4**	**0.4**	**0.5**	**0.5**	**0.5**	**0.5**	**0.6**	**18.1**	**18.7**	**19.0**	**20.3**	**21.6**	**22.9**	**24.0**
		Total	**16.3**	**16.9**	**17.1**	**18.3**	**19.5**	**20.6**	**21.6**	**1.4**	**1.4**	**1.4**	**1.5**	**1.6**	**1.7**	**1.8**	**0.4**	**0.4**	**0.5**	**0.5**	**0.5**	**0.5**	**0.6**	**18.1**	**18.7**	**19.0**	**20.3**	**21.6**	**22.9**	**24.0**
		Grand Total for WRR XI	**361.2**	**380.3**	**395.9**	**417.3**	**444.6**	**470.7**	**495.3**	**50.3**	**53.0**	**56.2**	**59.1**	**63.5**	**67.9**	**72.3**	**9.8**	**10.3**	**10.8**	**11.4**	**12.2**	**13.0**	**13.8**	**421.3**	**443.6**	**462.9**	**487.9**	**520.4**	**551.6**	**581.4**

Source: JICA Study Team

2. Detailed Industrial Water Demand Forecast Result

Table E- 4 Detailed Industrial Water Demand Forecast Result of WRR V

Region	Province	City/ Municipality	Population Projection (Medium) updated by 2020 census						
			2020	2025	2030	2035	2040	2045	2050
Region IV-A_ CALABARZON	Quezon	TAGKAWAYAN	39	39	40	41	41	43	43
		Sub-total	**39**	**39**	**40**	**41**	**41**	**43**	**43**
		Total	**39**	**39**	**40**	**41**	**41**	**43**	**43**
Region V_ BICOL	Albay	BACACAY	1	1	1	1	1	1	1
		CAMALIG	1	1	1	1	1	1	1
		DARAGA (LOCSIN)	2	2	2	2	2	2	2
		GUINOBATAN	1	1	1	1	1	1	1
		JOVELLAR	0	0	0	0	0	0	0
		LEGAZPI CITY (Capital)	3	3	3	3	3	4	4
		LIBON	1	1	1	1	1	1	1
		CITY OF LIGAO	1	2	2	2	2	2	2
		MALILIPOT	0	1	1	1	1	1	1
		MALINAO	1	1	1	1	1	1	1
		MANITO	0	0	0	0	0	0	0
		OAS	1	1	1	1	1	1	1
		PIO DURAN	1	1	1	1	1	1	1
		POLANGUI	1	1	1	1	1	2	2
		RAPU-RAPU	0	0	1	1	1	1	1
		SANTO DOMINGO (LIBOG)	0	1	1	1	1	1	1
		CITY OF TABACO	2	2	2	2	2	2	2
		TIWI	1	1	1	1	1	1	1
		Sub-total	17	18	20	21	22	23	24
	Camarines Norte	BASUD	1	1	1	1	1	1	1
		CAPALONGA	0	0	1	1	1	1	1
		DAET (Capital)	1	2	2	2	2	2	2
		SAN LORENZO RUIZ (IMELDA)	0	0	0	0	0	0	0
		JOSE PANGANIBAN	1	1	1	1	1	1	1
		LABO	1	1	2	2	2	2	2
		MERCEDES	1	1	1	1	1	1	1
		PARACALE	1	1	1	1	1	1	1
		SAN VICENTE	0	0	0	0	0	0	0
		SANTA ELENA	1	1	1	1	1	1	1
		TALISAY	0	0	0	0	0	1	1
		VINZONS	1	1	1	1	1	1	1
		Sub-total	8	9	9	10	11	12	13
	Camarines Sur	BAAO	1	1	1	1	1	1	1
		BALATAN	0	0	0	0	1	1	1
		BATO	1	1	1	1	1	1	1
		BOMBON	0	0	0	0	0	0	0
		BUHI	1	1	1	1	1	1	2
		BULA	1	1	1	1	1	1	1
		CABUSAO	0	0	0	0	0	0	0
		CALABANGA	1	1	1	1	1	2	2
		CAMALIGAN	0	0	0	0	0	0	0
		CANAMAN	0	0	1	1	1	1	1
		CARAMOAN	1	1	1	1	1	1	1
		DEL GALLEGO	0	0	0	0	0	0	0
		GAINZA	0	0	0	0	0	0	0
		GARCHITORENA	0	0	0	0	0	1	1
		GOA	1	1	1	1	1	1	1
		IRIGA CITY	1	2	2	2	2	2	2
		LAGONOY	1	1	1	1	1	1	1
		LIBMANAN	1	2	2	2	2	2	2
		LUPI	0	0	0	1	1	1	1
		MAGARAO	0	0	0	0	0	0	1
		MILAOR	0	0	0	1	1	1	1
		MINALABAC	1	1	1	1	1	1	1
		NABUA	1	1	1	1	1	2	2
		NAGA CITY	3	3	3	3	3	4	4
		OCAMPO	1	1	1	1	1	1	1
		PAMPLONA	0	1	1	1	1	1	1
		PASACAO	1	1	1	1	1	1	1
		PILI (Capital)	1	1	1	2	2	2	2
		PRESENTACION (PARUBCAN)	0	0	0	0	0	0	0
		RAGAY	1	1	1	1	1	1	1
		SAGÑAY	0	0	1	1	1	1	1
		SAN FERNANDO	0	1	1	1	1	1	1
		SAN JOSE	1	1	1	1	1	1	1
		SIPOCOT	1	1	1	1	1	1	1
		SIRUMA	0	0	0	0	0	0	0
		TIGAON	1	1	1	1	1	1	1
		TINAMBAC	1	1	1	1	1	1	1
		Sub-total	25	28	30	32	34	37	39

Region	Province	City/ Municipality	Population Projection (Medium) updated by 2020 census						
			2020	2025	2030	2035	2040	2045	2050
Region V_ BICOL	Catanduanes	BAGAMANOC	0	0	0	0	0	0	0
		BARAS	0	0	0	0	0	0	0
		BATO	0	0	0	0	0	0	0
		CARAMORAN	0	0	0	1	1	1	1
		GIGMOTO	0	0	0	0	0	0	0
		PANDAN	0	0	0	0	0	0	0
		PANGANIBAN (PAYO)	0	0	0	0	0	0	0
		SAN ANDRES (CALOLBON)	0	1	1	1	1	1	1
		SAN MIGUEL	0	0	0	0	0	0	0
		VIGA	0	0	0	0	0	0	0
		VIRAC (Capital)	1	1	1	1	1	1	2
		Sub-total	3	4	4	4	5	5	6
	Masbate	AROROY	1	1	1	1	1	2	2
		BALENO	0	0	0	0	0	1	1
		BALUD	0	1	1	1	1	1	1
		BATUAN	0	0	0	0	0	0	0
		CATAINGAN	1	1	1	1	1	1	1
		CAWAYAN	1	1	1	1	1	1	1
		CLAVERIA	1	1	1	1	1	1	1
		DIMASALANG	0	0	0	0	0	0	0
		ESPERANZA	0	0	0	0	0	0	0
		MANDAON	1	1	1	1	1	1	1
		CITY OF MASBATE (Capital)	1	1	2	2	2	2	2
		MILAGROS	1	1	1	1	1	1	1
		MOBO	0	1	1	1	1	1	1
		MONREAL	0	0	0	0	0	0	0
		PALANAS	0	0	0	0	0	1	1
		PIO V. CORPUZ (LIMBUHAN)	0	0	0	0	0	0	0
		PLACER	1	1	1	1	1	1	1
		SAN FERNANDO	0	0	0	0	0	0	0
		SAN JACINTO	0	0	0	0	0	1	1
		SAN PASCUAL	1	1	1	1	1	1	1
		USON	1	1	1	1	1	1	1
		Sub-total	11	12	13	14	15	17	18
	Sorsogon	BARCELONA	0	0	0	0	0	0	0
		BULAN	1	1	2	2	2	2	2
		BULUSAN	0	0	0	0	0	0	0
		CASIGURAN	0	0	1	1	1	1	1
		CASTILLA	1	1	1	1	1	1	1
		DONSOL	1	1	1	1	1	1	1
		GUBAT	1	1	1	1	1	1	1
		IROSIN	1	1	1	1	1	1	1
		JUBAN	0	0	1	1	1	1	1
		MAGALLANES	0	1	1	1	1	1	1
		MATNOG	1	1	1	1	1	1	1
		PILAR	1	1	1	1	1	1	1
		PRIETO DIAZ	0	0	0	0	0	0	0
		SANTA MAGDALENA	0	0	0	0	0	0	0
		CITY OF SORSOGON (Capital)	2	2	3	3	3	3	4
		Sub-total	10	11	12	13	14	15	16
		Total	74	82	88	96	101	109	115
		Grand Total for WRR V	**113**	**120**	**128**	**136**	**142**	**152**	**158**

Source: JICA Survey Team

Table E- 5 Detailed Industrial Water Demand Forecast Result of WRR VII

Region	Province	City/ Municipality	Population Projection (Medium) updated by 2020 census						
			2020	2025	2030	2035	2040	2045	2050
Region VI_ WESTERN VISAYAS	Negros Occidental	CANDONI	0	0	0	0	0	0	0
		HINOBA-AN (ASIA)	1	1	1	1	1	1	1
		ILOG	1	1	1	1	1	1	1
		Sub-total	**2**	**2**	**2**	**3**	**3**	**3**	**3**
		Total	**2**	**2**	**2**	**3**	**3**	**3**	**3**
Region VII_ CENTRAL VISAYAS	Bohol	ALBURQUERQUE	0	0	0	0	0	0	0
		ALICIA	1	1	1	1	1	1	1
		ANDA	0	0	0	0	0	1	1
		ANTEQUERA	0	0	0	0	0	0	0
		BACLAYON	0	0	1	1	1	1	1
		BALILIHAN	0	0	0	0	0	1	1
		BATUAN	0	0	0	0	0	0	0
		BILAR	0	0	0	0	0	1	1
		BUENAVISTA	1	1	1	1	1	1	1
		CALAPE	1	1	1	1	1	1	1
		CANDIJAY	1	1	1	1	1	1	1
		CARMEN	1	1	1	1	1	1	1
		CATIGBIAN	0	1	1	1	1	1	1
		CLARIN	0	0	0	1	1	1	1
		CORELLA	0	0	0	0	0	0	0
		CORTES	0	0	0	0	0	1	1
		DAGOHOY	0	0	0	0	1	1	1
		DANAO	0	0	0	0	1	1	1
		DAUIS	1	1	1	1	1	1	2
		DIMIAO	0	0	0	0	0	0	0
		DUERO	0	0	0	0	0	1	1
		GARCIA HERNANDEZ	1	1	1	1	1	1	1
		GUINDULMAN	1	1	1	1	1	1	1
		INABANGA	1	1	1	1	1	1	1
		JAGNA	1	1	1	1	1	1	1
		GETAFE	1	1	1	1	1	1	1
		LILA	0	0	0	0	0	0	0
		LOAY	0	0	0	0	0	1	1
		LOBOC	0	0	0	0	0	0	1
		LOON	1	1	1	1	1	1	1
		MABINI	1	1	1	1	1	1	1
		MARIBOJOC	0	0	1	1	1	1	1
		PANGLAO	1	1	1	1	1	1	1
		PILAR	1	1	1	1	1	1	1
		PRES. CARLOS P. GARCIA (PITOGO)	0	1	1	1	1	1	1
		SAGBAYAN (BORJA)	1	1	1	1	1	1	1
		SAN ISIDRO	0	0	0	0	0	0	0
		SAN MIGUEL	1	1	1	1	1	1	1
		SEVILLA	0	0	0	0	0	0	0
		SIERRA BULLONES	1	1	1	1	1	1	1
		SIKATUNA	0	0	0	0	0	0	0
		TAGBILARAN CITY (Capital)	2	2	2	3	3	3	3
		TALIBON	1	2	2	2	2	2	2
		TRINIDAD	1	1	1	1	1	1	1
		TUBIGON	1	1	1	1	1	1	1
		UBAY	2	2	2	2	2	2	2
		VALENCIA	1	1	1	1	1	1	1
		BIEN UNIDO	1	1	1	1	1	1	1
		Sub-total	29	30	32	34	36	40	42
	Cebu	ALCANTARA	0	0	0	0	0	0	0
		ALCOY	0	0	0	0	0	0	0
		ALEGRIA	1	1	1	1	1	1	1
		ALOGUINSAN	1	1	1	1	1	1	1
		ARGAO	2	2	2	2	2	2	2
		ASTURIAS	1	1	1	1	1	1	1
		BADIAN	1	1	1	1	1	1	1
		BALAMBAN	2	2	2	2	2	2	2
		BANTAYAN	2	2	2	2	2	2	2
		BARILI	2	2	2	2	2	2	2
		CITY OF BOGO	2	2	2	2	2	2	2
		BOLJOON	0	0	0	0	0	0	0
		BORBON	1	1	1	1	1	1	1
		CITY OF CARCAR	3	3	3	3	3	3	4
		CARMEN	1	1	1	1	1	1	1
		CATMON	1	1	1	1	1	1	1
		COMPOSTELA	1	1	1	1	1	1	1
		CONSOLACION	3	3	3	4	4	4	4
		CORDOVA	1	2	2	2	2	2	2
		DAANBANTAYAN	2	2	2	2	2	2	2
		DALAGUETE	2	2	2	2	2	2	2
		DANAO CITY	3	3	4	4	4	4	4
		DUMANJUG	1	1	1	1	1	1	1
		GINATILAN	0	0	0	0	0	0	0
		LILOAN	3	3	4	4	4	4	4
		MADRIDEJOS	1	1	1	1	1	1	1

Region	Province	City/ Municipality	Population Projection (Medium) updated by 2020 census						
			2020	2025	2030	2035	2040	2045	2050
Region VII_ CENTRAL VISAYAS	Cebu	MALABUYOC	0	0	0	0	0	1	1
		MEDELLIN	1	1	1	1	1	2	2
		MINGLANILLA	3	3	3	4	4	4	4
		MOALBOAL	1	1	1	1	1	1	1
		CITY OF NAGA	3	3	3	3	3	3	3
		OSLOB	1	1	1	1	1	1	1
		PILAR	0	0	0	0	0	0	0
		PINAMUNGAHAN	2	2	2	2	2	2	2
		PORO	1	1	1	1	1	1	1
		RONDA	0	0	0	0	1	1	1
		SAMBOAN	0	0	0	0	0	1	1
		SAN FERNANDO	1	2	2	2	2	2	2
		SAN FRANCISCO	1	1	1	1	1	2	2
		SAN REMIGIO	1	1	2	2	2	2	2
		SANTA FE	1	1	1	1	1	1	1
		SANTANDER	0	0	0	0	0	0	0
		SIBONGA	1	1	1	1	1	1	1
		SOGOD	1	1	1	1	1	1	1
		TABOGON	1	1	1	1	1	1	1
		TABUELAN	1	1	1	1	1	1	1
		CITY OF TALISAY	5	6	6	6	6	7	7
		TOLEDO CITY	4	5	5	5	5	5	5
		TUBURAN	1	2	2	2	2	2	2
		TUDELA	0	0	0	0	0	0	0
		CEBU CITY (Capital)	20	21	22	23	23	25	25
		LAPU-LAPU CITY (OPON)	10	11	11	12	12	13	13
		MANDAUE CITY	8	8	8	9	9	9	9
		Sub-total	107	115	119	123	126	131	133
	Negros Oriental	AMLAN (AYUQUITAN)	1	1	1	1	1	1	1
		AYUNGON	1	1	1	1	1	1	1
		BACONG	1	1	1	1	1	1	1
		BAIS CITY	2	2	2	2	2	2	2
		BASAY	1	1	1	1	1	1	1
		CITY OF BAYAWAN (TULONG)	3	3	3	3	3	3	3
		BINDOY (PAYABON)	1	1	1	1	1	1	1
		DAUIN	1	1	1	1	1	1	1
		DUMAGUETE CITY (Capital)	3	3	3	3	3	4	4
		CITY OF GUIHULNGAN	2	2	2	2	3	3	3
		JIMALALUD	1	1	1	1	1	1	1
		LA LIBERTAD	1	1	1	1	1	1	1
		MANJUYOD	1	1	1	1	1	1	1
		PAMPLONA	1	1	1	1	1	1	1
		SAN JOSE	0	0	0	1	1	1	1
		SANTA CATALINA	2	2	2	2	2	2	2
		SIATON	2	2	2	2	2	2	2
		SIBULAN	1	1	1	2	2	2	2
		CITY OF TANJAY	2	2	2	2	2	2	2
		TAYASAN	1	1	1	1	1	1	1
		VALENCIA (LUZURRIAGA)	1	1	1	1	1	1	1
		VALLEHERMOSO	1	1	1	1	1	1	1
		ZAMBOANGUITA	1	1	1	1	1	1	1
		Sub-total	30	31	32	34	36	38	40
	Siquijor	ENRIQUE VILLANUEVA	0	0	0	0	0	0	0
		LARENA	0	0	0	0	0	0	1
		LAZI	0	0	1	1	1	1	1
		MARIA	0	0	0	0	0	0	1
		SAN JUAN	0	0	0	0	0	1	1
		SIQUIJOR (Capital)	1	1	1	1	1	1	1
		Sub-total	2	2	2	3	3	3	4
		Total	**167**	**177**	**185**	**194**	**201**	**213**	**219**
		Grand Total for WRR VII	**170**	**180**	**188**	**196**	**203**	**215**	**222**

Source: JICA Survey Team

Table E- 6 Detailed Industrial Water Demand Forecast Result of WRR XI

Region	Province	City/ Municipality	Population Projection (Medium) updated by 2020 census						
			2020	2025	2030	2035	2040	2045	2050
Region X_NORTHERN MINDANAO	Bukidnon	QUEZON	3	3	3	3	3	3	3
		SAN FERNANDO	1	2	2	2	2	2	2
		Sub-total	**4**	**4**	**5**	**5**	**5**	**5**	**5**
		Total	**4**	**4**	**5**	**5**	**5**	**5**	**5**
Region XI_DAVAO	Davao de Oro	COMPOSTELA	2	2	3	3	3	3	3
		LAAK (SAN VICENTE)	2	2	2	2	3	3	3
		MABINI (DOÑA ALICIA)	1	1	1	1	1	2	2
		MACO	2	2	2	3	3	3	3
		MARAGUSAN (SAN MARIANO)	1	2	2	2	2	2	2
		MAWAB	1	1	1	1	1	1	1
		MONKAYO	2	2	3	3	3	3	3
		MONTEVISTA	1	1	1	1	2	2	2
		NABUNTURAN (Capital)	2	2	2	3	3	3	3
		NEW BATAAN	1	1	1	2	2	2	2
		PANTUKAN	2	2	3	3	3	3	3
		Sub-total	**18**	**19**	**22**	**24**	**25**	**27**	**27**
	Davao del Norte	ASUNCION (SAUG)	1	2	2	2	2	2	2
		CARMEN	2	2	2	2	3	3	3
		KAPALONG	2	2	2	2	3	3	3
		NEW CORELLA	1	1	2	2	2	2	2
		CITY OF PANABO	5	5	6	6	7	7	7
		ISLAND GARDEN CITY OF SAMAL	3	3	3	4	4	4	4
		SANTO TOMAS	3	3	4	4	4	4	4
		CITY OF TAGUM (Capital)	7	7	8	9	9	10	10
		TALAINGOD	1	1	1	1	1	1	1
		BRAULIO E. DUJALI	1	1	1	1	1	1	1
		SAN ISIDRO	1	1	1	1	1	1	1
		Sub-total	26	28	31	34	35	38	39
	Davao del Sur	BANSALAN	1	2	2	2	2	2	3
		CITY OF DIGOS (Capital)	4	5	6	6	7	7	8
		HAGONOY	1	2	2	2	2	2	2
		KIBLAWAN	1	1	2	2	2	2	2
		MAGSAYSAY	1	2	2	2	2	2	2
		MALALAG	1	1	1	1	1	2	2
		MATANAO	1	2	2	2	2	2	2
		PADADA	1	1	1	1	1	1	1
		SANTA CRUZ	2	3	3	3	4	4	4
		SULOP	1	1	1	1	1	1	1
		DAVAO CITY	41	49	54	60	64	69	73
		Sub-total	57	67	75	83	88	96	101
	Davao Occidental	DON MARCELINO 2	1	1	1	1	2	2	2
		JOSE ABAD SANTOS (TRINIDAD) 2	2	2	2	2	3	3	3
		MALITA 2	3	3	3	4	4	4	5
		SANTA MARIA 2	1	1	2	2	2	2	2
		SARANGANI 2	1	1	1	1	1	1	1
		Sub-total	7	8	9	10	11	12	13
	Davao Oriental	BAGANGA	1	2	2	2	2	2	2
		BANAYBANAY	1	1	1	1	2	2	2
		BOSTON	0	0	0	0	1	1	1
		CARAGA	1	1	1	1	1	1	2
		CATEEL	1	1	1	1	2	2	2
		GOVERNOR GENEROSO	1	2	2	2	2	2	2
		LUPON	2	2	2	2	2	3	3
		MANAY	1	1	1	1	1	1	2
		CITY OF MATI (Capital)	3	4	4	5	5	6	6
		SAN ISIDRO	1	1	1	1	1	1	1
		TARRAGONA	1	1	1	1	1	1	1
		Sub-total	13	15	17	18	20	22	23
		Total	**121**	**138**	**154**	**169**	**179**	**194**	**203**

Region	Province	City/ Municipality	Population Projection (Medium) updated by 2020 census						
			2020	2025	2030	2035	2040	2045	2050
Region XII_SOCCSKSARGEN	Cotabato (North Cotabato)	MAGPET	1	1	1	1	1	1	1
		MAKILALA	1	1	1	1	2	2	2
		TULUNAN	1	1	1	1	1	1	1
		ARAKAN	1	1	1	1	1	1	1
		Sub-total	**4**	**4**	**4**	**4**	**4**	**5**	**5**
	Sarangani	ALABEL (Capital)	1	1	1	1	1	1	1
		GLAN	2	2	2	2	2	2	2
		KIAMBA	1	1	1	1	1	1	1
		MAASIM	1	1	1	1	1	1	1
		MALAPATAN	1	1	1	1	1	1	1
		MALUNGON	1	2	2	2	2	2	2
		Sub-total	**7**	**8**	**8**	**8**	**8**	**8**	**8**
	South Cotabato	POLOMOLOK	2	3	3	3	3	3	3
		T'BOLI	1	2	2	2	2	2	2
		GENERAL SANTOS CITY (DADIANGAS)	10	10	11	11	11	12	12
		Sub-total	**14**	**14**	**15**	**15**	**16**	**16**	**17**
		Total	**25**	**26**	**27**	**28**	**28**	**29**	**30**
Region XIII_CARAGA	Surigao del Sur	BAROBO	1	1	1	1	1	1	1
		BAYABAS	0	0	0	0	0	0	0
		CITY OF BISLIG	1	1	1	1	1	2	2
		CAGWAIT	0	0	0	0	0	0	0
		CANTILAN	1	0	0	0	1	1	1
		CARMEN	0	0	0	0	0	0	0
		CORTES	0	0	0	0	0	0	0
		HINATUAN	1	1	1	1	1	1	1
		LANUZA	0	0	0	0	0	0	0
		LIANGA	1	0	0	0	0	1	1
		LINGIG	1	1	1	1	1	1	1
		MADRID	0	0	0	0	0	0	0
		MARIHATAG	0	0	0	0	0	0	0
		SAN AGUSTIN	0	0	0	0	0	0	0
		SAN MIGUEL	1	1	1	1	1	1	1
		TAGBINA	1	1	1	1	1	1	1
		TAGO	1	1	1	1	1	1	1
		CITY OF TANDAG (Capital)	1	1	1	1	1	1	1
		Sub-total	**9**	**9**	**9**	**9**	**9**	**10**	**10**
		Total	**9**	**9**	**9**	**9**	**9**	**10**	**10**
		Grand Total for WRR XI	**159**	**177**	**194**	**210**	**221**	**239**	**248**

Source: JICA Survey Team

ANNEX F

Agricultural Water Demands

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ABBREVATIONS

AWD: Annual Water Demands
BAI: Bureau of Animal Industry
BAS: Bureau of Agricultural Statistics
BFAR: Bureau of Fisheries and Aquatic Resources
CI: Cropping Intensity
CIS: Communal Irrigation System
DA: Department of Agriculture
DWR: Diversion Water Requirements
FAO: Food and Agriculture Organization
FUSA: Firm-up Service Area
IA: Irrigators Association
IMO: Irrigation management Office
ISA: Irrigation Service Area
ITS: Irrigation Telemetry System
IWD: Irrigation Water Demands
JICA: Japan International Cooperation Agency
JST: JICA Survey Team
LGU: Local Government Unit
NEDA: National Economic and Development Authority
NIA: National Irrigation Administration
NIMP: National Irrigation Master Plan
NIS: National Irrigation System
NISRIP: National Irrigation System Rehabilitation and Improvement Project
NWRB: National Water Resources Board
O&M: Operation and Maintenance
OGAS: Other Government Assisted System
PIC: Private Irrigation System
PSA: Philippine Statistics Authority
RIS: River Irrigation System
SRIP/S: Small Reservoir Irrigation Project/System
TH: Thousand Heads
WRR: Water Resources Region

F-1 CURRENT STATUS OF AGRICULTURAL WATER USE

F-1.1 Basis of Study on Agricultural Water Demands

The agriculture sector is the main water user among all sectors and consumes a lot of water sources. It is mainly composed of three (3) sub-sectors, namely: irrigation farming, inland fishery, and livestock/ poultry. The agricultural water demands are estimated by these sub-sectors. For the estimation of the present and future agricultural water demands, the following data and information (See Table F 1-1) are required.

Table F 1-1 Data Required for Agricultural Water Demands Study

Sub-sector	Data	Outputs by Study
General	- National Irrigation Master Plan 2020-2030 - Agricultural Production Data	Future irrigation development plan (area)
Irrigation Farming	- Present Irrigation Service Area and Actual Irrigated Area by Existing Irrigation Systems - Cropping Patterns in Existing Irrigation Systems - Land Soaking, Land Preparation Water Requirements and Percolation in Existing Irrigation Systems	Irrigation water demands by Provinces
Inland Fishery	- Existing Fishpond Area and by Provinces - Unit Water Requirements for Major Inland Fishes	Inland fishery water demands by Provinces
Livestock/ Poultry	- Head of Major Livestock and Poultry by Provinces - Standard Water Requirements for Livestock and Poultry	Livestock/ poultry water demands by Provinces

Source: JICA Survey Team

Through the official endorsement by NEDA, the above data and information were provided by the concerned agencies such as the Department of Agriculture (DA) and the National Irrigation Administration (NIA). The concerned Bureaus of DA are as follows.

- Bureau of Agricultural Statistics (BAS)
- Bureau of Soils and Water Management (BSWM)
- Bureau of Animal Industry (BAI)
- Bureau of Fisheries and Aquatic Resources (BFAR)

F-1.2 Present Irrigation Service Area

According to NIA Final Corporate Plan 2017-2026 in November 2016, the agricultural land areas of 9.4 million ha, which is about 32% of the Philippines' total land area (29.82 million ha), are largely classified into five major crop cultivation areas as shown in Table F 1-2.

Table F 1-2 Agricultural Land Areas by Five Major Crops

Crop	Area (thousand ha)	Ratio (%)
Rice	3,112	32.0
Irrigated	1,625	
Rainfed	1,487	
Corn	2,611	27.7
Coconut	2,833	30.1
Sugarcane	406	4.3
Banana	449	4.8
Total	9,411	

Source: NIA Final Corporate Plan 2017-2026

For this study, irrigation water demands are estimated by focusing on the irrigated rice area, because the other crops are mainly cultivated under rainfed conditions. Furthermore, in the water balance analysis between available water sources and agricultural water demands, the majority of the critical water shortages may only occur during the irrigated rice farming in the dry season.

NIA has provided "Inventory of National, Communal, Private & Other Government Assisted (OGA) Irrigation System from 2016 to 2020 (hereinafter as NIA Inventory data)" which is a database showing the irrigation areas (irrigation service area, firmed-up service area, irrigated area, and so on) and the related data/ information of all existing irrigation systems. According to this NIA Inventory data, the irrigation systems in the Philippines are classified into four types, National Irrigation System (NIS), Communal Irrigation System (CIS), Private Irrigation System (PIS) and Other Government Assisted System (OGAS). For reporting purpose, the systems except NISs are named as "small-scale systems" hereinafter. NISs are composed of three sub-systems: reservoir system, gravity system and pump system. The small-scale systems are also composed of three schemes, namely: gravity, pump and others (reservoir, etc.) systems. The pump systems are furthermore categorized into two types by water sources, surface water (river, pond, lake) and groundwater (shallow tube well and deep tube well). These classifications are summarized in Table F 1-3.

Table F 1-3 Classification of Irrigation Systems

National Irrigation System		Reservoir System Gravity System Pump System	 By Surface Water By Groundwater
Small Scale Systems (for this report only)	Communal Irrigation System Private Irrigation System Other Government Assisted System	Gravity System Pump System Other System	 By Surface Water By Groundwater

Source: Inventory of National, Communal, Private & Other Government Assisted (OGA) Irrigation System as of December 31, 2020

(1) National Irrigation System (NIS)

The NIS generally covers irrigation service area (ISA) of more than 1,000 ha and is constructed, operated and maintained by NIA. The operation and maintenance (O&M) works are also conducted by duly organized irrigators' cooperatives or associations (IA) together with NIA. Under Irrigation Management Transfer (IMT) program, NIA is transferring partial or full management of NIS to IA. According to NIA Inventory data as of December 31, 2020, there are 257 NISs nationwide covering ISA of 917,023 ha. For the actual irrigation management, NIA defines "Firm-up Service Area (FUSA) as follows:

(FUSA) = (ISA) – (Converted Area) – (Permanently Non-restorable Area)
– (Newly Generated Area with Non-operational)

<u>Conversion of Irrigated Areas</u>: Part of the service area of an existing system, originally used for agriculture, was converted to non-agricultural use such as commercial, industrial, and subdivision.

<u>Permanently Non-restorable Areas:</u> Parts of the service area of an existing system which can no

longer be restored or irrigated even after interventions by NIA. These areas include those covered by canals, access/service roads, portion of service areas that were eroded, elevated areas which would be too costly to reach, among others.

Newly Generated Area with Non-operational: Areas developed as new irrigation system but cannot be counted as the service area due to some difficulty of the operation.

These NISs are listed in Table F-1 with actual irrigated area in 2020 and summarized in Table F 1-4.

Table F 1-4 Summary of NISs in 2020

Clasification of Water Source	Nos.	ISA (ha)	FUSA (ha)	2020 Actual Irrigated Area (ha)			Cropping Intensity (%)		
				Wet Season	Dry Season	Total	Wet Season	Dry Season	Total
All Systems	257	917,023	816,653	724,098	690,453	1,414,551	88.7	84.5	173.2
Systems by Surface Water	256	913,572	813,259	721,685	688,089	1,409,774	88.7	84.6	173.3
Systems by Ground Water	1	3,451	3,394	2,413	2,364	4,777	71.1	69.7	140.7

Classification of ISA	Nos.	ISA (ha)	FUSA (ha)	2020 Actual Irrigated Area (ha)			Cropping Intensity (%)		
				Wet Season	Dry Season	Total	Wet Season	Dry Season	Total
ISA more than 10,000 ha	36	444,717 48.5%	413,736 50.7%	375,887 51.9%	368,598 53.4%	744,485 52.6%	90.9	89.1	179.9
1,000 ha<ISA<10,000 ha	148	435,804 47.5%	377,453 46.2%	327,593 45.2%	301,268 43.6%	628,861 44.5%	86.8	79.8	166.6
ISA less than 1,000 ha	73	36,502 4.0%	25,464 3.1%	20,618 2.8%	20,587 3.0%	41,205 2.9%	81.0	80.8	161.8

Source: Inventory of National, Communal, Private & Other Government Assisted (OGA) Irrigation System as of December 32, 2020
Remarks: (Cropping Intensity: CI) = (Actual Irrigated Area) / (FUSA)

(2) Communal Irrigation System (CIS)

The CIS is the main system among the small-scale irrigation systems with ISA of less than 1,000 ha, constructed by NIA and turned over to IA for O&M. There are 9,719 CISs nationwide covering ISA of 702,253 ha in 2020. The ISA, FUSA and irrigated area of CISs in 2020 are shown in Table F-2 and summarized in Table F 1-5.

Table F 1-5 Summary of CISs in 2020

System	Nos.	ISA (ha)	FUSA (ha)	2020 Actual Irrigated Area (ha)			Cropping Intensity (%)		
				Wet Season	Dry Season	Total	Wet Season	Dry Season	Total
Gravity	7,015	591,794	545,788	414,001	389,586	803,586	75.9	71.4	147.2
Pump	2,636	104,650	69,651	45,130	38,810	83,940	64.8	55.7	120.5
By Surface Water	*854*	*36,873*	*32,438*	*18,868*	*17,764*	*36,632*	*58.2*	*54.8*	*112.9*
By Ground Water	*1,782*	*67,677*	*37,213*	*26,262*	*21,046*	*47,308*	*70.6*	*56.6*	*127.1*
Other	68	5,809	5,566	4,191	3,723	7,914	75.3	66.9	142.2
Total	9,719	702,253	621,005	463,322	432,119	895,440	74.6	69.6	144.2

Source: Inventory of National, Communal, Private & Other Government Assisted (OGA) Irrigation System as of December 32, 2020

(3) Private Irrigation System (PIS)

The PIS is constructed by farmers without any financial assistance from the government and O&M works are carried out by themselves. There are 6,142 PISs nationwide covering ISA of 186,008 ha in 2020. The ISA, FUSA and irrigated area of PISs in 2020 are shown in Table F-3 and summarized in Table F 1-6.

Table F 1-6 Summary of PISs in 2020

System	Nos.	ISA (ha)	FUSA (ha)	2020 Actual Irrigated Area (ha)			Cropping Intensity (%)		
				Wet Season	Dry Season	Total	Wet Season	Dry Season	Total
Gravity	3,507	111,093	109,408	80,204	65,838	146,042	73.3	60.2	133.5
Pump	2,436	56,083	55,828	45,585	42,288	87,873	81.7	75.7	157.4
By Surface Water	*789*	*11,032*	*10,893*	*8,608*	*6,859*	*15,467*	*79.0*	*63.0*	*142.0*
By Ground Water	*1,647*	*45,051*	*44,935*	*36,977*	*35,429*	*72,406*	*82.3*	*78.8*	*161.1*
Other	199	18,832	10,312	1,558	1,593	3,151	15.1	15.4	30.6
Total	6,142	186,008	175,548	127,347	109,719	237,066	72.5	62.5	135.0

Source: Inventory of National, Communal, Private & Other Government Assisted (OGA) Irrigation System as of December 32, 2020

(4) Other Government Assisted Irrigation System (OGAS)

OGAS is constructed by other government agencies except NIA and O&M works are carried out by farmers. The most famous OGASs are Small Water Impounding Management (SWIM) implemented by Bureau of Soils and Water Management (BSWM) of DA and Department of Public Works and Highways (DPWH). There are 3,855 OGASs nationwide covering ISA of 169,996 ha in 2020. The ISA, FUSA and irrigated area of OGASs in 2020 are shown in Table F-4 and summarized in Table F 1-7.

Table F 1-7 Summary of OGASs in 2020

System	Nos.	ISA (ha)	FUSA (ha)	2020 Actual Irrigated Area (ha)			Cropping Intensity (%)		
				Wet Season	Dry Season	Total	Wet Season	Dry Season	Total
Gravity	2,177	122,493	121,317	79,913	49,642	129,555	65.9	40.9	106.8
Pump	1,608	44,334	40,489	27,665	24,602	52,267	68.3	60.8	129.1
By Surface Water	*517*	*17,864*	*14,671*	*11,473*	*10,515*	*21,988*	*78.2*	*71.7*	*149.9*
By Ground Water	*1,091*	*26,470*	*25,818*	*16,192*	*14,087*	*30,279*	*62.7*	*54.6*	*117.3*
Other	70	3,169	3,169	1,894	1,882	3,776	59.8	59.4	119.2
Total	3,855	169,996	164,975	109,472	76,126	185,596	66.4	46.1	112.5

Source: Inventory of National, Communal, Private & Other Government Assisted (OGA) Irrigation System as of December 32, 2020

(5) Small Scale Irrigation Systems

The summary figures of small-scale irrigation systems composed of CISs, PISs and OGASs in 2020 are presented in Table F-5, and the main features are shown in Table F 1-8.

Table F 1-8 Summary of Small-scale Irrigation Systems in 2020

System	Nos.	ISA (ha)	FUSA (ha)	2020 Actual Irrigated Area (ha)			Cropping Intensity (%)		
				Wet Season	Dry Season	Total	Wet Season	Dry Season	Total
CIS	9,719 49.3%	702,253 66.4%	621,005 64.6%	463,322 66.2%	432,119 69.9%	895,441 67.9%	74.6	69.6	144.2
PIS	6,142 31.2%	186,008 17.6%	175,548 18.3%	127,347 18.2%	109,719 17.8%	237,066 18.0%	72.5	62.5	135.0
OGAS	3,855 19.6%	169,996 16.1%	164,975 17.2%	109,472 15.6%	76,126 12.3%	185,598 14.1%	66.4	46.1	112.5
Total	19,716	1,058,257	961,528	700,141	617,964	1,318,105	72.8	64.3	137.1

Source: Inventory of National, Communal, Private & Other Government Assisted (OGA) Irrigation System as of December 32, 2020

(6) All Irrigation Systems

The summations of above all irrigation systems are shown in Table F-6 for all types, in Table F-7 for the systems by surface water sources, and in Table F-8 for the systems by groundwater sources. The classification by water sources is prepared for the future water balance studies by two water sources of surface and groundwater. These three tables are summarized in Table F 1-9.

Table F 1-9 ISA, FUIA & Irrigated Area of Irrigation Systems in 2020

(Unit: 1,000 ha)

Systems	NISs				Small Scale Systems				Total			
	ISA	FUSA	Irrigated Area		ISA	FUSA	Irrigated Area		ISA	FUSA	Irrigated Area	
			Wet	Dry			Wet	Dry			Wet	Dry
All	917	817	724	690	1,058	961	700	618	1,975	1,778	1,424	1,308
By Surface Water	914	813	722	688	919	854	621	547	1,833	1,667	1,343	1,235
By Ground Water	3.5	3.4	2.4	2.4	139.2	108.0	79.4	70.6	142.7	111.4	81.8	73.0

Source: Inventory of National, Communal, Private & Other Government Assisted (OGA) Irrigation System as of December 31, 2020

The irrigation areas of all systems are also summarized by regions as shown in Table F 1-10. The cropping intensities vary from 62.9% to 90.8% in wet season, from 56.9% to 88.1% in dry season and from 123.1% to 176.7% in total. These variations are mainly caused by the availability of water resources and weather conditions, especially rainfall.

Table F 1-10 Irrigation Areas in 2020 by Region

Region	Area in 2020 (1,000 ha)					Cropping Intensity (%)		
	ISA	FUSA	Irrigated					
			Wet	Dry	Total	Wet	Dry	Total
CAR	102.5	96.7	73.3	70.1	143.4	75.8	72.5	148.3
1	217.4	190.1	156.4	108.2	264.6	82.3	56.9	139.2
2	302.1	279.5	247.9	246.1	494.0	88.7	88.1	176.7
3	346.9	322.9	267.1	252.2	519.3	82.7	78.1	160.8
4A	64.3	48.7	36.8	35.9	72.7	75.6	73.7	149.3
4B	109.5	95.0	82.0	70.9	152.9	86.3	74.6	160.9
5	143.3	118.3	78.4	75.7	154.1	66.3	64.0	130.3
6	128.2	114.2	82.4	66.4	148.8	72.2	58.1	130.3
7	50.4	44.1	35.9	32.9	68.8	81.4	74.6	156.0
8	71.9	70.4	50.2	50.9	101.1	71.3	72.3	143.6
9	47.6	41.6	34.1	32.7	66.8	82.0	78.6	160.6
10	73.0	60.4	46.4	44.5	90.9	76.8	73.7	150.5
11	70.4	68.2	53.0	52.9	105.9	77.7	77.6	155.3
12	127.7	117.2	106.4	99.8	206.2	90.8	85.2	175.9
CARAGA	71.4	64.5	44.8	41.2	86.0	69.5	63.9	133.3
ARMM	48.8	46.3	29.1	27.9	57.0	62.9	60.3	123.1
Total	1,975.4	1,778.1	1,424.2	1,308.3	2,732.5	80.1	73.6	153.7

Source: Inventory of National, Communal, Private & Other Government Assisted (OGA) Irrigation System as of December 31, 2020

Furthermore, to assess annual variation, the irrigation areas from 2016 to 2019 are summed up by provinces as shown in Table F-9 and summarized in Table F 1-11.

Table F 1-11 Irrigation Areas from 2016 to 2020

Year	ISA (ha)		FUSA (ha)		Irrigated Area (ha)				Cropping Intensity (%)	
		Variat'n		Variat'n	Wet	Variat'n	Dry	Variat'n	Wet	Dry
2016	1,855,998		1,674,889		1,186,913		1,091,860		70.9	65.2
2017	1,875,777	19,779	1,702,635	27,746	1,274,835	87,922	1,169,606	77,746	74.9	68.7
2018	1,873,985	-1,792	1,724,440	21,805	1,315,640	40,805	1,218,213	48,607	76.3	70.6
2019	1,930,853	56,868	1,751,644	27,204	1,368,971	53,331	1,274,066	55,853	78.2	72.7
2020	1,975,280	44,427	1,778,181	26,537	1,424,239	55,268	1,308,417	34,351	80.1	73.6

Source: Inventory of National, Communal, Private & Other Government Assisted (OGA) Irrigation System as of December 31, 2020

All categories of irrigation areas in 2020 show maximum values. Therefore, the irrigated areas in 2020 will be adopted for the estimation of the present irrigation water demands.

F-1.3 Present Inland Fishery Sub-sector

DA-BFAR provided the following data that is only available data for the requirements by the JICA Survey Team, based on the data from Philippine Statistics Authority (PSA).

- Number and area of aquafarms by type of aquafarm, size of aquafarm, region and province: Philippines, 2012
- Number of aquafarms by type of aquafarm, type of water environment, region and province: Philippines, 2012
- Area and number of aquafarms by type of water environment by region, 2008-2012
- Census of Tilapia aquafarms by type of aquafarms by region, 2012

Based on these data, the aquafarms including inland fisheries are classified several types as shown in Table F 1-12.

Table F 1-12 Area and Number of Aquafarms by Several Types in 2012

Type of of Aquafarms	Total Area of Aquafarms (ha)	Total Number of Aquafarms	Number by Type of Water Environment		
			Fresh Water	Brackish Water	Marine Water
Fishpond	85,606	75,002	49,065	21,987	3,950
Fish Pen	2,553	3,102	1,623	785	694
Fish Cage	2,849	16,353	9,683	2,323	4,347
Seaweed Farm	30,292	48,494	0	0	48,494
Oyster Farm	568	2,856	0	1,988	868
Mussel Farm	233	1,040	3	250	787
Fish Tanks	No Data	1,029	929	57	43
Hatchery	No Data	590	352	138	100
Others	122	228	40	5	183
Total	122,223	148,694	61,695	27,533	59,466
Total Area (ha)			**16,603**	134,740	No Data

Source : Philippine Statistics Authority

In the water balance study for the assessment of national water resources, the most important data is the area of aquafarms by freshwater source (16,603 ha), which are categorized as inland fishery. In order to estimate the area of aquafarms by freshwater source in 2020, the average annual increase rate of 1.6% (156.6/144.7 = 1.082 => (**1.016**)[5]) is calculated based on the following data by PSA.

- Quantity of fish production in freshwater fishpond in 2012: 144.7 thousand tons
- Quantity of fish production in freshwater fishpond in 2017: 156.6 thousand tons

Therefore, the area of aquafarms by freshwater source in 2020 is estimated at **18,851 ha** (16,603 ha x (1.016)[8]), that is recommended as the basis for the estimation of water demand of inland fishery sub-sector.

F-1.4 Present Livestock/ Poultry Sub-sector

DA-BAI provided the following data in response to JICA Survey Team's request.

- Inventory of livestock (cattle, carabao, hog) and Poultry (chicken) by provinces from 2012 to 2021

- standard water requirements for livestock and poultry

The inventories of livestock and poultry are shown in Table F-10 for carabao, Table F-11 for cattle, Table F-12 for hog and Table F-13 for chicken, and the summary is shown in Table F 1-13.

Table F 1-13 Total Heads of Livestock/Poultry by Type

(Unit: 1,000head)

Year	Livestock			Poultry
	Carabao	Cattle	Hog	Chicken
2012	2,964	2,493	11,863	164,192
2013	2,913	2,498	11,843	166,386
2014	2,847	2,512	11,802	167,671
2015	2,855	2,534	12,000	176,469
2016	2,877	2,554	12,479	178,793
2017	2,882	2,548	12,428	175,317
2018	2,883	2,554	12,604	175,772
2019	2,874	2,535	12,709	186,370
2020	**2,865**	**2,542**	**12,796**	**178,265**
2021	*2,849*	*2,605*	*9,943*	*176,820*
2022	*2,774*	*2,557*	*9,426*	*185,102*

Source : Philippine Statistics Authority

The above total heads of livestock/poultry are utilized for the estimation of water demand of livestock/poultry sub-sector.

F-2 WATER DEMAND FORECAST (AGRICULTURAL USE)

F-2.1 Future Irrigation Area

In order to assess the water resources in the year of 2030, 2040, and 2050, the respective irrigation water demands will be estimated. For this purpose, future irrigation area, firm-up service area and irrigated area will be projected based on the following two programs:

1) National Irrigation Master Plan (NIMP) 2020-2030, and
2) National Irrigation Administration (NIA) Annual Irrigation Programs from 2011 to 2020

F-2.1.1 Projection Based on NIMP 2020-2030

The projected supply and demand gap for rice is a critical input in determining the need to expand the area planted for paddy and to improve crop productivity. The physical area targets for irrigation development are determined relative to the projected rice consumption of the country. The National Irrigation Master Plan (NIMP) 2020-2030 assumes a rice demand projection of 13.91 million tons in 2019 and 15.88 million tons in 2030 as presented in the Philippine Rice Industry Roadmap (PRIR) 2030. Based on the population of 109,292,453 in 2020 and 123,833,055 in 2030, these rice demands are assumed to be estimated by the per capita consumption of 128 kg.

For the estimation of rice production, NIMP adopted the following assumptions in Scenario 1 which is the priority plan.

(1)	Cropping intensity	170%
(2)	Crop yield under irrigated areas	4.43 ton/ha in 2020 to 2021 5 ton/ha in 2022 to 2024 and 5.4 ton/ha in 2025 to 2030
(3)	Crop yield under rainfed areas	3.13 ton/ha

(4)	Weighted average rate of rainfed areas converted to additional irrigated areas	0.53 ha per 1 ha of irrigated area
(5)	Milling recovery rate	65%
(6)	Postharvest losses	14% in 2020 to 2024 and 12% in 2025 to 2030
(7)	Annual rate of irrigation area increase	2.8%

In NIMP, the key data of 2020 was projected. However, in 2021, as 2020 data is already available this will be projected. The future irrigation areas are re-estimated based on the main methodology in the NIMP 2030's rice demand projection, which is the most important factor adopted from the PRIR. In this re-estimation, the above assumption (7) of the annual rate of irrigation area increase is not considered. The results of the re-estimation are shown in Table F 2-1

Table F 2-1 Projection of Future Irrigation Areas

Items			Year			
			2020	2030	2040	2050
(A)	Population		109,292,453 *4	123,833,055 *4	135,881,380 *4	143,758,859 *4
(B)	Per capita Rice Consumption (kg/person)		128 *1	128.24 *1	128 *1	128 *1
(C)	Required Rice Volume (ton)	(A) x (B)	13,989,434	15,880,000 *1	17,392,817	18,401,134
(D)	Ratio of Rice to Paddy*1		0.65 *1	0.65 *1	0.65 *1	0.65 *1
(E)	Required Paddy Production (ton)	(C) / (D)	21,522,206	24,430,769 *1	26,758,179	28,309,437
(F)	Postharvest Losses		0.14 *1	0.12 *1	0.11 *4	0.10 *4
(G)	Required Gross Paddy Production (ton)	(E)/(1-F)	25,025,821	27,762,238 *1	**30,065,370**	**31,454,930**
(H)	Paddy Production (ton)		19,294,855 *2	27,108,679 *1	**30,065,370** *4	**31,454,930** *4
	Irrigated Paddy (ton)		14,571,765 *2	23,888,866 *1	27,497,699	29,193,749
	Rainfed Paddy (ton)		4,723,090 *2	3,219,813 *1	2,567,672	2,261,180
(I)	Unit Yield of paddy			5.40 *1	5.40 *1	5.40 *1
(J)	Firm-up Service Area (ha)		1,777,639 *3	**2,602,273** *1	**2,995,392**	**3,180,147**
(K)	Cropping Intensity (%)		154 *3	170 *1	170 *1	170 *1
(L)	Required Increase in Irrigated Areas (ha) in 10 Years			824,634 *4	393,119 *4	184,755 *4

Source: NIA Inventory, NIMP 2020-2030 and JICA Survey Team
Remarks: (*1) Data in NIMP 2020-2030
(*2) Data in PSO
(*3) Data in NIA Inventory
(*4) Estimated or Recommended by JICA Survey Team

There are 57 identified priority provinces for paddy production with newly estimated potential irrigable area in NIMP. Based on above firm-up service area in 2030, 2040, and 2050 and these potential service areas in 57 provinces, the irrigated areas in 2030, 2040, and 2050 are calculated by each province as shown in Table F-14.

F-2.1.2 Projection Based on NIA's 2011-2020 Financial Programs

Irrigation development in the Philippines has been hampered by numerous issues and constraints including the lack of adequate and reliable hydrologic data for proper irrigation system planning and design; inadequate and uncoordinated watershed and aquifer protection; competing water uses; reduction of technical manpower; poor irrigation water management and so on. Thus, 824,500 ha of irrigation development within ten years from 2020 to 2030 is quite a challenging task for NIA, considering these issues and constraints.

On the other hand, former President Rodrigo Duterte signed RA 10969 or "the Free Irrigation Service Act" on February 2, 2018. With this law, all farmers with landholdings of 8 ha and below are exempted from paying irrigation service fee (ISF) for water derived from NIS. While the law puts NIA, as a corporation, in a better financial position with government subsidy as receivables are written off, a cloud of doubt hovers over the long run financial sustainability of the free irrigation program since it adds to the financial burden of the government.

Under these circumstances, aside from the NIMP, the JICA Survey Team studied the possible irrigation development plan based on NIA's past financial programs. Table F 2-2 shows NIA's annual irrigation program from 2011 to 2020.

Table F 2-2 NIA Annual Irrigation Program from 2011 to 2020

CY	Financial Program (P1,000)	Physical Targets (ha)		
		New	Restored	Rehab
2011	16,084,710	29,782	29,173	102,680
2012	25,063,808	83,720	53,870	91,151
2013	27,329,295	63,065	42,219	112,699
2014	21,111,849	41,158	7,468	5,359
2015	28,750,441	27,672	28,282	ND
2016	32,743,184	19,660	14,703	75,967
2017	38,376,441	23,115	13,507	ND
2018	28,021,653	33,247	14,460	ND
2019	31,730,876	31,267	4,730	ND
2020	25,617,898	29,019	10,630	ND
Average	27,483,016	**38,171**	21,904	

Source: NIA
Remarks: ND= No data

Based on these past physical targets, annual increased area of ISA is tentatively assumed at 38,000 ha, and future ISA is estimated as follows:

- ISA in Year 2030: (2020 ISA=1,975,280) + (38,000 ha x 10 years) = about 2,355,000 ha
- ISA in Year 2040: (2020 ISA=1,975,280) + (38,000 ha x 20 years) = about 2,735,000 ha
- ISA in Year 2050: (2020 ISA=1,975,280) + (38,000 ha x 30 years) = about 3,115,000 ha

The potential irrigable area was reported as 3,128,632 ha in NIA Status of Irrigation Development as of December 31, 2019. Irrigation development, which is the ratio of ISA to the potential irrigable area, is 63.1% as of December 31, 2020, based on ISA of 1,975,280 ha as explained above. The remaining irrigable area for future development is 1,153,352 ha. The future ISAs and FUSAs by province are estimated based on the ratio of remaining potential area by province to the total remaining area. The irrigated areas by province are also calculated based on the NIMP targeted cropping intensity of 170%. The results are shown in Table F-15.

It is necessary to clarify whether these additional irrigation areas contribute to the rice self-sufficiency or not. By adopting same assumptions in NIMP, paddy demands and productions in each target year are estimated as shown Table F2-3. In 2030, paddy productions are 23.90 million ton against the demands of 27.76 million ton, which means that rice import of about 5.94 million ton {(27.76-23.90)/0.65} is required. With the same estimation, rice import volume in 2040 and 2050 is 5.09 million ton and 2.83

million ton, respectively. Per capita consumption based on the production volume is estimated at 110 kg/person in 2030, 114 kg/person in 2040, and 121 kg/person in 2050.

Per capita consumption: (Paddy Production) x (Rice/Paddy Ratio) x (Postharvest Losses) / (Population)

It is generally known that the more society develops, the more rice consumption decreases. The proper assumption of per capita consumption is the important key factor for the formulation of future irrigation development programs.

Table F 2-3 Projection of Future Paddy Demands and Productions

Items			Year			
			2020	2030	2040	2050
(A)	Population		109,292,453 *4	123,833,055 *4	135,881,380 *4	143,758,859 *4
(B)	Per capita Rice Consumption (kg/person)		128 *1	128.24 *1	128 *1	128 *1
(C)	Required Rice Volume (ton)	(A) x (B)	13,989,434	15,880,000 *1	17,392,817	18,401,134
(D)	Ratio of Rice to Paddy*1		0.65 *1	0.65 *1	0.65 *1	0.65 *1
(E)	Required Paddy Production (ton)	(C) / (D)	21,522,206	24,430,769 *1	26,758,179	28,309,437
(F)	Postharvest Losses		0.14 *1	0.12 *1	0.11 *4	0.10 *4
(G)	Required Gross Paddy Production (ton)	(E)/(1-F)	25,025,821	**27,762,238** *1	**30,065,370**	**31,454,930**
(H)	Paddy Production (ton)		19,294,855 *2	**23,899,834**	**26,757,852**	**29,615,870**
	Irrigated Paddy (ton)		14,571,765 *2	19,807,126	23,295,526	26,783,926
	Rainfed Paddy (ton)		4,723,090 *2	4,092,708	3,462,326	2,831,944
(I)	Unit Yield of paddy			5.40 *1	5.40 *1	5.40 *1
(J)	Firm-up Service Area (ha)		1,777,639 *3	**2,157,639**	**2,537,639**	**2,917,639**
(K)	Cropping Intensity (%)		154 *3	170 *1	170 *1	170 *1
(L)	Required Increase in Irrigated Areas (ha) in 10 Years			380,000 *4	380,000 *4	380,000 *4

Source: NIA Inventory, NIMP 2020-2030 and JICA Survey Team
Remarks: (*1) Data in NIMP 2020-2030
(*2) Data in PSO
(*3) Data in NIA Inventory
(*4) Estimated or Recommended by JICA Survey Team

F-2.2 Irrigation Water Requirements

F-2.2.1 General

In the Philippines, rice has been imported every year since the middle of the 1990s. Because of this situation, irrigation water demands shall be estimated based on the paddy-paddy cropping pattern, even if there are several actual cropping patterns nationwide. This is because the main purpose of this study is to clarify the critical water shortage regions among all water resources regions. The double cropping of paddy requires the maximum water demand in the irrigated farming for all crops.

The irrigation water requirements are estimated for the following two cases in consideration of present actual field water management and future improved irrigation water management.

1) Irrigation water requirements based on NIA present operation with JICA Survey Team's modifications
2) Irrigation water requirements based on proposed future operations

F-2.2.2 Basic Conditions

In the Data Collection Survey for National Water Resources Development and Management Plan, irrigation water requirements are calculated with **ten days** as unit based on the following conditions.

1) Cropping pattern (calendar) for double cropping of paddy is prepared based on the standard or common pattern adopted in the provincial level of NIA field offices. The major factors in preparing the cropping pattern are shown in Table F 2-4 in comparison with both present and future operations.

Table F 2-4 Major Factors of Cropping Pattern

Factors	Present Operation	Future Operation
Paddy Variety Growing period Seeding to Drainage	 115 days & 125 days are common 100 days & 110 days	Same as Present Operation
Staggered Period (SP)	20 days to 60 days, there are several periods. To standardize as much as possible, the four (4) SPs such as 20 days, 30 days, 45 days & 60 days are prepared.	Following present operation, but most of 20 days SP are modified to 30 days SP in considering that cropping pattern is standardized in whole provincial areas, not only one irrigation system.
Start of Land Soaking	A lot of patters are adopted.	Following present patterns as much as possible, but some are modified in consideration of climate types and so on.
Land Soaking Period	7 days in all	7 days in all
Land Preparation Period	15 days & 20 days	15 days & 20 days (same as present operation)

Source: JICA Survey Team

2) The following basic data are minimum requirements to be collected from field operations for the estimation of irrigation water requirements. To estimate the realistic requirements, these values commonly utilized in the provincial level of NIA field offices were collected and adopted, as much as possible.

- Potential evapotranspiration
- Soil saturation requirement (Land soaking requirement in wet and dry seasons)
- Percolation rate
- Irrigation efficiency

F-2.2.3 Estimation of Diversion Water Requirements

Based on the cropping pattern, irrigation water requirements are estimated by the following formulas.

$$DWR = IWR/IE$$

$$IWR = FWR - ER$$

$$FWR = LS + LP + CWR$$

$$LS = Sn/t + Kcf \times Eto + P$$

$$LP = Kcf \times Eto + P$$

$$CWR = Kc \times Eto + P$$

Where, *DWR*: Diversion water requirement, mm/day and liter/second/ha (l/s/ha)
IE: Irrigation Efficiency, % (refer to **1)** below**)**)

IWR: Irrigation water requirement, mm/day
ER: Effective rainfall, mm/day (refer to **2)** below))
FWR: Farm water requirement, mm/day
LS: Land soaking requirement, mm/day
LP: Land preparation requirement, mm/day
CWR: Crop water requirement, mm/day
Sn: Soil saturation requirement, mm (refer to **3)** below))
t: Number of days to saturate soil (7 days as standard)
Kcf: Conversion coefficient for evaporation from paddy field, (0.8)
Eto: Potential evapotranspiration, mm/day (refer to **4)** below))
P: Percolation rate, mm/day (refer to **5)** below))
Kc: Crop coefficient (refer to **6)** below)

1) Irrigation Efficiency

If the actual irrigation efficiency utilized by NIA field office is available, that rate is adopted for the estimation of diversion water requirement under present operation. If not available, the following efficiencies are adopted. In case of future operations, the following efficiencies are also fully adopted in consideration of future improvement of water management.

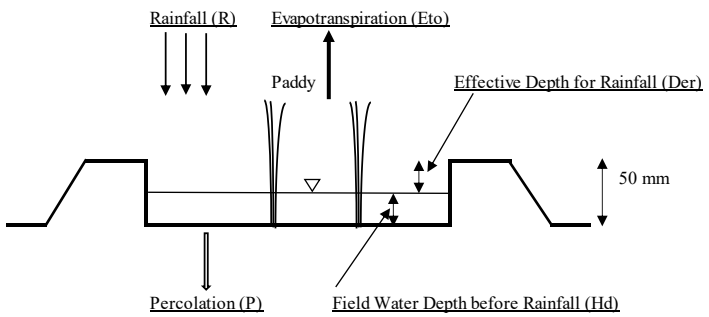
Table F 2-5 Irrigation Efficiency

Component	Climate Type I		Climate Type II, III & IV	
	Wet (%)	Dry (%)	Wet (%)	Dry (%)
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	**48**	**54**	**48**	**48**

Source: JICA Survey Team based on several Feasibility Study Reports for NIA Irrigation Development Projects

2) Effective Rainfall (ER)

The JICA Survey Team's hydrological expert prepared a daily and ten-day rainfall data for each province. Utilizing daily rainfall data of a five-year probability in Pampanga and Nueva Ecija provinces, effective rainfall was calculated by adopting paddy field Tank Model with 50 mm depth (see Figure F 2-1).



Source: JICA Survey Team

Figure F 2-1 Paddy Field Tank Model

Assuming above paddy field Tank Model, the daily effective rainfall is calculated as:

$$ER = R - Eto - P - Hd$$
$$(50 - Eto - P - Hd) \leq ER \leq 50$$

However, it is not realistic to determine effective rainfall based on daily water balance by the field Tank Model because of the following:

- Rainfall does not evenly pour to paddy fields in the wide irrigation system area.
- Irrigation water management is not easily operated in accordance with rainfall due to the time lag between the intake site and the wide and remote paddy field areas. (In the Feasibility Study Report on the Improvement Project of the Operation & Maintenance of National Irrigation Systems (UPRIIS) in February 1984, the time lag between the Pantabangan Dam and the terminal points of UPRIIS service area was estimated at 2.7 days.)
- It is hardly possible to operate many turnout gates simultaneously with adjusting proper requirements considering effective rainfall.

In consideration of sample studies on daily water balance method, the alternative studies for effective rainfall were examined based on the ten-day rainfall data of five-year probability. As a result, the following assumptions are adopted for the estimation of effective rainfall.

Table F 2-6 Effective Rainfall Assumptions (5 Year Probability Rainfall)

10 days Rainfall	Effective Rainfall
0 to 20 mm	0 %
21 to 100 mm	70 %
101 to 200 mm	40 %
More than 201 mm	20 %

Source: JICA Survey Team
Remarks: Maximum effective rainfall = (Farm water requirement) x (Actual days of 10 days period: 8 to 11 days)

3) Soil Saturation Requirement (Land Soaking Requirement)

If the actual requirement utilized by NIA field offices is available, that value is adopted for the estimation of land soaking requirement under future operation as well as under present operation. If not available, the following requirements are adopted.

Table F 2-7 Land Soaking Requirements

Climate Type I		Climate Type II, III & IV	
Wet (mm)	Dry (mm)	Wet (mm)	Dry (mm)
165	145	150	120

Source: JICA Survey Team based on several Feasibility Study Reports for NIA Irrigation Development Projects

4) Potential Evapotranspiration

If the *Eto* utilized by NIA field offices is available, that value is adopted for the estimation of water requirement under present operation. However, for future operation, *Eto* estimated by the JICA Survey Team based on FAO Penman-Monteith Method is fully adopted, even for present operation in case of no *Eto* data.

5) Percolation Rate

If the actual rate utilized by NIA field offices is available, that rate is adopted for the estimation. If not available, 2 mm/day is adopted based on results in past irrigation projects.

6) Crop Coefficient

The following crop coefficients for paddy are commonly utilized for the estimation of crop water requirement in the NIA irrigation projects.

Table F 2-8 Paddy Crop Coefficients

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.30	1.21	1.15	1.01	0.85

Source: JICA Survey Team based on several Feasibility Study Reports for NIA Irrigation Development Projects

F-2.2.4 Provincial Irrigation Water Requirements

Calculation sheets for irrigation water requirements of each province are shown in Attachment-A for present operation and Attachment-B for future operation. Ten-day diversion water requirements by province (present operation) is summarized in Table F-16. Ten-day diversion water requirements by province (proposed for future operation) are also summarized in Table F-17.

F-2.2.5 Irrigation Water Demands by Provinces

(1) Present Irrigation Water Demands

Based on the 2020 irrigation area shown in Table F-6 and ten days diversion water requirement: present operation shown in Table F-16, irrigation water demands (IWD) by provinces in 2020 are calculated and shown in Table F-18. Annual total demand is estimated at 31,524 MCM.

Table F 2-9 Estimated Present Irrigation Water Demands

ISA (ha)	FUSA (ha)	Irrigated Area (ha)		Cropping Intensity (%)	IWD (MCM)
		Wet	Dry		
1,975,280	1,778,181	1,424,239	1,308,417	153.7	31,527

Source: JICA Survey Team

(2) Future Irrigation Water Demands

Future water demands are calculated for two cases as explained in the above “Future Irrigation Area”. Based on the NIMP 2020-2030, the projected irrigation service area in 2030, 2040, and 2050 are shown in Table F-14 and the ten-day diversion water requirements by province, as proposed for future operation shown in Table F-17 are used for the calculation of the water demands. The results are shown in Table F-19 for 2030, Table F-20 for 2040 and Table F-21 for 2050.

In case of NIA’s past financial programs, the irrigation water demands are calculated based on the ten-day diversion water requirements by province, as proposed for future operation shown in Table F-17 and projected irrigation service area in 2030, 2040, and 2050 based on NIA’s 2011-2020 irrigation program shown in Table F-15. The results are shown in Table F-22 for 2030, Table F-23 for 2040 and Table F-24 for 2050.

Annual total demands for each case are summarized in Table F 2-10.

Table F 2-10 Estimated Future Irrigation Water Demands

Year	ISA (ha)	FUSA (ha)	Irrigated Area (ha)		Cropping Intensity (%)	IWD (MCM)
			Wet	Dry		
Based on NIMP 2020-2030						
2030	2,799,014	2,602,815	2,313,988	2,110,798	170	49,901
2040	3,193,033	2,995,934	2,662,389	2,430,698	170	57,283
2050	3,377,788	3,180,689	2,826,128	2,581,043	170	60,753
Based on NIA Past Financial Programs						
2030	2,355,280	2,158,181	1,918,116	1,750,791	170	41,300
2040	2,735,280	2,538,181	2,253,076	2,061,832	170	48,186
2050	3,115,280	2,918,181	2,588,035	2,372,872	170	55,069

Source: JICA Survey Team

F-2.2.6 Irrigation Water Demands by Water Resources Regions

(1) Present Irrigation Water Demands

Based on the area rate of each provincial area in water resources region (WRR), irrigation areas of each WRR are calculated as shown in Table F-25. The irrigation water demands by WRR are estimated by multiplying these provincial irrigated areas by WRR with the ten-days diversion water requirements by provinces (present condition) as shown in Table F-16. The irrigation water demands by WRR in 2020 are shown in Table F-26 and the monthly irrigation water demands by WRR in 2020 are summarized in Table F 2-11.

Table F 2-11 Monthly Irrigation Water Demands by WRR in 2020 (All Systems)

(Unit: MCM)

WRR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
I	243.65	198.93	43.22	0.96	13.61	122.97	172.23	143.48	107.15	26.17	190.52	185.52	1,448.41
II	1,147.19	1,175.41	587.54	53.70	37.63	872.41	809.94	648.39	522.55	67.58	606.75	661.06	7,190.16
III	1,282.51	1,246.19	734.86	89.54	29.61	288.87	625.67	641.20	509.07	408.30	898.86	1,200.41	7,955.08
IV	400.75	405.21	275.09	46.03	305.68	213.35	281.92	176.01	33.02	31.72	89.89	338.31	2,596.97
V	279.67	334.49	305.80	10.06	268.52	271.96	143.01	149.78	8.19	0.00	0.87	191.75	1,964.11
VI	294.84	106.20	3.55	0.00	232.16	180.11	200.23	198.25	15.58	97.59	208.14	297.36	1,834.01
VII	110.46	46.06	10.24	0.00	47.04	85.01	98.67	102.19	32.15	41.26	111.90	109.53	794.51
VIII	192.69	108.00	15.55	67.91	69.27	165.25	108.40	117.28	70.64	0.00	89.40	119.33	1,123.72
IX	190.68	113.23	21.63	97.67	118.04	78.99	54.48	25.24	12.12	21.07	63.23	84.22	880.61
X	196.33	173.86	78.50	0.86	17.59	140.14	77.49	118.22	54.51	0.00	57.10	80.09	994.69
XI	243.98	180.57	130.35	78.93	82.41	177.79	117.42	141.51	83.14	47.08	159.47	243.83	1,686.48
XII	252.06	59.93	224.37	499.59	407.74	268.83	59.18	57.30	115.39	264.18	385.43	463.45	3,057.44
Total	4,834.80	4,148.07	2,430.69	945.26	1,629.32	2,865.68	2,748.65	2,518.88	1,563.50	1,004.95	2,861.57	3,974.84	31,526.20

Source: JICA Survey Team

In the water balance studies, it is necessary to analyse the demands by water sources such as surface and groundwater. Thus, the irrigation water demands by surface water and groundwater are separately estimated as shown in Table F-27 and Table F-28, respectively. And these results are summarized as the monthly irrigation water demands for the systems irrigated by surface and groundwater by WRR in 2020, as shown in Table F 2-12 and Table F 2-13, respectively.

Table F 2-12 Monthly Irrigation Water Demands by WRR in 2020 (Systems Irrigated by Surface Water)

(Unit: MCM)

WRR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
I	232.72	190.05	41.45	0.95	13.52	120.48	164.72	137.14	101.55	23.44	180.67	175.46	1,382.16
II	1,007.55	1,033.63	521.53	53.57	37.52	728.08	669.28	551.85	414.25	67.00	492.66	575.20	6,152.12
III	1,174.08	1,147.83	691.21	88.05	29.20	277.95	575.78	585.84	453.48	367.31	817.94	1,093.80	7,302.49
IV	378.31	383.10	262.16	44.49	293.84	203.47	264.89	167.08	28.82	27.44	81.62	319.88	2,455.10
V	273.87	327.51	299.60	9.87	262.98	266.12	140.31	146.84	8.10	0.00	0.82	188.50	1,924.54
VI	292.24	105.31	3.55	0.00	227.46	177.91	197.28	195.14	15.41	96.57	206.54	294.96	1,812.37
VII	107.40	44.74	10.24	0.00	46.41	81.71	96.16	98.99	30.81	40.87	109.13	107.03	773.49
VIII	192.63	107.88	15.52	67.81	69.21	165.21	108.36	117.28	70.64	0.00	89.35	119.28	1,123.17
IX	190.10	112.88	21.58	97.36	117.65	78.71	54.28	25.15	12.08	21.00	63.00	83.88	877.65
X	196.01	173.58	78.34	0.86	17.55	139.70	77.24	117.92	54.36	0.00	56.96	79.94	992.46
XI	243.83	180.54	130.12	78.51	82.04	177.44	117.35	141.43	83.03	46.81	159.19	243.54	1,683.85
XII	250.78	59.89	222.74	495.93	404.81	266.98	58.85	57.20	114.72	262.07	382.65	460.33	3,036.95
Total	4,539.52	3,866.96	2,298.04	937.41	1,602.20	2,683.75	2,524.51	2,341.86	1,387.25	952.52	2,640.53	3,741.80	29,516.35

Source: JICA Survey Team

Table F 2-13 Monthly Irrigation Water Demands by WRR in 2020 (Systems Irrigated by Groundwater)

(Unit: MCM)

WRR	Jan	Feb	MAR	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
I	10.93	8.88	1.78	0.01	0.09	2.48	7.51	6.34	5.60	2.73	9.85	10.05	66.25
II	139.64	141.79	66.01	0.14	0.11	144.33	140.66	96.55	108.30	0.58	114.08	85.85	1,038.04
III	108.43	98.35	43.64	1.49	0.41	10.92	49.89	55.35	55.59	40.99	80.92	106.61	652.59
IV	22.44	22.11	12.94	1.54	11.83	9.88	17.03	8.93	4.19	4.28	8.27	18.43	141.87
V	5.79	6.98	6.19	0.18	5.54	5.84	2.70	2.95	0.09	0.00	0.05	3.25	39.57
VI	2.60	0.89	0.00	0.00	4.70	2.20	2.95	3.11	0.16	1.02	1.60	2.40	21.64
VII	3.06	1.32	0.00	0.00	0.63	3.30	2.51	3.20	1.34	0.39	2.77	2.50	21.02
VIII	0.06	0.12	0.03	0.10	0.06	0.04	0.04	0.00	0.00	0.00	0.05	0.05	0.55
IX	0.58	0.35	0.05	0.31	0.39	0.28	0.20	0.09	0.04	0.07	0.23	0.35	2.96
X	0.32	0.27	0.16	0.00	0.04	0.45	0.26	0.30	0.15	0.00	0.15	0.15	2.24
XI	0.15	0.03	0.22	0.42	0.37	0.35	0.07	0.08	0.11	0.27	0.28	0.29	2.63
XII	1.27	0.03	1.63	3.65	2.93	1.85	0.34	0.11	0.67	2.11	2.79	3.11	20.49
Total	295.28	281.12	132.65	7.85	27.11	181.92	224.14	177.01	176.26	52.43	221.04	233.04	2,009.85

Source: JICA Survey Team

(2) Future Irrigation Water Demands

The future irrigation areas of 2030, 2040 and 2050 by WRR are also estimated based on the area rate of each provincial area in WRR. Same as the estimation of present irrigation water demands, the future irrigation water demands must be analysed by water sources. Thus, the irrigation areas of three cases, namely: all irrigation systems, systems irrigated by surface water and systems irrigated by groundwater, are estimated by adopting same percentages between the areas of surface and groundwater systems in 2020.

These estimations for the future irrigation areas based on NIMP 2020-2030 are shown in Table F-29 for all systems, Table F-30 for systems irrigated by surface water and Table F-31 for systems irrigated by groundwater, respectively. And with using the ten-day diversion water requirements by province, as proposed for future operation shown in Table F-17, the irrigation water demands are calculated as shown in the following tables.

Table F-32 Irrigation Water Demands of All Systems by WRR in 2030 (Based on Irrigated Areas Projected under NIMP 2020-2030)

Table F-33 Irrigation Water Demands of Surface Water Systems by WRR in 2030 (Based on Irrigated Areas Projected under NIMP 2020-2030)

Table F-34 Irrigation Water Demands of Groundwater Systems by WRR in 2030 (Based on Irrigated Areas Projected under NIMP 2020-2030)

Table F-35 Irrigation Water Demands of All Systems by WRR in 2040 (Based on Irrigated Areas Projected under NIMP 2020-2030)

Table F-36 Irrigation Water Demands of Surface Water Systems by WRR in 2040 (Based on Irrigated Areas Projected under NIMP 2020-2030)

Table F-37 Irrigation Water Demands of Groundwater Systems by WRR in 2040 (Based on Irrigated Areas Projected under NIMP 2020-2030)

Table F-38 Irrigation Water Demands of All Systems by WRR in 2050 (Based on Irrigated Areas Projected under NIMP 2020-2030)

Table F-39 Irrigation Water Demands of Surface Water Systems by WRR in 2050 (Based on Irrigated Areas Projected under NIMP 2020-2030)

Table F-40 Irrigation Water Demands of Groundwater Systems by WRR in 2050 (Based on Irrigated Areas Projected under NIMP 2020-2030)

The monthly irrigation water demands for above cases are summarized in the following tables.

Table F 2-14 Monthly Irrigation Water Demands by WRR in 2030 (All Systems under NIMP 2020-2030)

(Unit: MCM)

WRR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
I	368.20	307.13	80.85	0.00	19.41	175.28	282.35	245.57	176.03	44.45	270.19	288.04	2,257.52
II	1,417.57	1,467.20	778.78	93.94	62.61	1,034.89	1,024.10	834.93	662.38	90.55	714.03	836.87	9,017.85
III	1,883.15	1,780.90	1,019.03	101.72	36.84	414.44	973.95	977.28	777.35	612.14	1,315.08	1,730.01	11,621.91
IV	686.50	723.51	448.00	90.99	434.88	331.56	338.02	352.60	47.30	34.91	179.64	420.18	4,088.08
V	547.42	673.77	702.99	107.98	550.08	531.48	380.46	395.16	16.98	0.00	4.49	359.33	4,270.13
VI	554.50	205.49	7.15	0.00	499.07	344.05	318.78	340.25	9.07	198.79	384.46	523.83	3,385.43
VII	238.84	114.17	26.87	0.00	122.52	152.80	207.20	201.61	73.78	84.40	217.98	234.04	1,674.20
VIII	379.42	251.89	42.65	169.76	154.66	325.26	216.70	221.76	133.99	0.00	183.02	240.73	2,319.84
IX	315.34	209.35	50.74	146.43	194.94	165.79	114.87	55.63	27.67	26.91	106.97	145.39	1,560.03
X	437.33	384.88	143.61	2.29	19.56	301.83	167.74	258.57	127.09	0.00	139.28	183.43	2,165.61
XI	400.74	363.64	216.62	112.11	102.87	365.55	302.74	355.57	176.67	50.55	277.84	377.43	3,102.34
XII	441.73	141.37	322.39	665.17	487.95	332.67	79.44	139.41	188.19	375.88	548.94	714.54	4,437.67
Total	7,670.74	6,623.30	3,839.67	1,490.39	2,685.40	4,475.60	4,406.36	4,378.33	2,416.49	1,518.60	4,341.91	6,053.81	49,900.59

Source: JICA Survey Team

Table F 2-15 Monthly Irrigation Water Demands by WRR in 2030 (Systems Irrigated by Surface Water under NIMP 2020-2030)

(Unit: MCM)

WRR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
I	351.97	293.93	78.14	0.00	19.28	171.56	271.01	235.52	167.36	40.39	255.77	273.09	2,158.00
II	1,238.71	1,286.00	694.30	93.68	62.41	851.18	844.06	710.60	523.54	89.36	568.67	726.76	7,689.26
III	1,695.64	1,612.81	944.93	100.13	36.36	394.26	886.29	881.62	685.62	542.55	1,177.19	1,551.39	10,508.79
IV	651.95	687.28	428.19	87.96	417.02	315.72	317.36	335.16	42.32	30.21	166.47	397.78	3,877.42
V	538.58	662.40	690.86	106.34	540.48	521.74	373.66	387.83	16.85	0.00	4.23	354.37	4,197.35
VI	549.38	203.51	7.15	0.00	490.29	340.88	315.73	335.63	8.93	196.66	381.47	519.39	3,349.02
VII	235.68	112.80	26.87	0.00	121.88	149.40	204.62	198.31	72.39	84.00	215.12	231.46	1,652.53
VIII	379.06	251.20	42.47	169.17	154.29	325.01	216.48	221.76	133.99	0.00	182.74	240.43	2,316.61
IX	313.83	208.28	50.45	145.90	194.21	165.21	114.45	55.48	27.62	26.80	106.30	144.38	1,552.90
X	436.36	384.07	143.22	2.29	19.50	300.62	166.98	257.65	126.57	0.00	138.72	182.86	2,158.86
XI	400.54	363.58	216.35	111.60	102.45	365.07	302.61	355.39	176.48	50.26	277.53	377.10	3,098.95
XII	439.92	141.28	319.97	659.63	483.96	330.38	79.18	139.20	187.22	373.07	545.35	710.39	4,409.56
Total	7,231.63	6,207.13	3,642.91	1,476.70	2,642.14	4,231.01	4,092.43	4,114.15	2,168.89	1,433.31	4,019.57	5,709.40	46,969.25

Source: JICA Survey Team

Table F 2-16 Monthly Irrigation Water Demands by WRR in 2030 (Systems Irrigated by Groundwater under NIMP 2020-2030)

(Unit: MCM)

WRR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
I	16.23	13.21	2.71	0.00	0.14	3.72	11.34	10.06	8.68	4.06	14.42	14.96	99.52
II	178.86	181.20	84.48	0.27	0.21	183.71	180.05	124.33	138.83	1.19	145.36	110.10	1,328.58
III	187.50	168.09	74.10	1.59	0.48	20.18	87.66	95.66	91.73	69.59	137.90	178.62	1,113.12
IV	34.55	36.23	19.81	3.03	17.86	15.84	20.66	17.43	4.98	4.70	13.17	22.40	210.65
V	8.84	11.36	12.13	1.64	9.60	9.74	6.79	7.33	0.13	0.00	0.26	4.96	72.78
VI	5.11	1.99	0.00	0.00	8.78	3.18	3.05	4.62	0.14	2.13	2.99	4.44	36.42
VII	3.15	1.36	0.00	0.00	0.65	3.40	2.58	3.30	1.39	0.40	2.86	2.58	21.66
VIII	0.36	0.70	0.19	0.58	0.37	0.25	0.22	0.00	0.00	0.00	0.28	0.29	3.23
IX	1.51	1.08	0.29	0.53	0.72	0.58	0.42	0.16	0.05	0.11	0.66	1.01	7.12
X	0.97	0.81	0.39	0.00	0.06	1.21	0.76	0.92	0.51	0.00	0.56	0.57	6.75
XI	0.21	0.06	0.27	0.51	0.42	0.48	0.13	0.18	0.19	0.29	0.31	0.33	3.39
XII	1.81	0.08	2.41	5.54	3.99	2.29	0.26	0.20	0.97	2.81	3.59	4.15	28.11
Total	439.11	416.16	196.76	13.69	43.26	244.59	313.93	264.18	247.60	85.29	322.35	344.41	2,931.34

Source: JICA Survey Team

Table F 2-17 Monthly Irrigation Water Demands by WRR in 2040 (All Systems under NIMP 2020-2030)

(Unit: MCM)

WRR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
I	398.74	331.95	85.77	0.00	19.41	187.66	309.88	270.86	191.71	48.38	293.17	313.32	2,450.85
II	1,544.45	1,598.95	849.98	99.26	62.62	1,127.06	1,125.43	914.93	725.83	91.56	770.32	912.92	9,823.32
III	2,102.81	1,986.01	1,131.56	111.17	38.37	460.78	1,095.38	1,093.24	872.50	684.37	1,470.89	1,931.95	12,979.03
IV	779.37	826.30	483.63	91.15	505.85	388.22	384.55	426.54	49.78	35.61	213.59	469.75	4,654.34
V	651.59	801.52	825.73	127.85	648.33	624.82	451.28	469.33	20.30	0.00	6.01	431.41	5,058.17
VI	656.17	241.76	8.31	0.00	596.57	412.76	381.66	407.05	10.04	235.99	460.00	619.37	4,029.70
VII	284.75	135.94	32.42	0.00	149.00	180.65	247.36	239.23	86.75	102.12	259.60	279.15	1,996.95
VIII	454.48	303.48	50.54	201.57	181.89	387.38	259.68	268.39	162.42	0.00	220.09	289.85	2,779.77
IX	371.97	249.45	61.28	169.35	226.66	198.36	136.08	68.48	34.48	31.68	126.06	171.41	1,845.25
X	530.06	464.56	174.48	2.77	22.90	362.99	201.25	308.92	153.46	0.00	171.93	223.93	2,617.25
XI	490.99	445.38	260.25	128.22	118.80	444.05	371.42	435.55	214.68	57.09	336.59	457.22	3,760.24
XII	531.98	172.09	379.89	782.86	572.60	394.24	97.20	170.10	227.06	447.49	656.82	856.16	5,288.49
Total	8,797.34	7,557.42	4,343.84	1,714.20	3,143.00	5,168.97	5,061.16	5,072.63	2,748.99	1,734.30	4,985.06	6,956.45	57,283.36

Source: JICA Survey Team

Table F 2-18 Monthly Irrigation Water Demands by WRR in 2040 (Systems Irrigated by Surface Water under NIMP 2020-2030)

(Unit: MCM)

WRR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
I	380.81	317.37	82.79	0.00	19.28	183.55	297.32	259.64	182.06	43.89	277.25	296.79	2,340.75
II	1,348.11	1,400.02	757.21	98.99	62.41	925.25	927.65	778.42	573.35	90.35	610.58	792.10	8,364.43
III	1,890.51	1,795.69	1,047.79	109.45	37.86	437.67	995.66	985.06	768.97	605.83	1,314.60	1,729.96	11,719.06
IV	740.83	785.38	462.35	88.12	484.81	369.76	361.78	405.56	44.67	30.81	198.59	445.26	4,417.92
V	641.64	788.71	812.16	126.02	637.57	613.85	443.64	461.03	20.16	0.00	5.66	425.85	4,976.29
VI	650.16	239.41	8.31	0.00	586.32	409.16	378.20	401.72	9.88	233.48	456.45	614.14	3,987.24
VII	281.59	134.58	32.42	0.00	148.35	177.25	244.78	235.93	85.36	101.71	256.74	276.57	1,975.29
VIII	454.00	302.55	50.29	200.79	181.40	387.04	259.39	268.39	162.42	0.00	219.72	289.45	2,775.43
IX	370.28	248.25	60.98	168.71	225.79	197.65	135.57	68.29	34.43	31.54	125.31	170.27	1,837.06
X	528.83	463.55	173.98	2.77	22.82	361.47	200.28	307.76	152.80	0.00	171.21	223.19	2,608.66
XI	490.76	445.31	259.95	127.66	118.35	443.50	371.26	435.34	214.45	56.78	336.24	456.86	3,756.46
XII	529.84	171.99	377.08	776.36	567.94	391.55	96.88	169.85	225.90	444.20	652.59	851.26	5,255.44
Total	8,307.35	7,092.81	4,125.32	1,698.88	3,092.90	4,897.71	4,712.40	4,776.99	2,474.45	1,638.60	4,624.94	6,571.69	54,014.04

Source: JICA Survey Team

Table F 2-19 Monthly Irrigation Water Demands by WRR in 2040 (Systems Irrigated by Groundwater under NIMP 2020-2030)

(Unit: MCM)

WRR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
I	17.93	14.58	2.98	0.00	0.14	4.11	12.56	11.23	9.65	4.49	15.91	16.53	110.10
II	196.34	198.93	92.77	0.27	0.21	201.82	197.78	136.52	152.48	1.20	159.74	120.83	1,458.88
III	212.30	190.32	83.77	1.72	0.51	23.11	99.72	108.18	103.53	78.55	156.29	201.99	1,259.97
IV	38.54	40.92	21.28	3.03	21.03	18.47	22.77	20.98	5.12	4.79	15.01	24.49	236.43
V	9.95	12.81	13.57	1.83	10.76	10.97	7.64	8.31	0.14	0.00	0.35	5.56	81.88
VI	6.01	2.35	0.00	0.00	10.26	3.60	3.45	5.33	0.16	2.51	3.56	5.24	42.46
VII	3.15	1.36	0.00	0.00	0.65	3.40	2.58	3.30	1.39	0.40	2.86	2.58	21.66
VIII	0.48	0.94	0.25	0.78	0.49	0.34	0.29	0.00	0.00	0.00	0.37	0.39	4.34
IX	1.69	1.20	0.30	0.64	0.87	0.71	0.51	0.19	0.05	0.14	0.75	1.15	8.19
X	1.23	1.02	0.50	0.00	0.07	1.52	0.97	1.16	0.66	0.00	0.73	0.74	8.59
XI	0.23	0.07	0.30	0.56	0.45	0.55	0.16	0.22	0.22	0.32	0.34	0.36	3.78
XII	2.15	0.10	2.82	6.50	4.66	2.69	0.32	0.24	1.16	3.30	4.23	4.90	33.05
Total	489.99	464.61	218.51	15.33	50.11	271.26	348.76	295.64	274.54	95.70	360.12	384.75	3,269.32

Source: JICA Survey Team

Table F 2-20 Monthly Irrigation Water Demands by WRR in 2050 (All Systems under NIMP 2020-2030)

(Unit: MCM)

WRR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
I	413.09	343.61	88.09	0.00	19.41	193.48	322.82	282.75	199.07	50.23	303.96	325.20	2,541.71
II	1,604.07	1,660.88	883.44	101.76	62.63	1,170.38	1,173.05	952.53	755.65	92.03	796.77	948.67	10,201.87
III	2,206.04	2,082.41	1,184.45	115.61	39.09	482.56	1,152.45	1,147.74	917.21	718.32	1,544.11	2,026.86	13,616.84
IV	823.02	874.61	500.37	91.23	539.20	414.86	406.42	461.29	50.95	35.93	229.55	493.05	4,920.48
V	700.54	861.57	883.41	137.19	694.51	668.69	484.57	504.19	21.85	0.00	6.73	465.29	5,428.53
VI	703.96	258.80	8.86	0.00	642.40	445.05	411.21	438.45	10.50	253.48	495.51	664.28	4,332.48
VII	306.32	146.18	35.02	0.00	161.44	193.74	266.23	256.91	92.85	110.44	279.16	300.35	2,148.64
VIII	489.75	327.73	54.25	216.52	194.69	416.58	279.87	290.31	175.78	0.00	237.51	312.93	2,995.92
IX	398.58	268.29	66.24	180.12	241.57	213.66	146.05	74.51	37.68	33.92	135.03	183.65	1,979.30
X	573.64	502.02	188.99	2.99	24.46	391.73	217.00	332.58	165.86	0.00	187.28	244.06	2,830.60
XI	533.40	483.80	280.75	135.79	126.29	480.94	403.69	473.15	232.54	60.17	364.19	494.71	4,069.43
XII	574.40	186.54	406.92	838.17	612.38	423.17	105.54	184.52	245.32	481.15	707.52	922.72	5,688.35
Total	9,326.82	7,996.43	4,580.78	1,819.39	3,358.07	5,494.83	5,368.90	5,398.93	2,905.26	1,835.67	5,287.32	7,381.75	60,754.15

Source: JICA Survey Team

Table F 2-21 Monthly Irrigation Water Demands by WRR in 2050 (Systems Irrigated by Surface Water under NIMP 2020-2030)

(Unit: MCM)

WRR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
I	394.36	328.38	84.98	0.00	19.28	189.19	309.69	270.97	188.97	45.54	287.35	307.92	2,426.64
II	1,399.52	1,453.61	786.77	101.49	62.42	960.06	966.94	810.29	596.76	90.82	630.28	822.80	8,681.75
III	1,982.10	1,881.65	1,096.14	113.83	38.57	458.07	1,047.06	1,033.68	808.14	635.56	1,379.18	1,813.89	12,287.86
IV	782.61	831.48	478.40	88.20	516.67	395.15	382.65	438.64	45.77	31.10	213.68	467.57	4,671.93
V	690.08	848.07	869.17	135.27	683.19	657.14	476.52	495.42	21.71	0.00	6.34	459.45	5,342.38
VI	697.53	256.29	8.86	0.00	631.44	441.25	407.56	432.79	10.33	250.79	491.68	658.67	4,287.19
VII	303.17	144.82	35.02	0.00	160.79	190.34	263.65	253.62	91.46	110.04	276.30	297.77	2,126.98
VIII	489.21	326.68	53.97	215.64	194.14	416.20	279.55	290.31	175.78	0.00	237.09	312.49	2,991.06
IX	396.80	267.03	65.93	179.43	240.62	212.90	145.50	74.32	37.63	33.77	134.25	182.43	1,970.61
X	572.29	500.90	188.44	2.99	24.38	390.07	215.93	331.31	165.13	0.00	186.47	243.12	2,821.03
XI	533.16	483.72	280.45	135.21	125.82	480.37	403.52	472.91	232.30	59.84	363.83	494.34	4,065.47
XII	572.09	186.42	403.91	831.22	607.41	420.30	105.20	184.26	244.08	477.63	702.99	917.47	5,652.98
Total	8,812.91	7,509.05	4,352.05	1,803.30	3,304.74	5,211.04	5,003.77	5,088.51	2,618.06	1,735.08	4,909.45	6,977.92	57,325.87

Source: JICA Survey Team

Table F 2-22 Monthly Irrigation Water Demands by WRR in 2050 (Systems Irrigated by Groundwater under NIMP 2020-2030)

(Unit: MCM)

WRR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
I	18.73	15.23	3.11	0.00	0.14	4.29	13.13	11.78	10.10	4.69	16.62	17.27	115.07
II	204.55	207.27	96.67	0.27	0.21	210.32	206.11	142.24	158.89	1.21	166.49	125.87	1,520.12
III	223.95	200.76	88.31	1.78	0.52	24.49	105.39	114.06	109.07	82.76	164.93	212.97	1,328.99
IV	40.41	43.13	21.97	3.03	22.53	19.70	23.77	22.65	5.18	4.83	15.87	25.47	248.54
V	10.46	13.49	14.24	1.92	11.31	11.55	8.04	8.76	0.14	0.00	0.39	5.84	86.15
VI	6.43	2.52	0.00	0.00	10.95	3.80	3.65	5.66	0.16	2.69	3.82	5.61	45.30
VII	3.15	1.36	0.00	0.00	0.65	3.40	2.58	3.30	1.39	0.40	2.86	2.58	21.66
VIII	0.54	1.05	0.28	0.88	0.55	0.38	0.32	0.00	0.00	0.00	0.42	0.44	4.86
IX	1.77	1.26	0.30	0.70	0.95	0.76	0.55	0.20	0.05	0.15	0.78	1.21	8.69
X	1.35	1.12	0.55	0.00	0.08	1.66	1.06	1.27	0.72	0.00	0.81	0.94	9.56
XI	0.25	0.08	0.31	0.58	0.47	0.58	0.18	0.24	0.24	0.32	0.36	0.37	3.96
XII	2.30	0.11	3.01	6.95	4.97	2.87	0.35	0.26	1.25	3.53	4.53	5.25	35.37
Total	513.90	487.38	228.74	16.09	53.33	283.79	365.13	310.42	287.20	100.58	377.88	403.83	3,428.27

Source: JICA Survey Team

Furthermore, the estimations for the future irrigation areas based on NIA's 2011-2020 irrigation program are shown in Table F-41 for all systems, Table F-42 for systems irrigated by surface water and Table F-43 for systems irrigated by groundwater, respectively. And with using the ten-day diversion water requirements by province, as proposed for future operation shown in Table F-17, the irrigation water demands are calculated as shown in the following tables.

Table F-44 Irrigation Water Demands of All Systems by WRR in 2030 (Based on Irrigated Areas Projected in Consideration of NIA Financial Program)

Table F-45 Irrigation Water Demands of Surface Water Systems by WRR in 2030 (Based on Irrigated Areas Projected in Consideration of NIA Financial Program)

Table F-46 Irrigation Water Demands of Groundwater Systems by WRR in 2030 (Based on Irrigated Areas Projected in Consideration of NIA Financial Program)

Table F-47 Irrigation Water Demands of All Systems by WRR in 2040 (Based on Irrigated Areas Projected in Consideration of NIA Financial Program)

Table F-48 Irrigation Water Demands of Surface Water Systems by WRR in 2040 (Based on Irrigated Areas Projected in Consideration of NIA Financial Program)

Table F-49 Irrigation Water Demands of Groundwater Systems by WRR in 2040 (Based on Irrigated Areas Projected in Consideration of NIA Financial Program)

Table F-50 Irrigation Water Demands of All Systems by WRR in 2050 (Based on Irrigated Areas Projected in Consideration of NIA Financial Program)

Table F-51 Irrigation Water Demands of Surface Water Systems by WRR in 2050 (Based on Irrigated Areas Projected in Consideration of NIA Financial Program)

Table F-52 Irrigation Water Demands of Groundwater Systems by WRR in 2050 (Based on Irrigated Areas Projected in Consideration of NIA Financial Program)

The monthly irrigation water demands for above cases are summarized in the following tables.

Table F 2-23 Monthly Irrigation Water Demands by WRR in 2030 (All Systems in Consideration of NIA Financial Program)

(Unit: MCM)

WRR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
I	308.47	258.59	71.22	0.00	19.41	150.61	227.56	197.01	146.46	37.07	225.27	239.04	1,880.72
II	1,339.35	1,386.71	733.84	93.11	65.29	971.62	943.42	775.70	608.74	95.13	679.83	785.55	8,478.29
III	1,609.01	1,526.17	880.33	90.46	35.20	363.06	826.20	838.08	654.70	518.74	1,123.70	1,474.71	9,940.36
IV	558.95	575.65	415.44	98.07	315.32	239.12	275.31	221.21	50.28	40.52	127.77	360.28	3,277.94
V	417.49	514.64	562.33	83.44	436.05	422.43	293.75	302.33	12.53	0.00	1.43	261.72	3,308.13
VI	403.35	152.74	5.74	0.00	347.02	240.77	225.04	240.13	7.67	141.88	271.46	385.60	2,421.41
VII	149.78	71.69	16.07	0.00	71.41	98.97	129.44	128.79	48.46	49.75	137.18	147.35	1,048.90
VIII	242.68	158.15	29.13	113.39	108.45	214.78	136.52	136.32	81.85	0.00	113.85	150.01	1,485.13
IX	245.55	152.80	31.56	133.07	174.56	128.22	94.63	34.40	13.67	22.61	83.68	119.07	1,233.83
X	375.91	329.64	116.94	1.80	17.77	280.53	149.21	235.94	121.24	0.00	111.73	159.15	1,899.87
XI	301.33	250.00	158.55	111.39	95.77	288.82	210.64	252.93	147.95	50.20	217.29	291.56	2,376.43
XII	377.36	100.06	283.89	628.33	452.01	291.33	56.17	89.79	173.78	352.69	502.06	641.33	3,948.78
Total	6,329.22	5,476.84	3,305.04	1,353.06	2,138.26	3,690.27	3,567.90	3,452.64	2,067.34	1,308.59	3,595.23	5,015.37	41,299.77

Source: JICA Survey Team

Table F 2-24 Monthly Irrigation Water Demands by WRR in 2030 (Systems Irrigated by Surface Water in Consideration of NIA Financial Program)

(Unit: MCM)

WRR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
I	295.60	248.11	69.06	0.00	19.28	147.62	218.60	189.17	139.63	33.85	213.83	227.20	1,801.95
II	1,180.91	1,226.22	659.04	92.83	65.07	809.16	784.20	665.67	485.95	93.92	551.31	687.93	7,302.22
III	1,451.39	1,384.78	817.71	89.01	34.75	345.87	752.77	757.48	577.87	460.68	1,007.74	1,324.67	9,004.72
IV	528.47	545.08	396.41	94.77	303.06	227.39	256.33	209.91	44.64	35.05	116.64	339.24	3,096.98
V	409.14	504.00	550.69	81.84	426.91	413.35	287.35	295.62	12.39	0.00	1.34	256.99	3,239.64
VI	400.11	151.51	5.74	0.00	341.01	238.25	222.62	236.70	7.54	140.55	269.65	382.81	2,396.49
VII	146.62	70.33	16.07	0.00	70.77	95.57	126.85	125.50	47.08	49.34	134.32	144.78	1,027.24
VIII	242.57	157.93	29.07	113.21	108.33	214.70	136.46	136.32	81.85	0.00	113.76	149.92	1,484.13
IX	244.32	151.93	31.29	132.71	174.08	127.86	94.36	34.29	13.62	22.54	83.15	118.31	1,228.47
X	375.31	329.13	116.71	1.80	17.74	279.76	148.75	235.36	120.94	0.00	111.43	158.85	1,895.79
XI	301.15	249.96	158.30	110.90	95.37	288.40	210.54	252.79	147.80	49.91	217.00	291.25	2,373.36
XII	375.74	100.01	281.73	623.20	448.38	289.25	55.94	89.65	172.86	350.14	498.79	637.58	3,923.28
Total	5,951.33	5,119.01	3,131.82	1,340.28	2,104.74	3,477.18	3,294.78	3,228.47	1,852.17	1,235.98	3,318.98	4,719.53	38,774.27

Source: JICA Survey Team

Table F 2-25 Monthly Irrigation Water Demands by WRR in 2030 (Systems Irrigated by Groundwater in Consideration of NIA Financial Program)

(Unit: MCM)

WRR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
I	12.87	10.48	2.17	0.00	0.14	2.99	8.96	7.85	6.83	3.22	11.44	11.84	78.77
II	158.43	160.49	74.80	0.28	0.22	162.46	159.21	110.03	122.79	1.22	128.52	97.62	1,176.06
III	157.62	141.39	62.62	1.45	0.45	17.19	73.43	80.60	76.83	58.07	115.95	150.03	935.64
IV	30.49	30.57	19.03	3.30	12.26	11.74	18.98	11.30	5.64	5.47	11.13	21.05	180.95
V	8.35	10.63	11.63	1.60	9.14	9.08	6.40	6.71	0.14	0.00	0.08	4.72	68.49
VI	3.25	1.24	0.00	0.00	6.01	2.52	2.42	3.44	0.12	1.33	1.80	2.79	24.92
VII	3.15	1.36	0.00	0.00	0.65	3.40	2.58	3.30	1.39	0.40	2.86	2.58	21.66
VIII	0.11	0.21	0.06	0.18	0.11	0.08	0.07	0.00	0.00	0.00	0.09	0.09	1.00
IX	1.23	0.87	0.27	0.36	0.48	0.37	0.27	0.11	0.05	0.07	0.53	0.77	5.36
X	0.59	0.50	0.24	0.00	0.03	0.78	0.46	0.58	0.30	0.00	0.30	0.30	4.07
XI	0.18	0.04	0.25	0.49	0.40	0.42	0.10	0.13	0.16	0.28	0.30	0.31	3.07
XII	1.62	0.04	2.16	5.12	3.63	2.08	0.23	0.13	0.92	2.56	3.26	3.74	25.50
Total	377.90	357.83	173.23	12.78	33.52	213.09	273.12	224.16	215.17	72.61	276.26	295.84	2,525.49

Source: JICA Survey Team

Table F 2-26 Monthly Irrigation Water Demands by WRR in 2040 (All Systems in Consideration of NIA Financial Program)

(Unit: MCM)

WRR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
I	312.79	262.11	71.93	0.00	19.41	151.91	230.53	201.50	149.75	37.92	228.55	243.06	1,909.46
II	1,527.26	1,582.60	838.26	103.44	67.98	1,101.70	1,075.28	884.30	688.22	101.82	763.71	893.77	9,628.34
III	1,795.65	1,701.68	977.68	99.02	36.76	408.88	933.18	942.11	731.63	576.86	1,259.13	1,643.01	11,105.61
IV	626.23	643.41	457.62	105.51	344.63	265.55	310.20	244.94	58.48	47.58	147.11	404.38	3,655.64
V	506.07	623.50	679.13	100.58	528.12	509.19	355.60	365.10	15.03	0.00	1.55	315.31	3,999.18
VI	465.50	176.07	6.78	0.00	399.50	281.61	263.21	280.15	8.30	163.00	316.91	447.80	2,808.83
VII	157.03	74.91	16.89	0.00	75.84	103.58	135.91	134.90	50.36	52.24	143.68	155.30	1,100.64
VIII	263.38	172.62	32.16	123.76	119.36	234.60	146.49	148.72	89.35	0.00	122.43	162.33	1,615.19
IX	294.52	180.36	34.51	167.79	220.72	158.97	118.89	40.11	13.96	28.31	100.45	147.35	1,505.94
X	508.99	441.56	155.02	2.31	22.98	387.51	200.97	318.93	170.72	0.00	152.69	219.84	2,581.52
XI	391.23	307.85	191.98	144.46	122.09	376.76	262.59	318.08	198.98	63.56	279.96	373.05	3,030.57
XII	502.31	123.20	366.02	838.36	593.64	379.13	70.16	104.53	240.90	479.73	681.48	865.19	5,244.63
Total	7,350.95	6,289.87	3,827.99	1,685.21	2,551.04	4,359.39	4,102.99	3,983.36	2,415.69	1,551.03	4,197.66	5,870.38	48,185.55

Source: JICA Survey Team

Table F 2-27 Monthly Irrigation Water Demands by WRR in 2040 (Systems Irrigated by Surface Water in Consideration of NIA Financial Program)

(Unit: MCM)

WRR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
I	299.72	251.46	69.73	0.00	19.28	148.86	221.41	193.41	142.75	34.66	216.96	231.03	1,829.26
II	1,352.59	1,405.63	755.74	103.14	67.75	922.52	899.70	762.99	552.84	100.56	621.87	786.15	8,331.47
III	1,615.91	1,540.38	906.25	97.44	36.28	388.54	848.68	850.33	644.95	511.54	1,126.54	1,472.55	10,039.40
IV	591.44	608.66	436.29	101.94	331.30	252.41	288.46	232.33	51.87	41.15	134.18	380.30	3,450.33
V	495.89	610.56	664.97	98.64	516.99	498.19	347.81	356.95	14.87	0.00	1.46	309.56	3,915.90
VI	462.23	174.82	6.78	0.00	393.15	278.87	260.56	276.41	8.17	161.67	315.10	444.98	2,782.74
VII	153.87	73.55	16.89	0.00	75.19	100.18	133.33	131.60	48.98	51.84	140.82	152.73	1,078.98
VIII	263.26	172.38	32.10	123.56	119.23	234.51	146.42	148.72	89.35	0.00	122.33	162.23	1,614.10
IX	293.21	179.43	34.24	167.37	220.17	158.56	118.58	39.99	13.91	28.23	99.88	146.53	1,500.10
X	508.23	440.92	154.72	2.31	22.94	386.52	200.38	318.19	170.33	0.00	152.29	219.44	2,576.27
XI	391.01	307.79	191.70	143.89	121.64	376.27	262.46	317.91	198.78	63.24	279.62	372.69	3,027.01
XII	500.17	123.16	363.27	831.63	588.97	376.43	69.84	104.40	239.63	476.40	677.19	860.29	5,211.38
Total	6,927.53	5,888.76	3,632.68	1,669.92	2,512.90	4,121.85	3,797.62	3,733.23	2,176.43	1,469.29	3,888.26	5,538.48	45,356.95

Source: JICA Survey Team

Table F 2-28 Monthly Irrigation Water Demands by WRR in 2040 (Systems Irrigated by Groundwater in Consideration of NIA Financial Program)

(Unit: MCM)

WRR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
I	13.07	10.64	2.20	0.00	0.14	3.06	9.12	8.09	7.01	3.26	11.59	12.03	80.21
II	174.68	176.97	82.52	0.30	0.23	179.18	175.57	121.30	135.38	1.26	141.84	107.62	1,296.87
III	179.74	161.30	71.43	1.58	0.48	20.34	84.50	91.79	86.68	65.32	132.59	170.46	1,066.21
IV	34.79	34.75	21.34	3.57	13.33	13.14	21.74	12.61	6.60	6.43	12.93	24.08	205.31
V	10.17	12.94	14.16	1.94	11.14	11.00	7.78	8.15	0.16	0.00	0.09	5.75	83.28
VI	3.27	1.24	0.00	0.00	6.35	2.74	2.65	3.74	0.13	1.33	1.81	2.82	26.09
VII	3.15	1.36	0.00	0.00	0.65	3.40	2.58	3.30	1.39	0.40	2.86	2.58	21.66
VIII	0.12	0.23	0.06	0.20	0.12	0.08	0.07	0.00	0.00	0.00	0.09	0.10	1.08
IX	1.32	0.92	0.27	0.42	0.55	0.41	0.31	0.11	0.05	0.08	0.56	0.82	5.83
X	0.76	0.64	0.31	0.00	0.04	0.99	0.59	0.74	0.39	0.00	0.40	0.40	5.25
XI	0.21	0.06	0.28	0.56	0.45	0.49	0.13	0.17	0.20	0.31	0.34	0.36	3.56
XII	2.13	0.04	2.74	6.72	4.66	2.70	0.32	0.14	1.27	3.33	4.29	4.90	33.25
Total	423.42	401.11	195.31	15.29	38.14	237.54	305.37	250.13	239.25	81.74	309.40	331.90	2,828.60

Source: JICA Survey Team

Table F 2-29 Monthly Irrigation Water Demands by WRR in 2050 (All Systems in Consideration of NIA Financial Program)

(Unit: MCM)

WRR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
I	317.11	265.62	72.64	0.00	19.41	153.22	233.49	205.99	153.05	38.78	231.83	247.07	1,938.21
II	1,715.18	1,778.50	942.69	113.76	70.67	1,231.78	1,207.14	992.89	767.69	108.50	847.60	1,002.00	10,778.40
III	1,982.30	1,877.19	1,075.03	107.58	38.33	454.70	1,040.16	1,046.15	808.56	634.98	1,394.57	1,811.32	12,270.86
IV	693.51	711.18	499.80	112.94	373.94	291.98	345.08	268.67	66.67	54.64	166.46	448.47	4,033.34
V	594.64	732.37	795.94	117.72	620.19	595.94	417.45	427.86	17.53	0.00	1.68	368.90	4,690.22
VI	527.65	199.39	7.82	0.00	451.98	322.45	301.37	320.16	8.94	184.13	362.37	509.99	3,196.26
VII	164.27	78.13	17.71	0.00	80.26	108.18	142.38	141.01	52.26	54.73	150.19	163.25	1,152.38
VIII	284.07	187.09	35.19	134.12	130.26	254.42	156.46	158.43	96.86	0.00	131.01	174.65	1,742.57
IX	343.50	207.91	37.45	202.50	266.89	189.72	143.14	45.81	14.24	34.02	117.22	175.63	1,778.04
X	642.07	553.48	193.10	2.82	28.19	494.49	252.73	401.92	220.21	0.00	193.64	280.52	3,263.17
XI	481.12	365.69	225.41	177.52	148.42	464.70	314.54	383.23	250.00	76.92	342.63	454.54	3,684.71
XII	627.25	146.35	448.14	1,048.39	735.26	466.93	84.14	119.28	308.02	606.76	860.91	1,089.05	6,540.48
Total	8,372.68	7,102.89	4,350.94	2,017.35	2,963.81	5,028.52	4,638.09	4,511.40	2,764.03	1,793.47	4,800.09	6,725.39	55,068.65

Source: JICA Survey Team

Table F 2-30 Monthly Irrigation Water Demands by WRR in 2050 (Systems Irrigated by Surface Water in Consideration of NIA Financial Program)

(Unit: MCM)

WRR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
I	303.84	254.81	70.41	0.00	19.28	150.09	224.21	197.65	145.87	35.47	220.09	234.85	1,856.57
II	1,524.26	1,585.04	852.45	113.44	70.43	1,035.87	1,015.20	860.31	619.73	107.20	692.43	884.36	9,360.72
III	1,780.44	1,695.97	994.79	105.88	37.82	431.21	944.59	943.17	712.03	562.40	1,245.35	1,620.43	11,074.09
IV	654.41	672.24	476.16	109.10	359.54	277.43	320.59	254.74	59.10	47.26	151.72	421.37	3,803.67
V	582.65	717.12	779.25	115.44	607.06	583.02	408.28	418.28	17.34	0.00	1.58	362.13	4,592.15
VI	524.36	198.14	7.82	0.00	445.29	319.49	298.49	316.12	8.79	182.79	360.55	507.15	3,169.00
VII	161.12	76.76	17.71	0.00	79.62	104.78	139.80	137.71	50.88	54.33	147.33	160.68	1,130.72
VIII	283.94	186.84	35.13	133.91	130.13	254.33	156.39	158.43	96.86	0.00	130.91	174.54	1,741.40
IX	342.09	206.93	37.18	202.02	266.27	189.26	142.79	45.69	14.20	33.92	116.62	174.76	1,771.74
X	641.14	552.70	192.73	2.82	28.14	493.29	252.01	401.02	219.72	0.00	193.15	280.03	3,256.75
XI	480.88	365.62	225.10	176.88	147.92	464.14	314.38	383.02	249.76	76.57	342.24	454.13	3,680.66
XII	624.61	146.31	444.81	1,040.06	729.56	463.62	83.74	119.14	306.40	602.65	855.59	1,083.00	6,499.49
Total	7,903.74	6,658.49	4,133.53	1,999.56	2,921.05	4,766.53	4,300.47	4,235.30	2,500.69	1,702.60	4,457.54	6,357.43	51,936.94

Source: JICA Survey Team

Table F 2-31 Monthly Irrigation Water Demands by WRR in 2050 (Systems Irrigated by Groundwater in Consideration of NIA Financial Program)

(Unit: MCM)

WRR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
I	13.27	10.81	2.23	0.00	0.14	3.13	9.28	8.34	7.19	3.31	11.74	12.22	81.65
II	190.92	193.45	90.24	0.32	0.24	195.91	191.94	132.58	147.96	1.31	155.17	117.63	1,417.67
III	201.86	181.21	80.24	1.70	0.51	23.49	95.57	102.98	96.52	72.58	149.23	190.88	1,196.78
IV	39.10	38.94	23.64	3.84	14.40	14.55	24.50	13.93	7.56	7.39	14.73	27.11	229.67
V	11.99	15.25	16.69	2.28	13.13	12.92	9.17	9.58	0.19	0.00	0.10	6.77	98.07
VI	3.29	1.25	0.00	0.00	6.69	2.97	2.88	4.04	0.15	1.34	1.82	2.85	27.27
VII	3.15	1.36	0.00	0.00	0.65	3.40	2.58	3.30	1.39	0.40	2.86	2.58	21.66
VIII	0.13	0.25	0.07	0.21	0.13	0.09	0.08	0.00	0.00	0.00	0.10	0.11	1.17
IX	1.41	0.98	0.28	0.48	0.63	0.46	0.35	0.12	0.05	0.09	0.60	0.87	6.31
X	0.93	0.78	0.37	0.00	0.05	1.20	0.72	0.90	0.48	0.00	0.49	0.49	6.42
XI	0.25	0.07	0.32	0.64	0.50	0.56	0.16	0.20	0.24	0.35	0.39	0.41	4.06
XII	2.64	0.04	3.33	8.32	5.70	3.31	0.40	0.14	1.62	4.11	5.32	6.05	41.00
Total	468.94	444.39	217.40	17.80	42.76	261.99	337.62	276.10	263.34	90.87	342.55	367.95	3,131.71

Source: JICA Survey Team

F-2.3 Inland Fishery Water Demands

In the previous Master Plan Study of 1998, the following criteria were used as the basis for granting water right for fishery purpose by NWRB.

- 0.9259 lit/sec/ha (**80 cum/day/ha**) for bangus and other species under brackish water fishpond and for tilapia under freshwater fishpond
- 3.15 lit/sec/ha (272 cum/day/ha) for sugpo under brackish/marin water

In the water balance study, it is necessary to estimate the water demands for freshwater fishpond. However, the area of freshwater fishpond is not available. The area of freshwater aquafarms including fishpond, fish pen, fish cage, etc. is only available as mentioned in the previous section (F1.3). Therefore, the water demands for freshwater aquafarms are estimated based on the above unit water requirement (80 cum/day/ha) and the area of aquafarms in 2020 (18,851 ha), that is also explained in the previous section. The annual water demands in 2030, 2040 and 2050 are also estimated as shown in Table F 2-32 with adopting the annual increase rate of 1.6% for the quantity of fish production in freshwater fishpond, as explained in the previous section.

Table F 2-32 Annual Water Demands for Freshwater Aquafarms

Year	Area of Freshwater Aquafarms*1	Annual Water Demands for Fishery (FWD)	Annual Water Demands for Irrigation (IWD)	(FWD)/ (IWD)
2020	18,851 ha	**550 MCM**	31,529 MCM	**1.74%**
2030	(18,851 ha) x $(1.016)^{10}$= 22,094 ha	**645 MCM**	41,300 MCM*2	**1.56%**
2040	(18,851 ha) x $(1.016)^{20}$= 25,895 ha	**756 MCM**	48,186 MCM*2	**1.57%**
2050	(18,851 ha) x $(1.016)^{30}$= 30,349 ha	**886 MCM**	55,069 MCM*2	**1.61%**

Source: JICA Survey Team
Remarks: *1=Include fishpond, fish pen, fish cage, fish tank, hatchery, etc.
*2=IWD estimated in consideration of NIA Financial Programs

Annual water demands for fishery (freshwater aquafarms only) are 1.5% to 1.7% of annual irrigation water demands. Judging from the above rough estimations, even if the water balance study is executed without fishery water demand, it is considered that the study does not have much effect on the overall results of water resources assessment. Furthermore, it is hardly possible to collect the exact data of freshwater fishpond by provinces for the past several years because DA-BFAR only has the data in 2012. Therefore, the fishery water demands are not recommended to count in the Stage 1 Works: Water Balance Analysis for 12 WRRs.

F-2.4 Livestock/Poultry Water Demands

In the previous Master Plan Study of 1998, the following criteria were used as basis in granting water right for livestock/poultry by NWRB.

- 2.4 lit/sec/10,000 heads (**21 cum/day/1,000 heads**) for livestock
- 1.46 lit/sec/1 million heads (**130 cum/day/1 million heads**) for poultry

DA-BAI provided the standard water requirements for livestock and poultry. The requirements are classified into their types and weight, for example; 50-415 liter/1,000 heads/day for broiler age 1-4 weeks, 180-320 liter/1,000 heads/day for broiler breeders, 3.2-4.5 liter/day for feeder pig of 23-36kg weight, 7.3-10 liter/day for feeder pig of 70-110kg weight, and 27-55 liter/day for feedlot cattle (short

keep) of 364-636 kg weight. However, the available data of livestock and poultry is only the total number of each livestock/poultry such as, cattle, hog, carabao and chicken, without detailed classifications. Thus, the above NWRB's criteria is adopted for estimation of water demands.

As explained in the previous section (F1.4), total heads of livestock and poultry in 2020 are estimated as follows.

Livestock:	Carabao = 2,865 thousand heads (TH)
	Cattle = 2,542 thousand heads (TH)
	Hog = 12,796 thousand heads (TH)
	Sub-total = 16,203 thousand heads (TH)
Poultry	Chicken = 178,265 thousand heads (TH)

Assuming the heads of livestock/poultry would increase with population increase ratio, annual water demands for livestock/poultry would be calculated as showing in Table F 2-33.

Table F 2-33 Annual Water Demands for Livestock and Poultry

Year	Total Heads (Thousand)		Annual Water Demands for Livestock/ Poultry (LPWD)	Annual Water Demands for Irrigation (IWD)	(LPWD) /(IWD)
	Livestock	Poultry			
2020	16,203	178,265	**133 MCM**	31,529 MCM	**0.42%**
2030	(16,203) x (1.133)*1= 18,358	(178, 265) x (1.133) *1= 201,973	**150 MCM**	41,300 MCM*4	**0.36%**
2040	(16,203) x (1.243) *2= 20,140	(178, 265) x (1.243) *2= 221,583	**165 MCM**	48,186 MCM*4	**0.34%**
2050	(16,203) x (1.315) *3= 21,307	(178, 265) x (1.315) *3= 234,418	**174 MCM**	55,069 MCM*4	**0.32%**

Source: JICA Survey Team
Remarks: *1=Population: (123,833,055 in 2030) / (109,292,453 in 2020)=1.133
*2=Population: (135,881,380 in 2040) / (109,292,453 in 2020)=1.243
*3=Population: (143,758,859 in 2050) / (109,292,453 in 2020)=1.315
*4=IWD estimated in consideration of NIA Financial Programs

Annual water demands for livestock/poultry are about 0.3-0.4% of annual irrigation water demands, thus negligible. Therefore, the livestock/poultry water demands are also not recommended to count in the Stage 1 Works: Water Balance Analysis for 12 WRRs.

F-3 PRIORITY WATER RESOURCES REGIONS

F-3.1 Water Resources Region-V

F-3.1.1 Current Status of Agricultural Water Use

(1) Irrigation Sub-sector

The Water Resources Region V (WRR V) covers the full administrative Region V and a small area of Quezon Province in Region IV-A. The irrigation areas covered by WRR V in 2020 are summarized in Table F 3-1 (refer to Table F-25).

Table F 3-1 Irrigation Areas of WRR V in 2020

Province	Area Rate	All Systems				By Surface Water				By Ground Water			
		ISA (ha)	FUSA (ha)	Irrigated Area (ha)		ISA (ha)	FUSA (ha)	Irrigated Area (ha)		ISA (ha)	FUSA (ha)	Irrigated Area (ha)	
				Wet	Dry			Wet	Dry			Wet	Dry
Quezon	0.053	1,082	974	818	751	1,016	908	773	707	66	66	44	44
Albay	1	31,749	30,429	23,045	21,651	30,541	29,647	22,729	21,335	1,208	782	316	316
Camarines Norte	1	9,695	9,236	6,725	6,710	8,649	8,383	6,561	6,546	1,046	853	164	164
Camarines Sur	1	77,665	55,218	34,313	32,880	52,588	52,417	33,230	31,932	25,077	2,801	1,083	948
Catanduanes	1	3,211	3,113	1,805	1,839	2,965	2,876	1,790	1,824	246	237	15	15
Masbate	1	6,848	6,582	3,456	3,519	6,656	6,396	3,456	3,519	192	186	0	0
Sorsogon	1	14,102	13,712	9,094	9,052	11,238	11,202	9,094	9,052	2,864	2,510	0	0
Total		144,352	119,264	79,256	76,402	113,653	111,829	77,633	74,915	30,699	7,435	1,622	1,487

Source: NIA Inventry Dat modified by JICA Survey Team

There are 18 NISs in the WRR V, which are summarized in Table F-53. Among the total irrigation service areas (ISAs) of 144,352 ha in WRR V, the ISAs of NISs are 24,135 ha, or about 17% of the total. The average ISA of NIS is about 1,340 ha. Other ISAs are covered by small scale irrigation systems such as CISs, PISs and OGASs, whose average ISA is about 60 ha.

All NISs are irrigated by surface water: 17 river-run-off systems (gravity) and 1 pump system. The small-scale systems are classified into two systems: 89,518 ha by surface water and 30,699 by groundwater. Among the systems by surface water, four systems (ISA=378 ha; all OGASs in Camarines Sur Province) are irrigated with a reservoir dam. The major surface water source in this WRR is the Bicol River. According to the DA Region-V officer, the most critical problem is flooding in the river basin. During the Bicol River Basin Development Project, many plans were proposed to develop the Basin; however, most of them have not yet been implemented.

In general, NISs in WRR V effectively utilize the water resources, judging from the higher cropping intensities (177% on the average) as shown in Table F-53. It is difficult for small-scale systems to effectively utilize the water source, because the farmer or irrigators association cannot execute proper water management, in both hard and soft aspects, to meet the farming practices under the river-run-off system without the full support of NIA or irrigation technician. Furthermore, judging from the low cropping intensity in the wet season, flooding is the more serious problem for irrigation farming, as pointed by the DA Regional Office.

The JICA Survey Team (JST) conducted the site inspection for the following five major NISs in WRR V, during the field works in May-June 2022.

(a) <u>Tigman-Hinagyaman-Inarihan River Irrigation System (THIRIS) in Camarines Sur Province</u>

THIRIS is composed of three systems, Tigman, Hinagyaman and Inarihan, which are integrated into one operation system. The Inarihan system was constructed in 1951 and the Tigman and Hinagyaman systems were constructed in 1989. The main water sources are the Tigman river, the Hinagyaman river and the Inarihan river, respectively. Water of the Tigman river is diverted to the Hinagyaman river as a supplemental water source of the Hinagyaman system. The three systems each have ogee type diversion dam which is well maintained as of May 2022. All the main and lateral canals are concrete lined canals. Twenty percent of the farm ditches are also

concrete lined canals. It can be said that the available water sources are effectively utilized by NIA, even though the watersheds of the source rivers are comparatively small.

THIRIS has potential development area in the downstream portion of the Tigman and Hinagyaman systems, which can be irrigated by new construction of pump station.

The system operation office explained the following problems in this system:

- Scoring risks in the diversion dam site due to the quarrying activities in the upstream of the three rivers,
- Hard maintenance works due to the garbage in the main canals (neighboring residential people dump garbage to the canal), and
- Flooding and salinity in the downstream areas due to sedimentation in natural creeks that are used as drainage canals.

(b) Rinconada Integrated Irrigation System (RIIS) in Camarines Sur Province

RIIS is composed of four sub-systems, namely: the Rinconada development area (ISA=2,698 ha), Upper Lalo RIS (ISA=1,061 ha), Lower Lalo RIS (ISA=1,596 ha) and Barit RIS (ISA=2,647 ha). Many CISs (ISA= 4,964 ha) are also included in RIIS's operation. Major sources of water are Lake Buhi, Barit river, Waras river and Lalo river. The water of Lake Buhi flows to Barit river, and the Lake Buhi control structure (fixed weir with sluice gates) was constructed at the outlet site in 1983 in order to control the irrigation water supply. Along each source river, total of seven water control structures have been constructed as follows.

(i) Sta. Justina intake structure in the Barit river constructed in 1985,
(ii) Sta. Justina bifurcation structure in the Barit river constructed in 1985,
(iii) Upper Barit diversion dam in the Barit river constructed in 1985,
(iv) San Francisco check gate constructed in 1989,
(v) Upper Lalo diversion dam in the Lalo river constructed in 1975,
(vi) Lower Barit diversion dam in the Barit river constructed in 1969, and
(vii) Waras check gate in the Waras river constructed in 1989.

Six structures except Waras check gate are functioning but most of the sluice gates require repair works. The Waras check gate requires restoration of facilities.

The effective water management of Lake Buhi is the most important operation for RIIS. The Camarines Sur Irrigation Management Office (IMO) proposed to introduce automatic monitoring and control system for the remote operation of the Lake Buhi control structure. Irrigation water management utilizing information technology (IT) is essential for the irrigation system with reservoir dam to release the reservoir water effectively, with proper assessment of effective rainfall and natural river discharge.

NIA proposed the Waras reservoir dam in the upstream of the Waras river to increase water supply quantity for RIIS. Although NIA prepared the feasibility and detailed design for this

future project, the project is suspended due to indigenous people issues in the proposed dam site.

The present constraints/problems are explained by the IMO is as follows.

1) Disposal of garbage, debris and wastes into the irrigation canals, resulting to clogging of structures (inlets and trash racks),
2) Denudation of watersheds causing surface erosion resulting in siltation of irrigation canals and waterways,
3) Informal settlers and encroachment of irrigation Right of Way (ROW), and
4) Lack of eligible personnel to perform efficient and timely regular irrigation O&M activities.

(c) Cabilogan San Juan River Irrigation System (RIS) in Albay

The water source of this system is the Cabilogan river. The diversion dam is composed of rubber dam and sluice gates, which are well operational except for minor mechanical operation issues of rubber dam. In general, the structures themselves (civil works) are well maintained through NIA's efforts, but the mechanical damages are not repaired promptly because the works are placed as an order out-side through bidding and contract.

(d) South Quinale River Irrigation System in Albay

The water source of this system is the Quinale river. This system has been improved by the Agrarian Reform Infrastructure Support Project (ARISP) under the Loan of JICA (OECF/JIBC) in 2007. At the time, the system was categorized as CIS. Through improvement works of the diversion dam by ARISP, the rubber dam with sluice gates were newly constructed. The original rubber dam was largely damaged by the flood in 2019 and the rubber dam was replaced in 2021. Thus, the cropping intensity in 2020 is very small, as shown in Table F-53.

(e) Nasisi River Irrigation System in Albay

The water source of this system is the Nasisi river. The diversion dam is composed of fixed weir and sluice gates, that are in well operational condition. Siltation in the upstream of the dam is a very big problem. During the site inspection, LGU was conducting the dredging works in the dam site.

The Albay IMO explained the following constraints/problems.

1) Illegal settlers along the irrigation canals,
2) Garbage clogging the irrigation canals and structures,
3) Siltation in the upstream of diversion dam and irrigation canals,
4) Vegetation along and/or within irrigation structures (not enough subsidy to IAs for the maintenance works after IMT),
5) Water scarcity at the tail end due to dilapidated and damaged checks and control system,
6) Annual typhoons that cause serious damages to the systems,
7) Insufficient staffs for proper monitoring and maintenance of the systems,
8) Lack of warning devices at the rubber dam for preventing downstream flood damages,
9) Lack of monitoring and gathering devices for meteorological data for proper water management, and
10) Right of way negotiation for extension plans of the existing systems.

(2) Livestock and Poultry Sub-sector

Based on Table F-10, F-11, F-12 and F-13, the heads of livestock and poultry in WRR V in 2020 are summarized in Table F 3-2.

Table F 3-2 Heads of Livestock & Poultry by Province in WRR V (2020)

Region	Province	Area	Heads of Livestock & Poultry				
		Rate	Carabao	Cattle	Hog	(Sub-total)	Chicken
IV-A	Quezon	0.053	4,346	3,272	12,628	20,246	223,527
V	Albay	1	85,562	8,180	181,136	274,878	1,741,647
	Camarines Norte	1	49,295	6,611	154,413	210,319	780,880
	Camarines Sur	1	78,796	25,325	289,819	393,940	4,575,399
	Catanduanes	1	6,078	1,807	68,371	76,256	89,586
	Masbate	1	64,083	57,500	108,483	230,066	941,703
	Sorsogon	1	32,714	15,573	89,235	137,522	622,320
Total			**320,874**	**118,268**	**904,085**	**1,343,227**	**8,975,062**

Source:Philippine Statistics Authority modified by JICA Survey Team

JST inspected the following two farms during the field works in May-June 2022 to get the general information and data on the livestock and poultry farms.

(a) Hacienda De Naga, Recreation Resort & Livestock Farm in Camarines Sur Province

This farm has been operated for a recreation resort, and there are several livestock such as cattle (108 heads), sheep (200 heads), goat (30 heads) and horse (23 heads) since 2011. The total 105 ha of the farm and recreation area with an artificial pond are located in Carolina of Naga City, and utilize the domestic water supply, whose original source is groundwater. The farm operator is unable to quantify the water consumption quantities for the livestock. Each livestock is kept separately in the wide grass fields under natural conditions, except for goats. Guests of the recreation resort can also interact with the animals.

(b) Lendes Poultry Farm in Camarines Sur Province

The office of the farm is located along the national highway in San Isidro, Baao Municipality. According to the owner, there has been laying hens for egg production in the farm for about 45 years. Total of 300,000 heads produce about 250,000 eggs per day. The water source of the farm is groundwater. The pump capacity is 75,000 liter per day according to the farm owner. (Unfortunately, JST could not inspect the farm itself due to risks during the COVID-19 pandemic.)

In general, the water source for livestock and poultry farms is groundwater, because the farms are located in remote areas, away from the residential zones in consideration of the environmental aspect such as noise, odor and insects. Furthermore, it is easy to use groundwater in the mountainous topography of this region.

(3) Inland Fishery Sub-sector

During the field works by JST in May-June 2022, DA-BFAR provided the data of freshwater fishpond areas in the priority WRRs, collected from the respective regional offices. The freshwater fishpond areas in WRR V in 2022 are modified based on these data, shown in Table F 3-3.

Table F 3-3 Freshwater Fishpond Areas by Province in WRR V (2022)

Region	Province	Area Rate	Fishpond Area (ha) in		Water Sources
			Province	WRR	
IV-A	Quezon	0.053	7.77	0.41	Ground water, Creek, etc
V	Albay	1	37.33	37.33	NIA Irrigation Canal, Creek, Spring
	Camarines Norte	1	103.36	103.36	Ground water, etc.
	Camarines Sur	1	11.64	11.64	NIA Irrigation Canal, Ground water, etc.
	Catanduanes	1	No data		
	Masbate	1	0.00	0.00	(No Fresh Water Fishpond)
	Sorsogon	1	7.77	7.77	Spring
Total			**167.87**	**160.51**	

Source: DA-BFAR modified by JICA Survey Team

JST inspected "Bagong Buga Tilapia Hatchery" located in Barayong, Ligao City of Albay to get the general information and data on freshwater fishponds. The water source of the hatchery is NIA Masuya Irrigation System, which original source is from river flow. The water is diverted from the NIA canal to the fishpond farms. According to the fishpond owner, there are many hatcheries around his farms and all of them use the irrigation water for their water source. Most of the freshwater fishpond owners are small scale farm operators. Therefore, they use the surface water sources rather than groundwater from the economical point of view. The total pond's area is 8 ha with 20 ponds. The average water depth of the ponds is judged at about 50 to 60 cm. The total storage volume is estimated as 48,000 cum (100 m x 100 m x 8 nos x 0.6 m).

F-3.1.2 Water Demand Forecast

(1) Irrigation Water Demands

The irrigation water demands by WRRs are explained in Section F2. In Table F-29 to F-52. 10-days water demands by provinces were estimated separately for all irrigation systems, systems irrigated by surface water and systems irrigated by groundwater in 2020, 2030, 2040 and 2050. Furthermore, the forecasted demands in 2030, 2040 and 2050 were estimated for two cases: (1) Future irrigation area based on NIMP 2020-2030, and (2) Future irrigation area in consideration of NIA Financial Program. Annual water demands (AWDs) of these estimations in WRR V are summarized in the following tables.

Table F 3-4 Annual Irrigation Water Demands of WRR V in 2020

Province	Area Rate	Irrigation Area By Surface Water					Irrigation Area By Ground Water					Total AWD (MCM)
		ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	AWD (MCM)	ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	AWD (MCM)	
Quezon	0.053	1,016	908	773	707	10.57	66	66	44	44	0.63	11.20
Albay	1.000	30,541	29,647	22,729	21,335	535.99	1,208	782	316	316	7.70	543.70
Camarines Norte	1.000	8,649	8,383	6,561	6,546	149.29	1,046	853	164	164	3.74	153.03
Camarines Sur	1.000	52,588	52,417	33,230	31,932	878.56	25,077	2,801	1,083	948	27.11	905.67
Catanduanes	1.000	2,965	2,876	1,790	1,824	47.34	246	237	15	15	0.39	47.74
Masbate	1.000	6,656	6,396	3,456	3,519	89.99	192	186	0	0	0.00	89.99
Sorsogon	1.000	11,238	11,202	9,094	9,052	212.80	2,864	2,510	0	0	0.00	212.80
Total		113,653	111,829	77,633	74,915	1,924.54	30,699	7,435	1,622	1,487	39.57	1,964.11

Source: JICA Survey Team

Table F 3-5 Annual Irrigation Water Demands of WRR V in 2030

Province	Area Rate	Irrigation Area By Surface Water					Irrigation Area By Ground Water					Total AWD (MCM)
		ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	AWD (MCM)	ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	AWD (MCM)	
Irrigation Area based on NIMP 2020-2030												
Quezon	0.053	3,258	3,134	2,818	2,577	56.29	212	228	161	159	3.36	59.65
Albay	1.000	35,601	34,772	30,853	28,961	744.09	1,408	917	429	429	10.70	754.79
Camarines Norte	1.000	8,649	8,383	7,668	7,650	174.68	1,046	853	192	192	4.37	179.05
Camarines Sur	1.000	67,213	72,920	64,582	62,059	1,735.62	32,051	3,897	2,105	1,842	53.77	1,789.39
Catanduanes	1.000	2,965	2,876	2,600	2,649	70.04	246	237	22	22	0.58	70.62
Masbate	1.000	42,471	42,203	36,582	37,249	956.32	1,225	1,227	0	0	0.00	956.32
Sorsogon	1.000	18,575	18,724	19,526	19,436	460.32	4,734	4,195	0	0	0.00	460.32
Total		178,732	183,013	164,629	160,581	4,197.35	40,922	11,554	2,909	2,644	72.78	4,270.13
Irrigation Area based on NIA Financial Program												
Quezon	0.053	1,104	996	896	819	17.89	72	72	51	51	1.07	18.96
Albay	1.000	37,634	36,831	32,680	30,675	788.13	1,489	971	454	454	11.34	799.47
Camarines Norte	1.000	12,378	12,177	11,138	11,112	253.73	1,497	1,239	278	278	6.35	260.08
Camarines Sur	1.000	62,719	66,620	59,002	56,697	1,585.66	29,908	3,560	1,923	1,683	49.12	1,634.78
Catanduanes	1.000	3,133	3,044	2,751	2,804	74.12	260	251	23	23	0.62	74.74
Masbate	1.000	10,773	10,512	9,112	9,278	238.20	311	306	0	0	0.00	238.20
Sorsogon	1.000	11,496	11,467	11,959	11,903	281.91	2,930	2,569	0	0	0.00	281.91
Total		139,236	141,645	127,536	123,288	3,239.64	36,466	8,969	2,730	2,490	68.49	3,308.13

Source: JICA Survey Team

Table F 3-6 Annual Irrigation Water Demands of WRR V in 2040

Province	Area Rate	Irrigation Area By Surface Water					Irrigation Area By Ground Water					Total AWD (MCM)
		ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	AWD (MCM)	ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	AWD (MCM)	
Irrigation Area based on NIMP 2020-2030												
Quezon	0.053	4,327	4,195	3,772	3,449	75.34	281	305	216	213	4.50	79.84
Albay	1.000	38,014	37,216	33,021	30,996	796.37	1,504	982	459	459	11.46	807.82
Camarines Norte	1.000	8,649	8,383	7,668	7,650	174.68	1,046	853	192	192	4.37	179.05
Camarines Sur	1.000	74,185	82,695	73,239	70,378	1,968.27	35,376	4,419	2,387	2,089	60.97	2,029.24
Catanduanes	1.000	2,965	2,876	2,600	2,649	70.04	246	237	22	22	0.58	70.62
Masbate	1.000	59,545	59,273	51,379	52,315	1,343.12	1,718	1,724	0	0	0.00	1,343.12
Sorsogon	1.000	22,073	22,309	23,266	23,158	548.47	5,625	4,999	0	0	0.00	548.47
Total		209,757	216,947	194,944	190,596	4,976.29	45,795	13,518	3,276	2,975	81.88	5,058.17
Irrigation Area based on NIA Financial Program												
Quezon	0.053	1,192	1,084	974	891	19.46	77	79	56	55	1.16	20.62
Albay	1.000	44,726	44,014	39,053	36,658	941.85	1,769	1,161	543	543	13.55	955.40
Camarines Norte	1.000	16,106	15,970	14,607	14,574	332.78	1,948	1,625	365	365	8.33	341.11
Camarines Sur	1.000	72,849	80,822	71,581	68,785	1,923.70	34,739	4,319	2,333	2,042	59.59	1,983.30
Catanduanes	1.000	3,301	3,212	2,903	2,958	78.21	274	265	24	24	0.65	78.86
Masbate	1.000	14,889	14,628	12,679	12,911	331.46	430	425	0	0	0.00	331.46
Sorsogon	1.000	11,755	11,732	12,235	12,178	288.43	2,996	2,629	0	0	0.00	288.43
Total		164,819	171,462	154,033	148,955	3,915.90	42,232	10,502	3,321	3,030	83.28	3,999.18

Source: JICA Survey Team

Table F 3-7 Annual Irrigation Water Demands of WRR V in 2050

Province	Area Rate	Irrigation Area By Surface Water					Irrigation Area By Ground Water					Total AWD (MCM)
		ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	AWD (MCM)	ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	AWD (MCM)	
Irrigation Area based on NIMP 2020-2030												
Quezon	0.053	4,829	4,694	4,220	3,859	84.30	314	341	242	239	5.03	89.33
Albay	1.000	39,147	38,364	34,040	31,952	820.94	1,548	1,012	473	473	11.81	832.75
Camarines Norte	1.000	8,649	8,383	7,668	7,650	174.68	1,046	853	192	192	4.37	179.05
Camarines Sur	1.000	77,462	87,288	77,307	74,288	2,077.61	36,938	4,664	2,520	2,205	64.36	2,141.97
Catanduanes	1.000	2,965	2,876	2,600	2,649	70.04	246	237	22	22	0.58	70.62
Masbate	1.000	67,569	67,295	58,333	59,396	1,524.91	1,949	1,957	0	0	0.00	1,524.91
Sorsogon	1.000	23,717	23,995	25,023	24,908	589.90	6,044	5,376	0	0	0.00	589.90
Total		224,338	232,895	209,191	204,701	5,342.38	48,086	14,441	3,448	3,131	86.15	5,428.53
Irrigation Area based on NIA Financial Program												
Quezon	0.053	1,281	1,172	1,053	963	21.04	83	85	60	60	1.26	22.29
Albay	1.000	51,819	51,198	45,427	42,641	1,095.57	2,050	1,350	632	632	15.76	1,111.33
Camarines Norte	1.000	19,835	19,764	18,077	18,036	411.83	2,399	2,011	452	452	10.31	422.14
Camarines Sur	1.000	82,980	95,025	84,159	80,872	2,261.75	39,570	5,078	2,743	2,401	70.07	2,331.82
Catanduanes	1.000	3,468	3,380	3,055	3,113	82.30	288	278	26	26	0.68	82.98
Masbate	1.000	19,006	18,743	16,247	16,543	424.72	548	545	0	0	0.00	424.72
Sorsogon	1.000	12,013	11,997	12,511	12,453	294.94	3,062	2,688	0	0	0.00	294.94
Total		190,402	201,278	180,530	174,622	4,592.15	47,999	12,036	3,912	3,570	98.07	4,690.22

Source: JICA Survey Team

These irrigation water demands will be re-calculated by separate watersheds for the water balance study with the same unit water requirements as prepared in Section F2.2 (refer to Table F-16 and F-17).

(2) Livestock and Poultry Water Demands

Water demands for livestock and poultry are estimated with the same procedure described in Section F2.4. Unit water requirements are adopted at **21 cum/day/1,000 heads** for livestock and **130 cum/day/1 million heads** for poultry. Based on the heads of livestock and poultry mentioned in the above sub-section F3.1.1 (2), annual water demands are calculated as shown in Table F 3-8.

Table F 3-8 Annual Water Demands for Livestock & Poultry of WRR V in 2020

Region	Province	Area Rate	Heads		Annual Water Demands (MCM)		
			Livestock	Poultry	Livestock	Poultry	Total
IV-A	Quezon	0.053	20,246	223,527	0.155	0.011	0.166
V	Albay	1.000	274,878	1,741,647	2.107	0.083	2.190
	Camarines Norte	1.000	210,319	780,880	1.612	0.037	1.649
	Camarines Sur	1.000	393,940	4,575,399	3.020	0.217	3.237
	Catanduanes	1.000	76,256	89,586	0.585	0.004	0.589
	Masbate	1.000	230,066	941,703	1.763	0.045	1.808
	Sorsogon	1.000	137,522	622,320	1.054	0.030	1.084
Total			1,343,227	8,975,062	10.296	0.426	10.722

Source: JICA Survey Team

For the water balance study, the 10-days requirements are also estimated as shown in Table F-54. The same requirements in 2030, 2040 and 2050 are also calculated based on those in 2020 and shown in Table F-55 for 2030, Table F-56 for 2040 and Table F-57 for 2050, assuming that the heads of livestock/poultry would increase with the following population increase ratio; 2020 to 2030: 1.133, 2020 to 2040: 1.243 and 2020 to 2050: 1.315 as explained in Section F2.4. Annual water demands in 2030, 2040 and 2050 are also summarized in Table F 3-9.

Table F 3-9 Annual Water Demands for Livestock & Poultry of WRR V in 2030, 2040 & 2050

Region	Province	Annual Water Demands (MCM)		
		2,030	2,040	2050
IV-A	Quezon	0.188	0.206	0.218
V	Albay	2.481	2.722	2.879
	Camarines Norte	1.868	2.050	2.169
	Camarines Sur	3.667	4.023	4.256
	Catanduanes	0.667	0.732	0.774
	Masbate	2.049	2.248	2.378
	Sorsogon	1.228	1.347	1.425
Total		12.148	13.327	14.099

Source: JICA Survey Team

These water demands for livestock and poultry will be re-calculated by separate watersheds for the water balance study of groundwater.

(3) Inland Fishery Water Demands

Water demands for inland fishery are estimated with the same procedures as described in Section F2.3. Unit water requirements of 80 cum/day/ha for the freshwater fishpond are adopted. Based on the freshwater fishpond areas in 2022 as mentioned in above sub-section F3.1.1 (3), annual water demands in each province are estimated as shown in Table F 3-10. The demands in 2030, 2040 and 2050 are also calculated with assumed annual increase rate of 1.6% for the fishpond area as follows.

- (Demand in 2030) = (Demand in 2022) x $(1.016)^8$, (=1.135)
- (Demand in 2040) = (Demand in 2022) x $(1.016)^{12}$, (=1.331)
- (Demand in 2050) = (Demand in 2022) x $(1.016)^{22}$, (=1.560)

Table F 3-10 Water Demands for Freshwater Fishponds in WRR V

Region	Province	Area Rate	Fishpond Area (ha) in		Annual Water Demands for Fishpond (MCM)			
			Province	WRR	2022	2030	2040	2050
IV-A	Quezon	0.053	7.77	0.41	0.01	0.01	0.02	0.02
V	Albay	1	37.33	37.33	1.09	1.24	1.45	1.70
	Camarines Norte	1	103.36	103.36	3.02	3.43	4.02	4.71
	Camarines Sur	1	11.64	11.64	0.34	0.39	0.45	0.53
	Catanduanes	1	No data					
	Masbate	1	0.00	0.00	0.00	0.00	0.00	0.00
	Sorsogon	1	7.77	7.77	0.23	0.26	0.30	0.35
Total			**167.87**	**160.51**	**4.69**	**5.32**	**6.24**	**7.31**

Source: JICA Survey Team

The major water sources for the fishponds are surface water such as irrigation water, and spring. Annual water demands for fishponds are compared with annual irrigation water demands of surface water systems as shown in Table F 3-11.

Table F 3-11 Comparison of Fishpond AWD and Irrigation AWD in WRR V

Province	Annual Water Demands (MCM)								(AWD for Fishpond)/ (AWD for Irrigation) (%)			
	For Fishpond				For Irrigation (Surface Water)							
	2022	2030	2040	2050	2020	2030	2040	2050	2020	2030	2040	2050
(Region IV-A)												
Quezon	0.01	0.01	0.02	0.02	10.57	17.89	19.46	21.04	0.11	0.08	0.08	0.09
(Region V)												
Albay	1.09	1.24	1.45	1.70	535.99	788.13	941.85	1,095.57	0.20	0.16	0.15	0.16
Camarines Norte	3.02	3.43	4.02	4.71	149.29	253.73	332.78	411.83	2.02	1.35	1.21	1.14
Camarines Sur	0.34	0.39	0.45	0.53	878.56	1,585.66	1,923.70	2,261.75	0.04	0.02	0.02	0.02
Sorsogon	0.23	0.26	0.30	0.35	212.80	281.91	288.43	294.94	0.11	0.09	0.10	0.12
Total	**4.69**	**5.32**	**6.24**	**7.31**	**1,787.21**	**2,927.32**	**3,506.22**	**4,085.13**	**0.26**	**0.18**	**0.18**	**0.18**

Source: JICA Survey Team

All ratios of (AWD for Fishpond) vs (AWD for Irrigation) are less than about 2.0%. In consideration of the several conditions for the estimation of the irrigation water demands, the water demands for fishponds are judged to be too negligible to be included in the error of irrigation demands.

F-3.2 Water Resources Region-VII

F-3.2.1 Current Status of Agricultural Water Use

(1) Irrigation Sub-sector

The Water Resources Region VII (WRR VII) covers most of the administrative Region VII and a small area of Negros Occidental Province in Region VI. The irrigation areas covered by WRR VII in 2020 are summarized in Table F 3-12 (refer to Table F-25).

Table F 3-12 Irrigation Areas of WRR VII in 2020

Province	Area Rate	All Systems				By Surface Water				By Ground Water			
		ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry
Negros Occidental	0.076	3,004	2,887	1,773	1,252	2,999	2,881	1,773	1,252	5	5	0	0
Bohol	1	25,254	23,904	18,677	16,736	25,234	23,904	18,677	16,736	20	0	0	0
Cebu	1	9,504	7,634	6,742	5,850	8,392	6,657	5,799	5,155	1,112	977	943	695
Negros Oriental	0.769	11,431	9,197	7,812	7,808	11,431	9,197	7,812	7,808	0	0	0	0
Siquijor	1	734	580	329	159	734	580	329	159	0	0	0	0
Total		49,927	44,202	35,332	31,805	48,790	43,219	34,389	31,110	1,137	982	943	695

Source: NIA Inventry Dat modified by JICA Survey Team

There are 14 NISs in the WRR VII, which are summarized in Table F-58. Among the total ISAs of 49,927 ha in WRR VII, the ISAs of NISs are 16,184 ha, or about 32% of the total. The average ISA of NIS is about 1,156 ha. Other ISAs are covered by small scale irrigation systems such as CISs, PISs and OGASs, whose average ISA is about 51 ha.

All NISs are irrigated by surface water with reservoir dam, three medium scale dam and eleven small reservoir irrigation systems (SRISs). The small-scale irrigation systems are classified into 32,606 ha of systems by surface water and 1,137 ha of systems by groundwater. Among NIA-CISs, the Calingganay SRIP (ISA=35 ha) in Bohol was constructed under the small water impounding management (SWIM) program. Some of OGASs were also constructed under SWIM, but definite data is not clear.

Half of NISs in WRR VII have operational constraints, especially regarding the effective utilization of the water resources. Even though all NISs have reservoirs that can store excess water in the wet season and release in the dry season, the cropping intensities of these NISs are less than 150% as shown in Table F-58. It is considered that the major causes of the low intensity are the decreased reservoir capacity due to sedimentation and the inefficient water management without proper meteorological and hydrological monitoring system. The small-scale irrigation systems are well irrigated with more than 150% of cropping intensity, except for the systems in Siquijor.

During the field works in May-June 2022, JST conducted site inspection for the following systems/projects to grasp the actual situation in the irrigation operation and development.

(a) Tubigon-Ilijan Small Reservoir Irrigation System (SRIS) in Bohol Province

This system of 190 ha ISA is irrigated with reservoir dam with design effective storage capacity of 2.906 MCM. The dam was constructed in 1972 to store the water of the Tangon & Dapanas Creeks in Tobigon Municipality. The catchment area at the dam site is 3.2 km^2. The present reservoir capacity is decreased due to heavy siltation. The intake gate is operated manually and there is a staff gauge installed in the reservoir. These present simple operation activities cause ineffective water utilization and additionally, the low cropping intensity of 40% in 2020.

The Provincial IMO prepared a feasibility study on automatic monitoring and operation systems with information technology for effective water management. It is also essential to establish a proper watershed management system with reforestation.

(b) Jantianon Small Irrigation Project (SIP) in Negros Oriental Province

The Jantianon SIP in Amlan Municipality is under-construction, with construction period of 2020 to 2024. The potential irrigable area is estimated at 950-1,200 ha. The water sources are the Tabuyanan and Bio-os rivers with drainage area of about 3.3 km^2. The watershed is well maintained; the available water sources are expected to be enough to irrigate the area with 200% of cropping intensity. The river water will be taken to the main canal by the core type diversion dam. The dam site is in the remote area and the access road is in poor conditions; there is no pavement and thus it would be difficult to drive during the rainy season. For proper water control/ management, improvements to the O&M office, staffs and road are essential.

(c) Sta. Agueda-Datagon Irrigation Project (IP) in Negros Oriental Province

The Sta. Agueda-Datagon IP in Pamplona Municipality was almost complete as of December 2021. The potential irrigable area is 1,050 ha. The main water source is the Hinotongan river and the supplemental source is the Magsusunog creek, whose drainage areas are about 30.31 km^2. The watershed is well maintained; the available water sources are expected to be enough to irrigate the area with 200% of cropping intensity. The river water will be taken to the main canal by an ogee type diversion dam. It is deemed beneficial to establish a monitoring system (facilities) at the dam site for proper water management.

(d) Tanjay-Bais River Irrigation Project (RIP) in Negros Oriental Province

The Tanjay-Bais RIP in Tanjay City is under-construction from 2021 and scheduled to complete in 2025. The potential irrigable area is estimated at 4,210 ha and is composed of the new development area (3,900 ha) and the existing Luca-San Isidro CIS (310 ha). The main water source is the Tanjay river and the supplemental source is the Inolucan river, whose drainage areas are about 75.0 km^2. The watershed is well maintained; the available water sources are expected to be enough to irrigate the area with 200% of cropping intensity. The river water will be taken to the main canal by an ogee type diversion dam.

Adding to above on-going projects, the NIA Negros Oriental Satellite Office has many irrigation

development programs. Four permanent engineers are carrying out the investigation, planning, design and supervision of construction works with the support of about 80 contract-based workers. It is necessary to provide not only further engineering assistance but also manpower and financial supports for the acceleration of the development.

(2) Livestock and Poultry Sub-sector

Based on Table F-10, F-11, F-12 and F-13, the heads of livestock and poultry in WRR VII in 2020 are summarized in Table F 3-13.

Table F 3-13 Heads of Livestock & Poultry by Province in WRR VII (2020)

Region	Province	Area Rate	Heads of Livestock & Poultry				
			Carabao	Cattle	Hog	(Sub-total)	Chicken
VI	Negros Occidental	0.076	7,617	3,900	35,794	47,312	643,383
VII	Bohol	1	74,404	77,626	329,377	481,407	4,228,731
	Cebu	1	53,404	119,408	459,715	632,527	10,482,111
	Negros Oriental	0.769	50,929	49,374	207,320	307,622	2,220,729
	Siquijor	1	1,084	20,104	49,200	70,388	590,425
Total			187,437	270,412	1,081,406	1,539,256	18,165,379

Source:Philippine Statistics Authority modified by JICA Survey Team

JST inspected the following two farms during the field works in May-June 2022 to get the general information and data on the livestock and poultry farms,.

(a) Sto. Nino Farms Multi-Livestock Processing in Bohol Province

The farm was established in 2006, and has been operated not only for keeping hog (3,400 heads) and chicken (20,000 heads) but also for slaughterhouse and dressing plant. The farm is located in the forest area of Municipality Bilar to avoid environmental issues for the residential areas. The farm is operating with power supply system that uses biogas from sewage. The water sources are one deep well and water supply from the water district. The water consumption is about 68 cum per day according to the farm operator. (JST could not enter to the farm area due to risks during COVID-19 pandemic, same as Region-V.)

(b) Triple “I” Poultry Farm in Negros Oriental Province

This farm in Valancia Municipality has 3,000 heads of broiler has been operated under the contract with chicken trading firm since 2012. The farm is also located in a remote forest area to prevent noise, smell and fly casualties to the residents. The droppings are utilized as organic inputs for the neighbouring agricultural farms. It is understood that sufficient environmental management is undertaken by the owner. The farm has private water supply facilities of pipeline and water tank to take the water from the local water supply by the water district, whose original source is riverflow.

(3) Inland Fishery Sub-sector

The freshwater fishpond areas in WRR VII in 2022 are modified based on the data provided by DA-BFAR as shown in Table F 3-14.

Table F 3-14 Freshwater Fishpond Areas by Province in WRR VII (2022)

Region	Province	Area Rate	Fishpond Area (ha) in		Water Sources
			Province	WRR	
VI	Negros Occidental	0.076	No data		
VII	Bohol	1	54.25	54.25	Spring, NIA/BSWM Irrigation Canal
	Cebu	1	1.68	1.68	River, Spring
	Negros Oriental	0.769	29.67	22.82	NIA Irrigation Canal, Ground water
	Siquijor	1	1.12	1.12	Creek/River, Ground water
Total			**86.72**	**79.87**	

Source: DA-BFAR modified by JICA Survey Team

JST inspected the following two freshwater fishpond farms to grasp the actual management of fishpond.

(a) Villianueva Hatchery Farm in Bohol Province

The farm bas been operated as the hatchery of tilapia since 2015 in Bilar Municipality. The fishpond area is one ha and the water source is spring. The water depth of the ponds is 1 meter; thus, the total storage volume is estimated at 10,000 cum (100 m x 100 m x 1 m). The pond is dried-up once a year. The initial investment costs were 2 million pesos. The gross income is 50,000 pesos per month, and the monthly O&M costs are about 21,000 pesos, three labour costs of 11,000 pesos and feeds of 10,000 pesos. According to the owner, there is no major problem in the O&M works at that time.

(b) Albino Solon Fishpond Farm in Negros Oriental

The farm has been operating to grow tilapia in Dumaguete City. The water source is NIA irrigation canal. Total fishpond area of 9 ponds is five ha, and the water depth is 1.2 meters. The total storage volume is estimated at 60,000 cum (100 m x 100 m x 5 ha x 1.2 m). The owner explained that there are two major problems: one is insufficient government support for the feed supply, and the other is the damages of NIA diversion dam, which happens unexpectedly, causing sudden stoppage in the water supply to the pond. Immediate repair works were anticipated, but it always took long periods to recover the normal supply.

F-3.2.2 Water Demand Forecast

(1) Irrigation Water Demands

The irrigation water demands by WRRs are explained in Section F2. In Table F-29 to F-52, 10-days water demands by provinces were separately estimated for all irrigation systems, for systems irrigated by surface water and for systems irrigated by groundwater in 2020, 2030, 2040 and 2050. Furthermore, the forecasted demands in 2030, 2040 and 2050 were estimated for the two cases; (1) Future irrigation

area based on NIMP 2020-2030, and (2) future irrigation area in consideration of NIA Financial Program. Annual water demands (AWDs) of these estimations in WRR VII are summarized in the following tables.

Table F 3-15 Annual Irrigation Water Demands of WRR VII n 2020

Province	Area Rate	Irrigation Area By Surface Water					Irrigation Area By Ground Water					Total
		ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	AWD (MCM)	ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	AWD (MCM)	AWD (MCM)
Negros Occidental	0.076	2,999	2,881	1,773	1,252	60.34	5	5	0	0	0.00	60.34
Bohol	1.000	25,234	23,904	18,677	16,736	320.24	20	0	0	0	0.00	320.24
Cebu	1.000	8,392	6,657	5,799	5,155	141.98	1,112	977	943	695	21.02	163.00
Negros Oriental	0.769	11,431	9,197	7,812	7,808	244.27	0	0	0	0	0.00	244.27
Siquijor	1.000	734	580	329	159	6.65	0	0	0	0	0.00	6.65
Total		48,790	43,219	34,389	31,110	773.49	1,137	982	943	695	21.02	794.51

Source: JICA Survey Team

Table F 3-16 Annual Irrigation Water Demands of WRR VII n 2030

Province	Area Rate	Irrigation Area By Surface Water					Irrigation Area By Ground Water					Total
		ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	AWD (MCM)	ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	AWD (MCM)	AWD (MCM)
Irrigation Area based on NIMP 2020-2030												
Negros Occidental	0.076	5,877	5,759	5,749	4,060	143.32	11	11	0	0	0.00	143.32
Bohol	1.000	43,490	42,174	37,813	33,883	849.45	34	0	0	0	0.00	849.45
Cebu	1.000	8,392	6,657	5,977	5,313	146.33	1,112	977	972	716	21.66	167.99
Negros Oriental	0.769	19,748	17,514	14,891	14,883	499.99	0	0	0	0	0.00	499.99
Siquijor	1.000	734	580	665	321	13.44	0	0	0	0	0.00	13.44
Total		78,241	72,684	65,094	58,460	1,652.53	1,157	988	972	716	21.66	1,674.20
Irrigation Area based on NIA Financial Program												
Negros Occidental	0.076	3,810	3,692	3,686	2,603	91.89	7	7	0	0	0.00	91.89
Bohol	1.000	26,526	25,197	22,591	20,243	507.50	21	0	0	0	0.00	507.50
Cebu	1.000	8,392	6,657	5,977	5,313	146.33	1,112	977	972	716	21.66	167.99
Negros Oriental	0.769	11,624	9,390	7,984	7,980	268.07	0	0	0	0	0.00	268.07
Siquijor	1.000	734	580	665	321	13.44	0	0	0	0	0.00	13.44
Total		51,086	45,517	40,902	36,460	1,027.24	1,140	984	972	716	21.66	1,048.90

Source: JICA Survey Team

Table F 3-17 Annual Irrigation Water Demands of WRR VII n 2040

Province	Area Rate	Irrigation Area By Surface Water					Irrigation Area By Ground Water					Total
		ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	AWD (MCM)	ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	AWD (MCM)	AWD (MCM)
Irrigation Area based on NIMP 2020-2030												
Negros Occidental	0.076	7,249	7,131	7,119	5,027	177.46	13	14	0	0	0.00	177.46
Bohol	1.000	52,193	50,884	45,622	40,881	1,024.88	41	0	0	0	0.00	1,024.88
Cebu	1.000	8,392	6,657	5,977	5,313	146.33	1,112	977	972	716	21.66	167.99
Negros Oriental	0.769	23,713	21,479	18,262	18,253	613.18	0	0	0	0	0.00	613.18
Siquijor	1.000	734	580	665	321	13.44	0	0	0	0	0.00	13.44
Total		92,280	86,731	77,644	69,794	1,975.29	1,167	991	972	716		1,996.95
Irrigation Area based on NIA Financial Program												
Negros Occidental	0.076	4,621	4,503	4,496	3,175	112.07	8	9	0	0	0.00	112.07
Bohol	1.000	27,818	26,490	23,750	21,282	533.54	22	0	0	0	0.00	533.54
Cebu	1.000	8,392	6,657	5,977	5,313	146.33	1,112	977	972	716	21.66	167.99
Negros Oriental	0.769	11,818	9,584	8,148	8,144	273.59	0	0	0	0	0.00	273.59
Siquijor	1.000	734	580	665	321	13.44	0	0	0	0	0.00	13.44
Total		53,382	47,814	43,036	38,235	1,078.98	1,142	986	972	716		1,100.64

Source: JICA Survey Team

Table F 3-18 Annual Irrigation Water Demands of WRR VII n 2050

Province	Area Rate	Irrigation Area By Surface Water					Irrigation Area By Ground Water					Total AWD (MCM)
		ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	AWD (MCM)	ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	AWD (MCM)	
Irrigation Area based on NIMP 2020-2030												
Negros Occidental	0.076	7,894	7,776	7,762	5,481	193.51	14	15	0	0	0.00	193.51
Bohol	1.000	56,283	54,977	49,292	44,169	1,107.33	45	0	0	0	0.00	1,107.33
Cebu	1.000	8,392	6,657	5,977	5,313	146.33	1,112	977	972	716	21.66	167.99
Negros Oriental	0.769	25,576	23,343	19,846	19,836	666.37	0	0	0	0	0.00	666.37
Siquijor	1.000	734	580	665	321	13.44	0	0	0	0	0.00	13.44
Total		98,879	93,332	83,542	75,121	2,126.98	1,171	992	972	716		2,148.64
Irrigation Area based on NIA Financial Program												
Negros Occidental	0.076	5,432	5,314	5,305	3,746	132.26	10	10	0	0	0.00	132.26
Bohol	1.000	29,110	27,783	24,910	22,321	559.58	23	0	0	0	0.00	559.58
Cebu	1.000	8,392	6,657	5,977	5,313	146.33	1,112	977	972	716	21.66	167.99
Negros Oriental	0.769	12,011	9,777	8,312	8,308	279.11	0	0	0	0	0.00	279.11
Siquijor	1.000	734	580	665	321	13.44	0	0	0	0	0.00	13.44
Total		55,679	50,111	45,169	40,010	1,130.72	1,145	987	972	716		1,152.38

Source: JICA Survey Team

These irrigation water demands will be re-calculated by separate watersheds for the water balance study with the same unit water requirements as explained in Section F2.2 (refer to Table F-16 and F-17).

(2) Livestock and Poultry Water Demands

Water demands for livestock and poultry are estimated with the same procedures described in Section F2.4. Unit water requirements are adopted at **21 cum/day/1,000heads** for livestock and **130 cum/day/1 million heads** for poultry. Based on the heads of livestock and poultry mentioned in above sub-section F3.2.1 (2), annual water demands are calculated as shown in Table F 3-19.

Table F 3-19 Annual Water Demands for Livestock & Poultry of 2020 in WRR VII

Region	Province	Area Rate	Heads		Annual Water Demands (MCM)		
			Livestock	Poultry	Livestock	Poultry	Total
VI	Negros Occidental	0.076	47,312	643,383	0.363	0.031	0.393
VII	Bohol	1.000	481,407	4,228,731	3.690	0.201	3.891
	Cebu	1.000	632,527	10,482,111	4.848	0.497	5.346
	Negros Oriental	0.769	307,622	2,220,729	2.358	0.105	2.463
	Siquijor	1.000	70,388	590,425	0.540	0.028	0.568
Total			1,539,256	18,165,379	11.798	0.862	12.660

Source: JICA Survey Team

For the water balance study, the 10-days requirements are also estimated as shown in Table F-54. The same requirements in 2030, 2040 and 2050 are also calculated based on those in 2020 and shown in Table F-55 for 2030, Table F-56 for 2040 and Table F-57 for 2050, assuming that the heads of livestock/poultry would increase with the following population increase ratio; 2020 to 2030: 1.133, 2020 to 2040: 1.243 and 2020 to 2050: 1.315 as explained in Section F2.4. Annual water demands in 2030, 2040 and 2050 are also summarized in Table F 3-20.

Table F 3-20 Annual Water Demands for Livestock/Poultry of WRR VII in 2030, 2040 & 2050

Region	Province	Annual Water Demands (MCM)		
		2,030	2,040	2050
VI	Negros Occidental	0.445	0.489	0.517
VII	Bohol	4.408	4.836	5.116
	Cebu	6.057	6.645	7.030
	Negros Oriental	2.791	3.062	3.239
	Siquijor	0.643	0.705	0.746
Total		14.344	15.737	16.648

Source: JICA Survey Team

These water demands for livestock and poultry will be re-calculated by separate watersheds for the water balance study of groundwater.

(3) Inland Fishery Water Demands

Water demands for inland fishery are estimated with the same procedures as described in Section F2.3. Unit water requirements of 80 cum/day/ha for the freshwater fishpond are adopted. Based on the freshwater fishpond areas in 2022 as mentioned in above sub-section F3.2.1 (3), annual water demands in each province are estimated as shown in Table F 3-21. The demands in 2030, 2040 and 2050 are also calculated with assumed annual increase rate of 1.6% for the fishpond area.

Table F 3-21 Water Demands for Freshwater Fishponds in WRR VII

Region	Province	Area Rate	Fishpond Area (ha) in Province	Fishpond Area (ha) in WRR	Annual Water Demands for Fishpond (MCM) 2022	2030	2040	2050
VI	Negros Occidental	0.076	No data					
VII	Bohol	1	54.25	54.25	1.58	1.80	2.11	2.47
	Cebu	1	1.68	1.68	0.05	0.06	0.07	0.08
	Negros Oriental	0.769	29.67	22.82	0.67	0.76	0.89	1.04
	Siquijor	1	1.12	1.12	0.03	0.04	0.04	0.05
Total			**86.72**	**79.87**	**2.33**	**2.65**	**3.11**	**3.64**

Source: JICA Survey Team

The major water sources for the fishponds are surface water such as irrigation water and spring. Annual water demands for fishponds are compared with annual irrigation water demands of surface water systems as shown in Table F 3-22.

Table F 3-22 Comparison of Fishpond AWD and Irrigation AWD in WRR VII

Province	Annual Water Demands (MCM)								(AWD for Fishpond)/ (AWD for Irrigation) (%)			
	For Fishpond				For Irrigation (Surface Water)							
	2022	2030	2040	2050	2020	2030	2040	2050	2020	2030	2040	2050
Bohol	1.584	1.798	2.11	2.471	320.24	507.50	533.54	559.58	0.49	0.35	0.40	0.44
Cebu	0.049	0.056	0.065	0.077	141.98	146.33	146.33	146.33	0.03	0.04	0.04	0.05
Negros Oriental	0.666	0.756	0.887	1.039	244.27	268.07	273.59	279.11	0.27	0.28	0.32	0.37
Siquijor	0.033	0.037	0.044	0.051	6.65	13.44	13.44	13.44	0.49	0.28	0.32	0.38
Total	**2.332**	**2.647**	**3.106**	**3.638**	**713.15**	**935.35**	**966.90**	**998.46**	**0.33**	**0.28**	**0.32**	**0.36**

Source: JICA Survey Team

All ratios of (AWD for Fishpond) vs (AWD for Irrigation) are less than 1.0%. In consideration of the several conditions for the estimation of irrigation water demands, the water demands for fishponds are judged to be too negligible to be included in the error of irrigation demands.

F-3.3 Water Resources Region-XI

F-3.3.1 Current Status of Agricultural Water Use

(1) Irrigation Sub-sector

WRR XI covers the administrative regions X, XI, XII and XIII. The irrigation areas covering WRR XI in 2020 are summarized in Table F 3-23 (refer to Table F-25).

Table F 3-23 Irrigation Areas of WRR XI in 2020

Province	Area Rate	All Systems				By Surface Water				By Ground Water			
		ISA (ha)	FUSA (ha)	Irrigated Area (ha)		ISA (ha)	FUSA (ha)	Irrigated Area (ha)		ISA (ha)	FUSA (ha)	Irrigated Area (ha)	
				Wet	Dry			Wet	Dry			Wet	Dry
Bukidnon	0.046	1,919	1,536	1,253	1,243	1,919	1,536	1,253	1,243	0	0	0	0
Davao de Oro (Compostela Valley)	0.477	7,082	7,021	5,352	5,352	7,082	7,021	5,352	5,352	0	0	0	0
Davao del Norte	0.989	28,990	27,475	21,499	21,499	28,990	27,475	21,499	21,499	0	0	0	0
Davao del Sur Davao Occidental	0.998	17,439	16,943	13,904	13,765	17,439	16,943	13,904	13,765	0	0	0	0
Davao Oriental	0.949	8,357	8,319	5,812	5,853	8,357	8,319	5,812	5,853	0	0	0	0
Sarangani	0.869	6,145	5,516	4,980	4,638	6,086	5,458	4,922	4,580	58	58	58	58
South Cotabato	0.34	12,266	10,571	9,594	9,479	12,263	10,568	9,591	9,476	3	3	3	3
North Cotabato	0.038	1,725	1,680	1,564	1,557	1,705	1,659	1,547	1,540	21	21	17	17
Sultan Kudarat	0.052	2,035	1,849	1,630	1,333	2,017	1,831	1,612	1,315	18	18	18	18
Agusan del Norte	0.027	471	381	276	275	471	381	276	275	0	0	0	0
Agusan del Sur	0.109	3,105	2,833	1,891	1,829	2,984	2,712	1,876	1,824	121	121	15	5
Surigao del Sur	0.896	14,818	14,253	9,673	8,680	14,764	14,239	9,660	8,680	54	13	13	0
Total		104,352	98,378	77,429	75,502	104,077	98,143	77,304	75,401	275	235	125	102

Source: NIA Inventry Dat modified by JICA Survey Team

There are nine NISs in WRR XI, eight in Region XI and one in Region-XIII, that are summarized in Table F-53. Among the total ISAs of 104,352 ha in WRR XI, ISAs of NISs are 38,695 ha, about 37% of the total. The average ISA of NIS is about 4,300 ha. Other ISAs are covered by small scale irrigation systems such as CISs, PISs and OGASs, whose average ISA is about 120 ha (the average of ISAs in the provinces covered by WRR XI).

All NISs are irrigated by surface water. As shown in the above Table F 2-33, only 275 ha of the small-scale irrigation systems, or about 0.26% of total ISAs, are irrigated by groundwater. Most of the systems are fully irrigated by surface water sources in WRR XI. The cropping intensities of NISs in 2020 are more than 160% except for the Lasang RIS in Davao del Norte Province, which is explained hereinafter. The intensities of the small systems varies from 99% of Surigao del sur Province to 175% of North Cotabato province. The intensities of the wet season and the dry season are almost same in most of the provinces. Flooding is considered as the big issue in the wet season.

During the field works in May-June 2022, JST conducted site inspection in the following three NISs which are the large systems in Davao del Norte Province, Region-XI.

(a) <u>Saug River Irrigation System</u>

The Saug RIS is located in Asuncion, Kapalong and New Corella Municipalities and Tagum City. The system has been irrigated since 1980. A diversion dam, fixed weir and sluice gate are constructed just downstream of the confluence of the Saug and Madgao rivers. NIA has a further development plan of the Upper Saug River Irrigation Project, which was proposed as an irrigation system by the new reservoir dam. But the present plan is a diversion dam system because there was a fault found in the proposed dam site. This extension service area will be identified through further investigation and study. According to NIA-IMO, the existing lined canals and their structures have slight damages due to heavy rains and frequent flooding, which are the most serious issues hindering proper O&M works of irrigation systems in this province.

The average unit yields of paddy are recorded at 100 to 140 cavans/ha (1 cavan = 50 kg) from 2017. The system shall be well maintained and operated for the continuous food supply basin.

(b) Libuganon River Irrigation System

The Libuganon RIS located in Carmen, B.E. Dujali and Sto. Tomas Municipalities has been irrigated since 1990. A diversion dam, fixed weir and sluice gate are constructed in the Libuganon river. Intake gates are provided in both right (8 gates) and left (2 gates) sides. This system also has same problems as the above Saug RIS – the damages of the irrigation facilities by flooding. The average unit yields of paddy are recorded at more than 100 cavans/ha from 2019. The system shall be maintained and operated effectively for continuous food supply in the basin.

(c) Lasang River Irrigation System

The Lasang RIS, located in Carman Municipality and Panabo City has been irrigated since 1983. A diversion dam, fixed weir and sluice gate are constructed in the Lasang river. The downstream apron and dike in the dam site have been heavily destroyed by flooding. As mentioned above, the cropping intensity in 2020 was lower than the other NISs because the proper operation of the system is disturbed by these damages. NIA-IMO wants to immediately rehabilitate the damaged facilities, but they do not have enough heavy equipment, and financial support by the government is also not on schedule. These problems are the common constraints for the proper O&M activities in the IMO. The average unit yields of paddy are recorded at about 120 cavans/ha from 2020. The system shall be also maintained and operated effectively for continuous food supply in the basin.

(2) Livestock and Poultry Sub-sector

The heads of livestock and poultry in WRR XI in 2020 are summarized in Table F 3-24.

Table F 3-24 Heads of Livestock & Poultry by Province in WRR XI (2020)

Region	Province	Area Rate	Heads of Livestock & Poultry				
			Carabao	Cattle	Hog	(Sub-total)	Chicken
X	Bukidnon	0.046	2,564	4,059	28,088	34,711	467,357
XI	Davao de Oro (Compostela Valley)	0.477	11,430	3,801	62,023	77,253	509,504
	Davao del Norte	0.989	52,953	48,951	379,080	480,983	7,064,839
	Davao del Sur Davao Occidental	0.998	34,485	51,016	310,849	396,350	1,410,840
	Davao Oriental	0.949	30,191	24,161	110,521	164,874	778,071
XII	Sarangani	0.869	20,943	9,277	57,309	87,528	667,326
	South Cotabato	0.340	14,258	21,362	146,889	182,509	1,930,145
	North Cotabato	0.038	2,611	3,093	8,692	14,396	99,171
	Sultan Kudarat	0.052	3,388	2,036	3,833	9,258	32,261
XIII	Agusan del Norte	0.027	400	290	1,529	2,218	26,406
	Agusan del Sur	0.109	3,289	520	6,498	10,307	79,415
	Surigao del Sur	0.896	16,218	2,465	54,293	72,976	377,839
Total			192,730	171,030	1,169,604	1,533,364	13,443,173

Source:Philippine Statistics Authority modified by JICA Survey Team

JST inspected "(Emmanuel) Gonzaga Livestock/Poultry Farm" located in the mountainous area of Barangay Tubok, Davao City to get the general information and data on the livestock and poultry farms.

The farm is established in 2018 and as of June 2022, keeps sheep (26 heads), goat (30 heads), duck (20 heads), native chicken (200 heads), hog (35 heads) and cattle (8 heads). The water source for the farm is deep well. The owner expects to use the domestic water supply by the Davao City Water District, which is under-construction. The owner is planning to expand the livestock/poultry farms in this area through the support of neighbouring farmers for the new establishment of their farms. It is difficult for the farmers in this area to make their living by crop farming due to the mountainous topography.

(3) Inland Fishery Sub-sector

The freshwater fishpond areas in WRR XI in 2022 are modified based on the data provided by DA-BFAR as shown in Table F 3-25.

Table F 3-25 Freshwater Fishpond Areas by Province in WRR XI (2022)

Region	Province	Area Rate	Fishpond Area (ha) in		Water Sources
			Province	WRR	
X	Bukidnon	0.046	No data		
XI	Davao de Oro (Compostela Valley)	0.477	110.47	52.69	NIA Irrigation Canal, Ground water, Spring
	Davao del Norte	0.989	264.02	261.12	(NIA Irrigation Canal, Spring)
	Davao del Sur Davao Occidental	0.998	23.38	23.33	NIA Irrigation Canal, Ground water, Creek
	Davao Oriental	0.949	58.61	55.62	NIA Irrigation Canal, Ground water
XII	Sarangani	0.869	20.69	17.98	NIA Irrigation Canal, Spring
	South Cotabato	0.34	30.92	10.51	River, Ground water, NIA Irrigation Canal
	North Cotabato	0.038	No data		
	Sultan Kudarat	0.052	No data		
XIII	Agusan del Norte	0.027	No data		
	Agusan del Sur	0.109	28.62	3.12	(No Data)
	Surigao del Sur	0.896	69.43	62.21	(No Data)
Total			**606.14**	**486.59**	

Source: DA-BFAR modified by JICA Survey Team

JST inspected "Los Amigos Fishpond Farm" located in Barangay Los Amigos, Davao City to get a general information and data on freshwater fishpond.

The fishpond farm, with total pond area of 1 ha with 22 ponds was established in 1988 for catfish cultivation. The water source of the fishpond is natural spring, which is the common water source in towns located along the skirts of Mount Apo. The growing period is 6 to 7 months for local species and 5 months for imported species. The farm harvests about 2,000 kg per month. The owner explained that there are about 500 fishponds in Barangay Los Amigos and the neighbouring barangays. The association of fishpond owners is now under organization. It is necessary for the owners to coordinate with each other for sustainable operation through the control of cultivated quantity and market price.

The main problems for the fishpond farms are flood damages and water pollution through utilization of chemicals in banana plantations. Flooding is the major common issue in the agriculture sector. Water resources development shall be studied from the viewpoints of water control as well as water utilization.

F-3.3.2 Water Demand Forecast

(1) Irrigation Water Demands

In Table F-29 to F-52, 10-days water demands by provinces were separately estimated for all irrigation systems, for systems irrigated by surface water and for systems irrigated by groundwater in 2020, 2030, 2040 and 2050. Furthermore, the forecasted demands in 2030, 2040 and 2050 were estimated for the two (2) cases; (1) Future Irrigation Area based on NIMP 2020-2030, (2) Future Irrigation Area in consideration of NIA Financial Program. Annual water demands (AWDs) of these estimations in WRR XI are summarized in the following tables.

Table F 3-26 Annual Irrigation Water Demands of WRR XI in 2020

Province	Area Rate	Irrigation Area By Surface Water					Irrigation Area By Ground Water					Total AWD (MCM)
		ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	AWD (MCM)	ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	AWD (MCM)	
Bukidnon	0.046	1,919	1,536	1,253	1,243	13.81	0	0	0	0	0.00	13.81
Davao de Oro (Compostela Valley)	0.477	7,082	7,021	5,352	5,352	96.78	0	0	0	0	0.00	96.78
Davao del Norte	0.989	28,990	27,475	21,499	21,499	424.68	0	0	0	0	0.00	424.68
Davao del Sur Davao Occidental	0.998	17,439	16,943	13,904	13,765	339.78	0	0	0	0	0.00	339.78
Davao Oriental	0.949	8,357	8,319	5,812	5,853	128.14	0	0	0	0	0.00	128.14
Sarangani	0.869	6,086	5,458	4,922	4,580	113.05	58	58	58	58	1.38	114.42
South Cotabato	0.340	12,263	10,568	9,591	9,476	272.85	3	3	3	3	0.10	272.95
North Cotabato	0.038	1,705	1,659	1,547	1,540	44.01	21	21	17	17	0.48	44.48
Sultan Kudarat	0.052	2,017	1,831	1,612	1,315	30.57	18	18	18	18	0.37	30.94
Agusan del Norte	0.027	471	381	276	275	6.12	0	0	0	0	0.00	6.12
Agusan del Sur	0.109	2,984	2,712	1,876	1,824	39.90	121	121	15	5	0.19	40.09
Surigao del Sur	0.896	14,764	14,239	9,660	8,680	174.15	54	13	13	0	0.13	174.28
Total		104,077	98,143	77,304	75,401	1,683.85	275	235	125	102	2.63	1,686.48

Source: JICA Survey Team

Table F 3-27 Annual Irrigation Water Demands of WRR XI in 2030

Province	Area Rate	Irrigation Area By Surface Water					Irrigation Area By Ground Water					Total AWD (MCM)
		ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	AWD (MCM)	ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	AWD (MCM)	
Irrigation Area based on NIMP 2020-2030												
Bukidnon	0.046	3,102	2,718	2,320	2,301	34.11	0	0	0	0	0.00	34.11
Davao de Oro (Compostela Valley)	0.477	12,387	12,327	10,478	10,478	189.45	0	0	0	0	0.00	189.45
Davao del Norte	0.989	48,275	46,760	39,746	39,746	700.65	0	0	0	0	0.00	700.65
Davao del Sur Davao Occidental	0.998	34,734	34,238	29,248	28,957	714.76	0	0	0	0	0.00	714.76
Davao Oriental	0.949	18,508	18,470	15,643	15,756	344.92	0	0	0	0	0.00	344.92
Sarangani	0.869	6,086	5,458	4,799	4,465	110.22	58	58	57	57	1.34	111.56
South Cotabato	0.340	18,640	16,944	14,489	14,315	337.71	5	5	5	5	0.12	337.83
North Cotabato	0.038	2,901	2,856	2,437	2,426	58.25	35	36	26	26	0.63	58.88
Sultan Kudarat	0.052	2,668	2,481	2,317	1,890	43.95	24	24	26	26	0.53	44.49
Agusan del Norte	0.027	718	628	535	533	10.87	0	0	0	0	0.00	10.87
Agusan del Sur	0.109	5,392	5,111	4,577	4,449	90.72	218	228	37	13	0.42	91.15
Surigao del Sur	0.896	29,181	28,695	25,700	23,092	463.32	106	27	36	0	0.34	463.66
Total		182,592	176,686	152,290	148,407	3,098.95	447	378	186	127	3.39	3,102.34
Irrigation Area based on NIA Financial Program												
Bukidnon	0.046	2,521	2,138	1,825	1,810	26.83	0	0	0	0	0.00	26.83
Davao de Oro (Compostela Valley)	0.477	19,784	19,723	16,765	16,765	303.13	0	0	0	0	0.00	303.13
Davao del Norte	0.989	29,286	27,772	23,606	23,606	416.12	0	0	0	0	0.00	416.12
Davao del Sur Davao Occidental	0.998	22,401	21,905	18,713	18,526	457.30	0	0	0	0	0.00	457.30
Davao Oriental	0.949	11,119	11,081	9,385	9,452	206.93	0	0	0	0	0.00	206.93
Sarangani	0.869	6,086	5,458	4,799	4,465	110.22	58	58	57	57	1.34	111.56
South Cotabato	0.340	18,968	17,273	14,770	14,592	344.25	5	6	5	5	0.12	344.37
North Cotabato	0.038	2,868	2,822	2,408	2,397	57.56	35	35	26	26	0.62	58.18
Sultan Kudarat	0.052	2,179	1,992	1,861	1,518	35.30	19	20	21	21	0.43	35.73
Agusan del Norte	0.027	761	672	572	570	11.62	0	0	0	0	0.00	11.62
Agusan del Sur	0.109	3,914	3,638	3,258	3,167	64.58	159	162	26	9	0.30	64.88
Surigao del Sur	0.896	21,534	21,027	18,832	16,921	339.52	78	20	26	0	0.25	339.77
Total		141,420	135,501	116,793	113,789	2,373.36	355	300	161	118	3.07	2,376.43

Source: JICA Survey Team

Table F 3-28 Annual Irrigation Water Demands of WRR XI in 2040

Province	Area Rate	Irrigation Area By Surface Water					Irrigation Area By Ground Water					Total AWD (MCM)
		ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	AWD (MCM)	ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	AWD (MCM)	
Irrigation Area based on NIMP 2020-2030												
Bukidnon	0.046	3,665	3,282	2,801	2,778	41.19	0	0	0	0	0.00	41.19
Davao de Oro (Compostela Valley)	0.477	14,916	14,856	12,627	12,627	228.32	0	0	0	0	0.00	228.32
Davao del Norte	0.989	57,468	55,954	47,561	47,561	838.40	0	0	0	0	0.00	838.40
Davao del Sur Davao Occidental	0.998	42,979	42,483	36,292	35,930	886.89	0	0	0	0	0.00	886.89
Davao Oriental	0.949	23,347	23,309	19,742	19,884	435.30	0	0	0	0	0.00	435.30
Sarangani	0.869	6,086	5,458	4,799	4,465	110.22	58	58	57	57	1.34	111.56
South Cotabato	0.340	21,680	19,984	17,089	16,883	398.30	6	6	6	6	0.14	398.44
North Cotabato	0.038	3,472	3,426	2,923	2,910	69.88	42	43	32	32	0.76	70.63
Sultan Kudarat	0.052	2,978	2,791	2,607	2,126	49.45	26	27	29	29	0.60	50.04
Agusan del Norte	0.027	836	746	636	633	12.91	0	0	0	0	0.00	12.91
Agusan del Sur	0.109	6,540	6,254	5,601	5,444	111.02	265	279	45	16	0.52	111.54
Surigao del Sur	0.896	36,054	35,586	31,871	28,637	574.59	131	34	44	0	0.42	575.01
Total		220,021	214,129	184,549	179,879	3,756.46	529	447	213	140	3.78	3,760.24
Irrigation Area based on NIA Financial Program												
Bukidnon	0.046	3,123	2,740	2,338	2,319	34.38	0	0	0	0	0.00	34.38
Davao de Oro (Compostela Valley)	0.477	32,486	32,425	27,561	27,561	498.35	0	0	0	0	0.00	498.35
Davao del Norte	0.989	29,582	28,068	23,858	23,858	420.57	0	0	0	0	0.00	420.57
Davao del Sur Davao Occidental	0.998	27,364	26,868	22,952	22,723	560.89	0	0	0	0	0.00	560.89
Davao Oriental	0.949	13,880	13,842	11,724	11,808	258.50	0	0	0	0	0.00	258.50
Sarangani	0.869	6,086	5,458	4,799	4,465	110.22	58	58	57	57	1.34	111.56
South Cotabato	0.340	25,673	23,977	20,503	20,257	477.88	7	8	7	7	0.17	478.05
North Cotabato	0.038	4,030	3,984	3,400	3,385	81.27	49	50	37	37	0.88	82.15
Sultan Kudarat	0.052	2,341	2,154	2,012	1,641	38.16	21	21	22	22	0.46	38.62
Agusan del Norte	0.027	1,051	962	819	816	16.64	0	0	0	0	0.00	16.64
Agusan del Sur	0.109	4,844	4,564	4,088	3,973	81.02	196	203	33	12	0.38	81.40
Surigao del Sur	0.896	28,304	27,815	24,912	22,384	449.12	103	26	35	0	0.33	449.45
Total		178,764	172,858	148,966	145,190	3,027.01	434	366	191	135	3.56	3,030.57

Source: JICA Survey Team

Table F 3-29 Annual Irrigation Water Demands of WRR XI in 2050

Province	Area Rate	Irrigation Area By Surface Water					Irrigation Area By Ground Water					Total AWD (MCM)
		ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	AWD (MCM)	ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	AWD (MCM)	
Irrigation Area based on NIMP 2020-2030												
Bukidnon	0.046	3,930	3,547	3,027	3,002	44.51	0	0	0	0	0.00	44.51
Davao de Oro (Compostela Valley)	0.477	16,105	16,044	13,638	13,638	246.59	0	0	0	0	0.00	246.59
Davao del Norte	0.989	61,789	60,275	51,233	51,233	903.14	0	0	0	0	0.00	903.14
Davao del Sur Davao Occidental	0.998	46,854	46,358	39,602	39,207	967.78	0	0	0	0	0.00	967.78
Davao Oriental	0.949	25,621	25,583	21,668	21,824	477.77	0	0	0	0	0.00	477.77
Sarangani	0.869	6,086	5,458	4,799	4,465	110.22	58	58	57	57	1.34	111.56
South Cotabato	0.340	23,108	21,413	18,310	18,090	426.77	6	7	6	6	0.15	426.92
North Cotabato	0.038	3,740	3,694	3,152	3,138	75.35	45	46	34	34	0.81	76.16
Sultan Kudarat	0.052	3,124	2,936	2,743	2,237	52.03	28	29	31	31	0.63	52.66
Agusan del Norte	0.027	891	802	683	680	13.87	0	0	0	0	0.00	13.87
Agusan del Sur	0.109	7,080	6,792	6,082	5,912	120.56	287	303	49	18	0.56	121.13
Surigao del Sur	0.896	39,283	38,824	34,772	31,244	626.88	143	37	48	0	0.46	627.35
Total		237,612	231,727	199,710	194,670	4,065.47	568	479	225	145	3.96	4,069.43
Irrigation Area based on NIA Financial Program												
Bukidnon	0.046	3,725	3,342	2,852	2,829	41.94	0	0	0	0	0.00	41.94
Davao de Oro (Compostela Valley)	0.477	45,188	45,127	38,358	38,358	693.57	0	0	0	0	0.00	693.57
Davao del Norte	0.989	29,879	28,364	24,110	24,110	425.01	0	0	0	0	0.00	425.01
Davao del Sur Davao Occidental	0.998	32,326	31,830	27,191	26,920	664.49	0	0	0	0	0.00	664.49
Davao Oriental	0.949	16,642	16,604	14,063	14,164	310.08	0	0	0	0	0.00	310.08
Sarangani	0.869	6,086	5,458	4,799	4,465	110.22	58	58	57	57	1.34	111.56
South Cotabato	0.340	32,378	30,682	26,237	25,921	611.51	9	10	9	9	0.22	611.73
North Cotabato	0.038	5,193	5,147	4,391	4,372	104.98	63	64	47	47	1.13	106.11
Sultan Kudarat	0.052	2,502	2,316	2,163	1,764	41.03	22	23	24	24	0.50	41.52
Agusan del Norte	0.027	1,342	1,252	1,067	1,062	21.66	0	0	0	0	0.00	21.66
Agusan del Sur	0.109	5,773	5,490	4,917	4,779	97.46	234	245	39	14	0.46	97.91
Surigao del Sur	0.896	35,073	34,603	30,991	27,846	558.72	128	33	43	0	0.41	559.14
Total		216,107	210,215	181,139	176,590	3,680.66	514	432	220	152	4.06	3,684.71

Source: JICA Survey Team

These irrigation water demands will be re-calculated by separate watersheds for the water balance study with the same unit water requirements as prepared in Section F2.2 (refer to Table F-16 and F-17).

(2) Livestock and Poultry Water Demands

Water demands for livestock and poultry are estimated as same procedures described in Section F2.3. Unit water requirements are adopted at **21 cum/day/1,000heads** for livestock and **130 cum/day/1 million heads** for poultry. Based on the heads of livestock and poultry mentioned in above sub-section F3.3.1 (2), annual water demands are calculated as shown in Table F 3-30.

Table F 3-30 Annual Water Demands for Livestock & Poultry of WRR XI in 2020

Region	Province	Area	Heads		Annual Water Demands (MCM)		
		Rate	Livestock	Poultry	Livestock	Poultry	Total
X	Bukidnon	0.046	34,711	467,357	0.266	0.022	0.288
XI	Davao de Oro (Compostela Valley)	0.477	77,253	509,504	0.592	0.024	0.616
	Davao del Norte	0.989	480,983	7,064,839	3.687	0.335	4.022
	Davao del Sur Davao Occidental	0.998	396,350	1,410,840	3.038	0.067	3.105
	Davao Oriental	0.949	164,874	778,071	1.264	0.037	1.301
XII	Sarangani	0.869	87,528	667,326	0.671	0.032	0.703
	South Cotabato	0.340	182,509	1,930,145	1.399	0.092	1.491
	North Cotabato	0.038	14,396	99,171	0.110	0.005	0.115
	Sultan Kudarat	0.052	9,258	32,261	0.071	0.002	0.072
XIII	Agusan del Norte	0.027	2,218	26,406	0.017	0.001	0.018
	Agusan del Sur	0.109	10,307	79,415	0.079	0.004	0.083
	Surigao del Sur	0.896	72,976	377,839	0.559	0.018	0.577
	Total		1,533,364	13,443,173	11.753	0.638	12.391

Source: JICA Survey Team

For the water balance study, the 10-days requirements are also prepared as shown in Table F-54. The same requirements in 2030, 2040 and 2050 are also calculated based on those in 2020 and shown in Table F-55 for 2030, Table F-56 for 2040 and Table F-57 for 2050, assuming the heads of livestock/poultry would increase with the following population increase ratio; 2020 to 2030: 1.133, 2020 to 2040: 1.243 and 2020 to 2050: 1.315. Annual water demands in 2030, 2040 and 2050 are also summarized in Table F 3-31.

Table F 3-31 Annual Water Demands for Livestock/Poultry of WRR XI in 2030, 2040 & 2050

Region	Province	Annual Water Demands (MCM)		
		2,030	2,040	2050
X	Bukidnon	0.327	0.358	0.379
XI	Davao de Oro (Compostela Valley)	0.698	0.766	0.810
	Davao del Norte	4.557	4.999	5.289
	Davao del Sur Davao Occidental	3.518	3.859	4.083
	Davao Oriental	1.474	1.617	1.710
XII	Sarangani	0.796	0.873	0.924
	South Cotabato	1.689	1.853	1.960
	North Cotabato	0.130	0.143	0.151
	Sultan Kudarat	0.082	0.090	0.095
XIII	Agusan del Norte	0.021	0.023	0.024
	Agusan del Sur	0.094	0.103	0.109
	Surigao del Sur	0.654	0.718	0.759
	Total	14.039	15.402	16.294

Source: JICA Survey Team

These water demands for livestock and poultry will be re-calculated by separate watersheds for the water balance study of groundwater.

(3) Inland Fishery Sub-sectors

Water demands for inland fishery are estimated with same procedures as described in Section F2.3. Unit water requirements of 80 cum/day/ha for the freshwater fishpond are adopted. Based on the freshwater fishpond areas in 2022 as mentioned in the above sub-chapter F3.3.1 (3), annual water demands in each province are estimated as shown in Table F 3-32. Furthermore, the demands in 2030, 2040 and 2050 are also calculated with assumed annual increase rate of 1.6% for the fishpond area.

Table F 3-32 Water Demands for Freshwater Fishponds in WRR XI

Region	Province	Area Rate	Fishpond Area (ha) in Province	Fishpond Area (ha) in WRR	Annual Water Demands for Fishpond (MCM) 2022	2030	2040	2050
X	Bukidnon	0.046	No data					
XI	Davao de Oro (Compostela Valley)	0.477	110.47	52.69	1.54	1.75	2.05	2.40
	Davao del Norte	0.989	264.02	261.12	7.62	8.65	10.16	11.89
	Davao del Sur Davao Occidental	0.998	23.38	23.33	0.68	0.77	0.91	1.06
	Davao Oriental	0.949	58.61	55.62	1.62	1.84	2.16	2.53
XII	Sarangani	0.869	20.69	17.98	0.53	0.60	0.70	0.82
	South Cotabato	0.34	30.92	10.51	0.31	0.35	0.41	0.48
	North Cotabato	0.038	No data					
	Sultan Kudarat	0.052	No data					
XIII	Agusan del Norte	0.027	No data					
	Agusan del Sur	0.109	28.62	3.12	0.09	0.10	0.12	0.14
	Surigao del Sur	0.896	69.43	62.21	1.82	2.06	2.42	2.83
Total			**606.14**	**486.59**	**14.21**	**16.13**	**18.93**	**22.16**

Source: JICA Survey Team

The major water sources for the fishponds are surface water such as the irrigation water and spring. Annual water demands for fishponds are compared with annual irrigation water demands of surface water systems as shown in Table F 3-33.

Table F 3-33 Comparison of Fishpond AWD and Irrigation AWD in WRR XI

Province	Annual Water Demands (MCM) For Fishpond 2022	2030	2040	2050	For Irrigation (Surface Water) 2020	2030	2040	2050	(AWD for Fishpond)/(AWD for Irrigation) (%) 2020	2030	2040	2050
(Region XI)												
Davao de Oro (Compostela Valley)	1.539	1.746	2.05	2.4	96.78	303.13	498.35	693.57	1.59	0.58	0.41	0.35
Davao del Norte	7.625	8.654	10.16	11.89	424.68	416.12	420.57	425.01	1.80	2.08	2.41	2.80
Davao del Sur Davao Occidental	0.681	0.773	0.908	1.063	339.78	457.30	560.89	664.49	0.20	0.17	0.16	0.16
Davao Oriental	1.624	1.843	2.163	2.534	128.14	206.93	258.50	310.08	1.27	0.89	0.84	0.82
(Region XII)												
Sarangani	0.525	0.596	0.699	0.819	113.05	110.22	110.22	110.22	0.46	0.54	0.63	0.74
South Cotabato	0.307	0.348	0.409	0.479	272.85	344.25	477.88	611.51	0.11	0.10	0.09	0.08
(Region XIII)												
Agusan del Sur	0.091	0.103	0.121	0.142	39.90	64.58	81.02	97.46	0.23	0.16	0.15	0.15
Surigao del Sur	1.817	2.062	2.42	2.834	174.15	339.52	449.12	558.72	1.04	0.61	0.54	0.51
Total	14.21	16.13	18.93	22.16	1,589.34	2,242.05	2,856.55	3,471.05	0.89	0.72	0.66	0.64

Source: JICA Survey Team

All ratios of (AWD for Fishpond) vs (AWD for Irrigation) are less than 3.0%. In consideration of the several conditions for the estimation of irrigation water demands, the water demands for fishponds are judged to be too negligible to be included in the error of irrigation demands.

F-4 FUTURE DEVELOPMENT PLAN

F-4.1 General

This section presents future irrigation development plans and does not include the plan for livestock and fishery sub-sectors. The water demands of both sub-sectors are excessively smaller than irrigation water demands, and both sub-sectors are developed by the private sector. Any future development plans of the two sub-sectors would have negligible effect on the overall national plans on the water resources development and management.

JST estimated two future irrigation development areas in this survey work. One is areas estimated based on NIMP 2020-2030, whose potential irrigable areas are about 4.6 million ha including slope lands of between 3% and 8%, which is not always suitable for paddy fields. The other is area estimated based on past NIA financial programs in consideration of the potential irrigable areas of about 3.1 million ha. As mentioned in sub-section F2.2.1, the irrigation water demand of paddy farming is the most critical factor for the assessment of water resources. Judging from some factors such as priority irrigation development for paddy farms, annual financial resources, and technical capability for the irrigation development, the water balance studies were mainly conducted where the irrigation areas estimated based on the past NIA financial programs were adopted.

The irrigation areas by groundwater resources were also assessed in the water balance studies. In the three priority WRRs, the groundwater irrigation systems are only located in Albay, Camarines Norte, Camarines Sur, Catanduanes and Cebu Provinces. The irrigation water demands of these systems in the provincial level are smaller than the municipal and industrial water demands. It is hard to assess the availability of groundwater resources from the irrigation water demands only. Because of these reasons, this section does not present a future irrigation development plan by groundwater resources.

F-4.2 Water Resources Region-V

F-4.2.1 Irrigation Development Areas

As shown in Table F 4-1, in the Stage 1 Study, the future irrigation development areas in 2030, 2040 and 2050 were estimated based on the past NIA financial programs and NIMP 2020-2030.

Table F 4-1 Forecasted Future Irrigation Development Areas in WRR V

Province	Potential Irrigable Area (ha)	Year 2020				Remaining Irrigable Area (ha)	Newly Developed ISA (ha) by		
		ISA (ha)	FUSA (ha)	Irrigated Area (ha)			Year 2030	Year 2040	Year 2050
				Wet	Dry				
NIA Financial Program									
Albay	54,435	31,749	30,429	23,045	21,651	22,686	7,373	14,746	22,119
Camarines Norte	22,555	9,695	9,236	6,725	6,710	12,860	4,180	8,359	12,539
Camarines Sur	123,700	77,665	55,218	34,313	32,880	46,035	14,962	29,923	44,885
Catanduanes	3,770	3,211	3,113	1,805	1,839	559	182	363	545
Masbate	19,880	6,848	6,582	3,456	3,519	13,032	4,235	8,471	12,706
Sorsogon	15,100	14,102	13,712	9,094	9,052	998	324	649	973
Total	239,440	143,270	118,290	78,438	75,651	96,170	31,256	62,511	93,767
NIMP 2020-2030									
Albay	49,323	31,749	30,429	23,045	21,651	17,574	5,260	7,768	8,947
Camarines Norte		9,695	9,236	6,725	6,710				
Camarines Sur	149,823	77,665	55,218	34,313	32,880	72,158	21,599	31,896	36,735
Catanduanes		3,211	3,113	1,805	1,839				
Masbate	129,951	6,848	6,582	3,456	3,519	123,103	36,848	54,415	62,670
Sorsogon	44,861	14,102	13,712	9,094	9,052	30,759	9,207	13,596	15,659
Total	373,958	143,270	118,290	78,438	75,651	243,594	72,915	107,675	124,011

Source: JICA Survey Team based on NIA Data

As a result of the water balance studies for the irrigation areas by the NIA financial programs, the estimated irrigation areas with 170% cropping intensity in 2050 could not be irrigated in Albay, Camarines Sur and Masbate Provinces. The irrigable areas estimated based on the results of the water balance studies in Albay, Camarines Sur and Masbate Provinces are shown in Table F 4-2**Error! Reference source not found.**.

Table F 4-2 Irrigable Areas by Provinces in 2050 Based on Water Balance Studies

Province	Eatimated Development Area (ha)				Irrigable Area by Water Balance (ha)		Cropping Intensity	
	ISA	FUSA	Irrigated Area					
			Wet	Dry	Wet	Dry	(%)	
Albay	53,868	52,548	46,059	43,273	**35,469**	**42,236**	**148**	Low
Camarines Norte	22,234	21,775	18,529	18,488	*18,529*	*18,488*	170	
Camarines Sur	122,550	100,103	86,902	83,273	**56,016**	**71,139**	**127**	Low
Catanduanes	3,756	3,658	3,080	3,138	*3,080*	*3,138*	170	
Masbate	19,554	19,288	16,247	16,543	**13,426**	**15,952**	**152**	Low
Sorsogon	15,075	14,685	12,511	12,453	*12,511*	*12,453*	170	
Total	237,037	212,057	183,329	177,168	139,032	163,407		

Source: JICA Survey Team

In these three provinces, the available water sources are not sufficient for the potential irrigation areas. The new irrigation development projects shall be carefully formulated with the proper irrigable areas through detailed analysis of the available water resources.

F-4.2.2 Rice Supply and Demand Forecast

The self-sufficiency of rice is one of the major indicators for irrigation development planning. Therefore, irrigation development shall be also assessed in consideration of the rice supply and demand. Table F 4-3 shows the per capita consumption of rice by provincial level in 2020. Except Camarines Sur Province, the per capita consumptions of other provinces are lower than the national target of 128kg, which is adopted in NIMP 2020-2030. At the regional level, the self-sufficiency of rice is attained.

Table F 4-3 Per Capita Consumption of Region V in 2020

Province	Palay Production (ton) in 2020			Population 2020	Per Capita Consumption*1 (kg)		
	Irrigated	Rainfed	Total		Irrigated	Rainfed	Total
Albay	186,440	29,567	216,007	1,396,090	87	14	101
Camarines Norte	70,972	37,540	108,512	622,515	74	39	113
Camarines Sur	483,608	166,798	650,406	2,059,495	153	53	205
Catanduanes	13,970	13,050	27,020	272,940	33	31	64
Masbate	41,589	106,421	148,010	937,079	29	74	103
Sorsogon	110,490	34,547	145,037	845,717	85	27	111
Total	907,069	387,923	1,294,992	6,133,836	96	41	137

Remarks *1: (Palay Production) x (0.65)/(Population), adopting 065% of milling rate
Source: JICA Survey Team based on Data from Bureau of Agricultural Statistics, Department of Agriculture

As for the irrigable areas in 2050 based on the NIA financial programs, the per capita consumptions of each province in 2050 are also estimated as shown in Table F 4-4.

Table F 4-4 Per Capita Consumption of WRR V in 2050

Province	Irrigable Area (ha) 2050		Palay Production *1(ton)	Population 2050	Per Capita Consumption *2(kg)
	Wet	Dry			
Albay	35,469	42,236	419,607	1,893,641	144
Camarines Norte	18,529	18,488	199,892	970,241	134
Camarines Sur	56,016	71,139	686,637	2,998,232	149
Catanduanes	3,080	3,138	33,581	440,285	50
Masbate	13,426	15,952	158,641	1,407,754	73
Sorsogon	12,511	12,453	134,809	1,282,805	68
Total	139,032	163,407	1,633,166	8,992,958	118

Remarks *1: Palay unit yield = 5.4 ton/ha
Remarks *2: (Palay Production) x (0.65)/(Population), adopting 065% of milling rate
Souece: JICA Survey Team

Albay and Camarines Norte Provinces could attain the self-sufficiency of rice through the irrigation development areas shown in Table F4-2. In Catanduanes, Masbate and Sorsogon Provinces, even if the full potential irrigation areas are developed, the self-sufficiency of rice could not be attained. As for the regional level, the per capita consumption of 118kg is lower than the national target of 128kg. However, as mentioned in sub-section F2.1.2, it is generally known that the more society develops, the more rice consumption decreases. The self-sufficiency of rice in regional level might be improved through irrigation development.

F-4.2.3 NIA Priority Irrigation Development Projects

As of February 2022, NIA has considered the priority projects in Region V as shown in Table F 4-5.

Table F 4-5 NIA Priority Irrigation Development Projects in Region V (Excludes on-going projects)

	Project Name	Province	Municipality	Program		Target Area (ha)		Project Status (As of March 2022)		
				TRIP	PIP	New	Restore	Feasibility Study (FS)	Detailed Engineering and Design (DED)	Remarks
1	Ogod SRIP	Albay	Daraga	✓	✓	661		FS is ongoing		ISA is in Sorsogon
2	Bosigon NIP	Camarines Norte	Labo	✓	✓	1,250	1,035	FS is ongoing		
3	Paculago IP	Camarines Sur	Ragay	✓	✓	450		FSR approved on November 2020	Interim Report for review	ROW Problem
4	Haguimit SRIP	Camarines Sur	Lupi	✓	✓	600		Ongoing review of Final FSR by the Regional Office		
5	Bicol River Irrigation System Improvement Project	Camarines Sur	Lupi	✓	✓	1,100	2,900	Ongoing field validation by the Consultant		
6	Waras SRIP	Camarines Sur	Iriga City	✓	✓	1,595		FS approved on May 15, 2019	On-going	Indigenous people issue
7	Ibingan SRIP	Sorsogon	Prieto Diaz		✓	255		Target date of reformulation of FS is May 2022.	Completed	
	Total					**5,911**	**3,935**			

TRIP: Three-year Rolling Infrastructure Program - DBM and NEDA Joint Circular No. 2016-01
PIP: Public Investment Program - NEDA Memorandum dated May 19, 2021, Updating of the 2017-2022 PIP
Source: NIA

The above programed development areas are not sufficient for the 2030 target development areas of 31,256 ha shown in Table F4-1. It is necessary for NIA to identify further irrigation development projects. NIA Regional Office (RO) V gives the priority to SRIP because the reservoir can contribute not only to irrigation but also flood control. However, on the other hand, SRIP has several constraints for the implementation, such as right of way and no-acceptance by the indigenous people.

In Region V, floods are the worst problem for proper irrigation operation. There are also occurrences of canal erosion and sedimentation. NIA-RO-V is taking several countermeasures. One of them is tree planting along flooding rivers as part of watershed management. In addition, DA-RO-V also emphasized that it is important to conserve the watershed together with infrastructure development.

F-4.2.4 Recommendations on Future Irrigation Development Plans

As the results of above assessment and the field inspection explained in Section F3, future irrigation development plans are recommended in consideration of the following situations.

(a) Water resources and potential irrigation areas

The Bicol River basin, mainly in Albay and Camarines Sur Provinces is the major rice granary in Region V. However, the water resources in 2050 are not sufficient for the full irrigation development areas estimated based on the past 10-years NIA financial programs. On the other hand, in the two island provinces of Masbate and Catanduanes, and in Sorsogon Province, potential irrigation areas are not sufficient to attain the self-sufficiency of rice.

The cropping intensity of actual irrigated areas in 2020 were 177% for NISs (refer to Table F-1) and 119% for small scale irrigation systems (refer to Table F-5). This means that NISs have large water sources and the small irrigation systems have been developed with small watershed

area. As the potential areas of large-scale irrigation development (like NIP) are not abundant, the improvement and extension of the existing NISs are the key factor of the future development plans.

(b) Per capita consumption of rice

The per capita consumption of rice could be improved through irrigation development. Under the limited irrigation areas and water sources, it is essential to increase the productivity through not only the new irrigation development, but also the improvement of the existing irrigation systems.

(c) Flood problem

The territory of Region V is located in the typhoon belt; thus, flooding is the most serious problem. The construction of proper flood control facilities is of course the most important requirement. However, irrigation facilities shall be also constructed and improved upon to prevent damages from floods as much as possible. Furthermore, it is essential to implement proper watershed management plans together with irrigation projects.

(d) Gate works of diversion dams

Related to the above flood problem, the gate works of diversion dams are easily damaged without proper operation during flooding. At present, many sluice gates of diversion dams are damaged and requires repair and replacement. The inventory data of NIS's gates in Region V is shown in Table F-60. It is a common issue that the repair work and replacement cannot be timely implemented due to the financial procedures and the availability of the materials. The non-operational gates cause further serious damages to the irrigation systems.

Considering the above situations, the following future irrigation development plans are recommended.

(a) New irrigation development projects

In order to complete the new irrigation area of 93,767 ha in 2050, NIA-RO-V shall implement new irrigation projects of about 3,500 ha per year from 2023 to 2050. The key factors in the formulation of these new projects are as follows.

(i) The main and lateral canals are to be constructed as concrete lining or flume canal from the perspective of water saving and the mitigation of flood damages.

(ii) Sluice gates and intake gates of diversion dams for NISs shall be of mechanical operation type with electric/generator power.

(iii) Remote-control operation system shall also be introduced in the flood prone areas in case a residential gatekeeper cannot be assigned.

(iv) Watershed management plans including re-forestation shall be implemented to achieve sustainable irrigation farming. There are several improved and recovery plans for the uncontrolled watershed, e.g. the construction of sabo dam and slope protection works. The definite plans shall be formulated through field surveys and further assessment of the present situations.

For Albay, Camarines Sur and Camarines Norte Provinces, the irrigation development plans are prepared in consideration of the target areas estimated based on the NIA financial programs. For Masbate and Sorsogon Provinces, the potential irrigable areas estimated in NIMP 2020-2030, which include the 3-8% slope area shall be assessed to clarify the suitable farmlands for paddy cultivation. The assessment shall be executed in due consideration of the available water resources.

(b) Improvement of the existing NISs

The productivity of the existing irrigation systems shall be maintained and upgraded through improvement of irrigation facilities. Extension of service areas shall also be programed in consideration of utilizing water resources saved through effective irrigation water management. The following improvement plans are recommended to accomplish sustainable irrigation farming in WRR V.

(i) Main and lateral canals shall be improved as concrete lining or flume canal to minimize conveyance losses.

(ii) Gate works of diversion dams shall be improved to prevent their damages from flood. As shown in Table F-60, There are 80 gate works for NISs in Region-V. Most of the gates are of manual operation type and 39 gates require rehabilitation works. These gates shall be replaced to ones of mechanical operation type with electric/generator power. Similar to new projects, remote-controlled operation system shall also be introduced in the flood prone area in case a residential gatekeeper cannot be assigned.

(iii) Denudation of watersheds shall be recovered by reforestation programs to prevent the irrigation facilities and waterways from siltation.

(iv) The Rinconada Integrated Irrigation System (RIIS) in Camarines Sur Province is operated with the main water resources as the Buhi Lake, similar to the reservoir irrigation system. The Camarines Sur IMO proposes to introduce automatic monitoring and control system for remote operation of the Buhi Lake control structure. The irrigation telemetry system (ITS) utilizing information technology (IT) is considered as an effective water management system for the reservoir irrigation system. The ITS is explained in the following sub-section F4.5.

(v) As for the rehabilitation/ improvement project of NISs, NIA had implemented **the National Irrigation Systems Rehabilitation and Improvement Project (NISRIP)** under JICA Loan Assistant Programs. NIA shall study whether the above-mentioned improvement works will be implemented as the NISRIP next phase.

F-4.2.5 Implementation Plan

The above future irrigation development plans are proposed to be implemented by short term (urgent), middle term and long term stages as shown in Figure F 4-1.

Work Items	Short Term 2030	Middle Term 2040	Long Term 2050
New Irrigation Development			
Based on NIA Financial Program	31,256 ha	31,256 ha	31,256 ha
Based on NIMP 2020-2030 (Mainly Masbate & Sorsogon Provinces)			
- Identification of Paddy Irrigation Area			
- Implementation			
Improvement of NISs			
Lining of Main & Lateral Canals			
Upgrading of Gate Works in Diversion Dam			
Watershed Management			
Intruducing of ITS			

Source: JICA Survey Team

Figure F 4-1 Implementation Plan of Future Irrigation Development in Region V

F-4.3 Water Resources Region-VII

F-4.3.1 Irrigation Development Areas

As shown in Table F 4-6, in the Stage 1 Study, the future irrigation development areas in 2030, 2040 and 2050 were estimated based on the past NIA financial programs and NIMP 2020-2030. The result of the water balance studies for the irrigation areas by NIA financial programs show that the estimated irrigation area with 170% cropping intensity in 2050 could be fully irrigated.

Table F 4-6 Forecasted Future Irrigation Development Areas in WRR VII

Province	Potential Irrigable Area (ha)	Year 2020				Remaining Irrigable Area (ha)	Newly Developed ISA (ha) by		
		ISA (ha)	FUSA (ha)	Irrigated Area (ha)			Year 2,030	Year 2,040	Year 2,050
				Wet	Dry				
NIA Financial Program									
Bohol	29,232	25,254	23,904	18,677	16,736	3,978	1,293	2,586	3,879
Cebu	8,106	9,504	7,634	6,742	5,850	0			
Negros Oriental	15,638	14,865	11,960	10,158	10,153	773	251	502	754
Siquijor	698	734	580	329	159	0			
Total	53,674	50,357	44,078	35,906	32,898	4,751	1,544	3,088	4,632
NIMP 2020-2030									
Bohol	86,291	25,254	23,904	18,677	16,736	61,037	18,270	26,980	31,073
Cebu		9,504	7,634	6,742	5,850				
Negros Oriental	50,997	14,865	11,960	10,158	10,153	36,132	10,815	15,971	18,394
Siquijor		734	580	329	159				
Total	137,288	50,357	44,078	35,906	32,898	97,169	29,085	42,951	49,468

Source: JICA Survey Team based on NIA Data

Cebu and Siquijor Provinces do not have the remaining potential irrigable areas in both NIA financial program basis and NIMP 2020-2030. Therefore, future irrigation development plans are studied for only the Bohol and Negros Oriental Provinces under this survey works.

F-4.3.2 Rice Supply and Demand Forecast

Table F 4-7 shows the per capita consumption of rice by provincial level in 2020. It is considered that in Region VII, the rice self-sufficiency by provinces or region is quite difficult to attain.

Table F 4-7 Per Capita Consumption in WRR VII in 2020

Province	Palay Production (ton) in 2020			Population 2020	Per Capita Consumption*1 (kg)		
	Irrigated	Rainfed	Total		Irrigated	Rainfed	Total
Bohol	122,072	66,761	188,833	1,365,108	58	32	90
Cebu	10,541	665	11,206	5,085,207	1	0	1
Negros Oriental	48,197	10,786	58,983	1,406,275	22	5	27
Siquijor	1,369	133	1,502	100,456	9	1	10
Total	182,179	78,345	260,524	7,957,046	15	6	21

Remarks *1: (Palay Production) x (0.65)/(Population), adopting 065% of milling rate
Source: JICA Survey Team based on Data from Bureau of Agricultural Statistics, Department of Agriculture

As for the irrigable areas in 2050 based on the past NIA financial programs, the per capita consumptions of each province in 2050 are also estimated as shown in Table F 4-8. The rice supply and demand situation in 2050 would be almost same as 2020.

Table F 4-8 Per Capita Consumption of WRR VII in 2050

Province	Irrigable Area (ha) 2050		Palay Production *1(ton)	Population 2050	Per Capita Consumption *2(kg)
	Wet	Dry			
Bohol	24,910	22,321	255,044	1,988,651	83
Cebu	6,949	6,029	70,080	6,324,794	7
Negros Oriental	10,809	10,804	116,712	1,915,315	40
Siquijor	665	321	5,324	178,134	19
Total	43,332	39,475	447,161	10,406,894	28

Remarks *1: Palay unit yield = 5.4 ton/ha
Remarks *2: (Palay Production) x (0.65)/(Population), adopting 065% of milling rate
Souece: JICA Survey Team

F-4.3.3 NIA Priority Irrigation Development Projects

As of February 2022, the priority projects in Region VII by NIA are shown in Table F 4-9.

Table F 4-9 NIA Priority Irrigation Development Projects in Region VII
(Excludes on-going projects)

	Project Name	Province	Municipality	Program		Target Area (ha)		Project Status (As of March 2022)		
				TRIP	PIP	New	Restore	Feasibility Study (FS)	Detailed Engineering and Design (DED)	Remarks
1	Bohol Northeast Basin Multipurpose Project	Bohol	Danao, San Miguel, Trinidad, Dagohoy, Bien Unido, Ubay	✓	✓	2,133		Reformulation of FS is ongoing by the end of 2022.		
2	Mandaug SRIP	Bohol		✓	✓	265		Final FSR under-review by Consultant.		(F/S not feasible)
3	San Isidro Banlasan SRIP	Bohol		✓	✓					*Target Implementation Period 2024-2027*
4	Bagasico SRIP	Bohol			✓			(Pre-F/S)		*Target Implementation Period 2024-2026*
5	Cabatang SRIP	Bohol			✓			(Pre-F/S)		*Target Implementation Period 2024-2026*
6	Kinalan SRIP	Negros Oriental		✓	✓	600		FS aproved on Nov. 22, 2017		*Target Implementation Period 2024-2027*
7	Bayawan Multipurpose IP	Negros Oriental	Bayawan	✓	✓	2,872		Ongoing FS under VEVA Stage	DED Inhouse for funding FSDE CY 2023.	
8	Dagangdang-Tampaga IP	Negros Oriental	Siaton	✓	✓	1,800		FS by the end of the 1st semester of 2022.		
9	Bio-os SRIP	Negros Oriental				700		Pre-FS completed Dec. 2021	DED proposed in 2022	Proposed by Negros Oriental Satellite Office
10	Canauay SRIP	Negros Oriental				3,200		Pre-FS undergoing		Proposed by Negros Oriental Satellite Office
11	Tabuay SRIP	Negros Oriental				3,700		Pre-FS undergoing		Proposed by Negros Oriental Satellite Office
	Total					**15,270**				

TRIP: Three-year Rolling Infrastructure Program - DBM and NEDA Joint Circular No. 2016-01
PIP: Public Investment Program - NEDA Memorandum dated May 19, 2021, Updating of the 2017-2022 PIP
Source: NIA

The above programed development areas are sufficient with the 2050 target development areas based on the NIA financial programs, but not enough with those based on NIMP 2020-2030. NIA shall assess the further potential projects in Bohol and Negros Oriental Provinces.

NIA Regional Office VII explained that issues of the decrease of water sources and the heavy siltation in the reservoirs and canals were heavily affected by climate change. To mitigate these issues, watershed recovery programs are undertaken by NIA.

F-4.3.4 Recommendations on Future Irrigation Development Plans

As the result of the above assessment and the field inspection explained in Section F-3, future irrigation development plans are recommended in consideration of the following present situations.

(a) Water resources and potential irrigation areas

In Region VII, especially Bohol and Negros Oriental Provinces, irrigation development is constrained by the limited potential areas, and not by the water resources. Negros Oriental Province has enough water resources for the irrigation areas estimated based on NIMP, judging from the results of water balance studies on the irrigation areas estimated based on the NIA financial programs. As for Bohol Province however, the irrigable areas shall be studied through detailed analysis of the available water resources.

NIA Negros Oriental Satellite Office has many irrigation development programs. Four permanent engineers are carrying out the investigation, planning, design, and supervision of construction works with the support of about 80 contract-based workers. For the acceleration of the development, not only further engineering assistant are necessary, but also manpower and financial support are indispensable.

(b) Reservoir dam irrigation systems

There are many reservoir irrigation systems and projects like SRIP in Region VII. Many existing reservoirs have heavy siltation problems, and the irrigated areas have decreased due to water shortage. Recovery of the reservoir capacity is urgently needed.

The following future irrigation development plans are recommended considering the above conditions.

(a) New irrigation development projects

Irrigation development projects in Bohol and Negros Oriental Provinces are important in order to improve the supply and demand balance of rice. The potential irrigable areas estimated in NIMP 2020-2030, which include the 3-8% slope area shall be assessed to clarify the suitable farmlands for paddy cultivation.

NIA proposes many SRIPs in both provinces, which shall be given higher priority in future irrigation development plans. For the implementation of SRIP, it is indispensable to implement watershed management plans and to introduce ITS for proper water management. There are

several improvement and recovery plans for the uncontrolled watershed, such as the construction of a sabo dam and slope protection works. The definite plans shall be formulated through field surveys and further assessment of the present situations. ITS is explained in the following sub-section F4.5.

(b) Improvement of the existing NISs

Reservoir irrigation systems for restoration of reservoir capacity and the watershed management plans including reforestation shall be implemented simultaneously. The introduce of ITS is also recommended for the proper water management of the reservoir systems, especially to maximize effective rainfall.

Several NISs are located in the remote areas as informed by the Negros Oriental Satellite Office. Access roads are in poor conditions, with no pavement and it is difficult to drive during rainy seasons. For proper water control/ management, improvements to the O&M office, staffs and road are essential.

Similar to Region V, NIA will study whether the above-mentioned improvement works will be implemented as the NISRIP next phase.

F-4.3.5 Implementation Plan

Above future irrigation development plans are proposed to be implemented by the short term (urgent), middle term and long term as shown periods in Figure F 4-2.

Work Items	Short Term 2030	Middle Term 2040	Long Term 2050
New Irrigation Development			
Based on NIA Financial Program (Mainly SRIP)	1,544ha	1,544ha	1,544ha
Based on NIMP 2020-2030 (Bohol & Negros Ori. Provinces)			
- Identification of Paddy Irrigation Area			
- Implementation			
Improvement of NISs			
Restoration of Reservoir Capacity			
Introducing of ITS			
Watershed Management			
O&M Facility Improvement			

Source: JICA Survey Team

Figure F 4-2 Implementation Plan of Future Irrigation Development in Region VII

F-4.4 Water Resources Region-XI

F-4.4.1 Irrigation Development Areas

As shown in Table F 4-10, in the Stage 1 Study, future irrigation development areas in 2030, 2040 and 2050 were estimated based on past NIA financial programs and NIMP 2020-2030. The water balance

studies for the irrigation areas by the NIA financial programs shows that the estimated irrigation area with 170% cropping intensity in 2050 could be fully irrigated.

Table F 4-10 Forecasted Future Irrigation Development Areas in WRR XI
(Provinces with large drainage area)

Province	Potential Irrigable Area (ha)	Year 2020				Remaining Irrigable Area (ha)	Newly Developed ISA (ha) by		
		ISA (ha)	FUSA (ha)	Irrigated Area (ha)			Year 2,030	Year 2,040	Year 2,050
				Wet	Dry				
NIA Financial Program									
Davao de Oro (Compostela Valley)	96,780	14,846	14,719	11,221	11,221	81,934	26,629	53,258	79,887
Davao del Norte	30,234	29,312	27,781	21,738	21,738	922	300	599	899
Davao del Sur Davao Occidental	32,773	17,474	16,977	13,932	13,793	15,299	4,972	9,944	14,917
Davao Oriental	17,760	8,806	8,766	6,124	6,168	8,954	2,910	5,820	8,730
Sarangani	6,964	7,071	6,348	5,731	5,337	0			
Surigao del Sur	39,870	16,538	15,907	10,796	9,687	23,332	7,583	15,166	22,749
Total	224,381	94,047	90,498	69,542	67,944	130,441	42,394	84,788	127,182
NIMP 2020-2030									
Davao de Oro (Compostela Valley)	52,005	14,846	14,719	11,221	11,221	37,159	11,123	16,425	18,917
Davao del Norte	94,456	29,312	27,781	21,738	21,738	65,144	19,499	28,795	33,164
Davao del Sur Davao Occidental	75,370	17,474	16,977	13,932	13,793	57,896	17,330	25,591	29,474
Davao Oriental	44,541	8,806	8,766	6,124	6,168	35,735	10,697	15,796	18,192
Sarangani	3,499	7,071	6,348	5,731	5,337	0			
Surigao del Sur	70,487	16,538	15,907	10,796	9,687	53,949	16,148	23,847	27,465
Total	340,358	94,047	90,498	69,542	67,944	249,883	74,797	110,455	127,212

Source: JICA Survey Team based on NIA Data

F-4.4.2 Rice Supply and Demand Forecast

Table F 4-11 shows the per capita consumption of rice by provincial level in 2020. At present, the per capita consumptions of rice for all provinces are less than the national target of 128kg.

Table F 4-11 Per Capita Consumption of WRR XI in 2020

Province	Palay Production (ton) in 2020			Population 2020	Per Capita Consumption*1 (kg)		
	Irrigated	Rainfed	Total		Irrigated	Rainfed	Total
Davao de Oro (Compostela Valley)	104,694	20,239	124,933	774,104	88	17	105
Davao del Norte	120,853	8,884	129,737	1,056,458	74	5	80
Davao del Sur	123,676	34	123,710	2,520,852	32	0	32
Davao Occidental	1,445	921	2,366	338,925	3	2	5
Davao Oriental	60,783	10,584	71,367	600,530	66	11	77
Saragani	32,577	6532	39,109	583791	36	7	44
Surigao del Sur	66,624	20,406	87,030	620531	70	21	91
Total	510,652	67,600	578,252	6,495,191	51	7	58

Remarks *1: (Palay Production) x (0.65)/(Population), adopting 065% of milling rate
Source: JICA Survey Team based on Data from Bureau of Agricultural Statistics, Department of Agriculture

As for the irrigable areas in 2050 based on the past NIA financial programs, the per capita consumptions of each province in 2050 are also estimated as shown in Table F 4-12. In three Provinces of "Davao de Oro", "Davao del Norte" and "Surigao del Sur", rice self-sufficiency could be attained through irrigation development.

Table F 4-12 Per Capita Consumption of WRR XI in 2050

Province	Irrigable Area (ha) 2050		Palay Production *1(ton)	Population 2050	Per Capita Consumption *2(kg)
	Wet	Dry			
Davao de Oro (Compostela Valley)	80,415	80,415	868,482	990,276	570
Davao del Norte	24,378	24,378	263,282	1,315,439	130
Davao del Sur	27,246	26,974	292,785	3,700,657	51
Davao Occidental	*(can not be estimated)*			482,165	
Davao Oriental	14,819	14,925	160,616	851,351	123
Saragani	5,588	5,204	58,275	750,225	50
Surigao del Sur	34,637	31,079	354,862	877,716	263
Total	187,082	182,974	1,998,301	8,967,829	145

Remarks *1: Palay unit yield = 5.4 ton/ha
Remarks *2: (Palay Production) x (0.65)/(Population), adopting 065% of milling rate
Souece: JICA Survey Team

F-4.4.3 NIA Priority Irrigation Development Projects

As of February 2022, NIA presented the following priority projects in Region XI shown in Table F 4-13.

Table F 4-13 NIA Priority Irrigation Development Projects in Region XI
(Excludes on-going projects)

	Project Name	Province	Municipality	Program		Target Area (ha)		Project Status (As of March 2022)		
				TRIP	PIP	New	Restore	Feasibility Study (FS)	Detailed Engineering and Design (DED)	Remarks
1	Cogon Bacaca SRIP	Davao del Sur	Kiblawan	□		880		FSR approved on December 2021	For In-house DED this CY 2022.	Not included in PIP
2	Linoan SRIP	Davao de Oro	Montevista	□		300		FS approved on January 2022.	For in-house DED this CY 2022.	Not included in PIP
3	Awao SRIP	Davao de Oro	Monkayo	□		600				The project is subject for Pre-FS.
4	Upper Saug RIP	Davao del Norte	New Corella		□	980				Reservoir dam not feasible w/ fault
	Total					**2,760**				

TRIP: Three-year Rolling Infrastructure Program - DBM and NEDA Joint Circular No. 2016-01
PIP: Public Investment Program - NEDA Memorandum dated May 19, 2021, Updating of the 2017-2022 PIP
Source: NIA

The above programed development areas are not sufficient for the 2030 target development areas of 42,394 ha shown in Table F4-10. It is necessary for NIA to identify further irrigation development projects.

F-4.4.4 Recommendations on Future Irrigation Development Plans

As the results of above assessment and the field inspection explained in Section F-3, future irrigation development plans are recommended in consideration of the following present situations.

(a) Water resources and potential irrigation areas

In Region XI, there are enough irrigation development areas with the water resources. The major factors hampering proper irrigation operation and development are flood problem and inefficient water management system.

(b) Per capita consumption of rice

The per capita consumption of rice could be improved through irrigation development. It is important to increase the productivity through not only the new irrigation development, but also the improvement of the existing irrigation systems.

(c) Flood problem

Flood is the most serious problem in WRR XI. Construction of proper flood control facilities are the most important requirement. However, irrigation facilities shall be also constructed and improved upon to prevent their damages from the floodings as much as possible.

(d) Project evaluation for implementation

According to NIA Regional Office XI, the economic internal rate of return (EIRR) is a "must" criteria for the formal approval of irrigation development projects. If NIA plans high quality systems for effective and sustainable irrigation operations, the systems will require expensive costs of materials, and construction works. With such development costs, EIRR required for the project evaluation is difficult to calculate.

The following future irrigation development plans are recommended in consideration of the above conditions.

(a) New irrigation development projects

In order to complete the new irrigation area of 127,182 ha in 2050, NIA-RO-XI shall implement new irrigation projects of about 4,500 ha per year from 2023 to 2050. The key factors in the formulation of the new projects are as follows.

(i) Main and lateral canals are to have concrete lining or flume canal from the perspective of water saving and the mitigation of flood damages.

(ii) Sluice gates and intake gates of diversion dams for NISs shall be of mechanical operation type with electric/generator power.

(iii) Remote-control operation system shall also be introduced in the flood prone areas in case a residential gate-keeper cannot be assigned.

(iv) Watershed management plans including re-forestation shall be implemented to achieve sustainable irrigation farming. There are several improvement and recovery plans for the uncontrolled watershed, e.g. the construction of a sabo dam and slope protection works. The definite plans shall be formulated through field surveys and further assessment of the present situations.

For Compostela Valley, Davao del Norte and Davao Oriental Provinces, the irrigation development plans are prepared in consideration of the target areas estimated based on the NIA financial programs. For Davao del Sur Province, the potential irrigable areas estimated in NIMP 2020-2030, which include the 3-8% slope area, shall be assessed to clarify the suitable farmlands for paddy cultivation.

(b) Improvement of the existing NISs

The productivity of the existing irrigation systems shall be maintained and upgraded through improvement of irrigation facilities. The extension of service areas shall also be included in consideration of utilizing the water resources saved by effective irrigation water management. The following improvement plans are recommended to attain sustainable irrigation farming in Region-XI.

(i) Main and lateral canals shall be improved as concrete lining or flume canal to minimize the conveyance losses.

(ii) Gate works of diversion dams shall be improved to prevent their damages from flood. As shown in Table F-61, There are 66 gate works for NISs in Region-XI. The 26 gates are manual operation type, and 29 gates require the rehabilitation works. All gates shall be replaced to the mechanical operation type with electric/generator power. As same as new projects, the remote-control operation system shall also be introduced in the flood prone areas in the case that the residential gatekeeper cannot be assigned.

(iii) Denudation of watersheds shall be recovered by reforestation programs to prevent irrigation facilities and waterways from siltation.

(iv) Mal RIS was rehabilitated under NISRIP. NIA shall also study whether the above-mentioned improvement works will be implemented as NISRIP next phase.

(v) Projects including upgrading equipment/facilities for the mechanical operation gate shall be carefully formulated in due consideration of their profits, and the projects shall be flexibly evaluated. The O&M costs and replacement costs of such equipment/facilities shall be properly estimated in comparison with those of the simple types. The procurement contract of these equipment/facilities are recommended to include the long-term O&M works for the sustainable operation of them.

F-4.4.5 Implementation Plan

Above future irrigation development plans are proposed to be implemented by the short term (urgent), middle term and long term as shown in Figure F 4-3.

Work Items	Short Term 2030	Middle Term 2040	Long Term 2050
New Irrigation Development			
Based on NIA Financial Program	42,394 ha	42,394 ha	42,394 ha
Based on NIMP 2020-2030 (Mainly Davao del Sur Province)			
- Identification of Paddy Irrigation Area			
- Implementation			
Improvement of NISs			
Lining of Main & Lateral Canals			
Upgrading of Gate Works in Diversion Dam			
Watershed Management			

Source: JICA Survey Team

Figure F 4-3 Implementation Plan for Future Irrigation Development in Region XI

F-4.5 Irrigation Telemetry System

The ultimate goal of proper irrigation water management is to improve agricultural productivity and farmers' economy through maximum utilization of available land and water resources. The introduction

of irrigation telemetry system (ITS) is proposed as one of the most effective tools for the establishment of proper water management system in NISs, especially NISs with reservoir dam.

F-4.5.1 Objectives of ITS

(1) Through direct monitoring and evaluation of irrigation water supply by farmer themselves (IAs),

-Increase paddy production (improve productivity), and

-Accelerate crop diversification (improve farm economy).

The most straight forward way to raise income of rice farmers is for them to switch to other high value crops after the rainy season rice harvest. After the first rice crop, farmers will make more money from vegetables, melons, sweet-corn, legumes and even herbals and ornamentals, provided a market can be assured for these other crops. However, there is a catch. The large irrigation systems are designed for rice. But other crops are different from those of rice. In order to successfully grow these other crops, individual farmers must have full control over the timing and frequency of the availability of water.

(2) Through the establishment of proper irrigation water management systems by NIA in collaboration with IAs,

-Increase paddy production areas in both dry and wet seasons,
(no more inundation damages in the wet season by excess irrigation water which can be saved for the dry season irrigation)

-Minimize operation and maintenance costs, and
(main purpose of Irrigation Management Transfer, IMT)

-Minimize impact of climate changes such as El Nino, typhoons, and flooding.

F-4.5.2 System Plans

(1) Basic Data for Irrigation Water Management

1) Cropping Areas and Farming Practices
2) Irrigation Water Requirements
   - Crop Water Requirement: (CWR)= (ET) x (Kc)
   - Evapotranspiration (ET)
   - Crop Growth Stage Coefficient (Kc)
   - Percolation (P)
   - Farm Water Requirement: (FWR) = (CWR) + (P)
   - Effective Rainfall: ER
   - Irrigation Efficiency: IE (e.g. Wet season= 48%, Dry season= 51%)
   - On-farm Efficiency: (e.g. Dry season: 80%, Wet season: 75%)
   - Operation Efficiency: (e.g. 85%)
   - Conveyance Efficiency: (e.g. 80-90%)
3) Diversion Water Requirements: (DWR) = {(FWR)-(ER)} ÷(IE)
4) River Discharge Data: (RD)

5) Dam Reservoir Operation Data: (DRO)

Rainfall data & River Discharge Data: Daily, Monthly basis, more than 10 years record will be classified as normal year, El Nino year and La Nina year.

(2) Preparation of Irrigation Plan before Each Crop Season

- Wet Season Paddy: (e.g. May – October)
- Dry Season Paddy: (e.g. November – April)

1) Determination of Cropping Areas (CA) based on;
   - Diversion Water Requirements (DWR)
   - Reservoir Volume (RV) of Dam before Cropping
   - Average Monthly Rainfall
   - Average Monthly River Discharge (RD)

   (CA) x (DWR) < (RV) + (RD): 10-day basis assessment during cropping season
2) Forecast of Dam Reservoir Operation Curve

(3) Monitoring Data

1) Daily Rainfall
2) Daily River Discharge (Water depth)
3) Dam Reservoir Surface Elevation
4) Canal Discharges (Water depth and Gate operation)
5) Daily Cropping Areas (until the target areas are fully planted)

(4) Weekly Assessment of Irrigation Plan through Actual Daily Water Management

1) Actual Daily Rainfalls
2) Actual Daily River Discharges
3) Actual Cropping Areas, if there are modifications in cropping area plan

   (Actual DWR)=[{(FWR)-(ER by Actual Daily Rainfall)} ÷(IE)] x (Actual CA)

   $(RV_{i+1}) = (RV_i) - (\text{Actual } DWR_i) + (RD_i)$, (i: Week in order)

(5) Display Data

1) Original Irrigation Plan (Weekly Basis)
2) Actual Irrigation Data
3) Daily River Discharges
4) Daily Rainfall
5) Dam Reservoir Operation Curve
6) Daily Canal Discharges

F-4.5.3 Water Management Procedures

1) Supply Estimated Crop (Farm) Water Requirements
2) Monitor Farm Practices (Cropping Area, Growth Stage, Field Water Depth)

3) Monitor Rainfall and Measure Daily Rainfall Volume
4) Monitor River Discharges and Measure Daily Discharges
5) Estimate Effective Rainfall and Irrigation Water Requirements by ITS
   (ER) = 5 mm < R < 50 mm, R < (50 mm) – (Water Depth of Paddy Field before Rainfall)
   (IWR) = (CWR) – (ER)
6) Inform (IWR) to Gate Keeper and Dam Operation Division
7) Adjust Intake Gate and Dam Release Volume (Take Account of Time Lag)
   (Dam Release Volume) = (IWR) – (RD)
8) Monitor Canal Discharges
9) Display Above All Data

F-4.5.4 Proposed Monitoring Devices and Sites

In order to establish proper irrigation water management system, provision of the following devices in the major monitoring sites are recommended. General concept of irrigation telemetry systems is shown in Figure F 4-4.

1) Water level sensor
2) Weather sensor (Meteorological observation such as rainfall, temperature, wind, etc.)
3) Camera and communication module (Mobile-phone network or Wifi)
4) Solar panel w/ charge controller, buttery
5) Computer units (Display, data recording and reporting devices)
6) Others (Current Meter, etc.)

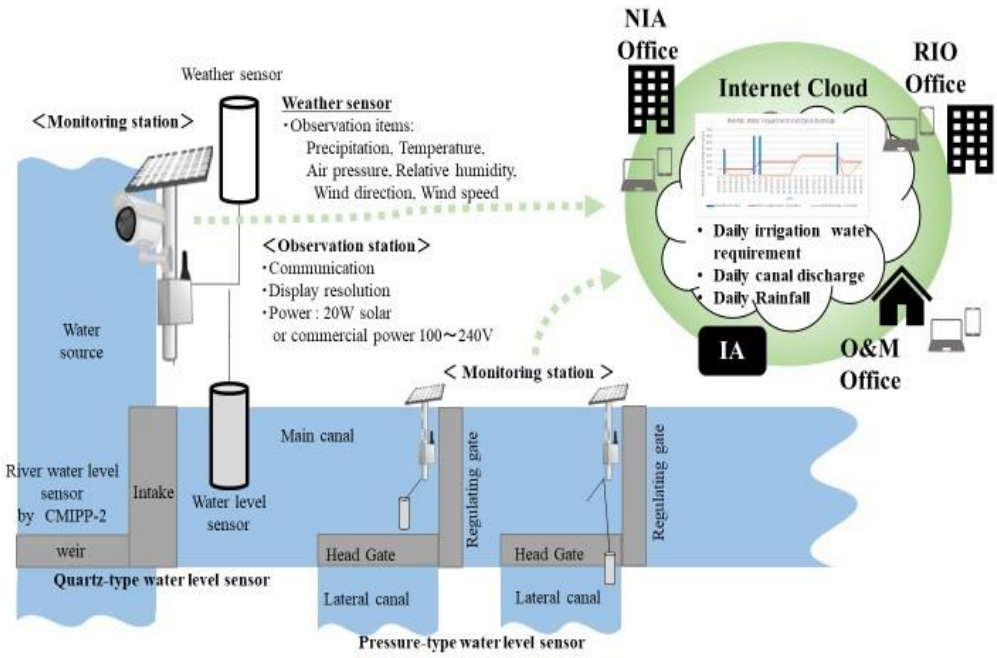


Figure F 4-4 General Concept of Irrigation Telemetry Systems

Source: Feasibility Study for Introduced of Irrigation Telemetry Systems Using Sensor Networks and Cloud Technology in the Philippines, E-Trust & Takuwa

The following sites are proposed for the installation of monitoring devices.

1) Downstream of Diversion Dam Intake
2) Downstream of Major Head Gates

The discharges (Diversion Water Requirements) required for each objective sub-areas are estimated by the cropping stages prior to the cropping. Monitoring of the actual discharges against the required discharges is the basis of water management. If there are gaps between both discharges, the released water volume from the dam shall be adjusted. Through the monitoring and proper operation of reservoir dam, effective water utilization is maximized.

The canal discharges are managed based on farm water requirements considering the effective rainfall through daily monitoring and assessment system. For the proper execution of the system, participation of the farmers is indispensable.

Attachment A: Present Irrigation Water Requirement

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA Team's Modifications

Region: CAR

Province: Abra — **Climate Type: I**

(A) Cropping Pattern (20 days Staggered Period)

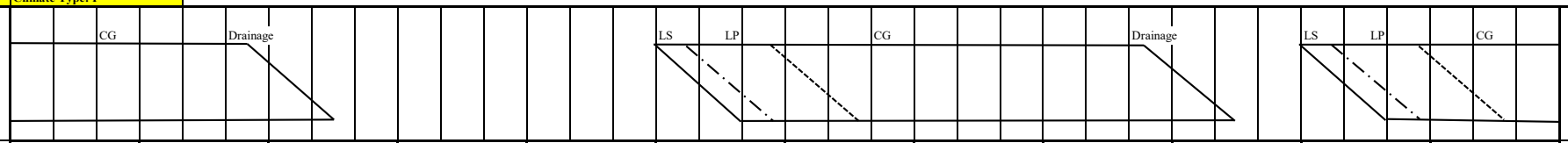
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
(B) Month																																							
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet																10	10	10	10	10	11	10	10	11	10	10	10	10	5								
		Dry	10	10	11	10	10	8	10	7																							10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.74			5.03			5.83			6.26			6.09			5.07			4.48			3.90			3.87			4.14			4.07			4.46			
(D) Area Factor																																							
Land Soaking Stage	(Als)																	0.228	0.350	0.123																			
Land Preparation Stage	(Alp)	(Wet)																0.023	0.400	0.855	0.600	0.123																	
Crop Growing Stage	(Acg)																			0.023	0.400	0.878	1.000	1.000	1.000	1.000	1.000	1.000	0.938	0.500	0.063								
Land Soaking Stage	(Als)																																0.228	0.350	0.123				
Land Preparation Stage	(Alp)	(Dry)																															0.023	0.400	0.855	0.600	0.123		
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.972	0.600	0.123																									0.023	0.400	0.878	1.000	
(E) Crop Coefficient	(Kc)	Wet																0.80	0.82	0.85	0.93	1.03	1.12	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85								
		Dry	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85																							0.80	0.82	0.85	0.93	1.03	1.12	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150																27.89	27.89	27.89																			
(Dry)		100																															19.87	19.87	19.87				
Land Preparation Stage	(LP)																	6.46	6.46	6.46	5.94	5.94											5.58	5.58	5.58	5.92	5.92		
Crop Growing Stage	(CG)		5.59	5.64	5.31	5.33	5.08	4.83	5.42	4.96										4.31	4.17	4.61	5.02	4.60	4.64	4.37	4.10	3.91	3.72	3.85	3.52				3.46	4.15	4.59	5.00	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00										2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR)	Wet																6.51	12.35	9.10	6.03	6.54	7.02	6.60	6.64	6.37	6.10	5.91	5.36	2.93	0.35								
		Dry	7.59	7.64	7.31	7.33	7.08	6.64	4.45	0.86																							4.66	9.19	7.34	6.01	6.52	7.00	
10-day FWR			75.93	76.41	80.40	73.32	70.80	53.10	44.53	5.99								65.08	123.46	91.00	60.32	65.38	77.19	66.02	66.41	70.05	61.02	59.09	53.61	29.25	1.74		46.58	91.86	73.42	60.14	65.18	76.95	1,784
(G) Rainfall (2015)		mm/10day	0	18	0	0	4	7	2	1	29	12	4	35	59	13	116	28	52	62	233	289	87	133	141	306	120	30	12	29	189	26	5	16	12	0	142	1	2,213
Effective Rainfall	(ER)		0	0	0	0	0	0	0	0								19.6	36.4	43.4	46.6	57.8	60.9	53.2	56.4	61.2	48	21	0	20.3	3.5		0	0	0	0	56.8	0	585
(H) Irrigation Water Requirement	(IWR)	mm/10day	75.9	76.4	80.4	73.3	70.8	53.1	44.5	6.0								45.5	87.1	47.6	13.7	7.6	16.3	12.8	10.0	8.8	13.0	38.1	53.6	9.0	0.0		46.6	91.9	73.4	60.1	8.4	76.9	1,201
(F)-(G)		mm/day	7.59	7.64	7.31	7.33	7.08	6.64	4.45	0.86								4.55	8.71	4.76	1.37	0.76	1.48	1.28	1.00	0.80	1.30	3.81	5.36	0.90	0.00		4.66	9.19	7.34	6.01	0.84	7.00	
(I) Irrigation Efficiency	(IE)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5								0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43		0.5	0.5	0.5	0.5	0.5	0.5	
(J) Diversion Water Requirement	(DWR)	mm/day	15.19	15.28	14.62	14.66	14.16	13.28	8.91	1.71								10.58	20.25	11.07	3.19	1.76	3.44	2.98	2.33	1.87	3.03	8.86	12.47	2.08	0.00		9.32	18.37	14.68	12.03	1.68	13.99	
(H)/(I)		lit/sec/ha	1.76	1.77	1.69	1.70	1.64	1.54	1.03	0.20								1.22	2.34	1.28	0.37	0.20	0.40	0.35	0.27	0.22	0.35	1.03	1.44	0.24	0.00		1.08	2.13	1.70	1.39	0.19	1.62	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA Team's Modifications

Region: CAR

Province: Apayao — **Climate Type: III**

(A) Cropping Pattern (30 days Staggered Period)

Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)

				CG			Drainage									LS	LP				CG						Drainage			LS	LP			CG			
(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet																10	10	10	10	10	11	10	10	11	10	10	10	10	10	5						
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	2.20			3.43			4.59			5.19			6.05			5.09			3.86			3.36			3.42			2.84			2.21			1.81		
(D) Area Factor																																						
Land Soaking Stage	(Als)																	0.152	0.233	0.233	0.082																	
Land Preparation Stage	(Alp)	(Wet)																0.015	0.267	0.585	0.652	0.400	0.074															
Crop Growing Stage	(Acg)																			0.015	0.267	0.600	0.926	1.000	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.038						
Land Soaking Stage	(Als)																																0.152	0.233	0.233	0.082		
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.267	0.585	0.652	0.400	0.074
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926
(E) Crop Coefficient	(Kc)	Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85						
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	150																27.91	27.91	27.91	26.83																	
(Dry)		100																															18.23	18.23	18.23	17.88		
Land Preparation Stage	(LP)		3.94	3.94														6.48	6.48	6.48	5.40	5.40	5.40										3.94	3.94	3.94	3.59	3.59	3.59
Crop Growing Stage	(CG)		2.51	2.57	2.51	3.77	3.60	3.33	4.41	4.27	3.90									4.33	3.47	3.78	4.13	3.83	3.93	3.83	3.76	3.59	3.32	2.73	2.64	2.41			1.88	1.63	1.77	1.94
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00
Total	(FWR)	Wet																4.34	8.23	10.39	7.18	5.63	6.08	5.83	5.93	5.83	5.76	5.59	5.09	3.15	1.55	0.17						
		Dry	4.51	4.57	4.51	5.77	5.60	5.23	4.70	2.51	0.44																						2.83	5.30	6.61	4.78	3.70	3.91
10-day FWR			45.08	45.74	49.59	57.73	56.02	41.81	46.96	25.07	3.06							43.39	82.32	103.88	71.80	56.28	66.84	58.30	59.31	64.13	57.62	55.91	50.94	31.53	15.46	0.84	28.30	53.01	66.14	47.77	37.01	43.02	1,465
(G) Rainfall (2004)		mm/10day	9	16	19	18	4	14	20	5	12	3	0	15	42	67	107	98	37	209	45	35	56	57	51	148	73	55	11	43	5	14	0	93	457	174	0	0	2,012
Effective Rainfall	(ER)		0	0	0	0	0	0	14	0	0							43.4	25.9	41.8	31.5	24.5	39.2	39.9	35.7	59.2	51.1	38.5	0	30.1	0	0	0	53	66.1	47.8	0	0	642
(H) Irrigation Water Requirement	(IWR)	mm/10day	45.1	45.7	49.6	57.7	56.0	41.8	33.0	25.1	3.1							0.0	56.4	62.1	40.3	31.8	27.6	18.4	23.6	4.9	6.5	17.4	50.9	1.4	15.5	0.8	28.3	0.0	0.0	0.0	37.0	43.0	823
(F)-(G)		mm/day	4.51	4.57	4.51	5.77	5.60	5.23	3.30	2.51	0.44							0.00	5.64	6.21	4.03	3.18	2.51	1.84	2.36	0.45	0.65	1.74	5.09	0.14	1.55	0.17	2.83	0.00	0.00	0.00	3.70	3.91	
(I) Irrigation Efficiency	(IE)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5							0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.5	0.5	0.5	0.5	0.5	0.5	
(J) Diversion Water Requirement	(DWR)	mm/day	9.02	9.15	9.02	11.55	11.20	10.45	6.59	5.01	0.87							0.00	13.12	14.44	9.37	7.39	5.84	4.28	5.49	1.04	1.52	4.05	11.85	0.33	3.59	0.39	5.66	0.00	0.00	0.00	7.40	7.82	
(H)/(I)		lit/sec/ha	1.04	1.06	1.04	1.34	1.30	1.21	0.76	0.58	0.10							0.00	1.52	1.67	1.08	0.86	0.68	0.50	0.64	0.12	0.18	0.47	1.37	0.04	0.42	0.05	0.66	0.00	0.00	0.00	0.86	0.91	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA Team's Modifications

Region: CAR

Province: Benguet — **Climate Type: I**

(A) Cropping Pattern (20 days Staggered Period)

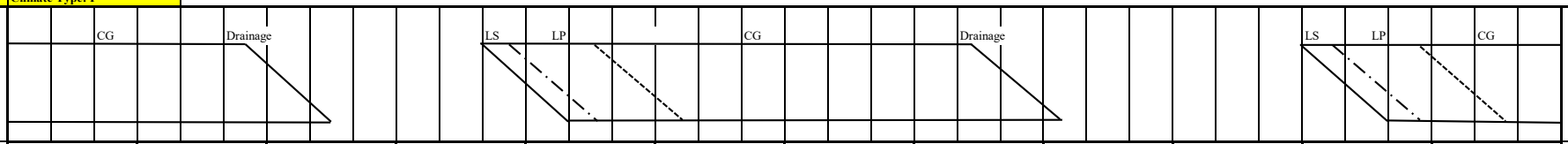
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet												10	10	10	11	10	10	10	10	10	11	10	10	11	4												
		Dry	10	10	11	10	10	8	10	7																							10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	3.03			3.12			3.42			3.56			2.81			2.62			2.43			1.63			2.28			2.22			2.94			2.63			
(D) Area Factor																																							
Land Soaking Stage	(Als)													0.228	0.350	0.123																							
Land Preparation Stage	(Alp)	(Wet)												0.023	0.400	0.855	0.575	0.090																					
Crop Growing Stage	(Acg)															0.023	0.425	0.910	1.000	1.000	1.000	1.000	1.000	1.000	0.938	0.523	0.040												
Land Soaking Stage	(Als)																																0.228	0.350	0.123				
Land Preparation Stage	(Alp)	(Dry)																															0.023	0.400	0.855	0.600	0.123		
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.972	0.600	0.123																									0.023	0.400	0.878	1.000	
(E) Crop Coefficient	(Kc)	Wet												0.80	0.82	0.85	0.93	1.03	1.12	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85												
		Dry	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85																							0.80	0.82	0.85	0.93	1.03	1.12	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	125												22.99	22.33	22.33																							
(Dry)		100																															18.87	18.87	18.87	18.60	18.60	18.60	
Land Preparation Stage	(LP)													5.13	4.47	4.47	4.47	4.31															4.59	4.59	4.59	4.31	4.31	4.31	
Crop Growing Stage	(CG)		3.58	3.61	3.39	3.31	3.15	3.00	3.18	2.91						2.39	2.61	2.70	2.93	3.09	2.89	2.72	2.58	1.65	1.56	1.52	1.94								2.50	2.45	2.71	2.95	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00						2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	
Total	(FWR)	Wet												5.36	9.60	6.67	4.53	4.66	4.93	5.09	4.89	4.72	4.58	3.65	3.34	1.84	0.16												
		Dry	5.58	5.61	5.39	5.31	5.15	4.86	3.11	0.60																							4.41	8.44	6.35	4.37	4.67	4.95	
10-day FWR			55.75	56.06	59.33	53.07	51.51	38.84	31.08	4.22				53.60	96.05	66.72	49.86	46.63	49.34	50.92	48.92	47.22	50.33	36.46	33.44	20.23	0.63						44.09	84.40	63.47	43.67	46.65	54.40	1,337
(G) Rainfall (1981)		mm/10day	3	0	8	0	4	12	6	4	13	0	5	116	47	133	150	116	215	79	128	146	99	126	120	170	86	109	111	48	6	129	15	12	168	0	0	49	2,433
Effective Rainfall	(ER)		0	0	0	0	0	0	0	0				46.4	32.9	53.2	49.9	46.4	43	31.6	48.9	47.2	50.3	36.5	33.4	20.2	0.6						0	0	63.5	0	0	34.3	638
(H) Irrigation Water Requirement	(IWR)	mm/10day	55.8	56.1	59.3	53.1	51.5	38.8	31.1	4.2				7.2	63.1	13.5	0.0	0.2	6.3	19.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0						44.1	84.4	0.0	43.7	46.7	20.1	699
(F)-(G)		mm/day	5.58	5.61	5.39	5.31	5.15	4.86	3.11	0.60				0.72	6.31	1.35	0.00	0.02	0.63	1.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00						4.41	8.44	0.00	4.37	4.67	1.83	
(I) Irrigation Efficiency	(IE)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5				0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43						0.5	0.5	0.5	0.5	0.5	0.5	
(J) Diversion Water Requirement	(DWR)	mm/day	11.15	11.21	10.79	10.61	10.30	9.71	6.22	1.21				1.67	14.69	3.14	0.00	0.05	1.48	4.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00						8.82	16.88	0.00	8.73	9.33	3.65	
(H)/(I)		lit/sec/ha	1.29	1.30	1.25	1.23	1.19	1.12	0.72	0.14				0.19	1.70	0.36	0.00	0.01	0.17	0.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00						1.02	1.95	0.00	1.01	1.08	0.42	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA Team's Modifications

Region: CAR

Province: Ifugao — **Climate Type: III**

(A) Cropping Pattern (20 days Staggered Period)

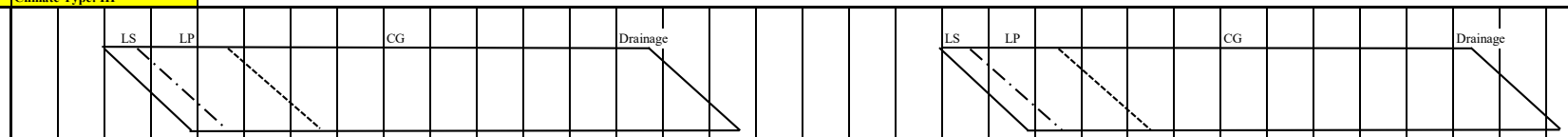
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet																					11	10	10	11	10	10	10	10	10	11	10	10	10	3		
		Dry			11	10	10	8	10	10	11	10	10	10	10	10	11	6																				
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	1.59			2.52			2.94			4.21			3.75			3.22			3.79			3.37			3.85			3.87			2.52			2.51		
(D) Area Factor																																						
Land Soaking Stage	(Als)																						0.239	0.348	0.090													
Land Preparation Stage	(Alp)	(Wet)																					0.036	0.450	0.870	0.500	0.063											
Crop Growing Stage	(Acg)																								0.040	0.500	0.938	1.000	1.000	1.000	1.000	1.000	1.000	0.910	0.425	0.023		
Land Soaking Stage	(Als)				0.239	0.348	0.090																															
Land Preparation Stage	(Alp)	(Dry)			0.036	0.450	0.870	0.600	0.160																													
Crop Growing Stage	(Acg)						0.040	0.400	0.840	1.000	1.000	1.000	1.000	1.000	1.000	0.978	0.575	0.090																				
(E) Crop Coefficient	(Kc)	Wet																					0.80	0.82	0.85	0.93	1.03	1.12	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85		
		Dry			0.80	0.82	0.85	0.93	1.03	1.12	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85																				
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	150																					26.26	25.89	25.89													
(Dry)		100			17.18	18.00	18.00																															
Land Preparation Stage	(LP)				2.90	3.72	3.72	3.72	4.09														4.84	4.47	4.47	4.47	4.89											
Crop Growing Stage	(CG)				1.27	2.07	2.14	2.34	3.03	3.29	3.47	5.01	4.72	4.46	3.79	3.60	3.49	2.74					3.03	2.76	2.86	3.13	3.97	4.31	4.54	4.61	4.33	4.10	2.55	2.42	2.34	2.13		
Percolation	(P)	1.50			1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50					1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50		
Total	(FWR)	Wet																					6.45	11.02	6.39	4.55	5.43	5.81	6.04	6.11	5.83	5.60	4.05	3.57	1.63	0.08		
		Dry			4.21	7.94	5.00	3.77	4.46	4.79	4.97	6.51	6.22	5.96	5.29	4.99	2.87	0.38																				
10-day FWR					46.33	79.38	50.00	30.14	44.58	47.93	54.66	65.10	62.15	59.63	52.88	49.88	31.55	2.29					70.96	110.21	63.90	50.05	54.35	58.12	60.43	61.05	58.34	61.62	40.45	35.66	16.34	0.25			1,418
(G) Rainfall (1993)		mm/10day	0	6	9	28	7	2	7	6	20	4	36	36	12	30	33	63	43	75	34	103	94	50	176	92	79	171	65	341	31	40	135	34	56	85	55	37	2,095
Effective Rainfall	(ER)				0	19.6	0	0	0	0	14	0	25.2	25.2	0	21	23.1	2.3					65.8	35	63.9	50.1	54.4	58.1	45.5	61.1	21.7	28	40.5	23.8	16.3	0.3			695
(H) Irrigation Water Requirement	(IWR)	mm/10day			46.3	59.8	50.0	30.1	44.6	47.9	40.7	65.1	37.0	34.4	52.9	28.9	8.4	0.0					5.2	75.2	0.0	0.0	0.0	0.0	14.9	0.0	36.6	33.6	0.0	11.9	0.0	0.0			724
(F)-(G)		mm/day			4.21	5.98	5.00	3.77	4.46	4.79	3.70	6.51	3.70	3.44	5.29	2.89	0.77	0.00					0.47	7.52	0.00	0.00	0.00	0.00	1.49	0.00	3.66	3.06	0.00	1.19	0.00	0.00			
(I) Irrigation Efficiency	(IE)				0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5					0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48			
(J) Diversion Water Requirement	(DWR)	mm/day			8.42	11.96	10.00	7.54	8.92	9.59	7.39	13.02	7.39	6.89	10.58	5.78	1.54	0.00					0.98	15.67	0.00	0.00	0.00	0.00	3.11	0.00	7.63	6.37	0.00	2.47	0.00	0.00			
(H)/(I)		lit/sec/ha			0.97	1.38	1.16	0.87	1.03	1.11	0.86	1.51	0.86	0.80	1.22	0.67	0.18	0.00					0.11	1.81	0.00	0.00	0.00	0.00	0.36	0.00	0.88	0.74	0.00	0.29	0.00	0.00			

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA Team's Modifications

Region: CAR

Province: Kalinga — **Climate Type: III**

(A) Cropping Pattern (20 days Staggered Period)

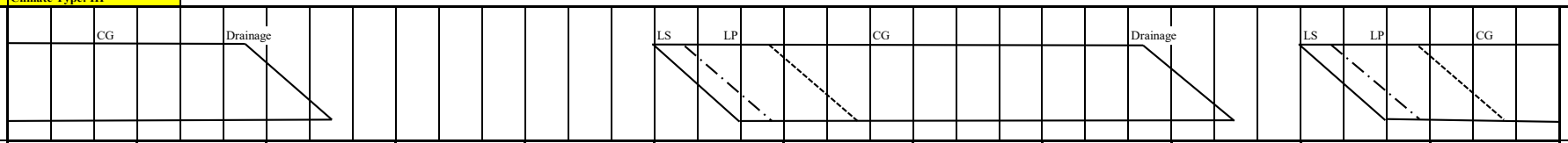
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet																10	10	10	10	10	11	10	10	11	10	10	10	10	5							
		Dry	10	10	11	10	10	8	10	7																							10	10	10	10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	3.66			4.28			4.66			4.51			4.08			4.57			4.23			4.04			3.94			3.72			3.59			3.63		
(D) Area Factor																																						
Land Soaking Stage	(Als)																	0.228	0.350	0.123																		
Land Preparation Stage	(Alp)	(Wet)																0.023	0.400	0.855	0.600	0.123																
Crop Growing Stage	(Acg)																			0.023	0.400	0.878	1.000	1.000	1.000	1.000	1.000	1.000	0.938	0.500	0.063							
Land Soaking Stage	(Als)																																0.228	0.350	0.123			
Land Preparation Stage	(Alp)	(Dry)																															0.023	0.400	0.855	0.600	0.123	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.972	0.600	0.123																									0.023	0.400	0.878	1.000
(E) Crop Coefficient	(Kc)	Wet																0.80	0.82	0.85	0.93	1.03	1.12	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85							
		Dry	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85																							0.80	0.82	0.85	0.93	1.03	1.12
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	150																27.64	27.64	27.64																		
(Dry)		100																															19.63	19.63	19.63			
Land Preparation Stage	(LP)																	6.21	6.21	6.21	5.91	5.91											5.35	5.35	5.35	5.38	5.38	
Crop Growing Stage	(CG)		4.32	4.36	4.10	4.54	4.32	4.11	4.33	3.96										3.88	3.93	4.36	4.74	4.77	4.81	4.52	4.18	3.98	3.78	3.46	3.16				3.05	3.38	3.74	4.07
Percolation	(P)	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19										2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19				2.19	2.19	2.19	2.19
Total	(FWR)	Wet																6.44	12.16	8.85	6.00	6.48	6.93	6.96	7.00	6.71	6.37	6.17	5.60	2.82	0.34							
		Dry	6.51	6.55	6.29	6.73	6.51	6.12	3.91	0.76																							4.60	9.01	7.11	5.46	5.87	6.26
10-day FWR			65.09	65.45	69.18	67.27	65.13	48.98	39.14	5.30								64.45	121.59	88.50	59.97	64.75	76.20	69.57	69.98	73.86	63.66	61.69	56.02	28.25	1.69		46.00	90.12	71.09	54.57	58.68	68.81	1,715
(G) Rainfall (1994)		mm/10day	6	0	0	3	1	1	0	12	10	19	7	20	79	70	81	109	66	91	246	275	230	291	62	150	204	99	42	2	34	44	1	0	8	2	0	9	2,274
Effective Rainfall	(ER)		0	0	0	0	0	0	0	0								43.6	46.2	63.7	49.2	55	46	58.2	43.4	60	40.8	61.7	29.4	0	1.7		0	0	0	0	0	0	599
(H) Irrigation Water Requirement	(IWR)	mm/10day	65.1	65.5	69.2	67.3	65.1	49.0	39.1	5.3								20.8	75.4	24.8	10.8	9.8	30.2	11.4	26.6	13.9	22.9	0.0	26.6	28.2	0.0		46.0	90.1	71.1	54.6	58.7	68.8	1,116
(F)-(G)		mm/day	6.51	6.55	6.29	6.73	6.51	6.12	3.91	0.76								2.08	7.54	2.48	1.08	0.98	2.75	1.14	2.66	1.26	2.29	0.00	2.66	2.82	0.00		4.60	9.01	7.11	5.46	5.87	6.26	
(I) Irrigation Efficiency	(IE)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5								0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43		0.5	0.5	0.5	0.5	0.5	0.5	
(J) Diversion Water Requirement	(DWR)	mm/day	13.02	13.09	12.58	13.45	13.03	12.24	7.83	1.51								4.85	17.53	5.77	2.50	2.27	6.39	2.64	6.18	2.93	5.32	0.00	6.19	6.57	0.00		9.20	18.02	14.22	10.91	11.74	12.51	
(H)/(I)		lit/sec/ha	1.51	1.52	1.46	1.56	1.51	1.42	0.91	0.18								0.56	2.03	0.67	0.29	0.26	0.74	0.31	0.72	0.34	0.62	0.00	0.72	0.76	0.00		1.06	2.09	1.65	1.26	1.36	1.45	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA Team's Modifications

Region: CAR

Province: Mountain Province — **Climate Type: I**

(A) Cropping Pattern (20 days Staggered Period)

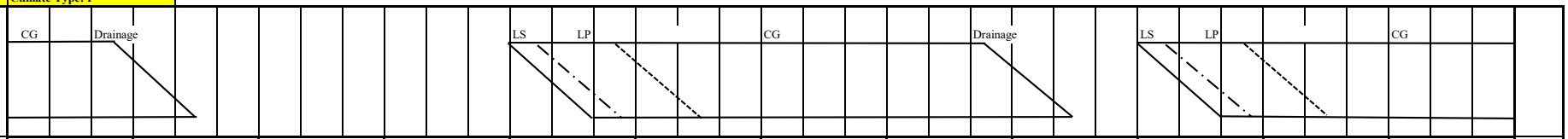
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	4											
		Dry	10	10	11	10	4																							10	10	11	10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	2.87			2.94			3.24			3.42			2.75			2.48			1.98			1.58			2.27			2.05			2.73			2.54			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.228	0.350	0.111																						
Land Preparation Stage	(Alp)	(Wet)													0.023	0.400	0.852	0.550	0.090																				
Crop Growing Stage	(Acg)																0.036	0.450	0.910	1.000	1.000	1.000	1.000	1.000	1.000	0.943	0.450	0.040											
Land Soaking Stage	(Als)																													0.228	0.350	0.111							
Land Preparation Stage	(Alp)	(Dry)																												0.023	0.400	0.852	0.550	0.090					
Crop Growing Stage	(Acg)		1.000	1.000	0.918	0.500	0.040																									0.036	0.450	0.910	1.000	1.000	1.000	1.000	
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.93	1.03	1.12	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85											
		Dry	1.06	1.01	0.96	0.93	0.85																							0.80	0.82	0.85	0.93	1.03	1.12	1.18	1.19	1.12	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150													25.35	25.35	25.35																						
(Dry)		150																												24.73	24.73	24.73							
Land Preparation Stage	(LP)														3.92	3.92	3.92	3.68	3.68											3.30	3.30	3.30	3.90	3.90					
Crop Growing Stage	(CG)		3.04	2.90	2.76	2.73	2.50										2.34	2.31	2.55	2.78	2.34	2.36	2.22	1.67	1.60	1.52	2.11	1.93		1.64	1.68	1.74	2.54	2.81	3.06	3.00	3.02	2.84	
Percolation	(P)	1.50	1.50	1.50	1.50	1.50	1.50										1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50		1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	
Total	(FWR)	Wet													5.87	10.44	6.29	3.74	4.02	4.28	3.84	3.86	3.72	3.17	3.10	2.84	1.62	0.14											
		Dry	4.54	4.40	3.91	2.12	0.16																							5.72	9.98	5.68	3.96	4.28	4.56	4.50	4.52	4.34	
10-day FWR			45.42	43.99	42.97	21.17	0.64								58.70	104.40	69.21	37.38	40.21	42.78	38.36	38.56	40.89	31.75	30.96	31.29	16.25	0.55		57.15	99.78	62.45	39.64	42.75	45.58	44.97	45.23	47.79	1,221
(G) Rainfall (2006)		mm/10day	0	0	72	17	2	15	8	55	18	2	37	3	7	81	97	20	49	40	55	179	178	92	106	109	44	127	72	38	24	184	91	95	28	108	44	4	2,101
Effective Rainfall	(ER)		0	0	43	0	0								0	56.7	67.9	14	34.3	28	38.4	38.6	40.9	31.8	31	31.3	16.3	0.6		26.6	16.8	62.5	39.6	42.8	19.6	43.2	30.8	0	755
(H) Irrigation Water Requirement	(IWR)	mm/10day	45.4	44.0	0.0	21.2	0.6								58.7	47.7	1.3	23.4	5.9	14.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		30.6	83.0	0.0	0.0	0.0	26.0	1.8	14.4	47.8	466
(F)-(G)		mm/day	4.54	4.40	0.00	2.12	0.16								5.87	4.77	0.12	2.34	0.59	1.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		3.06	8.30	0.00	0.00	0.00	2.60	0.18	1.44	4.34	
(I) Irrigation Efficiency	(IE)		0.5	0.5	0.5	0.5	0.5								0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
(J) Diversion Water Requirement	(DWR)	mm/day	9.08	8.80	0.00	4.23	0.32								13.65	11.09	0.28	5.44	1.37	3.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		6.11	16.60	0.00	0.00	0.00	5.20	0.35	2.89	8.69	
(H)/(I)		lit/sec/ha	1.05	1.02	0.00	0.49	0.04								1.58	1.28	0.03	0.63	0.16	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.71	1.92	0.00	0.00	0.00	0.60	0.04	0.33	1.01	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	150

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: I

Province: Ilocos Norte — **Climate Type: I**

(A) Cropping Pattern (30 days Staggered Period)

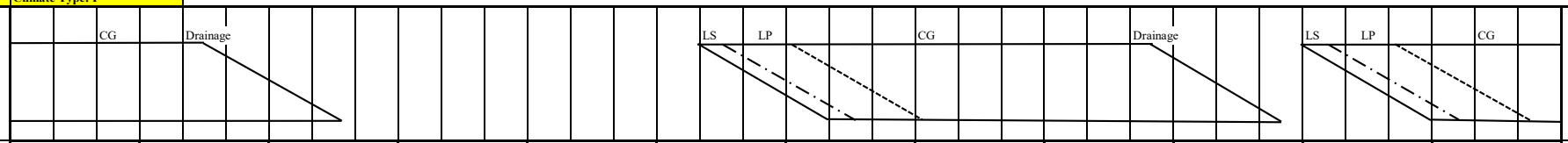
Paddy-Paddy

LS: 7 days

LP: 15 days

Seeding to Drainage: 100 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet																	10	10	10	10	11	10	10	11	10	10	10	10	10	5						
		Dry	10	10	11	10	10	8	10	7																							10	10	10	10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.81			5.39			6.51			7.07			6.00			5.65			5.06			5.02			4.79			4.96			4.56			4.54		
(D) Area Factor																																						
Land Soaking Stage	(Als)																	0.156	0.233	0.233	0.082																	
Land Preparation Stage	(Alp)	(Wet)																0.015	0.267	0.493	0.485	0.217	0.002															
Crop Growing Stage	(Acg)																			0.107	0.433	0.783	0.998	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.038							
Land Soaking Stage	(Als)																															0.156	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																														0.015	0.267	0.493	0.485	0.233	0.006	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	0.948	0.700	0.400	0.074																								0.107	0.433	0.767	0.994	
(E) Crop Coefficient	(Kc)	Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.01	0.96	0.93	0.85							
		Dry	1.14	1.17	1.14	1.10	1.01	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	165																30.54	30.54	30.02	30.02																	
(Dry)		145																														26.73	26.73	26.73	26.71	26.71	26.71	
Land Preparation Stage	(LP)																	6.97	6.97	6.45	6.45	6.45	6.42									6.01	6.01	6.01	6.00	6.00	6.00	
Crop Growing Stage	(CG)		5.48	5.63	5.48	5.93	5.44	5.17	6.05	5.53										4.30	4.55	4.96	5.37	5.72	5.87	5.46	5.27	4.84	4.76	4.61	4.22			3.88	4.09	4.45	4.86	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00										2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00	
Total	(FWR)	Wet																4.87	8.98	10.85	8.43	6.85	7.37	7.72	7.87	7.46	7.27	6.55	4.51	2.20	0.24							
		Dry	7.48	7.63	7.48	7.93	7.06	5.02	3.22	0.56																						4.26	7.83	9.82	7.73	6.34	6.85	
10-day FWR			74.83	76.28	82.32	79.29	70.57	40.18	32.22	3.90								48.69	89.78	108.51	84.29	75.34	73.69	77.23	86.61	74.61	72.69	65.51	45.10	22.02	1.18	42.60	78.33	98.20	77.33	63.43	75.38	1,820
(G) Rainfall (1998)		mm/10day	0	1	9	4	4	4	4	7	4	0	52	4	34	44	180	53	37	42	119	21	61	115	70	50	177	61	82	121	147	110	12	4	159	9	79	15	1,895
Effective Rainfall	(ER)		0	0	0	0	0	0	0	0									25.9	29.4	47.6	14.7	42.7	46	49	35	70.8	42.7	57.4	45.1	22	1.2	0	0	63.6	0	55.3	0	648
(H) Irrigation Water Requirement	(IWR)	mm/10day	74.8	76.3	82.3	79.3	70.6	40.2	32.2	3.9									22.8	60.4	60.9	69.6	32.6	27.7	28.2	51.6	3.8	30.0	8.1	0.0	0.0	0.0	42.6	78.3	34.6	77.3	8.1	75.4	1,172
(F)-(G)		mm/day	7.48	7.63	7.48	7.93	7.06	5.02	3.22	0.56									2.28	6.04	6.09	6.96	2.97	2.77	2.82	4.69	0.38	3.00	0.81	0.00	0.00	0.00	4.26	7.83	3.46	7.73	0.81	6.85	
(I) Irrigation Efficiency	(IE)		0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54									0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54	0.54	0.54	0.54	0.54	
(J) Diversion Water Requirement	(DWR)	mm/day	13.86	14.13	13.86	14.68	13.07	9.30	5.97	1.03									4.75	12.58	12.69	14.50	6.18	5.77	5.88	9.77	0.79	6.25	1.69	0.00	0.00	0.00	7.89	14.51	6.41	14.32	1.51	12.69	
(H)/(I)		lit/sec/ha	1.60	1.63	1.60	1.70	1.51	1.08	0.69	0.12									0.55	1.46	1.47	1.68	0.72	0.67	0.68	1.13	0.09	0.72	0.20	0.00	0.00	0.00	0.91	1.68	0.74	1.66	0.17	1.47	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: I

Province: Ilocos Sur — **Climate Type: I**

(A) Cropping Pattern (30 days Staggered Period)

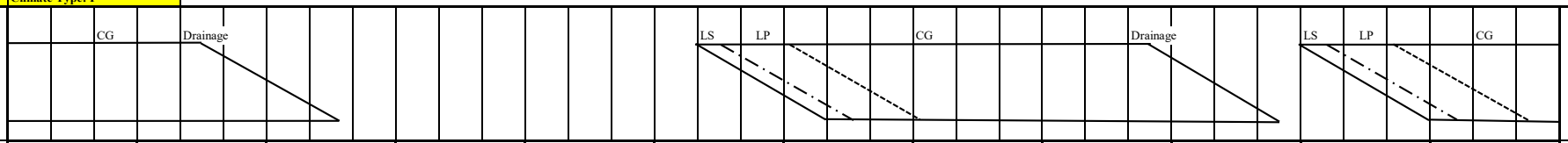
Paddy-Paddy

LS: 7 days

LP: 15 days

Seeding to Drainage: 100 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet																	10	10	10	10	11	10	10	11	10	10	10	10	10	5							
	Dry	10	10	11	10	10	8	10	7																							10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	4.74			5.29			6.35			6.84			5.81			5.50			4.91			4.90			4.66			4.83			4.46			4.49			
(D) Area Factor																																						
Land Soaking Stage	(Als)																0.156	0.233	0.233	0.082																		
Land Preparation Stage	(Alp) (Wet)																0.015	0.267	0.493	0.485	0.217	0.002																
Crop Growing Stage	(Acg)																		0.107	0.433	0.783	0.998	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.038								
Land Soaking Stage	(Als)																														0.156	0.233	0.233	0.082				
Land Preparation Stage	(Alp) (Dry)																														0.015	0.267	0.493	0.485	0.233	0.006		
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	0.948	0.700	0.400	0.074																								0.107	0.433	0.767	0.994		
(E) Crop Coefficient	(Kc) Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.01	0.96	0.93	0.85								
	Dry	1.14	1.17	1.14	1.10	1.01	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07		
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 165																30.41	30.41	29.89	29.89																		
(Dry)	145																														26.64	26.64	26.64	26.67	26.67	26.67		
Land Preparation Stage	(LP)																6.84	6.84	6.32	6.32	6.32	6.31									5.92	5.92	5.92	5.95	5.95	5.95		
Crop Growing Stage	(CG)	5.40	5.55	5.40	5.82	5.34	5.08	5.91	5.40										4.17	4.42	4.81	5.24	5.59	5.73	5.31	5.13	4.71	4.64	4.49	4.11			3.79	4.04	4.40	4.80		
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00										2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00		
Total	(FWR) Wet																4.85	8.91	10.74	8.30	6.71	7.24	7.59	7.73	7.31	7.13	6.42	4.43	2.16	0.23								
	Dry	7.40	7.55	7.40	7.82	6.96	4.95	3.16	0.55																						4.24	7.79	9.75	7.69	6.30	6.80		
10-day FWR		74.04	75.46	81.44	78.19	69.61	39.64	31.62	3.83								48.47	89.12	107.42	82.96	73.76	72.41	75.86	85.06	73.12	71.26	64.25	44.27	21.62	1.16	42.45	77.89	97.47	76.89	62.96	74.79	1,797	
(G) Rainfall (2002)	mm/10day	0	0	0	4	1	3	0	1	12	1	20	5	0	79	212	128	74	75	445	51	276	218	118	21	63	71	30	70	10	16	62	8	0	0	0	5	2,079
Effective Rainfall	(ER)	0	0	0	0	0	0	0	0									48.5	52.5	89	35.7	55.2	43.6	47.2	14.7	44.1	49.7	21	44.3	0	0	42.5	0	0	0	0	0	588
(H) Irrigation Water Requirement	(IWR) mm/10day	74.0	75.5	81.4	78.2	69.6	39.6	31.6	3.8									0.0	36.6	18.4	47.3	18.6	28.8	28.7	70.4	29.0	21.6	43.2	0.0	21.6	1.2	0.0	77.9	97.5	76.9	63.0	74.8	1,209	
(F)-(G)	mm/day	7.40	7.55	7.40	7.82	6.96	4.95	3.16	0.55									0.00	3.66	1.84	4.73	1.69	2.88	2.87	6.40	2.90	2.16	4.32	0.00	2.16	0.23	0.00	7.79	9.75	7.69	6.30	6.80		
(I) Irrigation Efficiency	(IE)	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54									0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54	0.54	0.54	0.54	0.54	
(J) Diversion Water Requirement	(DWR) mm/day	13.71	13.97	13.71	14.48	12.89	9.18	5.86	1.01									0.00	7.63	3.84	9.85	3.51	6.00	5.97	13.33	6.05	4.49	9.01	0.00	4.50	0.48	0.00	14.42	18.05	14.24	11.66	12.59		
(H)/(I)	lit/sec/ha	1.59	1.62	1.59	1.68	1.49	1.06	0.68	0.12									0.00	0.88	0.44	1.14	0.41	0.69	0.69	1.54	0.70	0.52	1.04	0.00	0.52	0.06	0.00	1.67	2.09	1.65	1.35	1.46		

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: I

Province: La Union — **Climate Type: I**

(A) Cropping Pattern (30 days Staggered Period)

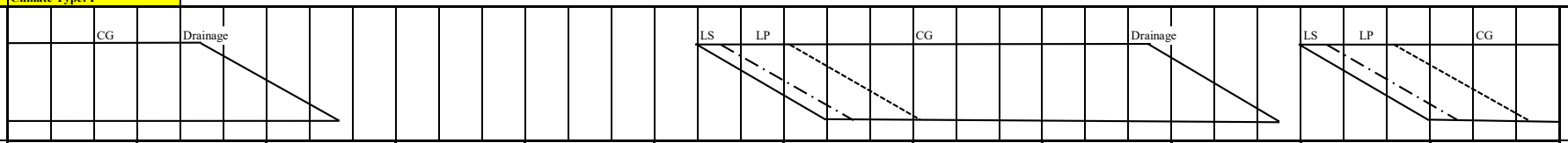
Paddy-Paddy

LS: 7 days

LP: 15 days

Seeding to Drainage: 100 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet																	10	10	10	10	11	10	10	11	10	10	10	10	10	5						
		Dry	10	10	11	10	10	8	10	7																							10	10	10	10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.69			5.23			6.28			6.78			5.76			5.45			4.87			4.85			4.62			4.78			4.41			4.44		
(D) Area Factor																																						
Land Soaking Stage	(Als)																	0.156	0.233	0.233	0.082																	
Land Preparation Stage	(Alp)	(Wet)																0.015	0.267	0.493	0.485	0.217	0.002															
Crop Growing Stage	(Acg)																			0.107	0.433	0.783	0.998	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.038							
Land Soaking Stage	(Als)																															0.156	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																														0.015	0.267	0.493	0.485	0.233	0.006	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	0.948	0.700	0.400	0.074																								0.107	0.433	0.767	0.994	
(E) Crop Coefficient	(Kc)	Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.01	0.96	0.93	0.85							
		Dry	1.14	1.17	1.14	1.10	1.01	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	165																30.37	30.37	29.86	29.86																	
(Dry)		145																														26.60	26.60	26.60	26.62	26.62	26.62	
Land Preparation Stage	(LP)																	6.80	6.80	6.29	6.29	6.29	6.27									5.88	5.88	5.88	5.91	5.91	5.91	
Crop Growing Stage	(CG)		5.35	5.49	5.35	5.75	5.28	5.02	5.84	5.34										4.14	4.38	4.77	5.19	5.53	5.67	5.27	5.08	4.67	4.59	4.45	4.06			3.75	4.00	4.35	4.75	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00										2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00	
Total	(FWR)	Wet																4.84	8.89	10.71	8.26	6.67	7.19	7.53	7.67	7.27	7.08	6.39	4.39	2.15	0.23							
		Dry	7.35	7.49	7.35	7.75	6.90	4.91	3.14	0.54																						4.24	7.77	9.71	7.64	6.25	6.75	
10-day FWR			73.47	74.87	80.81	77.53	69.04	39.32	31.36	3.80								48.39	88.90	107.12	82.61	73.34	71.88	75.29	84.42	72.67	70.82	63.86	43.95	21.46	1.15	42.37	77.67	97.11	76.44	62.48	74.20	1,786
(G) Rainfall (1994)		mm/10day	6	0	0	3	1	1	0	12	10	19	7	20	79	70	81	109	66	91	246	275	230	291	62	150	204	99	42	2	34	44	1	0	8	2	0	9	2,274
Effective Rainfall	(ER)		0	0	0	0	0	0	0	0									46.2	63.7	49.2	55	46	58.2	43.4	60	40.8	69.3	29.4	0	21.5	1.2	0	0	0	0	0	0	584
(H) Irrigation Water Requirement	(IWR)	mm/day	73.5	74.9	80.8	77.5	69.0	39.3	31.4	3.8									2.2	25.2	57.9	27.6	27.3	13.7	31.9	24.4	31.9	1.5	34.5	43.9	0.0	0.0	42.4	77.7	97.1	76.4	62.5	74.2	1,203
(F)-(G)		mm/day	7.35	7.49	7.35	7.75	6.90	4.91	3.14	0.54									0.22	2.52	5.79	2.76	2.49	1.37	3.19	2.22	3.19	0.15	3.45	4.39	0.00	0.00	4.24	7.77	9.71	7.64	6.25	6.75	
(I) Irrigation Efficiency	(IE)		0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54									0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54	0.54	0.54	0.54	0.54	
(J) Diversion Water Requirement	(DWR)	mm/day	13.60	13.87	13.60	14.36	12.78	9.10	5.81	1.01									0.46	5.25	12.07	5.75	5.18	2.85	6.64	4.62	6.64	0.32	7.18	9.16	0.00	0.00	7.85	14.38	17.98	14.16	11.57	12.49	
(H)/(I)		lit/sec/ha	1.57	1.60	1.57	1.66	1.48	1.05	0.67	0.12									0.05	0.61	1.40	0.67	0.60	0.33	0.77	0.54	0.77	0.04	0.83	1.06	0.00	0.00	0.91	1.66	2.08	1.64	1.34	1.45	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA Team's Modifications

Region: I

Province: Pangasinan — **Climate Type: I**

(A) Cropping Pattern (45 days Staggered Period)

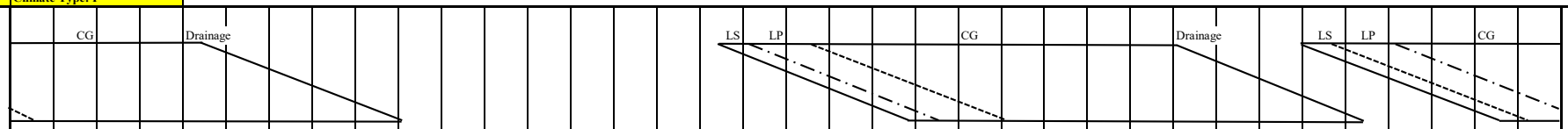
Paddy-Paddy

LS: 7 days

LP: 15 days

Seeding to Drainage: 100 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet																	5	10	10	10	11	10	10	11	10	10	10	10	10	11	10	4					
		Dry	10	10	11	10	10	8	10	10	11	1																					10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.99			5.57			6.68			7.21			6.08			5.69			5.07			5.05			4.82			5.02			4.66			4.69			
(D) Area Factor																																							
Land Soaking Stage	(Als)																	0.028	0.151	0.156	0.156	0.155	0.040																
Land Preparation Stage	(Alp)	(Wet)																	0.071	0.279	0.333	0.333	0.316	0.133	0.001														
Crop Growing Stage	(Acg)																			0.010	0.178	0.411	0.644	0.867	0.999	1.000	1.000	1.000	0.910	0.689	0.456	0.222	0.018						
Land Soaking Stage	(Als)																															0.101	0.156	0.156	0.156	0.128	0.004	
Land Preparation Stage	(Alp)	(Dry)	0.040																													0.010	0.178	0.329	0.333	0.333	0.252	
Crop Growing Stage	(Acg)		0.960	1.000	1.000	1.000	0.972	0.800	0.600	0.378	0.144	0.001																						0.071	0.289	0.511	0.744	
(E) Crop Coefficient	(Kc)	Wet																0.80	0.82	0.85	0.90	0.94	1.02	1.10	1.14	1.14	1.12	1.05	1.01	0.96	0.93	0.90	0.85						
		Dry	1.10	1.14	1.14	1.12	1.05	1.01	0.96	0.93	0.90	0.85																				0.80	0.82	0.85	0.90	0.94	1.02	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	165																30.58	30.58	30.03	30.03	30.03	30.02																
(Dry)		145																														26.82	26.82	26.82	26.84	26.84	26.84	
Land Preparation Stage	(LP)		6.39																7.01	6.46	6.46	6.46	6.44	6.44	6.44							6.10	6.10	6.10	6.13	6.13	6.13	
Crop Growing Stage	(CG)		5.49	5.69	5.69	6.24	5.85	5.63	6.41	6.21	6.01	6.13								4.31	4.56	4.77	5.15	5.56	5.76	5.49	5.40	5.06	5.07	4.82	4.67	4.19	3.96	3.96	4.22	4.41	4.78	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
Total	(FWR)	Wet																0.86	5.11	6.55	8.01	9.59	7.84	7.41	7.76	7.49	7.40	7.06	6.43	4.70	3.04	1.38	0.11					
		Dry	7.45	7.69	7.69	8.24	7.63	6.10	5.05	3.10	1.15	0.01																				2.77	5.27	6.61	8.03	8.75	6.70	
10-day FWR			74.45	76.89	84.57	82.38	76.29	48.80	50.48	31.04	12.69	0.01						4.28	51.15	65.51	80.05	105.46	78.42	74.07	85.31	74.95	73.98	70.61	64.34	46.98	33.45	41.44	53.12	66.14	80.25	87.51	73.68	1,848
(G) Rainfall (1982)		mm/10day	1	0	0	0	3	1	0	0	25	46	30	9	20	76	54	84	51	145	242	161	187	102	115	285	66	40	73	34	94	7	13	14	3	19	2	0	2,002
Effective Rainfall	(ER)		0	0	0	0	0	0	0	0	12.7	0.01							4.3	51.2	48.4	64.4	74.8	40.8	46	57	46.2	28	51.1	23.8	47	0	0	0	0	0	0	0	596
(H) Irrigation Water Requirement	(IWR)	mm/10day	74.5	76.9	84.6	82.4	76.3	48.8	50.5	31.0	0.0	0.0							0.0	0.0	17.1	15.7	30.7	37.6	28.1	28.3	28.7	46.0	19.5	40.5	0.0	33.4	41.4	53.1	66.1	80.3	87.5	73.7	1,253
(F)-(G)		mm/day	7.45	7.69	7.69	8.24	7.63	6.10	5.05	3.10	0.00	0.00							0.00	0.00	1.71	1.57	2.79	3.76	2.81	2.57	2.87	4.60	1.95	4.05	0.00	3.04	4.14	5.31	6.61	8.03	8.75	6.70	
(I) Irrigation Efficiency	(IE)		0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54							0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54	0.54	0.54		
(J) Diversion Water Requirement	(DWR)	mm/day	13.787	14.238	14.238	15.256	14.127	11.297	9.3476	5.7487	0	0							0	0	3.5647	3.2606	5.8075	7.8378	5.8484	5.3622	5.9892	9.58	4.0646	8.4456	0	6.3352	8.6342	11.067	12.247	14.862	16.205	12.405	
(H)/(I)		lit/sec/ha	1.60	1.65	1.65	1.77	1.64	1.31	1.08	0.67	0.00	0.00							0.00	0.00	0.41	0.38	0.67	0.91	0.68	0.62	0.69	1.11	0.47	0.98	0.00	0.73	1.00	1.28	1.42	1.72	1.88	1.44	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: II

Province: Batanes — **Climate Type: III, IV**

(A) Cropping Pattern (20 days Staggered Period)

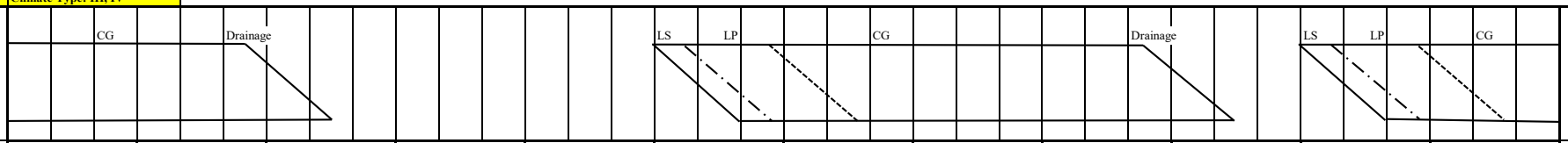
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet																10	10	10	10	10	11	10	10	11	10	10	10	10	5							
		Dry	10	10	11	10	10	8	10	7																							10	10	10	10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.74			5.28			6.35			6.91			5.98			5.74			5.18			5.16			4.89			4.99			4.54			4.49		
(D) Area Factor																																						
Land Soaking Stage	(Als)																	0.228	0.350	0.123																		
Land Preparation Stage	(Alp)	(Wet)																0.023	0.400	0.855	0.600	0.123																
Crop Growing Stage	(Acg)																			0.023	0.400	0.878	1.000	1.000	1.000	1.000	1.000	1.000	0.938	0.500	0.063							
Land Soaking Stage	(Als)																																0.228	0.350	0.123			
Land Preparation Stage	(Alp)	(Dry)																															0.023	0.400	0.855	0.600	0.123	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.972	0.600	0.123																									0.023	0.400	0.878	1.000
(E) Crop Coefficient	(Kc)	Wet																0.80	0.82	0.85	0.93	1.03	1.12	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85							
		Dry	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85																							0.80	0.82	0.85	0.93	1.03	1.12
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	150																28.48	28.48	28.48																		
(Dry)		100																															20.28	20.28	20.28			
Land Preparation Stage	(LP)																	7.05	7.05	7.05	6.56	6.56											6.00	6.00	6.00	5.95	5.95	
Crop Growing Stage	(CG)		5.59	5.64	5.31	5.60	5.33	5.07	5.91	5.40										4.88	4.82	5.34	5.80	6.09	6.14	5.78	5.18	4.94	4.69	4.64	4.24				3.86	4.18	4.62	5.03
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00										2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00
Total	(FWR)	Wet																6.66	12.79	9.69	6.66	7.25	7.80	8.09	8.14	7.78	7.18	6.94	6.28	3.32	0.39							
		Dry	7.59	7.64	7.31	7.60	7.33	6.87	4.74	0.91																							4.76	9.50	7.76	6.04	6.55	7.03
10-day FWR			75.93	76.41	80.40	75.97	73.33	54.97	47.43	6.37								66.56	127.88	96.90	66.62	72.47	85.82	80.89	81.40	85.57	71.83	69.39	62.79	33.20	1.97		47.62	94.96	77.55	60.41	65.48	77.32	1,917
(G) Rainfall (1997)		mm/10day	24	21	12	22	21	12	4	3	50	0	17	0	5	17	67	75	34	41	47	8	0	32	31	115	31	0	36	0	210	97	39	4	5	80	0	0	1,160
Effective Rainfall	(ER)		16.8	14.7	0	0	0	0	0	0								52.5	23.8	28.7	32.9	0	0	22.4	21.7	46	21.7	0	25.2	0	2		27.3	0	0	56	0	0	392
(H) Irrigation Water Requirement	(IWR)	mm/10day	59.1	61.7	80.4	76.0	73.3	55.0	47.4	6.4								14.1	104.1	68.2	33.7	72.5	85.8	58.5	59.7	39.6	50.1	69.4	37.6	33.2	0.0		20.3	95.0	77.6	4.4	65.5	77.3	1,526
(F)-(G)		mm/day	5.91	6.17	7.31	7.60	7.33	6.87	4.74	0.91								1.41	10.41	6.82	3.37	7.25	7.80	5.85	5.97	3.60	5.01	6.94	3.76	3.32	0.00		2.03	9.50	7.76	0.44	6.55	7.03	
(I) Irrigation Efficiency	(IE)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5								0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43		0.5	0.5	0.5	0.5	0.5	0.5	
(J) Diversion Water Requirement	(DWR)	mm/day	11.83	12.34	14.62	15.19	14.67	13.74	9.49	1.82								3.27	24.21	15.86	7.84	16.85	18.14	13.60	13.88	8.37	11.66	16.14	8.74	7.72	0.00		4.06	18.99	15.51	0.88	13.10	14.06	
(H)/(I)		lit/sec/ha	1.37	1.43	1.69	1.76	1.70	1.59	1.10	0.21								0.38	2.80	1.84	0.91	1.95	2.10	1.57	1.61	0.97	1.35	1.87	1.01	0.89	0.00		0.47	2.20	1.80	0.10	1.52	1.63	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: II

Province: Cagayan — **Climate Type: III, IV**

(A) Cropping Pattern (30 days Staggered Period)

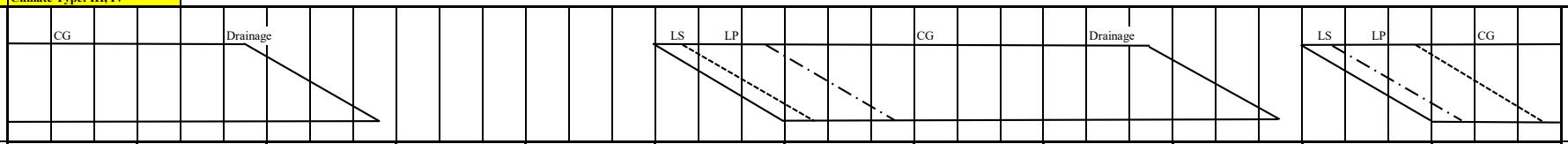
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet																10	10	10	10	10	11	10	10	11	10	10	10	10	10	5							
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	4.75			5.31			6.42			7.01			6.03			5.75			5.15			5.13			4.85			4.95			4.52			4.49			
(D) Area Factor																																						
Land Soaking Stage	(Als)																0.152	0.233	0.233	0.082																		
Land Preparation Stage	(Alp) (Wet)																0.015	0.267	0.585	0.652	0.400	0.074																
Crop Growing Stage	(Acg)																		0.015	0.267	0.600	0.926	1.000	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.038							
Land Soaking Stage	(Als)																															0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp) (Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc) Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85							
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 150																28.49	28.49	28.49	27.96	27.96	27.96																
(Dry)	120																															23.12	23.12	23.12	23.09	23.09	23.09	
Land Preparation Stage	(LP)																7.06	7.06	7.06	6.53	6.53	6.53	6.51	6.51								5.98	5.98	5.98	5.95	5.95	5.95	
Crop Growing Stage	(CG)	5.42	5.56	5.42	5.84	5.58	5.15	6.16	5.97	5.46								4.72	4.89	4.64	5.05	5.51	5.85	6.00	5.85	5.34	5.09	4.70	4.75	4.60	4.21			3.84	4.04	4.40	4.80	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00	
Total	(FWR) Wet																4.44	8.52	10.87	8.32	6.84	7.44	7.85	8.00	7.85	7.34	7.09	6.42	4.50	2.20	0.24							
	Dry	7.42	7.56	7.42	7.84	7.58	7.01	5.98	3.19	0.55																						3.60	6.98	8.97	7.39	6.22	6.74	
10-day FWR		74.15	75.58	81.57	78.41	75.76	56.12	59.84	31.88	3.86							44.36	85.23	108.71	83.23	68.41	81.82	78.48	80.02	86.33	73.35	70.93	64.23	45.04	21.99	1.18	36.04	69.83	89.72	73.87	62.21	74.15	1,936
(G) Rainfall (1997)	mm/10day	34	20	15	6	20	2	4	2	76	16	14	11	19	4	66	21	12	32	20	13	32	45	40	125	25	9	56	142	320	24	219	8	3	49	62	20	1,586
Effective Rainfall	(ER)	23.8	14	0	0	14	0	0	0	3.9							14.7	0	22.4	14	0	22.4	31.5	28	50	17.5	0	39.2	45	22	1.2	36	0	0	34.3	43.4	14	491
(H) Irrigation Water Requirement	(IWR) mm/10day	50.4	61.6	81.6	78.4	61.8	56.1	59.8	31.9	0.0							29.7	85.2	86.3	69.2	68.4	59.4	47.0	52.0	36.3	55.9	70.9	25.0	0.0	0.0	0.0	0.0	69.8	89.7	39.6	18.8	60.2	1,445
(F)-(G)	mm/day	5.04	6.16	7.42	7.84	6.18	7.01	5.98	3.19	0.00							2.97	8.52	8.63	6.92	6.84	5.40	4.70	5.20	3.30	5.59	7.09	2.50	0.00	0.00	0.00	0.00	6.98	8.97	3.96	1.88	5.47	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	10.49	12.828	15.448	16.335	12.866	14.614	12.466	6.6422	0							6.1795	17.756	17.982	14.423	14.252	11.254	9.7879	10.838	6.8807	11.635	14.776	5.2144	0	0	0	0	14.548	18.691	8.2434	3.9179	11.393	
(H)/(I)	lit/sec/ha	1.21	1.48	1.79	1.89	1.49	1.69	1.44	0.77	0.00							0.72	2.06	2.08	1.67	1.65	1.30	1.13	1.25	0.80	1.35	1.71	0.60	0.00	0.00	0.00	0.00	1.68	2.16	0.95	0.45	1.32	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA' Modifications

Region: II

Province: Isabela — **Climate Type: III, IV**

(A) Cropping Pattern (45 days Staggered Period)

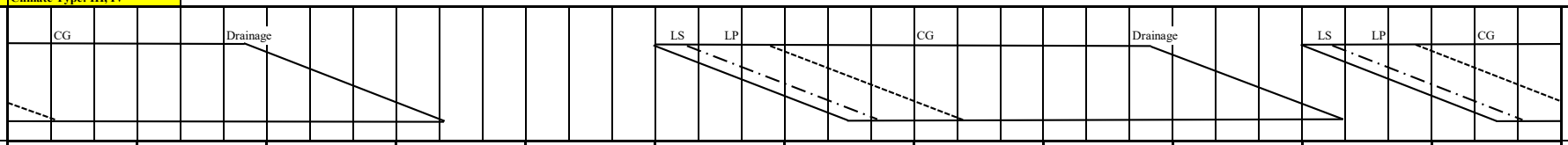
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet																10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	9					
		Dry	10	10	11	10	10	8	10	10	11	10	1																				10	10	10	10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.69			5.25			6.36			6.96			5.99			5.71			5.10			5.09			4.81			4.89			4.46			4.43		
(D) Area Factor																																						
Land Soaking Stage	(Als)																	0.101	0.156	0.156	0.156	0.128	0.004															
Land Preparation Stage	(Alp)	(Wet)																0.010	0.178	0.390	0.444	0.444	0.363	0.133	0.001													
Crop Growing Stage	(Acg)																			0.010	0.178	0.400	0.633	0.867	0.999	1.000	1.000	1.000	0.972	0.778	0.544	0.311	0.090					
Land Soaking Stage	(Als)																																0.101	0.156	0.156	0.156	0.128	0.004
Land Preparation Stage	(Alp)	(Dry)	0.133	0.001																													0.010	0.178	0.391	0.444	0.444	0.362
Crop Growing Stage	(Acg)		0.867	0.999	1.000	1.000	1.000	0.988	0.822	0.600	0.367	0.133	0.001																						0.009	0.178	0.400	0.633
(E) Crop Coefficient	(Kc)	Wet																0.80	0.82	0.85	0.90	0.94	1.02	1.10	1.14	1.14	1.12	1.08	1.01	0.97	0.96	0.93	0.85					
		Dry	1.10	1.14	1.14	1.12	1.08	1.01	0.97	0.96	0.93	0.85	0.85																				0.80	0.82	0.85	0.90	0.94	1.02
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	150																28.45	28.45	28.45	27.92	27.92	27.92															
(Dry)		120																															23.07	23.07	23.07	23.04	23.04	23.04
Land Preparation Stage	(LP)		6.13	6.13														7.02	7.02	7.02	6.49	6.49	6.49	6.48	6.48								5.92	5.92	5.92	5.90	5.90	5.90
Crop Growing Stage	(CG)		5.16	5.35	5.35	5.88	5.67	5.30	6.17	6.11	5.91	5.92	5.92						4.68	4.85	4.59	4.79	5.20	5.60	5.80	5.80	5.39	5.19	4.86	4.74	4.69	4.55	3.79		3.79	3.99	4.16	4.52
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00						2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00
Total	(FWR)	Wet																2.94	5.69	7.25	8.41	9.17	7.03	7.45	7.80	7.80	7.39	7.19	6.67	5.25	3.64	2.04	0.52					
		Dry	7.02	7.35	7.35	7.88	7.67	7.21	6.72	4.86	2.90	1.05	0.01																				2.39	4.65	5.97	7.28	8.03	6.35
10-day FWR			70.22	73.45	80.81	78.80	76.70	57.72	67.15	48.63	31.95	10.53	0.01					29.44	56.89	72.47	84.09	91.72	77.28	74.50	78.01	85.83	73.87	71.95	66.66	52.46	36.42	22.40	28.58	46.53	59.67	72.79	80.34	69.89	1,928
(G) Rainfall (2014)		mm/10day	10	33	5	18	9	5	0	0	84	6	4	44	51	3	9	41	13	34	36	58	75	32	64	80	84	189	20	99	66	112	3	140	127	225	99	4	1,882
Effective Rainfall	(ER)		0	23.1	0	0	0	0	0	0	32	0	0					28.7	0	23.8	25.2	40.6	52.5	22.4	44.8	56	58.8	72	14	52.5	36.4	22.4	0	46.5	50.8	45	69.3	0	817
(H) Irrigation Water Requirement	(IWR)	mm/10day	70.2	50.4	80.8	78.8	76.7	57.7	67.2	48.6	0.0	10.5	0.0					0.7	56.9	48.7	58.9	51.1	24.8	52.1	33.2	29.8	15.1	0.0	52.7	0.0	0.0	0.0	28.6	0.0	8.9	27.8	11.0	69.9	1,111
(F)-(G)		mm/day	7.02	5.04	7.35	7.88	7.67	7.21	6.72	4.86	0.00	1.05	0.01					0.07	5.69	4.87	5.89	5.11	2.25	5.21	3.32	2.71	1.51	0.00	5.27	0.00	0.00	0.00	2.86	0.00	0.89	2.78	1.10	6.35	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48					0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	14.629	10.49	15.305	16.417	15.979	15.031	13.99	10.132	0	2.1934	0.0165					0.1542	11.852	10.139	12.268	10.649	4.6936	10.854	6.9193	5.6494	3.14	0	10.971	0	0	0	5.9545	0	1.8485	5.7896	2.2997	13.237	
(H)/(I)		lit/sec/ha	1.69	1.21	1.77	1.90	1.85	1.74	1.62	1.17	0.00	0.25	0.00					0.02	1.37	1.17	1.42	1.23	0.54	1.26	0.80	0.65	0.36	0.00	1.27	0.00	0.00	0.00	0.69	0.00	0.21	0.67	0.27	1.53	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: II

Province: Nueva Vizcaya — **Climate Type: III, IV**

(A) Cropping Pattern (30 days Staggered Period)

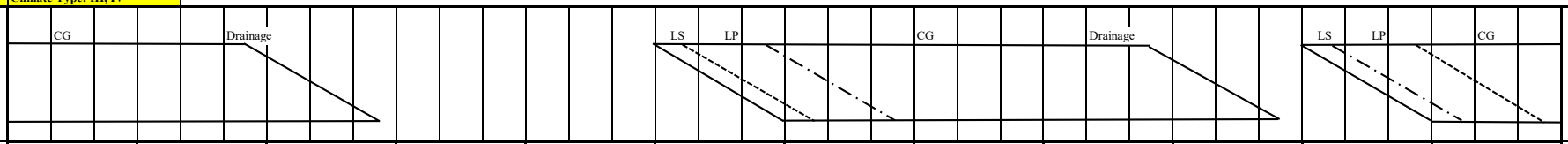
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet																10	10	10	10	10	11	10	10	11	10	10	10	10	10	5							
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	4.39			4.94			5.99			6.55			5.62			5.33			4.76			4.75			4.51			4.59			4.18			4.15			
(D) Area Factor																																						
Land Soaking Stage	(Als)																0.152	0.233	0.233	0.082																		
Land Preparation Stage	(Alp) (Wet)																0.015	0.267	0.585	0.652	0.400	0.074																
Crop Growing Stage	(Acg)																		0.015	0.267	0.600	0.926	1.000	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.038							
Land Soaking Stage	(Als)																															0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp) (Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc) Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85							
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 150																28.12	28.12	28.12	27.62	27.62	27.62																
(Dry)	120																															22.82	22.82	22.82	22.79	22.79	22.79	
Land Preparation Stage	(LP)																6.69	6.69	6.69	6.19	6.19	6.19	6.18	6.18								5.68	5.68	5.68	5.65	5.65	5.65	
Crop Growing Stage	(CG)	5.00	5.14	5.00	5.43	5.19	4.79	5.75	5.57	5.09								4.37	4.53	4.28	4.66	5.09	5.42	5.56	5.42	4.96	4.74	4.37	4.41	4.27	3.90			3.55	3.74	4.07	4.44	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00	
Total	(FWR) Wet																4.37	8.34	10.56	7.98	6.47	7.03	7.42	7.56	7.42	6.96	6.74	6.11	4.27	2.09	0.22							
	Dry	7.00	7.14	7.00	7.43	7.19	6.66	5.68	3.03	0.52																						3.55	6.83	8.72	7.09	5.90	6.38	
10-day FWR		70.05	71.36	77.05	74.34	71.87	53.30	56.81	30.28	3.67							43.74	83.38	105.64	79.78	64.74	77.29	74.15	75.58	81.57	69.61	67.36	61.07	42.73	20.87	1.12	35.54	68.33	87.23	70.86	59.01	70.20	1,849
(G) Rainfall (1995)	mm/10day	19	1	4	17	8	1	14	0	7	13	5	9	8	90	112	46	16	22	98	64	203	77	95	121	71	130	88	134	1	89	137	3	6	39	99	154	2,001
Effective Rainfall	(ER)	0	0	0	0	0	0	0	0	0							32.2	0	15.4	68.6	44.8	40.6	53.9	66.5	48.4	49.7	52	61.1	42.7	0	1.1	35.5	0	0	27.3	59	61.6	760
(H) Irrigation Water Requirement	(IWR) mm/10day	70.0	71.4	77.1	74.3	71.9	53.3	56.8	30.3	3.7							11.5	83.4	90.2	11.2	19.9	36.7	20.3	9.1	33.2	19.9	15.4	0.0	0.0	20.9	0.0	0.0	68.3	87.2	43.6	0.0	8.6	1,088
(F)-(G)	mm/day	7.00	7.14	7.00	7.43	7.19	6.66	5.68	3.03	0.52							1.15	8.34	9.02	1.12	1.99	3.34	2.03	0.91	3.02	1.99	1.54	0.00	0.00	2.09	0.00	0.00	6.83	8.72	4.36	0.00	0.78	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	14.59	14.87	14.59	15.49	14.97	13.88	11.84	6.31	1.09							2.41	17.37	18.80	2.33	4.16	6.95	4.22	1.89	6.28	4.15	3.20	0.00	0.00	4.35	0.00	0.00	14.24	18.17	9.07	0.00	1.63	
(H)/(I)	lit/sec/ha	1.69	1.72	1.69	1.79	1.73	1.61	1.37	0.73	0.13							0.28	2.01	2.18	0.27	0.48	0.80	0.49	0.22	0.73	0.48	0.37	0.00	0.00	0.50	0.00	0.00	1.65	2.10	1.05	0.00	0.19	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: II

Province: Qurino — **Climate Type: III, IV**

(A) Cropping Pattern (30 days Staggered Period)

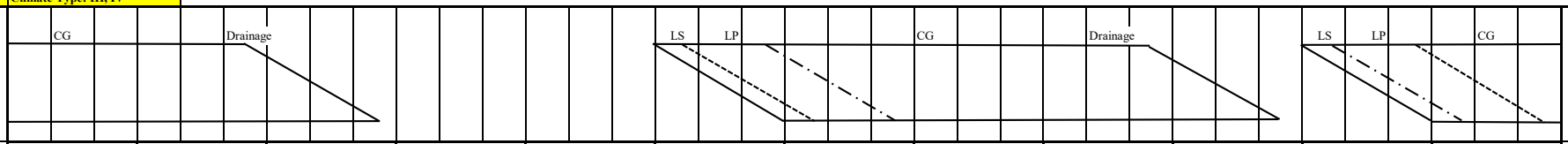
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet																10	10	10	10	10	11	10	10	11	10	10	10	10	10	5							
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	4.59			5.15			6.23			6.81			5.86			5.59			5.00			5.01			4.73			4.79			4.37			4.34			
(D) Area Factor																																						
Land Soaking Stage	(Als)																0.152	0.233	0.233	0.082																		
Land Preparation Stage	(Alp) (Wet)																0.015	0.267	0.585	0.652	0.400	0.074																
Crop Growing Stage	(Acg)																		0.015	0.267	0.600	0.926	1.000	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.038							
Land Soaking Stage	(Als)																															0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp) (Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient (Kc)	Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85							
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement (FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS) 150																28.35	28.35	28.35	27.83	27.83	27.83																
(Dry)	120																															22.99	22.99	22.99	22.96	22.96	22.96	
Land Preparation Stage	(LP)																6.92	6.92	6.92	6.40	6.40	6.40	6.41	6.41								5.85	5.85	5.85	5.82	5.82	5.82	
Crop Growing Stage	(CG)	5.23	5.37	5.23	5.67	5.41	5.00	5.98	5.79	5.30								4.58	4.75	4.50	4.90	5.35	5.71	5.86	5.71	5.20	4.97	4.59	4.60	4.45	4.07			3.71	3.91	4.25	4.64	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00	
Total	(FWR) Wet																4.41	8.45	10.75	8.19	6.70	7.28	7.71	7.86	7.71	7.20	6.97	6.31	4.40	2.15	0.23							
	Dry	7.23	7.37	7.23	7.67	7.41	6.86	5.85	3.12	0.54																						3.58	6.92	8.86	7.25	6.08	6.58	
10-day FWR		72.33	73.70	79.56	76.65	74.08	54.90	58.50	31.18	3.78							44.13	84.52	107.54	81.90	67.00	80.08	77.11	78.62	84.83	72.03	69.67	63.11	44.01	21.49	1.15	35.82	69.17	88.62	72.54	60.80	72.41	1,901
(G) Rainfall (1992)	mm/10day	22	10	25	12	3	15	11	17	40	0	64	27	36	91	170	42	11	51	34	120	79	68	66	155	224	207	194	35	87	75	17	57	0	6	48	8	2,127
Effective Rainfall	(ER)	15.4	0	17.5	0	0	0	0	0	3.8							29.4	0	35.7	23.8	48	55.3	47.6	46.2	62	44.8	41.4	63.1	24.5	21.5	1.2	0	39.9	0	0	33.6	0	655
(H) Irrigation Water Requirement	(IWR) mm/10day	56.9	73.7	62.1	76.7	74.1	54.9	58.5	31.2	0.0							14.7	84.5	71.8	58.1	19.0	24.8	29.5	32.4	22.8	27.2	28.3	0.0	19.5	0.0	0.0	35.8	29.3	88.6	72.5	27.2	72.4	1,247
(F)-(G)	mm/day	5.69	7.37	5.64	7.67	7.41	6.86	5.85	3.12	0.00							1.47	8.45	7.18	5.81	1.90	2.25	2.95	3.24	2.08	2.72	2.83	0.00	1.95	0.00	0.00	3.58	2.93	8.86	7.25	2.72	6.58	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	11.86	15.35	11.75	15.97	15.43	14.30	12.19	6.49	0.00							3.07	17.61	14.97	12.10	3.96	4.69	6.15	6.75	4.32	5.67	5.89	0.00	4.06	0.00	0.00	7.46	6.10	18.46	15.11	5.67	13.71	
(H)/(I)	lit/sec/ha	1.37	1.78	1.36	1.85	1.79	1.65	1.41	0.75	0.00							0.36	2.04	1.73	1.40	0.46	0.54	0.71	0.78	0.50	0.66	0.68	0.00	0.47	0.00	0.00	0.86	0.71	2.14	1.75	0.66	1.59	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA' Modifications

Region: III

Province: Aurora — **Climate Type: IV**

(A) Cropping Pattern (20 days Staggered Period)

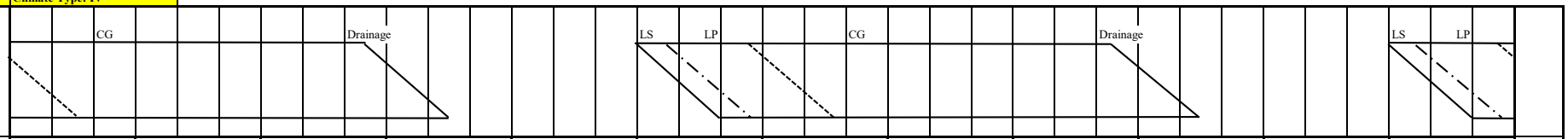
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet																10	10	10	10	10	11	10	10	11	10	10	10	10	5								
		Dry	10	10	11	10	10	8	10	10	11	10	6																							10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	2.68			3.30			3.93			4.53			4.61			4.30			4.13			3.80			3.53			3.42			2.80			2.48			
(D) Area Factor																																							
Land Soaking Stage	(Als)																	0.228	0.350	0.123																			
Land Preparation Stage	(Alp)	(Wet)																0.023	0.400	0.855	0.600	0.123																	
Crop Growing Stage	(Acg)																			0.023	0.400	0.878	1.000	1.000	1.000	1.000	1.000	1.000	0.938	0.500	0.063								
Land Soaking Stage	(Als)																																			0.228	0.350	0.111	
Land Preparation Stage	(Alp)	(Dry)	0.550	0.090																																0.023	0.400	0.852	
Crop Growing Stage	(Acg)		0.450	0.910	1.000	1.000	1.000	1.000	1.000	1.000	0.964	0.550	0.090																									0.036	
(E) Crop Coefficient	(Kc)	Wet																0.80	0.82	0.85	0.93	1.03	1.12	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85								
		Dry	0.93	1.03	1.12	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85																							0.80	0.82	0.85	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150																27.21	27.21	27.21																			
(Dry)		100																																		18.47	18.47	18.47	
Land Preparation Stage	(LP)		4.36	4.36														5.78	5.78	5.78	5.63	5.63														4.18	4.18	4.18	
Crop Growing Stage	(CG)		2.49	2.76	3.00	3.89	3.93	3.70	4.17	3.97	3.77	4.21	3.85							3.66	3.84	4.25	4.63	4.48	4.52	4.26	3.74	3.57	3.39	3.18	2.91							2.11	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00							2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00							2.00	
Total	(FWR)	Wet																6.34	11.84	8.42	5.72	6.18	6.63	6.48	6.52	6.26	5.74	5.57	5.05	2.59	0.31								
		Dry	4.42	4.72	5.00	5.89	5.93	5.70	6.17	5.97	5.56	3.42	0.53																							4.31	8.14	5.76	
10-day FWR			44.19	47.24	55.02	58.94	59.27	45.57	61.66	59.69	61.21	34.17	3.16					63.37	118.38	84.23	57.17	61.84	72.88	64.84	65.22	68.82	57.42	55.65	50.55	25.90	1.55					43.07	81.37	63.37	1,566
(G) Rainfall (1979)	(R)	mm/10day	23	33	42	48	33	29	27	4	27	12	118	35	8	141	86	65	62	102	108	19	122	116	27	30	37	96	210	158	29	39	148	77	39	12	17	53	2,232
Effective Rainfall (10 days)	(ER)		16.1	23.1	29.4	33.6	23.1	20.3	18.9	0	18.9	0	0					45.5	43.4	40.8	43.2	0	48.8	46.4	18.9	21	25.9	55.7	42	25.9	1.6					0	0	37.1	680
(H) Irrigation Water Requirement	(IWR)	mm/10day	28.1	24.1	25.6	25.3	36.2	25.3	42.8	59.7	42.3	34.2	0.0					17.9	75.0	43.4	14.0	61.8	24.1	18.4	46.3	47.8	31.5	0.0	8.5	0.0	0.0					43.1	81.4	26.3	883
(F)-(G)		mm/day	2.81	2.41	2.33	2.53	3.62	3.16	4.28	5.97	3.85	3.42	0.00					1.79	7.50	4.34	1.40	6.18	2.19	1.84	4.63	4.35	3.15	0.00	0.85	0.00	0.00					4.31	8.14	2.39	
(I) Irrigation Efficiency	(IE)		0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55					0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53					0.55	0.55	0.55	
(J) Diversion Water Requirement	(DWR)	mm/day	5.11	4.39	4.23	4.61	6.58	5.74	7.77	10.85	6.99	6.21	0.00					3.37	14.15	8.19	2.64	11.67	4.13	3.48	8.74	8.20	5.95	0.00	1.61	0.00	0.00					7.83	14.79	4.34	
(H)/(I)		lit/sec/ha	0.59	0.51	0.49	0.53	0.76	0.66	0.90	1.26	0.81	0.72	0.00					0.39	1.64	0.95	0.31	1.35	0.48	0.40	1.01	0.95	0.69	0.00	0.19	0.00	0.00					0.91	1.71	0.50	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA' Modifications

Region: III

Province: Bataan — **Climate Type: I**

(A) Cropping Pattern (30 days Staggered Period)

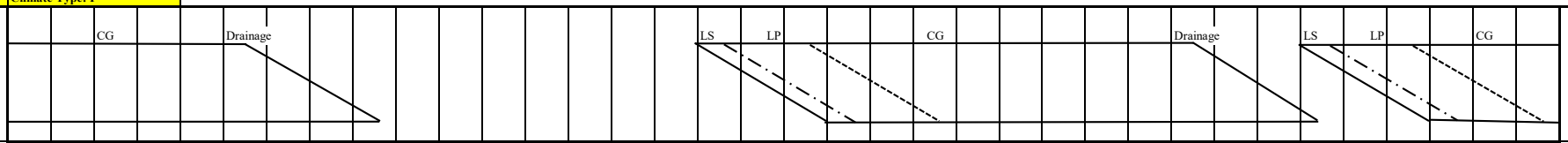
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet																	10	10	10	10	11	10	10	11	10	10	10	10	10	11	4						
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	7.00			7.00			7.00			7.00			7.00			7.00			7.00			7.00			7.00			7.00			7.00			7.00			
(D) Area Factor																																							
Land Soaking Stage	(Als)																	0.152	0.233	0.233	0.082																		
Land Preparation Stage	(Alp)	(Wet)																0.015	0.267	0.585	0.652	0.400	0.060																
Crop Growing Stage	(Acg)																			0.015	0.267	0.600	0.940	1.000	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.027						
Land Soaking Stage	(Als)																															0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																														0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																							0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85						
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																					0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	165																31.73	31.73	31.73	31.73																		
(Dry)		145																														28.87	28.87	28.87	28.87			
Land Preparation Stage	(LP)																	8.16	8.16	8.16	8.16	8.16	8.16									8.16	8.16	8.16	8.16	8.16	8.16	
Crop Growing Stage	(CG)		7.98	8.19	7.98	7.70	7.35	6.79	6.72	6.51	5.95									5.95	6.30	6.86	7.49	7.98	8.19	7.98	7.70	7.35	6.79	6.72	6.51	5.95		5.95	6.30	6.86	7.49	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00	
Total	(FWR)	Wet																4.95	9.57	12.29	10.14	8.58	9.41	9.98	10.19	9.98	9.70	9.35	8.42	5.82	2.83	0.21						
		Dry	9.98	10.19	9.98	9.70	9.35	8.62	6.39	3.40	0.59																					4.51	8.91	11.62	9.90	8.58	9.39	
10-day FWR			99.80	101.90	109.78	97.00	93.50	68.98	63.92	34.04	4.12							49.46	95.72	122.86	101.38	94.38	94.10	99.80	112.09	99.80	97.00	93.50	84.21	58.16	31.17	45.97	89.06	116.21	99.04	85.80	103.31	2,446
(G) Rainfall (1981)		mm/10day	1	0	1	0	0	0	0	0	0	0	1	15	13	31	63	164	251	98	178	219	59	242	122	37	31	74	120	71	22	58	47	32	114	4	0	31	2,099
Effective Rainfall (10 days)	(ER)		0	0	0	0	0	0	0	0	0								49.5	68.6	71.2	43.8	41.3	48.4	48.8	25.9	21.7	51.8	48	49.7	15.4	31.2	32.9	22.4	45.6	0	0	21.7	738
(H) Irrigation Water Requirement	(IWR)	mm/10day	99.8	101.9	109.8	97.0	93.5	69.0	63.9	34.0	4.1								0.0	27.1	51.7	57.6	53.1	45.7	51.0	86.2	78.1	45.2	45.5	34.5	42.8	0.0	13.1	66.7	70.6	99.0	85.8	81.6	1,708
(F)-(G)		mm/day	9.98	10.19	9.98	9.70	9.35	8.62	6.39	3.40	0.59								0.00	2.71	5.17	5.76	4.83	4.57	5.10	7.84	7.81	4.52	4.55	3.45	4.28	0.00	1.31	6.67	7.06	9.90	8.58	7.4189	
(I) Irrigation Efficiency	(IE)		0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54								0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54	0.54	0.54	0.54	0.54	
(J) Diversion Water Requirement	(DWR)	mm/day	18.48	18.87	18.48	17.96	17.31	15.97	11.84	6.30	1.09								0.00	5.65	10.76	12.00	10.05	9.52	10.63	16.32	16.27	9.42	9.48	7.19	8.91	0.00	2.42	12.35	13.08	18.34	15.89	13.739	
(H)/(I)		lit/sec/ha	2.14	2.18	2.14	2.08	2.00	1.85	1.37	0.73	0.13								0.00	0.65	1.25	1.39	1.16	1.10	1.23	1.89	1.88	1.09	1.10	0.83	1.03	0.00	0.28	1.43	1.51	2.12	1.84	1.59	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA' Modifications

Region: III

Province: Bulacan — **Climate Type: I**

(A) Cropping Pattern (30 days Staggered Period)

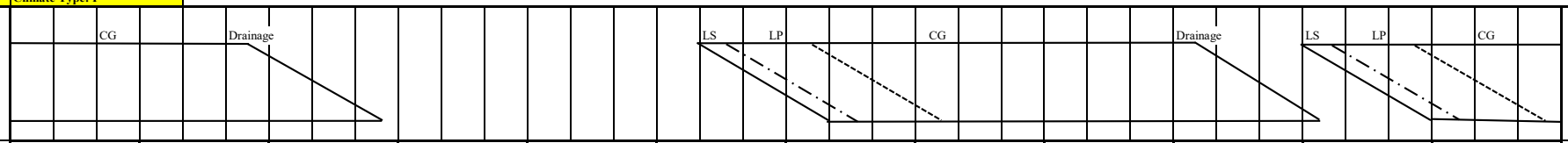
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet																	10	10	10	10	11	10	10	11	10	10	10	10	10	11	4						
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	4.50			5.00			6.20			6.80			6.10			4.00			4.20			4.40			5.50			5.00			4.10			3.90			
(D) Area Factor																																						
Land Soaking Stage	(Als)																0.152	0.233	0.233	0.082																		
Land Preparation Stage	(Alp) (Wet)																0.015	0.267	0.585	0.652	0.400	0.060																
Crop Growing Stage	(Acg)																		0.015	0.267	0.600	0.940	1.000	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.027						
Land Soaking Stage	(Als)																														0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp) (Dry)																														0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																							0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc) Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85							
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																					0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 145																26.23	26.23	26.41	26.41																		
(Dry)	116																														22.18	22.18	22.18	22.00			
Land Preparation Stage	(LP)																5.52	5.52	5.70	5.70	5.70	5.87									5.61	5.61	5.61	5.43	5.43	5.43	
Crop Growing Stage	(CG)	5.13	5.27	5.13	5.50	5.25	4.85	5.95	5.77	5.27									3.57	3.78	4.12	4.71	5.02	5.15	6.27	6.05	5.78	4.85	4.80	4.65	3.49		3.49	3.51	3.82	4.17	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00	
Total	(FWR) Wet																4.07	7.59	9.57	7.42	5.95	6.66	7.02	7.15	8.27	8.05	7.78	6.56	4.54	2.21	0.15						
	Dry	7.13	7.27	7.13	7.50	7.25	6.72	5.83	3.11	0.54																					3.46	6.67	8.53	6.82	5.67	6.12	
10-day FWR		71.30	72.65	78.43	75.00	72.50	53.76	58.29	31.06	3.77							40.70	75.86	95.69	74.23	65.43	66.58	70.16	78.63	82.70	80.50	77.75	65.62	45.36	24.36	35.15	66.65	85.31	68.17	56.66	67.30	1,840
(G) Rainfall (1982)	mm/10day	14	4	1	5	37	1	0	0	50	37	65	20	5	58	83	55	34	104	194	236	198	118	107	185	121	19	74	73	67	28	97	64	19	104	39	0	2,316
Effective Rainfall (10 days)	(ER)	0	0	0	0	25.9	0	0	0	3.8								23.8	41.6	77.6	47.2	65.4	47.2	42.8	74	48.4	0	51.8	51.1	45.4	19.6	35.2	44.8	0	41.6	27.3	0	815
(H) Irrigation Water Requirement	(IWR) mm/10day	71.3	72.7	78.4	75.0	46.6	53.8	58.3	31.1	0.0								16.9	34.3	18.1	27.0	0.0	19.4	27.4	4.6	34.3	80.5	26.0	14.5	0.0	4.8	0.0	21.9	85.3	26.6	29.4	67.3	1,025
(F)-(G)	mm/day	7.13	7.27	7.13	7.50	4.66	6.72	5.83	3.11	0.00								1.69	3.43	1.81	2.70	0.00	1.94	2.74	0.42	3.43	8.05	2.60	1.45	0.00	0.43	0.00	2.19	8.53	2.66	2.94	6.12	
(I) Irrigation Efficiency	(IE)	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54								0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54	0.54	0.54	0.54	0.54	
(J) Diversion Water Requirement	(DWR) mm/day	13.20	13.45	13.20	13.89	8.63	12.44	10.79	5.75	0.00								3.52	7.14	3.77	5.63	0.00	4.04	5.70	0.88	7.15	16.77	5.41	3.03	0.00	0.90	0.00	4.05	15.80	4.92	5.44	11.33	
(H)/(I)	lit/sec/ha	1.53	1.56	1.53	1.61	1.00	1.44	1.25	0.67	0.00								0.41	0.83	0.44	0.65	0.00	0.47	0.66	0.10	0.83	1.94	0.63	0.35	0.00	0.10	0.00	0.47	1.83	0.57	0.63	1.31	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on Previous JICA Feasibility Study on UPRIIS

Region: III

Province: Nueva Ecija — **Climate Type: I**

(A) Cropping Pattern (60 days Staggered Period)

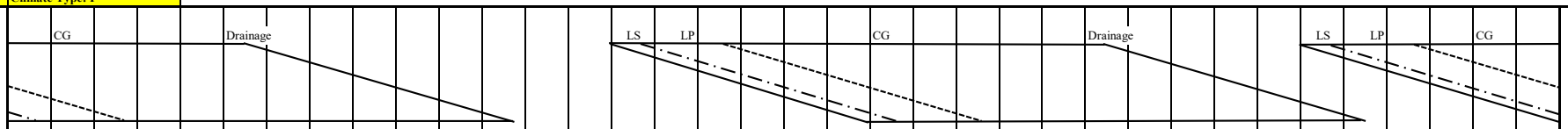
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	4					
	Dry	10	10	11	10	10	8	10	10	11	10	10	7																			10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	4.82			5.39			6.50			7.06			5.98			5.60			4.99			4.96			4.74			4.90			4.51			4.53			
(D) Area Factor																																						
Land Soaking Stage	(Als)															0.078	0.115	0.115	0.115	0.115	0.115	0.037																
Land Preparation Stage	(Alp) (Wet)															0.012	0.148	0.298	0.328	0.328	0.328	0.316	0.180	0.030														
Crop Growing Stage	(Acg)																	0.013	0.148	0.311	0.475	0.648	0.820	0.970	1.000	1.000	0.970	0.820	0.656	0.492	0.320	0.148	0.013					
Land Soaking Stage	(Als)	0.040																														0.075	0.115	0.115	0.115	0.115	0.115	
Land Preparation Stage	(Alp) (Dry)	0.320	0.197	0.037																												0.007	0.131	0.288	0.328	0.328	0.328	
Crop Growing Stage	(Acg)	0.639	0.803	0.963	1.000	1.000	0.991	0.869	0.705	0.533	0.361	0.197	0.040																					0.007	0.161	0.295	0.467	
(E) Crop Coefficient	(Kc) Wet																	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.10	1.06	1.04	1.01	0.97	0.96	0.93	0.85					
	Dry	1.02	1.07	1.09	1.11	1.10	1.06	1.04	1.01	0.97	0.96	0.93	0.85																					0.85	0.90	0.94	0.99	
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 165															30.83	30.50	30.50	30.50	29.96	29.96	29.96																
(Dry)	145	26.96																														26.68	26.68	26.68	26.70	26.70	26.70	
Land Preparation Stage	(LP)	6.24	6.24	6.24												7.26	6.93	6.93	6.93	6.39	6.39	6.39	6.36	6.36								5.97	5.97	5.97	5.99	5.99	5.99	
Crop Growing Stage	(CG)	4.92	5.16	5.25	5.98	5.93	5.71	6.76	6.57	6.31	6.78	6.57	6.00					4.76	5.04	4.69	4.94	5.09	5.31	5.41	5.51	5.21	5.02	4.93	4.95	4.75	4.70	4.19	3.83	3.83	4.08	4.26	4.48	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00					2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
Total	(FWR) Wet															2.49	4.53	5.66	6.82	7.62	8.84	7.72	7.14	7.38	7.51	7.21	6.81	5.68	4.56	3.32	2.15	0.92	0.08					
	Dry	7.50	6.98	7.22	7.98	7.93	7.64	7.61	6.04	4.43	3.17	1.69	0.32																			2.04	3.85	4.83	6.01	6.88	8.06	
10-day FWR		74.95	69.77	79.38	79.83	79.29	61.15	76.12	60.38	48.69	31.69	16.87	2.24			27.41	45.33	56.60	68.22	76.23	88.39	84.95	71.38	73.75	82.56	72.14	68.14	56.82	45.59	33.22	23.60	29.60	38.81	48.28	60.13	68.80	88.69	1,989
(G) Rainfall (1994)	(R) mm/10day	50	0	0	24	0	0	10	33	7	29	3	12	80	31	31	63	19	90	239	216	196	128	48	119	167	122	69	6	39	46	0	4	2	5	9	44	1,941
Effective Rainfall (10 days)	(ER)	35	0	0	16.8	0	0	0	23.1	0	20.3	0	0			21.7	44.1	13.3	63	47.8	43.2	78.4	51.2	33.6	47.6	66.8	48.8	48.3	0	27.3	23.6	0	0	0	0	0	30.8	785
(H) Irrigation Water Requirement	(IWR) mm/10day	40.0	69.8	79.4	63.0	79.3	61.2	76.1	37.3	48.7	11.4	16.9	2.2			5.7	1.2	43.3	5.2	28.4	45.2	6.5	20.2	40.2	35.0	5.3	19.3	8.5	45.6	5.9	0.0	29.6	38.8	48.3	60.1	68.8	57.9	1,204
(F)-(G)	mm/day	4.00	6.98	7.22	6.30	7.93	7.64	7.61	3.73	4.43	1.14	1.69	0.32			0.52	0.12	4.33	0.52	2.84	4.52	0.60	2.02	4.02	3.18	0.53	1.93	0.85	4.56	0.59	0.00	2.96	3.88	4.83	6.01	6.88	5.26	
(I) Irrigation Efficiency	(IE)	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54			0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54	0.54	0.54	
(J) Diversion Water Requirement	(DWR) mm/day	7.3984	12.92	13.364	11.672	14.683	14.156	14.097	6.9043	8.1973	2.1087	3.1249	0.5927			1.0822	0.2558	9.0205	1.087	5.9225	9.4137	1.2399	4.2033	8.3649	6.6215	1.1125	4.0285	1.7756	9.497	1.2343	0	6.1662	8.085	8.9415	11.134	12.741	9.7453	
(H)/(I)	lit/sec/ha	0.86	1.50	1.55	1.35	1.70	1.64	1.63	0.80	0.95	0.24	0.36	0.07			0.13	0.03	1.04	0.13	0.69	1.09	0.14	0.49	0.97	0.77	0.13	0.47	0.21	1.10	0.14	0.00	0.71	0.94	1.03	1.29	1.47	1.13	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA' Modifications

Region: III

Province: Pampanga — **Climate Type: I**

(A) Cropping Pattern (30 days Staggered Period)

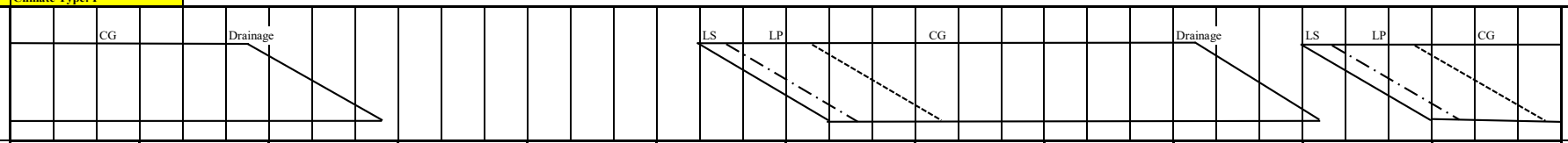
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet																	10	10	10	10	11	10	10	11	10	10	10	10	10	11	4						
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.41			6.64			6.66			7.23			6.12			5.07			4.39			3.93			4.13			4.19			4.67			4.90			
(D) Area Factor																																							
Land Soaking Stage	(Als)																	0.152	0.233	0.233	0.082																		
Land Preparation Stage	(Alp)	(Wet)																0.015	0.267	0.585	0.652	0.400	0.060																
Crop Growing Stage	(Acg)																			0.015	0.267	0.600	0.940	1.000	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.027						
Land Soaking Stage	(Als)																															0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																														0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																							0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85						
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																					0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	145																27.18	27.18	26.58	26.58																		
(Dry)		116																														22.68	22.68	22.68	22.88			
Land Preparation Stage	(LP)																	6.46	6.46	5.86	5.86	5.86	5.46									6.11	6.11	6.11	6.31	6.31	6.31	
Crop Growing Stage	(CG)		6.17	6.33	6.17	7.30	6.97	6.44	6.39	6.19	5.66									3.73	3.95	4.30	4.21	4.48	4.60	4.71	4.54	4.34	4.06	4.02	3.90	3.97		3.97	4.41	4.80	5.24	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00	
Total	(FWR)	Wet																4.23	8.06	9.71	7.59	6.13	6.16	6.48	6.60	6.71	6.54	6.34	5.81	4.02	1.96	0.16						
		Dry	8.17	8.33	8.17	9.30	8.97	8.28	6.15	3.28	0.57																					3.54	6.92	8.95	7.70	6.61	7.17	
10-day FWR			81.67	83.30	89.84	93.04	89.72	66.24	61.53	32.78	3.97							42.28	80.57	97.08	75.91	67.39	61.60	64.80	72.58	67.08	65.43	63.37	58.10	40.17	21.60	36.04	69.16	89.48	77.03	66.06	78.92	1,897
(G) Rainfall (1997)		mm/10day	1	0	1	11	5	3	6	0	4	10	20	7	39	7	352	20	53	66	102	119	222	127	364	170	39	70	83	48	40	1	1	18	0	0	3	2	2,014
Effective Rainfall (10 days)	(ER)		0	0	0	0	0	0	0	0	0								37.1	46.2	40.8	47.6	44.4	50.8	64.8	68	27.3	49	58.1	33.6	28	0	0	0	0	0	0	0	596
(H) Irrigation Water Requirement	(IWR)	mm/10day	81.7	83.3	89.8	93.0	89.7	66.2	61.5	32.8	4.0								5.2	34.4	56.3	28.3	23.0	10.8	0.0	4.6	39.8	16.4	5.3	24.5	12.2	21.6	36.0	69.2	89.5	77.0	66.1	78.9	1,301
(F)-(G)		mm/day	8.17	8.33	8.17	9.30	8.97	8.28	6.15	3.28	0.57								0.52	3.44	5.63	2.83	2.09	1.08	0.00	0.42	3.98	1.64	0.53	2.45	1.22	1.96	3.60	6.92	8.95	7.70	6.61	7.17	
(I) Irrigation Efficiency	(IE)		0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54								0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54	0.54	0.54	0.54	0.54	
(J) Diversion Water Requirement	(DWR)	mm/day	15.12	15.43	15.12	17.23	16.61	15.33	11.39	6.07	1.05								1.08	7.16	11.73	5.90	4.35	2.25	0.00	0.87	8.29	3.42	1.10	5.10	2.54	4.09	6.67	12.81	16.57	14.27	12.23	13.29	
(H)/(I)		lit/sec/ha	1.75	1.79	1.75	1.99	1.92	1.77	1.32	0.70	0.12								0.12	0.83	1.36	0.68	0.50	0.26	0.00	0.10	0.96	0.40	0.13	0.59	0.29	0.47	0.77	1.48	1.92	1.65	1.42	1.54	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA' Modifications

Region: III

Province: Tarlac — **Climate Type: I**

(A) Cropping Pattern (30 days Staggered Period)

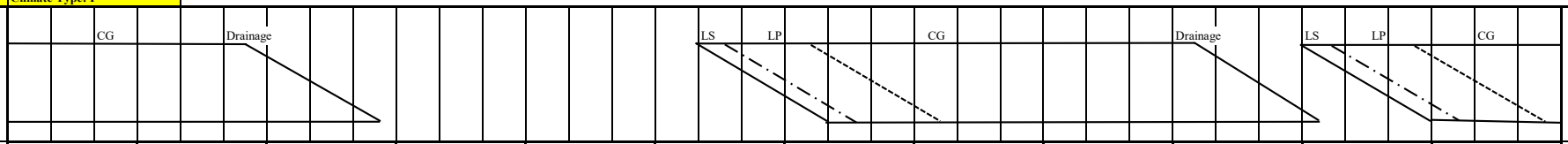
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet																	10	10	10	10	11	10	10	11	10	10	10	10	10	11	4						
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	5.12			6.13			6.36			7.72			6.87			5.32			4.76			4.20			4.67			4.54			4.80			4.63			
(D) Area Factor																																						
Land Soaking Stage	(Als)																0.152	0.233	0.233	0.082																		
Land Preparation Stage	(Alp) (Wet)																0.015	0.267	0.585	0.652	0.400	0.060																
Crop Growing Stage	(Acg)																		0.015	0.267	0.600	0.940	1.000	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.027							
Land Soaking Stage	(Als)																														0.152	0.233	0.233	0.082				
Land Preparation Stage	(Alp) (Dry)																														0.015	0.267	0.585	0.652	0.400	0.074		
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																							0.015	0.267	0.600	0.926		
(E) Crop Coefficient	(Kc) Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85							
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																					0.80	0.82	0.85	0.90	0.98	1.07		
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 165																30.15	30.15	29.66	29.66																		
(Dry)	145																														26.84	26.84	26.84	26.69				
Land Preparation Stage	(LP)																6.58	6.58	6.09	6.09	6.09	5.60									6.12	6.12	6.12	5.97	5.97	5.97		
Crop Growing Stage	(CG)	5.84	5.99	5.84	6.74	6.44	5.95	6.11	5.91	5.41									4.05	4.28	4.66	4.49	4.79	4.91	5.32	5.14	4.90	4.40	4.36	4.22	4.08		4.08	4.17	4.54	4.95		
Percolation	(P) 1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90									1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90		1.90	1.90	1.90	1.90		
Total	(FWR) Wet																4.68	8.78	10.56	8.05	6.37	6.35	6.69	6.81	7.22	7.04	6.80	6.04	4.17	2.04	0.16							
	Dry	7.74	7.89	7.74	8.64	8.34	7.70	5.87	3.13	0.54																					4.17	7.89	9.93	7.70	6.25	6.79		
10-day FWR		77.37	78.90	85.10	86.43	83.37	61.58	58.68	31.26	3.78							46.82	87.83	105.62	80.53	70.12	63.46	66.88	74.95	72.24	70.37	68.04	60.39	41.74	22.43	42.36	78.88	99.26	77.04	62.52	74.68	1,933
(G) Rainfall (1979)	mm/10day	2	3	4	3	9	1	1	1	5	3	11	17	4	177	138	86	59	103	130	42	150	197	130	56	44	77	95	283	36	24	24	11	4	1	1	28	1,960
Effective Rainfall (10 days)	(ER)	0	0	0	0	0	0	0	0	0								41.3	41.2	52	29.4	60	64.2	52	22.4	30.8	53.9	66.5	56.6	25.2	16.8	16.8	0	0	0	0	19.6	649
(H) Irrigation Water Requirement	(IWR) mm/10day	77.4	78.9	85.1	86.4	83.4	61.6	58.7	31.3	3.8								5.5	46.6	53.6	51.1	10.1	0.0	14.9	52.6	41.4	16.5	1.5	3.8	16.5	5.6	25.6	78.9	99.3	77.0	62.5	55.1	1,285
(F)-(G)	mm/day	7.74	7.89	7.74	8.64	8.34	7.70	5.87	3.13	0.54								0.55	4.66	5.36	5.11	0.92	0.00	1.49	4.78	4.14	1.65	0.15	0.38	1.65	0.51	2.56	7.89	9.93	7.70	6.25	5.01	
(I) Irrigation Efficiency	(IE)	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54								0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54	0.54	0.54	0.54	0.54	
(J) Diversion Water Requirement	(DWR) mm/day	14.33	14.61	14.33	16.01	15.44	14.25	10.87	5.79	1.00								1.15	9.71	11.17	10.65	1.92	0.00	3.10	9.95	8.63	3.43	0.32	0.79	3.45	1.07	4.73	14.61	18.38	14.27	11.58	9.27	
(H)/(I)	lit/sec/ha	1.66	1.69	1.66	1.85	1.79	1.65	1.26	0.67	0.12								0.13	1.12	1.29	1.23	0.22	0.00	0.36	1.15	1.00	0.40	0.04	0.09	0.40	0.12	0.55	1.69	2.13	1.65	1.34	1.07	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA' Modifications

Region: III

Province: Zambales — **Climate Type: I**

(A) Cropping Pattern (30 days Staggered Period)

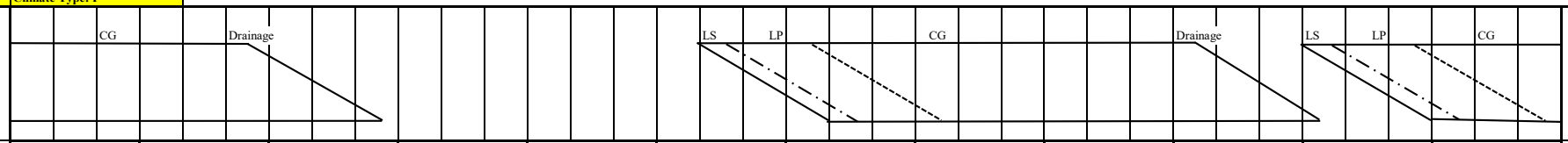
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet																	10	10	10	10	11	10	10	11	10	10	10	10	10	11	4						
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	1.65			0.82			3.59			8.00			8.00			8.00			8.00			8.00			8.00			8.00			8.00			8.00			
(D) Area Factor																																						
Land Soaking Stage	(Als)																0.152	0.233	0.233	0.082																		
Land Preparation Stage	(Alp) (Wet)																0.015	0.267	0.585	0.652	0.400	0.060																
Crop Growing Stage	(Acg)																		0.015	0.267	0.600	0.940	1.000	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.027						
Land Soaking Stage	(Als)																														0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp) (Dry)																														0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																							0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc) Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85						
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																					0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 134																28.08	28.08	28.08	28.08																		
(Dry)	110																														24.65	24.65	24.65	24.65			
Land Preparation Stage	(LP)																8.94	8.94	8.94	8.94	8.94	8.94									8.94	8.94	8.94	8.94	8.94	8.94	
Crop Growing Stage	(CG)	1.88	1.93	1.88	0.90	0.86	0.80	3.45	3.34	3.05									6.80	7.20	7.84	8.56	9.12	9.36	9.12	8.80	8.40	7.76	7.68	7.44	6.80		6.80	7.20	7.84	8.56	
Percolation	(P) 1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90									1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90		1.90	1.90	1.90	1.90	
Total	(FWR) Wet																4.40	8.93	11.90	10.56	9.42	10.37	11.02	11.26	11.02	10.70	10.30	9.25	6.39	3.11	0.23						
	Dry	3.78	3.83	3.78	2.80	2.76	2.64	3.92	2.10	0.37																					3.88	8.13	11.10	10.28	9.42	10.35	
10-day FWR		37.81	38.31	41.59	28.02	27.61	21.15	39.19	20.95	2.56							44.03	89.30	119.04	105.61	103.62	103.69	110.20	123.86	110.20	107.00	103.00	92.54	63.90	34.21	39.76	81.31	111.05	102.80	94.20	113.82	2,110
(G) Rainfall (1980)	mm/10day	2	4	6	2	16	1	4	3	30	3	15	6	13	65	122	71	66	106	216	129	278	40	136	197	109	230	97	42	33	96	236	21	11	21	8	3	2,438
Effective Rainfall (10 days)	(ER)	0	0	0	0	0	0	0	0	2.6								44	42.4	43.2	51.6	55.6	28	54.4	78.8	43.6	46	67.9	29.4	23.1	34.2	39.8	14.7	0	14.7	0	0	714
(H) Irrigation Water Requirement	(IWR) mm/10day	37.8	38.3	41.6	28.0	27.6	21.2	39.2	21.0	0.0								0.0	46.9	75.8	54.0	48.0	75.7	55.8	45.1	66.6	61.0	35.1	63.1	40.8	0.0	0.0	66.6	111.0	88.1	94.2	113.8	1,396
(F)-(G)	mm/day	3.78	3.83	3.78	2.80	2.76	2.64	3.92	2.10	0.00								0.00	4.69	7.58	5.40	4.37	7.57	5.58	4.10	6.66	6.10	3.51	6.31	4.08	0.00	0.00	6.66	11.10	8.81	9.42	10.35	
(I) Irrigation Efficiency	(IE)	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54								0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54	0.54	0.54	0.54	0.54	
(J) Diversion Water Requirement	(DWR) mm/day	7.00	7.09	7.00	5.19	5.11	4.90	7.26	3.88	0.00								0.00	9.77	15.80	11.25	9.09	15.77	11.63	8.53	13.88	12.71	7.31	13.15	8.50	0.00	0.00	12.34	20.56	16.32	17.44	19.16	
(H)/(I)	lit/sec/ha	0.81	0.82	0.81	0.60	0.59	0.57	0.84	0.45	0.00								0.00	1.13	1.83	1.30	1.05	1.83	1.35	0.99	1.61	1.47	0.85	1.52	0.98	0.00	0.00	1.43	2.38	1.89	2.02	2.22	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA Team's Modifications

Region: IV-A

Province: Batangas — **Climate Type: I**

(A) Cropping Pattern (30 days Staggered Period)

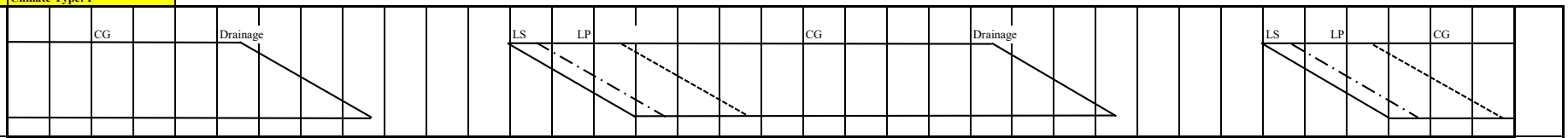
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4									
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	3.69			4.53			5.26			5.43			4.95			4.11			3.95			4.00			3.75			3.52			3.83			3.54		
(D) Area Factor																																						
Land Soaking Stage	(Als)														0.152	0.233	0.232	0.060																				
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																		
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027									
Land Soaking Stage	(Als)																																0.152	0.233	0.233	0.082		
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.267	0.585	0.652	0.400	0.074
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85									
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	80													17.78	17.78	17.78	17.05																				
(Dry)		46																															11.94	11.94	11.94	11.69		
Land Preparation Stage	(LP)														6.36	6.36	6.36	5.62	5.62	5.62													5.37	5.37	5.37	5.12	5.12	5.12
Crop Growing Stage	(CG)		4.21	4.32	4.21	4.98	4.76	4.39	5.05	4.89	4.47						4.21	3.70	4.03	4.40	4.50	4.62	4.50	4.40	4.20	3.88	3.60	3.49	3.19						3.26	3.19	3.47	3.79
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00						2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00						2.00	2.00	2.00	2.00
Total	(FWR)	Wet													2.80	5.84	8.04	6.33	5.88	6.35	6.50	6.62	6.50	6.40	6.20	5.56	3.54	1.65	0.14									
		Dry	6.21	6.32	6.21	6.98	6.76	6.27	5.17	2.76	0.48																						1.90	4.22	6.00	5.68	5.33	5.74
10-day FWR			62.07	63.17	68.27	69.83	67.57	50.18	51.67	27.57	3.35				27.99	58.41	88.42	63.27	58.77	63.51	65.03	66.22	71.53	64.00	62.00	61.12	35.45	16.46	0.56				18.96	42.16	60.03	56.78	53.28	63.12	1,561
(G) Rainfall (2015)		mm/10day	29	30	0	1	9	4	1	1	17	2	2	14	24	0	20	50	65	34	190	26	77	67	80	173	99	91	46	104	79	4	59	2	20	2	261	0	1,683
Effective Rainfall	(ER)		20.3	21	0	0	0	0	0	0	0				16.8	0	14	35	45.5	23.8	65	18.2	53.9	46.9	56	61.1	35.5	16.5	0.6				19	0	14	0	52.2	0	615
(H) Irrigation Water Requirement	(IWR)	mm/10day	41.8	42.2	68.3	69.8	67.6	50.2	51.7	27.6	3.4				11.2	58.4	74.4	28.3	13.3	39.7	0.0	48.0	17.6	17.1	6.0	0.0	0.0	0.0	0.0				0.0	42.2	46.0	56.8	1.1	63.1	946
(F)-(G)		mm/day	4.18	4.22	6.21	6.98	6.76	6.27	5.17	2.76	0.48				1.12	5.84	6.77	2.83	1.33	3.97	0.00	4.80	1.60	1.71	0.60	0.00	0.00	0.00	0.00				0.00	4.22	4.60	5.68	0.11	5.74	
(I) Irrigation Efficiency	(IE)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5				0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43				0.5	0.5	0.5	0.5	0.5	0.5	
(J) Diversion Water Requirement	(DWR)	mm/day	8.35	8.43	12.41	13.97	13.51	12.55	10.33	5.51	0.96				2.60	13.58	15.73	6.57	3.09	9.23	0.00	11.17	3.73	3.98	1.40	0.00	0.00	0.00	0.00				0.00	8.43	9.21	11.36	0.22	11.48	
(H)/(I)		lit/sec/ha	0.97	0.98	1.44	1.62	1.56	1.45	1.20	0.64	0.11				0.30	1.57	1.82	0.76	0.36	1.07	0.00	1.29	0.43	0.46	0.16	0.00	0.00	0.00	0.00				0.00	0.98	1.07	1.31	0.02	1.33	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA Team's Modifications

Region: IV-A

Province: Cavita — **Climate Type: I**

(A) Cropping Pattern (30 days Staggered Period)

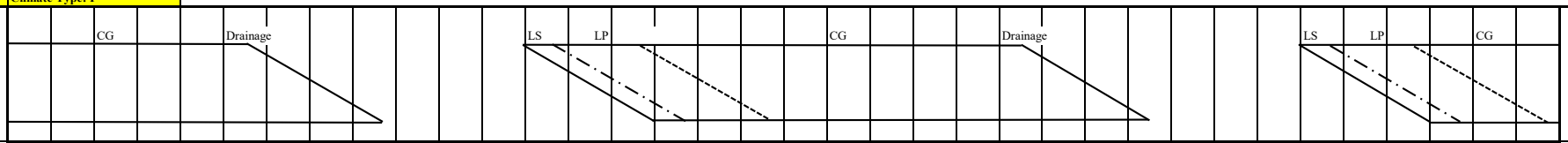
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4									
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	3.69			4.53			5.26			5.43			4.95			4.11			3.95			4.00			3.75			3.52			3.83			3.54		
(D) Area Factor																																						
Land Soaking Stage	(Als)														0.152	0.233	0.232	0.060																				
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																		
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027									
Land Soaking Stage	(Als)																																0.152	0.233	0.233	0.082		
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.267	0.585	0.652	0.400	0.074
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85									
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	80													17.78	17.78	17.78	17.05																				
(Dry)		46																															11.94	11.94	11.94	11.69		
Land Preparation Stage	(LP)														6.36	6.36	6.36	5.62	5.62	5.62													5.37	5.37	5.37	5.12	5.12	5.12
Crop Growing Stage	(CG)		4.21	4.32	4.21	4.98	4.76	4.39	5.05	4.89	4.47						4.21	3.70	4.03	4.40	4.50	4.62	4.50	4.40	4.20	3.88	3.60	3.49	3.19						3.26	3.19	3.47	3.79
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00						2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00						2.00	2.00	2.00	2.00
Total	(FWR)	Wet													2.80	5.84	8.04	6.33	5.88	6.35	6.50	6.62	6.50	6.40	6.20	5.56	3.54	1.65	0.14									
		Dry	6.21	6.32	6.21	6.98	6.76	6.27	5.17	2.76	0.48																						1.90	4.22	6.00	5.68	5.33	5.74
10-day FWR			62.07	63.17	68.27	69.83	67.57	50.18	51.67	27.57	3.35				27.99	58.41	88.42	63.27	58.77	63.51	65.03	66.22	71.53	64.00	62.00	61.12	35.45	16.46	0.56				18.96	42.16	60.03	56.78	53.28	63.12	1,561
(G) Rainfall (1981)		mm/10day	1	0	11	0	7	0	0	1	2	0	0	14	7	18	45	96	183	67	152	130	40	132	40	18	35	83	109	60	30	75	105	58	108	5	1	62	1,695
Effective Rainfall	(ER)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	31.5	63.3	58.8	46.9	60.8	52	28	52.8	28	0	24.5	16.5	0.6				19	40.6	43.2	0	0	43.4	610
(H) Irrigation Water Requirement	(IWR)	mm/10day	62.1	63.2	68.3	69.8	67.6	50.2	51.7	27.6	3.4				28.0	58.4	56.9	0.0	0.0	16.6	4.2	14.2	43.5	11.2	34.0	61.1	10.9	0.0	0.0				0.0	1.6	16.8	56.8	53.3	19.7	951
(F)-(G)		mm/day	6.21	6.32	6.21	6.98	6.76	6.27	5.17	2.76	0.48				2.80	5.84	5.17	0.00	0.00	1.66	0.42	1.42	3.96	1.12	3.40	5.56	1.09	0.00	0.00				0.00	0.16	1.68	5.68	5.33	1.79	
(I) Irrigation Efficiency	(IE)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5				0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43				0.5	0.5	0.5	0.5	0.5	0.5	
(J) Diversion Water Requirement	(DWR)	mm/day	12.41	12.63	12.41	13.97	13.51	12.55	10.33	5.51	0.96				6.51	13.58	12.03	0.00	0.00	3.86	0.98	3.31	9.20	2.60	7.91	12.92	2.55	0.00	0.00				0.00	0.31	3.37	11.36	10.66	3.59	
(H)/(I)		lit/sec/ha	1.44	1.46	1.44	1.62	1.56	1.45	1.20	0.64	0.11				0.75	1.57	1.39	0.00	0.00	0.45	0.11	0.38	1.07	0.30	0.92	1.50	0.29	0.00	0.00				0.00	0.04	0.39	1.31	1.23	0.41	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA Team's Modifications

Region: IV-A

Province: Laguna — **Climate Type: I, III**

(A) Cropping Pattern (30 days Staggered Period)

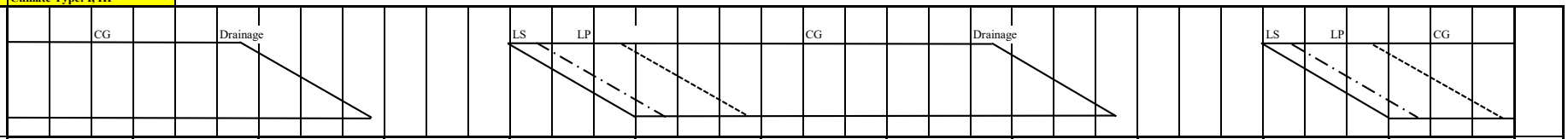
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4										
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	3.69			4.53			5.26			5.43			4.95			4.11			3.95			4.00			3.75			3.52			3.83			3.54			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.152	0.233	0.232	0.060																					
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																			
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027										
Land Soaking Stage	(Als)																																0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85										
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	80													17.78	17.78	17.78	17.05																					
(Dry)		46																															11.94	11.94	11.94	11.69			
Land Preparation Stage	(LP)														6.36	6.36	6.36	5.62	5.62	5.62													5.37	5.37	5.37	5.12	5.12	5.12	
Crop Growing Stage	(CG)		4.21	4.32	4.21	4.98	4.76	4.39	5.05	4.89	4.47						4.21	3.70	4.03	4.40	4.50	4.62	4.50	4.40	4.20	3.88	3.60	3.49	3.19						3.26	3.19	3.47	3.79	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00						2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00						2.00	2.00	2.00	2.00	
Total	(FWR)	Wet													2.80	5.84	8.04	6.33	5.88	6.35	6.50	6.62	6.50	6.40	6.20	5.56	3.54	1.65	0.14										
		Dry	6.21	6.32	6.21	6.98	6.76	6.27	5.17	2.76	0.48																						1.90	4.22	6.00	5.68	5.33	5.74	
10-day FWR			62.07	63.17	68.27	69.83	67.57	50.18	51.67	27.57	3.35				27.99	58.41	88.42	63.27	58.77	63.51	65.03	66.22	71.53	64.00	62.00	61.12	35.45	16.46	0.56				18.96	42.16	60.03	56.78	53.28	63.12	1,561
(G) Rainfall (1982)		mm/10day	16	8	3	7	18	10	0	4	55	23	38	5	10	46	59	59	25	70	115	210	137	102	65	99	160	39	78	89	80	25	81	93	36	130	117	0	2,112
Effective Rainfall	(ER)		0	0	0	0	0	0	0	0	3.4				0	32.2	41.3	41.3	17.5	49	46	42	54.8	40.8	45.5	61.1	35.5	16.5	0.6				19	42.2	25.2	52	46.8	0	713
(H) Irrigation Water Requirement	(IWR)	mm/10day	62.1	63.2	68.3	69.8	67.6	50.2	51.7	27.6	0.0				28.0	26.2	47.1	22.0	41.3	14.5	19.0	24.2	16.7	23.2	16.5	0.0	0.0	0.0	0.0				0.0	0.0	34.8	4.8	6.5	63.1	848
(F)-(G)		mm/day	6.21	6.32	6.21	6.98	6.76	6.27	5.17	2.76	0.00				2.80	2.62	4.28	2.20	4.13	1.45	1.90	2.42	1.52	2.32	1.65	0.00	0.00	0.00	0.00				0.00	0.00	3.48	0.48	0.65	5.74	
(I) Irrigation Efficiency	(IE)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5				0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43				0.5	0.5	0.5	0.5	0.5	0.5	
(J) Diversion Water Requirement	(DWR)	mm/day	12.41	12.63	12.41	13.97	13.51	12.55	10.33	5.51	0.00				6.51	6.10	9.96	5.11	9.60	3.37	4.43	5.63	3.54	5.40	3.84	0.00	0.00	0.00	0.00				0.00	0.00	6.97	0.96	1.30	11.48	
(H)/(I)		lit/sec/ha	1.44	1.46	1.44	1.62	1.56	1.45	1.20	0.64	0.00				0.75	0.71	1.15	0.59	1.11	0.39	0.51	0.65	0.41	0.62	0.44	0.00	0.00	0.00	0.00				0.00	0.00	0.81	0.11	0.15	1.33	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA Team's Modifications

Region: IV-A

Province: Quezon — **Climate Type: IV**

(A) Cropping Pattern (30 days Staggered Period)

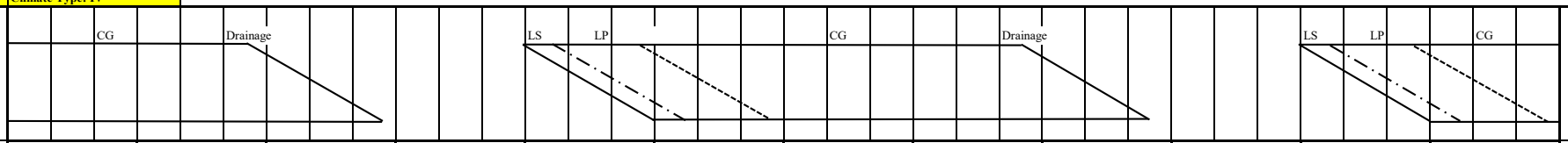
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4										
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	2.89			3.72			4.26			5.06			4.68			3.92			3.84			3.85			3.64			3.36			3.04			2.77			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.152	0.233	0.232	0.060																					
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																			
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027										
Land Soaking Stage	(Als)																																0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85										
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	80													17.55	17.55	17.55	16.88																					
(Dry)		46																															11.25	11.25	11.25	11.01			
Land Preparation Stage	(LP)														6.12	6.12	6.12	5.45	5.45	5.45													4.68	4.68	4.68	4.44	4.44	4.44	
Crop Growing Stage	(CG)		3.29	3.38	3.29	4.09	3.91	3.61	4.09	3.96	3.62						3.98	3.53	3.84	4.19	4.38	4.49	4.38	4.24	4.04	3.73	3.49	3.39	3.09						2.58	2.49	2.71	2.96	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00						2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00						2.00	2.00	2.00	2.00	
Total	(FWR)	Wet													2.76	5.72	7.84	6.16	5.70	6.15	6.38	6.49	6.38	6.24	6.04	5.42	3.48	1.62	0.14										
		Dry	5.29	5.38	5.29	6.09	5.91	5.50	4.46	2.38	0.42																						1.78	3.87	5.42	5.00	4.60	4.92	
10-day FWR			52.95	53.81	58.24	60.92	59.06	44.01	44.64	23.85	2.91				27.59	57.22	86.20	61.59	56.98	61.50	63.78	64.93	70.15	62.35	60.43	59.61	34.78	16.16	0.55				17.80	38.69	54.24	49.96	46.04	54.17	1,445
(G) Rainfall (1994)		mm/10day	178	1	22	19	35	1	22	43	16	30	16	43	31	30	32	50	36	87	172	113	144	35	9	72	97	85	93	39	45	59	17	42	33	61	31	164	2,003
Effective Rainfall	(ER)		53	0	15.4	0	24.5	0	15.4	23.9	0				21.7	21	22.4	35	25.2	60.9	63.8	45.2	57.6	24.5	0	50.4	34.8	16.2	0.6				0	29.4	23.1	42.7	21.7	54.2	783
(H) Irrigation Water Requirement	(IWR)	mm/10day	0.0	53.8	42.8	60.9	34.6	44.0	29.2	0.0	2.9				5.9	36.2	63.8	26.6	31.8	0.6	0.0	19.7	12.6	37.9	60.4	9.2	0.0	0.0	0.0				17.8	9.3	31.1	7.3	24.3	0.0	663
(F)-(G)		mm/day	0.00	5.38	3.89	6.09	3.46	5.50	2.92	0.00	0.42				0.59	3.62	5.80	2.66	3.18	0.06	0.00	1.97	1.14	3.79	6.04	0.84	0.00	0.00	0.00				1.78	0.93	3.11	0.73	2.43	0.00	
(I) Irrigation Efficiency	(IE)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5				0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43				0.5	0.5	0.5	0.5	0.5	0.5	
(J) Diversion Water Requirement	(DWR)	mm/day	0.00	10.76	7.79	12.18	6.91	11.00	5.85	0.00	0.83				1.37	8.42	13.49	6.18	7.39	0.14	0.00	4.59	2.65	8.80	14.05	1.95	0.00	0.00	0.00				3.56	1.86	6.23	1.45	4.87	0.00	
(H)/(I)		lit/sec/ha	0.00	1.25	0.90	1.41	0.80	1.27	0.68	0.00	0.10				0.16	0.97	1.56	0.72	0.86	0.02	0.00	0.53	0.31	1.02	1.63	0.23	0.00	0.00	0.00				0.41	0.21	0.72	0.17	0.56	0.00	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA Team's Modifications

Region: IV-A

Province: Rizal — **Climate Type: I**

(A) Cropping Pattern (30 days Staggered Period)

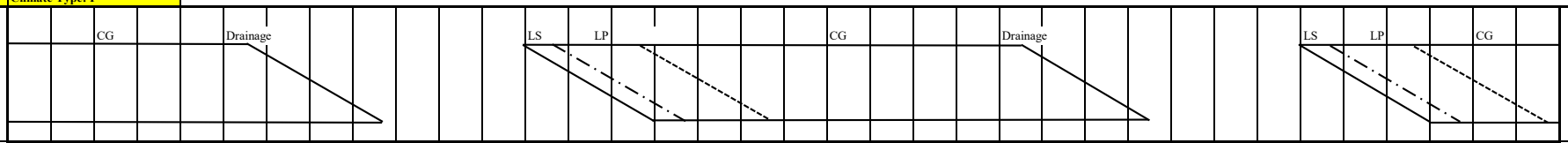
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4										
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	2.93			3.32			3.87			4.78			3.75			3.53			3.38			2.75			2.69			2.99			2.64			2.46			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.152	0.233	0.232	0.060																					
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																			
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027										
Land Soaking Stage	(Als)																																0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85										
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	80													16.73	16.73	16.73	16.53																					
(Dry)		46																															10.89	10.89	10.89	10.74			
Land Preparation Stage	(LP)														5.30	5.30	5.30	5.11	5.11	5.11													4.32	4.32	4.32	4.16	4.16	4.16	
Crop Growing Stage	(CG)		3.34	3.43	3.34	3.65	3.49	3.22	3.72	3.60	3.29						3.19	3.18	3.46	3.78	3.85	3.95	3.85	3.03	2.89	2.67	2.58	2.50	2.29						2.24	2.21	2.41	2.63	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00						2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00						2.00	2.00	2.00	2.00	
Total	(FWR)	Wet													2.62	5.31	7.14	5.81	5.33	5.74	5.85	5.95	5.85	5.03	4.89	4.41	2.90	1.35	0.12										
		Dry	5.34	5.43	5.34	5.65	5.49	5.12	4.19	2.24	0.39																						1.72	3.69	5.13	4.72	4.31	4.60	
10-day FWR			53.40	54.28	58.74	56.52	54.86	40.97	41.89	22.40	2.74				26.22	53.13	78.57	58.13	53.30	57.37	58.53	59.55	64.39	50.25	48.88	48.52	29.01	13.51	0.46				17.21	36.93	51.31	47.21	43.12	50.57	1,332
(G) Rainfall (1984)		mm/10day	11	82	38	5	9	8	8	62	1	0	53	89	77	58	37	55	89	166	127	58	73	121	115	197	42	73	80	124	124	280	61	18	47	19	37	1	2,445
Effective Rainfall	(ER)		0	54.3	26.6	0	0	0	0	22.4	0				26.2	40.6	25.9	38.5	53.3	57.4	50.8	40.6	51.1	48.4	46	48.5	29	13.5	0.5				17.2	0	32.9	0	25.9	0	750
(H) Irrigation Water Requirement	(IWR)	mm/10day	53.4	0.0	32.1	56.5	54.9	41.0	41.9	0.0	2.7				0.0	12.5	52.7	19.6	0.0	0.0	7.7	18.9	13.3	1.8	2.9	0.0	0.0	0.0	0.0				0.0	36.9	18.4	47.2	17.2	50.6	582
(F)-(G)		mm/day	5.34	0.00	2.92	5.65	5.49	5.12	4.19	0.00	0.39				0.00	1.25	4.79	1.96	0.00	0.00	0.77	1.89	1.21	0.18	0.29	0.00	0.00	0.00	0.00				0.00	3.69	1.84	4.72	1.72	4.60	
(I) Irrigation Efficiency	(IE)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5				0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43				0.5	0.5	0.5	0.5	0.5	0.5	
(J) Diversion Water Requirement	(DWR)	mm/day	10.68	0.00	5.84	11.30	10.97	10.24	8.38	0.00	0.78				0.00	2.91	11.14	4.57	0.00	0.00	1.80	4.41	2.81	0.43	0.67	0.00	0.00	0.00	0.00				0.00	7.39	3.68	9.44	3.44	9.20	
(H)/(I)		lit/sec/ha	1.24	0.00	0.68	1.31	1.27	1.19	0.97	0.00	0.09				0.00	0.34	1.29	0.53	0.00	0.00	0.21	0.51	0.33	0.05	0.08	0.00	0.00	0.00	0.00				0.00	0.85	0.43	1.09	0.40	1.06	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: IV-B

Province: Marinduque — **Climate Type: III**

(A) Cropping Pattern (20 days Staggered Period)

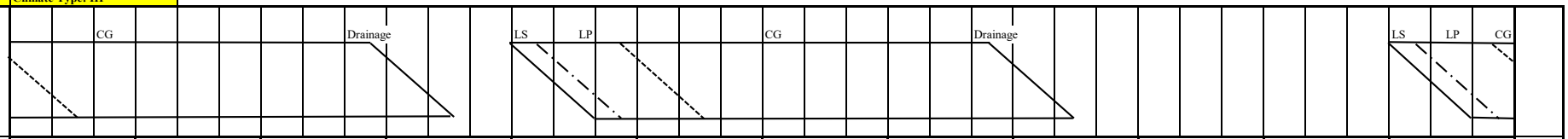
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	4											
	Dry	10	10	11	10	10	8	10	10	11	10	6																							10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	4.99			5.55			6.63			7.15			6.08			5.72			5.12			5.13			4.87			5.03			4.65			4.70			
(D) Area Factor																																						
Land Soaking Stage	(Als)													0.228	0.350	0.111																						
Land Preparation Stage	(Alp) (Wet)													0.023	0.400	0.852	0.550	0.090																				
Crop Growing Stage	(Acg)															0.036	0.450	0.910	1.000	1.000	1.000	1.000	1.000	1.000	0.943	0.450	0.040											
Land Soaking Stage	(Als)																																		0.228	0.350	0.111	
Land Preparation Stage	(Alp) (Dry)	0.550	0.090																																0.023	0.400	0.852	
Crop Growing Stage	(Acg)	0.450	0.910	1.000	1.000	1.000	1.000	1.000	1.000	0.964	0.550	0.090																									0.036	
(E) Crop Coefficient	(Kc) Wet													0.80	0.82	0.85	0.93	1.03	1.12	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85											
	Dry	0.93	1.03	1.12	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85																							0.80	0.82	0.85	
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 150													28.78	28.78	28.78																						
(Dry)	120																																		23.28	23.28	23.28	
Land Preparation Stage	(LP)	6.39	6.39											7.35	7.35	7.35	7.03	7.03																	6.14	6.14	6.14	
Crop Growing Stage	(CG)	4.64	5.14	5.59	6.55	6.60	6.22	7.03	6.70	6.36	6.65	6.08		4.86	4.99	5.17	5.32	5.89	6.41	6.04	6.09	5.73	5.44	5.18	4.92	4.53	4.14								3.76	3.85	4.00	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	
Total	(FWR) Wet													6.73	13.01	9.72	7.16	7.81	8.41	8.04	8.09	7.73	7.44	7.18	6.53	2.94	0.25											
	Dry	6.50	7.07	7.59	8.55	8.60	8.22	9.03	8.70	8.06	4.76	0.73																							5.45	10.60	8.03	
10-day FWR		65.03	70.72	83.48	85.49	86.05	65.73	90.28	86.96	88.70	47.57	4.36		67.31	130.13	106.87	71.62	78.14	84.06	80.42	80.93	85.08	74.38	71.81	71.83	29.38	0.98								54.49	106.02	88.30	2,056
(G) Rainfall (2015)	mm/10day	35	58	0	1	33	2	15	11	14	0	28	2	24	0	1	57	58	47	80	6	50	29	37	66	49	76	18	58	103	19	56	21	24	1	297	0	1,376
Effective Rainfall	(ER)	24.5	40.6	0	0	23.1	0	0	0	0	0	4.4		16.8	0	0	39.9	40.6	32.9	56	0	35	20.3	25.9	46.2	29.4	1								0	59.4	0	496
(H) Irrigation Water Requirement	(IWR) mm/10day	40.5	30.1	83.5	85.5	62.9	65.7	90.3	87.0	88.7	47.6	0.0		50.5	130.1	106.9	31.7	37.5	51.2	24.4	80.9	50.1	54.1	45.9	25.6	0.0	0.0								54.5	46.6	88.3	1,560
(F)-(G)	mm/day	4.05	3.01	7.59	8.55	6.29	8.22	9.03	8.70	8.06	4.76	0.00		5.05	13.01	9.72	3.17	3.75	5.12	2.44	8.09	4.55	5.41	4.59	2.33	0.00	0.00								5.45	4.66	8.03	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48								0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	8.44	6.28	15.81	17.81	13.11	17.12	18.81	18.12	16.80	9.91	0.00		10.52	27.11	20.24	6.61	7.82	10.66	5.09	16.86	9.48	11.27	9.57	4.85	0.00	0.00								11.35	9.71	16.72	
(H)/(I)	lit/sec/ha	0.98	0.73	1.83	2.06	1.52	1.98	2.18	2.10	1.94	1.15	0.00		1.22	3.14	2.34	0.76	0.91	1.23	0.59	1.95	1.10	1.30	1.11	0.56	0.00	0.00								1.31	1.12	1.94	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: IV-B

Province: Occidental Mindoro — **Climate Type: I**

(A) Cropping Pattern (30 days Staggered Period)

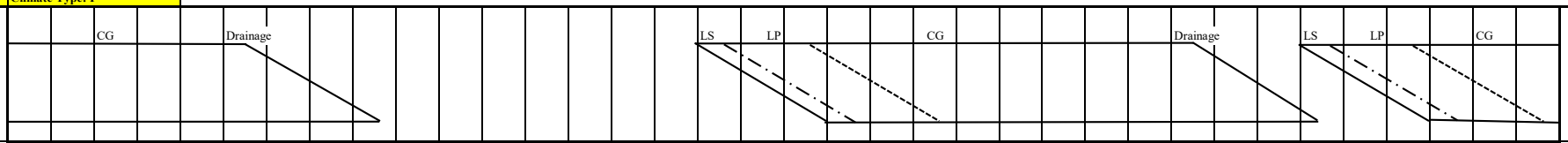
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet																	10	10	10	10	11	10	10	11	10	10	10	10	10	11	4						
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	4.91			5.46			6.53			7.03			5.93			5.54			4.94			4.93			4.70			4.89			4.56			4.61			
(D) Area Factor																																						
Land Soaking Stage	(Als)																0.152	0.233	0.233	0.082																		
Land Preparation Stage	(Alp) (Wet)																0.015	0.267	0.585	0.652	0.400	0.060																
Crop Growing Stage	(Acg)																		0.015	0.267	0.600	0.940	1.000	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.027							
Land Soaking Stage	(Als)																														0.152	0.233	0.233	0.082				
Land Preparation Stage	(Alp) (Dry)																														0.015	0.267	0.585	0.652	0.400	0.074		
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																							0.015	0.267	0.600	0.926		
(E) Crop Coefficient	(Kc) Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85							
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																					0.80	0.82	0.85	0.90	0.98	1.07		
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 165																30.45	30.45	29.92	29.92																		
(Dry)	145																														26.73	26.73	26.73	26.77				
Land Preparation Stage	(LP)																6.88	6.88	6.35	6.35	6.35	6.34									6.01	6.01	6.01	6.06	6.06	6.06		
Crop Growing Stage	(CG)	5.60	5.74	5.60	6.01	5.73	5.30	6.27	6.07	5.55									4.20	4.45	4.84	5.28	5.62	5.77	5.36	5.17	4.94	4.74	4.69	4.55	3.88		3.88	4.15	4.52	4.93		
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00		
Total	(FWR) Wet																4.73	8.93	10.78	8.31	6.64	7.22	7.62	7.77	7.36	7.17	6.94	6.46	4.47	2.18	0.16							
	Dry	7.60	7.74	7.60	8.01	7.73	7.16	6.06	3.23	0.56																					4.15	7.83	9.83	7.79	6.33	6.87		
10-day FWR		75.97	77.45	83.57	80.06	77.33	57.26	60.61	32.29	3.91							47.31	89.30	107.77	83.13	73.08	72.19	76.20	85.45	73.58	71.70	69.35	64.60	44.65	23.98	42.16	78.33	98.33	77.86	63.33	75.55	1,966	
(G) Rainfall (2003)	mm/10day	9	6	0	4	3	0	4	3	3	0	4	28	7	19	409	18	132	133	58	86	213	185	184	134	205	80	92	27	120	20	38	90	0	0	32	20	2,366	
Effective Rainfall	(ER)	0	0	0	0	0	0	0	0	0								47.3	53.2	40.6	60.2	42.6	72.2	73.6	53.6	41	56	64.4	18.9	44.7	14	26.6	63	0	0	22.4	14	808	
(H) Irrigation Water Requirement	(IWR) mm/10day	76.0	77.4	83.6	80.1	77.3	57.3	60.6	32.3	3.9								0.0	36.1	67.2	22.9	30.5	0.0	2.6	31.8	32.6	15.7	5.0	45.7	0.0	10.0	15.6	15.3	98.3	77.9	40.9	61.5	1,158	
(F)-(G)	mm/day	7.60	7.74	7.60	8.01	7.73	7.16	6.06	3.23	0.56								0.00	3.61	6.72	2.29	2.77	0.00	0.26	2.90	3.26	1.57	0.50	4.57	0.00	0.91	1.56	1.53	9.83	7.79	4.09	5.60		
(I) Irrigation Efficiency	(IE)	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54								0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54	0.54	0.54	0.54	0.54		
(J) Diversion Water Requirement	(DWR) mm/day	14.07	14.34	14.07	14.83	14.32	13.25	11.22	5.98	1.03								0.00	7.52	13.99	4.78	5.77	0.00	0.54	6.03	6.79	3.27	1.03	9.52	0.00	1.89	2.88	2.84	18.21	14.42	7.58	10.36		
(H)/(I)	lit/sec/ha	1.63	1.66	1.63	1.72	1.66	1.53	1.30	0.69	0.12								0.00	0.87	1.62	0.55	0.67	0.00	0.06	0.70	0.79	0.38	0.12	1.10	0.00	0.22	0.33	0.33	2.11	1.67	0.88	1.20		

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA Team's Modifications

Region: IV-B

Province: Oriental Mindoro **Climate Type: III**

(A) Cropping Pattern (20 days Staggered Period)

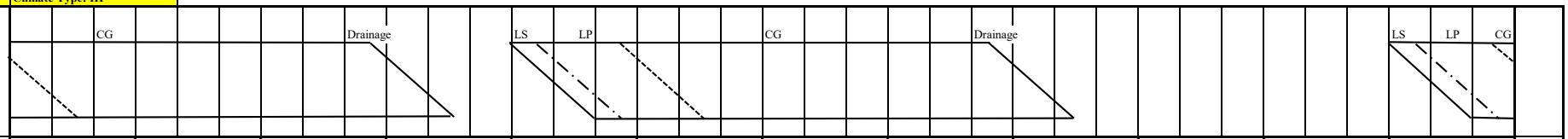
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	4											
		Dry	10	10	11	10	10	8	10	10	11	10	6																							10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	3.80			2.84			2.77			3.80			5.42			8.44			9.22			6.34			6.70			10.17			9.78			9.28			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.228	0.350	0.111																						
Land Preparation Stage	(Alp)	(Wet)													0.023	0.400	0.852	0.550	0.090																				
Crop Growing Stage	(Acg)																0.036	0.450	0.910	1.000	1.000	1.000	1.000	1.000	1.000	0.943	0.450	0.040											
Land Soaking Stage	(Als)																																			0.228	0.350	0.111	
Land Preparation Stage	(Alp)	(Dry)	0.550	0.090																																0.023	0.400	0.852	
Crop Growing Stage	(Acg)		0.450	0.910	1.000	1.000	1.000	1.000	1.000	1.000	0.964	0.550	0.090																									0.036	
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.93	1.03	1.12	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85											
		Dry	0.93	1.03	1.12	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85																							0.80	0.82	0.85	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	100													21.06	21.06	21.06																						
(Dry)		60																																		18.74	18.74	18.74	
Land Preparation Stage	(LP)		5.34	5.34											6.77	6.77	6.77	9.43	9.43																	10.17	10.17	10.17	
Crop Growing Stage	(CG)		3.53	3.91	4.26	3.35	3.38	3.18	2.94	2.80	2.66	3.53	3.23		4.34	4.44	4.61	7.85	8.69	9.45	10.88	10.97	10.33	6.72	6.40	6.09	6.23	5.70								7.42	7.61	7.89	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	
Total	(FWR)	Wet													4.96	10.08	8.34	9.62	10.58	11.45	12.88	12.97	12.33	8.72	8.40	7.63	3.70	0.31											
		Dry	5.43	5.86	6.26	5.35	5.38	5.18	4.94	4.80	4.49	3.04	0.47																							4.51	10.62	11.10	
10-day FWR			54.30	58.63	68.82	53.51	53.80	41.45	49.36	47.98	49.41	30.44	2.82		49.56	100.77	91.77	96.17	105.79	114.53	128.80	129.72	135.59	87.20	84.03	83.88	37.04	1.23								45.06	106.25	122.07	2,030
(G) Rainfall (1982)		mm/10day	4	6	16	14	8	8	0	23	44	12	41	4	11	71	76	72	85	119	98	200	85	72	85	108	183	20	34	62	43	31	56	71	21	21	15	33	1,852
Effective Rainfall	(ER)		0	0	0	0	0	0	0	16.1	30.8	0	0		0	49.7	53.2	50.4	59.5	47.6	68.6	40	59.5	50.4	59.5	43.2	37	1.2								14.7	0	23.1	705
(H) Irrigation Water Requirement	(IWR)	mm/10day	54.3	58.6	68.8	53.5	53.8	41.4	49.4	31.9	18.6	30.4	2.8		49.6	51.1	38.6	45.8	46.3	66.9	60.2	89.7	76.1	36.8	24.5	40.7	0.0	0.0								30.4	106.2	99.0	1,325
(F)-(G)		mm/day	5.43	5.86	6.26	5.35	5.38	5.18	4.94	3.19	1.69	3.04	0.47		4.96	5.11	3.51	4.58	4.63	6.69	6.02	8.97	6.92	3.68	2.45	3.70	0.00	0.00								3.04	10.62	9.00	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48								0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	11.31	12.21	13.03	11.15	11.21	10.79	10.28	6.64	3.52	6.34	0.98		10.33	10.64	7.30	9.54	9.64	13.94	12.54	18.69	14.41	7.67	5.11	7.70	0.00	0.00								6.33	22.14	18.75	
(H)/(I)		lit/sec/ha	1.31	1.41	1.51	1.29	1.30	1.25	1.19	0.77	0.41	0.73	0.11		1.20	1.23	0.85	1.10	1.12	1.61	1.45	2.16	1.67	0.89	0.59	0.89	0.00	0.00								0.73	2.56	2.17	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: IV-B

Province: Palawan — **Climate Type: I, III**

(A) Cropping Pattern (20 days Staggered Period)

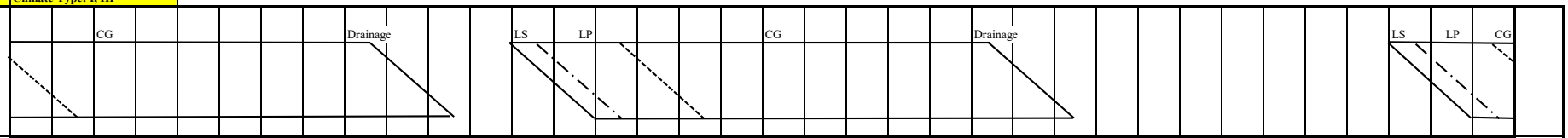
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)	Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	4										
	Dry	10	10	11	10	10	8	10	10	11	10	6																							10	10	11
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	5.07			5.62			6.69			7.17			6.04			5.67			5.08			5.08			4.83			5.00			4.66			4.75			
(D) Area Factor																																					
Land Soaking Stage	(Als)													0.228	0.350	0.111																					
Land Preparation Stage	(Alp) (Wet)													0.023	0.400	0.852	0.550	0.090																			
Crop Growing Stage	(Acg)															0.036	0.450	0.910	1.000	1.000	1.000	1.000	1.000	1.000	0.943	0.450	0.040										
Land Soaking Stage	(Als)																																		0.228	0.350	0.111
Land Preparation Stage	(Alp) (Dry)	0.550	0.090																																0.023	0.400	0.852
Crop Growing Stage	(Acg)	0.450	0.910	1.000	1.000	1.000	1.000	1.000	1.000	0.964	0.550	0.090																									0.036
(E) Crop Coefficient	(Kc) Wet													0.80	0.82	0.85	0.93	1.03	1.12	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85										
	Dry	0.93	1.03	1.12	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85																							0.80	0.82	0.85
(F) Farm Water Requirement	(FWR) mm/day																																				
Land Soaking Stage (Wet)	(LS) 150													28.74	28.74	28.74																					
(Dry)	120																																		23.32	23.32	23.32
Land Preparation Stage	(LP)	6.46	6.46											7.32	7.32	7.32	6.99	6.99																	6.18	6.18	6.18
Crop Growing Stage	(CG)	4.72	5.22	5.68	6.63	6.69	6.29	7.09	6.76	6.42	6.67	6.09		4.83	4.95	5.13	5.27	5.84	6.35	5.99	6.05	5.69	5.38	5.13	4.88	4.49	4.11								3.80	3.90	4.04
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00
Total	(FWR) Wet													6.72	12.99	9.68	7.12	7.76	8.35	7.99	8.05	7.69	7.38	7.13	6.48	2.92	0.24										
	Dry	6.58	7.15	7.68	8.63	8.69	8.29	9.09	8.76	8.12	4.77	0.73																							5.46	10.64	8.07
10-day FWR		65.76	71.54	84.46	86.32	86.88	66.36	90.91	87.57	89.31	47.67	4.37		67.22	129.86	106.48	71.17	77.64	83.50	79.94	80.45	84.59	73.85	71.31	71.33	29.21	0.98								54.60	106.35	88.79	2,058
(G) Rainfall (1982)	mm/10day	2	10	6	3	3	1	0	12	11	5	10	6	14	57	56	45	52	197	76	154	73	49	114	174	206	31	34	81	28	28	37	23	11	18	53	46	1,726
Effective Rainfall	(ER)	0	0	0	0	0	0	0	0	0	0	0		0	39.9	39.2	31.5	36.4	78.8	53.2	61.6	51.1	34.3	45.6	69.6	29.2	1								0	37.1	32.2	641
(H) Irrigation Water Requirement	(IWR) mm/10day	65.8	71.5	84.5	86.3	86.9	66.4	90.9	87.6	89.3	47.7	4.4		67.2	90.0	67.3	39.7	41.2	4.7	26.7	18.9	33.5	39.5	25.7	1.7	0.0	0.0								54.6	69.3	56.6	1,418
(F)-(G)	mm/day	6.58	7.15	7.68	8.63	8.69	8.29	9.09	8.76	8.12	4.77	0.73		6.72	9.00	6.12	3.97	4.12	0.47	2.67	1.89	3.04	3.95	2.57	0.16	0.00	0.00								5.46	6.93	5.14	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48								0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	13.70	14.90	16.00	17.98	18.10	17.28	18.94	18.24	16.91	9.93	1.52		14.00	18.74	12.74	8.26	8.59	0.98	5.57	3.93	6.34	8.24	5.36	0.33	0.00	0.00								11.37	14.43	10.72	
(H)/(I)	lit/sec/ha	1.59	1.72	1.85	2.08	2.09	2.00	2.19	2.11	1.96	1.15	0.18		1.62	2.17	1.47	0.96	0.99	0.11	0.64	0.45	0.73	0.95	0.62	0.04	0.00	0.00								1.32	1.67	1.24	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: IV-B

Province: Romblon — **Climate Type: III**

(A) Cropping Pattern (20 days Staggered Period)

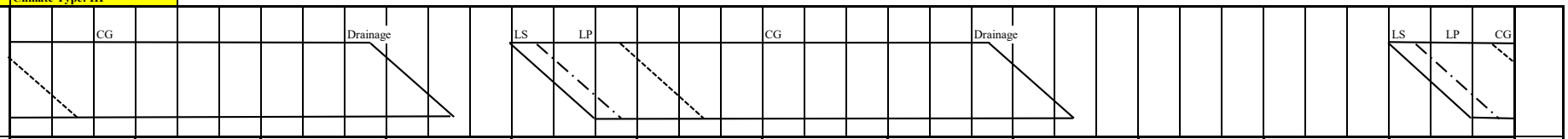
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)	Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	4										
	Dry	10	10	11	10	10	8	10	10	11	10	6																							10	10	11
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	5.02			5.57			6.65			7.15			6.07			5.71			5.10			5.11			4.86			5.02			4.66			4.71		
(D) Area Factor																																					
Land Soaking Stage	(Als)													0.228	0.350	0.111																					
Land Preparation Stage	(Alp) (Wet)													0.023	0.400	0.852	0.550	0.090																			
Crop Growing Stage	(Acg)															0.036	0.450	0.910	1.000	1.000	1.000	1.000	1.000	1.000	0.943	0.450	0.040										
Land Soaking Stage	(Als)																																		0.228	0.350	0.111
Land Preparation Stage	(Alp) (Dry)	0.550	0.090																																0.023	0.400	0.852
Crop Growing Stage	(Acg)	0.450	0.910	1.000	1.000	1.000	1.000	1.000	1.000	0.964	0.550	0.090																									0.036
(E) Crop Coefficient	(Kc) Wet													0.80	0.82	0.85	0.93	1.03	1.12	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85										
	Dry	0.93	1.03	1.12	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85																							0.80	0.82	0.85
(F) Farm Water Requirement	(FWR) mm/day																																				
Land Soaking Stage (Wet)	(LS) 150													28.77	28.77	28.77																					
(Dry)	120																																		23.29	23.29	23.29
Land Preparation Stage	(LP)	6.42	6.42											7.34	7.34	7.34	7.02	7.02																	6.14	6.14	6.14
Crop Growing Stage	(CG)	4.67	5.17	5.62	6.57	6.63	6.24	7.05	6.72	6.38	6.65	6.08		4.86	4.98	5.16	5.31	5.88	6.40	6.02	6.07	5.71	5.42	5.16	4.91	4.52	4.13								3.77	3.86	4.00
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00
Total	(FWR) Wet													6.73	13.01	9.71	7.15	7.80	8.40	8.02	8.07	7.71	7.42	7.16	6.51	2.93	0.25										
	Dry	6.53	7.10	7.62	8.57	8.63	8.24	9.05	8.72	8.08	4.76	0.73																							5.45	10.61	8.04
10-day FWR		65.31	71.03	83.85	85.73	86.28	65.91	90.49	87.17	88.90	47.57	4.36		67.28	130.06	106.77	71.53	78.04	83.95	80.18	80.69	84.83	74.17	71.61	71.63	29.34	0.98								54.51	106.09	88.40	2,057
(G) Rainfall (1983)	mm/10day	20	16	17	2	6	5	7	3	7	2	8	5	4	0	8	21	18	67	102	220	87	94	58	51	37	84	132	90	101	82	23	56	57	22	21	0	1,533
Effective Rainfall	(ER)	14	0	0	0	0	0	0	0	0	0	0		0	0	0	14.7	0	46.9	40.8	44	60.9	65.8	40.6	35.7	25.9	1								15.4	14.7	0	420
(H) Irrigation Water Requirement	(IWR) mm/10day	51.3	71.0	83.8	85.7	86.3	65.9	90.5	87.2	88.9	47.6	4.4		67.3	130.1	106.8	56.8	78.0	37.1	39.4	36.7	23.9	8.4	31.0	35.9	3.4	0.0								39.1	91.4	88.4	1,636
(F)-(G)	mm/day	5.13	7.10	7.62	8.57	8.63	8.24	9.05	8.72	8.08	4.76	0.73		6.73	13.01	9.71	5.68	7.80	3.71	3.94	3.67	2.18	0.84	3.10	3.27	0.34	0.00								3.91	9.14	8.04	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48								0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	10.69	14.80	15.88	17.86	17.98	17.16	18.85	18.16	16.84	9.91	1.51		14.02	27.10	20.22	11.84	16.26	7.72	8.20	7.64	4.53	1.74	6.46	6.81	0.72	0.00								8.15	19.04	16.74	
(H)/(I)	lit/sec/ha	1.24	1.71	1.84	2.07	2.08	1.99	2.18	2.10	1.95	1.15	0.18		1.62	3.14	2.34	1.37	1.88	0.89	0.95	0.88	0.52	0.20	0.75	0.79	0.08	0.00								0.94	2.20	1.94	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: V

Province: Albay — **Climate Type: II**

(A) Cropping Pattern (30 & 20 days Staggered Period)

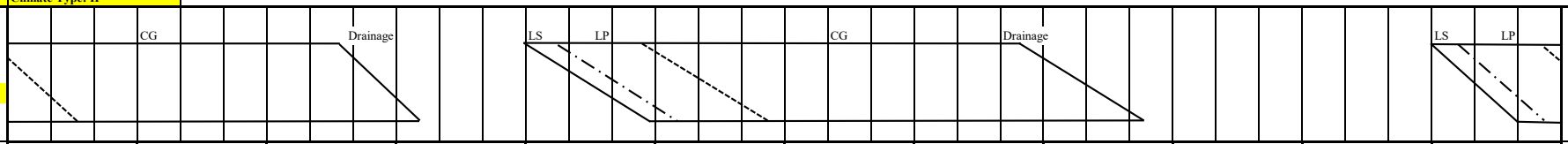
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: Wet=110 days, Dry=100 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)	Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4									
	Dry	10	10	11	10	10	8	10	10	11	6																								10	10	11
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	4.98			5.53			6.60			7.11			6.06			5.70			5.10			5.11			4.85			5.01			4.63			4.68		
(D) Area Factor																																					
Land Soaking Stage	(Als)													0.152	0.233	0.232	0.060																				
Land Preparation Stage	(Alp) (Wet)													0.015	0.267	0.592	0.640	0.367	0.060																		
Crop Growing Stage	(Acg)															0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027									
Land Soaking Stage	(Als)																																		0.228	0.350	0.111
Land Preparation Stage	(Alp) (Dry)	0.550	0.090																																0.023	0.400	0.852
Crop Growing Stage	(Acg)	0.450	0.910	1.000	1.000	1.000	1.000	1.000	0.977	0.575	0.090																										0.036
(E) Crop Coefficient	(Kc) Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85									
	Dry	0.93	1.03	1.12	1.18	1.19	1.12	1.06	0.96	0.93	0.85																								0.80	0.82	0.85
(F) Farm Water Requirement	(FWR) mm/day																																				
Land Soaking Stage (Wet)	(LS) 150													28.76	28.76	28.76	28.44																				
(Dry)	120																																		23.26	23.26	23.26
Land Preparation Stage	(LP)	6.38	6.38											7.33	7.33	7.33	7.02	7.02	7.02																6.12	6.12	6.12
Crop Growing Stage	(CG)	4.63	5.13	5.58	6.53	6.58	6.19	7.00	6.34	6.14	6.04					5.15	5.13	5.59	6.10	5.81	5.97	5.81	5.62	5.37	4.96	4.66	4.51	4.12									3.98
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00					2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00
Total	(FWR) Wet													4.48	8.66	11.19	8.34	7.38	8.03	7.81	7.97	7.81	7.62	7.37	6.57	4.21	1.95	0.17									
	Dry	6.49	7.06	7.58	8.53	8.58	8.19	9.00	8.14	4.68	0.72																								5.44	10.59	8.01	
10-day FWR		64.94	70.62	83.35	85.25	85.81	65.55	89.96	81.44	51.47	4.34			44.82	86.59	123.04	83.36	73.77	80.34	78.14	79.67	85.95	76.21	73.66	72.31	42.13	19.53	0.66							54.44	105.89	88.11	1,951
(G) Rainfall (2002)	mm/10day	9	133	25	44	37	22	9	13	63	0	2	91	32	16	84	12	61	25	49	133	89	45	151	63	41	211	35	29	29	138	238	69	17	138	13	95	2,261
Effective Rainfall	(ER)	0	53.2	17.5	30.8	25.9	15.4	0	0	44.1	0			22.4	0	58.8	0	42.7	17.5	34.3	53.2	62.3	31.5	60.4	44.1	28.7	19.5	0.7							54.4	0	66.5	784
(H) Irrigation Water Requirement	(IWR) mm/10day	64.9	17.4	65.9	54.5	59.9	50.1	90.0	81.4	7.4	4.3			22.4	86.6	64.2	83.4	31.1	62.8	43.8	26.5	23.7	44.7	13.3	28.2	13.4	0.0	0.0							0.0	105.9	21.6	1,167
(F)-(G)	mm/day	6.49	1.74	5.99	5.45	5.99	6.27	9.00	8.14	0.67	0.72			2.24	8.66	5.84	8.34	3.11	6.28	4.38	2.65	2.15	4.47	1.33	2.56	1.34	0.00	0.00							0.00	10.59	1.96	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48			0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	13.53	3.63	12.47	11.34	12.48	13.06	18.74	16.97	1.40	1.51			4.67	18.04	12.17	17.37	6.47	13.09	9.13	5.51	4.48	9.31	2.76	5.34	2.80	0.00	0.00							0.00	22.06	4.09	
(H)/(I)	lit/sec/ha	1.57	0.42	1.44	1.31	1.44	1.51	2.17	1.96	0.16	0.17			0.54	2.09	1.41	2.01	0.75	1.52	1.06	0.64	0.52	1.08	0.32	0.62	0.32	0.00	0.00							0.00	2.55	0.47	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: V

Province: Camarines Norte — **Climate Type: II, III, IV**

(A) Cropping Pattern (30 & 20 days Staggered Period)

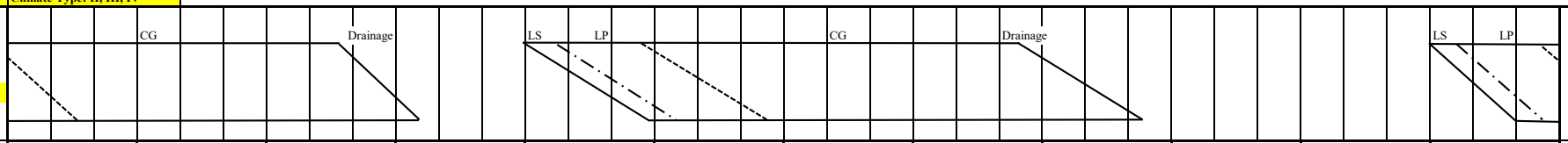
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: Wet=110 days, Dry=100 days

(Drainage: 15 days)



			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
(B) Month																																							
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4										
		Dry	10	10	11	10	10	8	10	10	11	6																								10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.97			5.52			6.60			7.13			6.09			5.74			5.13			5.15			4.88			5.02			4.63			4.67			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.152	0.233	0.232	0.060																					
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																			
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027										
Land Soaking Stage	(Als)																																			0.228	0.350	0.111	
Land Preparation Stage	(Alp)	(Dry)	0.550	0.090																																0.023	0.400	0.852	
Crop Growing Stage	(Acg)		0.450	0.910	1.000	1.000	1.000	1.000	1.000	0.977	0.575	0.090																										0.036	
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85										
		Dry	0.93	1.03	1.12	1.18	1.19	1.12	1.06	0.96	0.93	0.85																								0.80	0.82	0.85	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150													28.79	28.79	28.79	28.48																					
(Dry)		120																																		23.25	23.25	23.25	
Land Preparation Stage	(LP)		6.37	6.37											7.36	7.36	7.36	7.05	7.05	7.05																6.11	6.11	6.11	
Crop Growing Stage	(CG)		4.62	5.12	5.57	6.51	6.57	6.18	7.00	6.34	6.14	6.06					5.18	5.17	5.63	6.14	5.85	6.00	5.85	5.67	5.41	5.00	4.68	4.54	4.15									3.97	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00					2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	
Total	(FWR)	Wet													4.49	8.67	11.21	8.37	7.41	8.08	7.85	8.00	7.85	7.67	7.41	6.61	4.23	1.96	0.17										
		Dry	6.49	7.05	7.57	8.51	8.57	8.18	9.00	8.14	4.68	0.73																								5.44	10.58	8.00	
10-day FWR			64.85	70.52	83.23	85.14	85.69	65.46	89.96	81.44	51.47	4.35			44.86	86.72	123.28	83.71	74.15	80.76	78.48	80.02	86.33	76.65	74.08	72.72	42.31	19.62	0.66							54.42	105.82	88.01	1,955
(G) Rainfall (1980)		mm/10day	12	45	28	17	64	9	13	24	116	22	15	12	9	39	115	99	75	104	57	105	95	39	82	126	107	81	78	52	59	88	209	66	16	52	84	28	2,242
Effective Rainfall	(ER)		0	31.5	19.6	0	44.8	0	0	16.8	46.4	4.4			0	27.3	46	69.3	52.5	41.6	39.9	42	66.5	27.3	57.4	50.4	42.3	19.6	0.7							36.4	58.8	19.6	861
(H) Irrigation Water Requirement	(IWR)	mm/10day	64.9	39.0	63.6	85.1	40.9	65.5	90.0	64.6	5.1	0.0			44.9	59.4	77.3	14.4	21.6	39.2	38.6	38.0	19.8	49.4	16.7	22.3	0.0	0.0	0.0							18.0	47.0	68.4	1,094
(F)-(G)		mm/day	6.49	3.90	5.78	8.51	4.09	8.18	9.00	6.46	0.46	0.00			4.49	5.94	7.03	1.44	2.16	3.92	3.86	3.80	1.80	4.94	1.67	2.03	0.00	0.00	0.00							1.80	4.70	6.22	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48			0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	13.51	8.13	12.05	17.74	8.52	17.05	18.74	13.47	0.96	0.00			9.35	12.38	14.64	3.00	4.51	8.16	8.04	7.92	3.76	10.28	3.47	4.23	0.00	0.00	0.00							3.75	9.80	12.96	
(H)/(I)		lit/sec/ha	1.56	0.94	1.39	2.05	0.99	1.97	2.17	1.56	0.11	0.00			1.08	1.43	1.69	0.35	0.52	0.94	0.93	0.92	0.43	1.19	0.40	0.49	0.00	0.00	0.00							0.43	1.13	1.50	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA Team's Modifications

Region: V

Province: Camarines Sur — **Climate Type: II, III, IV**

(A) Cropping Pattern (45 & 20 days Staggered Period)

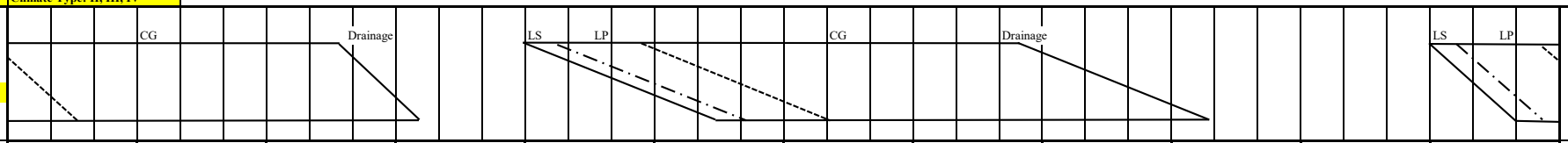
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: Wet=110 days, Dry=100 days

(Drainage: 15 days)



			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
(B) Month																																							
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	9									
		Dry	10	10	11	10	10	8	10	10	11	6																								10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	6.57			6.57			6.57			6.57			6.57			6.57			3.79			3.79			3.79			3.79			3.79			3.79			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.101	0.156	0.156	0.156	0.116	0.001																			
Land Preparation Stage	(Alp)	(Wet)													0.010	0.178	0.395	0.444	0.444	0.354	0.133	0.001																	
Crop Growing Stage	(Acg)																0.015	0.200	0.422	0.644	0.867	0.999	1.000	1.000	1.000	0.964	0.756	0.533	0.311	0.090									
Land Soaking Stage	(Als)																																			0.228	0.350	0.111	
Land Preparation Stage	(Alp)	(Dry)	0.550	0.090																																0.023	0.400	0.852	
Crop Growing Stage	(Acg)		0.450	0.910	1.000	1.000	1.000	1.000	1.000	0.977	0.575	0.090																										0.036	
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.94	1.02	1.10	1.14	1.14	1.12	1.08	1.01	0.97	0.96	0.93	0.85									
		Dry	0.93	1.03	1.12	1.18	1.19	1.12	1.06	0.96	0.93	0.85																								0.80	0.82	0.85	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	165													31.35	31.35	31.35	31.35	31.35	31.35																			
(Dry)		145																																		26.05	26.05	26.05	
Land Preparation Stage	(LP)		7.78	7.78											7.78	7.78	7.78	7.78	7.78	7.78	5.34	5.34														5.34	5.34	5.34	
Crop Growing Stage	(CG)		6.11	6.77	7.36	7.75	7.82	7.36	6.96	6.31	6.11	5.58					5.58	5.91	6.18	6.70	4.17	4.32	4.32	4.24	4.09	3.83	3.68	3.64	3.52	3.22								3.22	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00					2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	
Total	(FWR)	Wet													3.24	6.28	8.08	9.93	10.54	8.39	6.06	6.32	6.32	6.24	6.09	5.62	4.29	3.01	1.72	0.47									
		Dry	7.93	8.68	9.36	9.75	9.82	9.36	8.96	8.12	4.66	0.68																								6.06	11.25	7.63	
10-day FWR			79.29	86.78	102.94	97.53	98.18	74.87	89.64	81.16	51.30	4.10			32.44	62.76	88.86	99.29	105.42	83.90	60.58	63.20	69.53	62.45	60.93	61.80	42.91	30.05	17.18	4.23						60.62	112.51	83.88	1,968
(G) Rainfall (1987)		mm/10day	43	22	22	20	5	15	18	16	7	0	32	1	3	5	34	44	62	34	44	134	49	17	117	76	142	73	33	82	1	117	10	207	273	301	144	109	2,312
Effective Rainfall	(ER)		30.1	15.4	15.4	14	0	0	0	0	0	0			0	0	23.8	30.8	43.4	23.8	30.8	53.6	34.3	0	46.8	53.2	42.9	30.1	17.2	4.2						60.2	57.6	43.6	671
(H) Irrigation Water Requirement	(IWR)	mm/10day	49.2	71.4	87.5	83.5	98.2	74.9	89.6	81.2	51.3	4.1			32.4	62.8	65.1	68.5	62.0	60.1	29.8	9.6	35.2	62.4	14.1	8.6	0.0	0.0	0.0	0.0						0.4	54.9	40.3	1,297
(F)-(G)		mm/day	4.92	7.14	7.96	8.35	9.82	9.36	8.96	8.12	4.66	0.68			3.24	6.28	5.91	6.85	6.20	6.01	2.98	0.96	3.20	6.24	1.41	0.78	0.00	0.00	0.00	0.00						0.04	5.49	3.66	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48			0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	10.25	14.87	16.58	17.40	20.45	19.50	18.68	16.91	9.72	1.42			6.76	13.08	12.32	14.27	12.92	12.52	6.20	2.00	6.67	13.01	2.94	1.63	0.00	0.00	0.00	0.00						0.09	11.44	7.63	
(H)/(I)		lit/sec/ha	1.19	1.72	1.92	2.01	2.37	2.26	2.16	1.96	1.12	0.16			0.78	1.51	1.43	1.65	1.50	1.45	0.72	0.23	0.77	1.51	0.34	0.19	0.00	0.00	0.00	0.00						0.01	1.32	0.88	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: V

Province: Catanduanes — **Climate Type: II**

(A) Cropping Pattern (30 & 20 days Staggered Period)

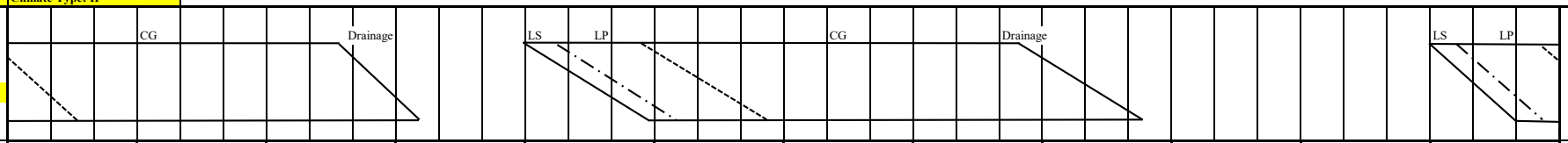
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: Wet=110 days, Dry=100 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4										
		Dry	10	10	11	10	10	8	10	10	11	6																								10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.00			5.55			6.61			7.11			6.07			5.74			5.14			5.15			4.89			5.03			4.65			4.70			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.152	0.233	0.232	0.060																					
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																			
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027										
Land Soaking Stage	(Als)																																			0.228	0.350	0.111	
Land Preparation Stage	(Alp)	(Dry)	0.550	0.090																																0.023	0.400	0.852	
Crop Growing Stage	(Acg)		0.450	0.910	1.000	1.000	1.000	1.000	1.000	0.977	0.575	0.090																										0.036	
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85										
		Dry	0.93	1.03	1.12	1.18	1.19	1.12	1.06	0.96	0.93	0.85																								0.80	0.82	0.85	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150													28.77	28.77	28.77	28.48																					
(Dry)		120																																		23.28	23.28	23.28	
Land Preparation Stage	(LP)		6.40	6.40											7.34	7.34	7.34	7.05	7.05	7.05																6.14	6.14	6.14	
Crop Growing Stage	(CG)		4.65	5.15	5.60	6.55	6.60	6.22	7.01	6.35	6.15	6.04					5.16	5.17	5.63	6.14	5.86	6.01	5.86	5.67	5.41	5.00	4.69	4.55	4.16									4.00	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00					2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	
Total	(FWR)	Wet													4.48	8.66	11.19	8.37	7.41	8.08	7.86	8.01	7.86	7.67	7.41	6.61	4.24	1.96	0.17										
		Dry	6.51	7.08	7.60	8.55	8.60	8.22	9.01	8.15	4.68	0.72																								5.45	10.60	8.03	
10-day FWR			65.13	70.83	83.60	85.49	86.05	65.73	90.07	81.54	51.53	4.34			44.83	86.64	123.12	83.71	74.15	80.76	78.60	80.14	86.46	76.65	74.08	72.72	42.38	19.64	0.66							54.49	106.02	88.30	1,958
(G) Rainfall (2002)		mm/10day	0	276	0	29	68	16	15	71	8	0	0	62	94	0	47	25	38	21	32	96	67	42	122	15	33	222	0	65	9	163	388	56	13	72	53	124	2,342
Effective Rainfall	(ER)		0	55.2	0	20.3	47.6	0	0	49.7	0	0			44.8	0	32.9	17.5	26.6	14.7	22.4	67.2	46.9	29.4	48.8	0	23.1	19.6	0							50.4	37.1	49.6	704
(H) Irrigation Water Requirement	(IWR)	mm/10day	65.1	15.6	83.6	65.2	38.4	65.7	90.1	31.8	51.5	4.3			0.0	86.6	90.2	66.2	47.5	66.1	56.2	12.9	39.6	47.3	25.3	72.7	19.3	0.0	0.7							4.1	68.9	38.7	1,254
(F)-(G)		mm/day	6.51	1.56	7.60	6.52	3.84	8.22	9.01	3.18	4.68	0.72			0.00	8.66	8.20	6.62	4.75	6.61	5.62	1.29	3.60	4.73	2.53	6.61	1.93	0.00	0.17							0.41	6.89	3.52	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48			0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	13.57	3.26	15.83	13.58	8.01	17.12	18.76	6.63	9.76	1.51			0.00	18.05	17.09	13.79	9.91	13.76	11.71	2.70	7.49	9.84	5.27	13.77	4.02	0.00	0.35							0.85	14.36	7.33	
(H)/(I)		lit/sec/ha	1.57	0.38	1.83	1.57	0.93	1.98	2.17	0.77	1.13	0.17			0.00	2.09	1.98	1.60	1.15	1.59	1.36	0.31	0.87	1.14	0.61	1.59	0.46	0.00	0.04							0.10	1.66	0.85	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: V

Province: Masbate — **Climate Type: III**

(A) Cropping Pattern (30 & 20 days Staggered Period)

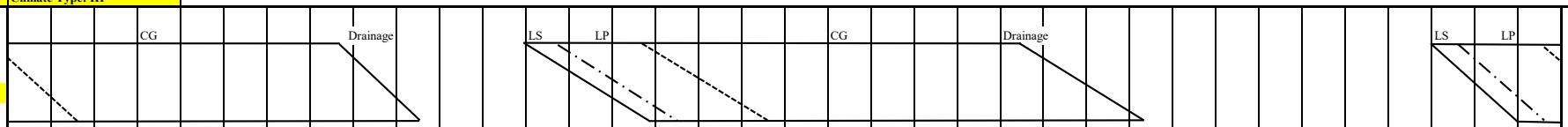
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: Wet=110 days, Dry=100 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4										
	Dry	10	10	11	10	10	8	10	10	11	6																								10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	5.04			5.59			6.64			7.14			6.07			5.72			5.13			5.14			4.88			5.05			4.68			4.74			
(D) Area Factor																																						
Land Soaking Stage	(Als)													0.152	0.233	0.232	0.060																					
Land Preparation Stage	(Alp) (Wet)													0.015	0.267	0.592	0.640	0.367	0.060																			
Crop Growing Stage	(Acg)															0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027										
Land Soaking Stage	(Als)																																		0.228	0.350	0.111	
Land Preparation Stage	(Alp) (Dry)	0.550	0.090																																0.023	0.400	0.852	
Crop Growing Stage	(Acg)	0.450	0.910	1.000	1.000	1.000	1.000	1.000	0.977	0.575	0.090																										0.036	
(E) Crop Coefficient	(Kc) Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85										
	Dry	0.93	1.03	1.12	1.18	1.19	1.12	1.06	0.96	0.93	0.85																								0.80	0.82	0.85	
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 150													28.77	28.77	28.77	28.46																					
(Dry)	120																																		23.31	23.31	23.31	
Land Preparation Stage	(LP)	6.44	6.44											7.34	7.34	7.34	7.03	7.03	7.03																6.17	6.17	6.17	
Crop Growing Stage	(CG)	4.69	5.19	5.64	6.60	6.65	6.26	7.04	6.37	6.18	6.07					5.16	5.15	5.61	6.12	5.85	6.00	5.85	5.65	5.40	4.99	4.68	4.54	4.15									4.03	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00					2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	
Total	(FWR) Wet													4.48	8.66	11.19	8.35	7.40	8.06	7.85	8.00	7.85	7.65	7.40	6.60	4.23	1.96	0.17										
	Dry	6.55	7.12	7.64	8.60	8.65	8.26	9.04	8.18	4.70	0.73																								5.46	10.63	8.06	
10-day FWR		65.49	71.23	84.09	85.96	86.52	66.09	90.38	81.82	51.71	4.36			44.83	86.64	123.12	83.54	73.96	80.55	78.48	80.02	86.33	76.54	73.97	72.62	42.31	19.62	0.66							54.58	106.28	88.69	1,960
(G) Rainfall (1991)	mm/10day	32	4	38	8	2	46	0	90	0	0	18	25	22	75	43	16	84	60	119	48	71	129	32	50	51	39	18	50	75	64	62	84	40	53	65	0	1,613
Effective Rainfall	(ER)	22.4	0	26.6	0	0	32.2	0	63	0	0			15.4	52.5	30.1	0	58.8	42	47.6	33.6	49.7	51.6	22.4	35	35.7	19.6	0							37.1	45.5	0	721
(H) Irrigation Water Requirement	(IWR) mm/10day	43.1	71.2	57.5	86.0	86.5	33.9	90.4	18.8	51.7	4.4			29.4	34.1	93.0	83.5	15.2	38.6	30.9	46.4	36.6	24.9	51.6	37.6	6.6	0.0	0.7							17.5	60.8	88.7	1,240
(F)-(G)	mm/day	4.31	7.12	5.23	8.60	8.65	4.24	9.04	1.88	4.70	0.73			2.94	3.41	8.46	8.35	1.52	3.86	3.09	4.64	3.33	2.49	5.16	3.42	0.66	0.00	0.17							1.75	6.08	8.06	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54			0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	8.98	14.84	10.89	17.91	18.03	8.82	18.83	3.92	8.71	1.34			6.13	7.11	17.62	17.40	3.16	8.03	6.43	9.67	6.94	5.20	10.74	7.12	1.38	0.00	0.35							3.64	12.66	16.80	
(H)/(I)	lit/sec/ha	1.04	1.72	1.26	2.07	2.09	1.02	2.18	0.45	1.01	0.16			0.71	0.82	2.04	2.01	0.37	0.93	0.74	1.12	0.80	0.60	1.24	0.82	0.16	0.00	0.04							0.42	1.47	1.94	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: V

Province: Sorsogon — **Climate Type: II, IV**

(A) Cropping Pattern (30 & 20 days Staggered Period)

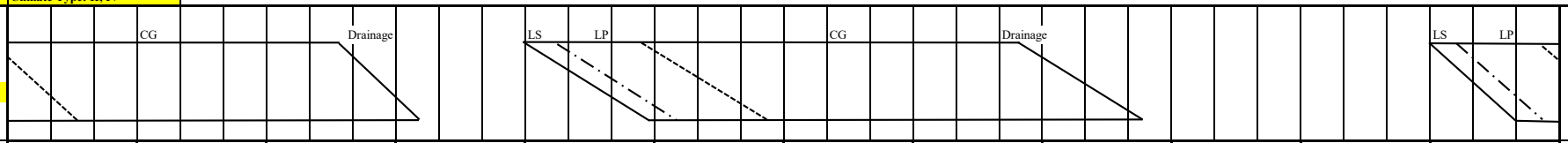
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: Wet=110 days, Dry=100 days

(Drainage: 15 days)



			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
(B) Month																																							
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4										
		Dry	10	10	11	10	10	8	10	10	11	6																								10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.00			5.55			6.62			7.12			6.06			5.71			5.11			5.12			4.87			5.03			4.65			4.70			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.152	0.233	0.232	0.060																					
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																			
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027										
Land Soaking Stage	(Als)																																			0.228	0.350	0.111	
Land Preparation Stage	(Alp)	(Dry)	0.550	0.090																																0.023	0.400	0.852	
Crop Growing Stage	(Acg)		0.450	0.910	1.000	1.000	1.000	1.000	1.000	0.977	0.575	0.090																										0.036	
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85											
		Dry	0.93	1.03	1.12	1.18	1.19	1.12	1.06	0.96	0.93	0.85																								0.80	0.82	0.85	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150													28.76	28.76	28.76	28.45																					
(Dry)		120																																		23.28	23.28	23.28	
Land Preparation Stage	(LP)		6.40	6.40											7.33	7.33	7.33	7.02	7.02	7.02																6.14	6.14	6.14	
Crop Growing Stage	(CG)		4.65	5.15	5.60	6.55	6.60	6.22	7.02	6.36	6.16	6.05					5.15	5.14	5.60	6.11	5.83	5.98	5.83	5.63	5.38	4.97	4.68	4.53	4.14									4.00	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00					2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	
Total	(FWR)	Wet													4.48	8.66	11.19	8.34	7.39	8.04	7.83	7.98	7.83	7.63	7.38	6.58	4.23	1.96	0.17										
		Dry	6.51	7.08	7.60	8.55	8.60	8.22	9.02	8.16	4.69	0.72																								5.45	10.60	8.03	
10-day FWR			65.13	70.83	83.60	85.49	86.05	65.73	90.17	81.63	51.59	4.35			44.82	86.59	123.04	83.45	73.86	80.45	78.25	79.79	86.08	76.32	73.76	72.42	42.25	19.59	0.66							54.49	106.02	88.30	1,955
(G) Rainfall (1991)		mm/10day	92	3	21	27	9	54	0	132	0	1	47	54	58	83	31	31	120	72	159	57	64	132	26	70	60	67	18	52	83	107	80	86	134	101	47	0	2,178
Effective Rainfall	(ER)		64.4	0	14.7	18.9	0	37.8	0	52.8	0	0			40.6	58.1	21.7	21.7	48	50.4	63.6	39.9	44.8	52.8	18.2	49	42	19.6	0							40.4	32.9	0	832
(H) Irrigation Water Requirement	(IWR)	mm/10day	0.7	70.8	68.9	66.6	86.0	27.9	90.2	28.8	51.6	4.3			4.2	28.5	101.3	61.7	25.9	30.0	14.7	39.9	41.3	23.5	55.6	23.4	0.3	0.0	0.7							14.1	73.1	88.3	1,122
(F)-(G)		mm/day	0.07	7.08	6.26	6.66	8.60	3.49	9.02	2.88	4.69	0.72			0.42	2.85	9.21	6.17	2.59	3.00	1.47	3.99	3.75	2.35	5.56	2.13	0.03	0.00	0.17							1.41	7.31	8.03	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48			0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	0.15	14.76	13.05	13.87	17.93	7.27	18.79	6.01	9.77	1.51			0.88	5.94	19.19	12.86	5.39	6.26	3.05	8.31	7.82	4.90	11.58	4.43	0.05	0.00	0.35							2.93	15.23	16.72	
(H)/(I)		lit/sec/ha	0.02	1.71	1.51	1.61	2.07	0.84	2.17	0.70	1.13	0.17			0.10	0.69	2.22	1.49	0.62	0.72	0.35	0.96	0.90	0.57	1.34	0.51	0.01	0.00	0.04							0.34	1.76	1.94	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA Team's Modifications

Region: VI

Province: Aklan — **Climate Type: I**

(A) Cropping Pattern (30 days Staggered Period)

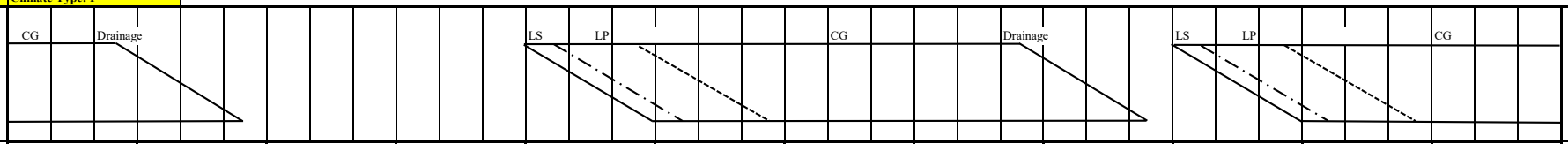
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4										
		Dry	10	10	11	10	10	4																						10	10	11	10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	3.50			3.50			3.50			3.50			3.50			3.50			3.50			3.50			3.50			3.50			3.50			3.50			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.152	0.233	0.232	0.060																					
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																			
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027										
Land Soaking Stage	(Als)																													0.152	0.233	0.232	0.060						
Land Preparation Stage	(Alp)	(Dry)																												0.015	0.267	0.592	0.640	0.367	0.060				
Crop Growing Stage	(Acg)		1.000	1.000	0.940	0.633	0.300	0.033																								0.024	0.300	0.633	0.940	1.000	1.000	1.000	
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.07	1.14	1.10	1.05	0.97	0.96	0.93	0.85										
		Dry	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.07	1.14	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150													27.01	27.01	27.01	27.01																					
(Dry)		100																												19.87	19.87	19.87	19.87						
Land Preparation Stage	(LP)														5.58	5.58	5.58	5.58	5.58	5.58										5.58	5.58	5.58	5.58	5.58	5.58				
Crop Growing Stage	(CG)		3.85	3.68	3.40	3.36	3.26	2.98									2.98	3.15	3.43	3.75	3.99	3.75	3.99	3.85	3.68	3.40	3.36	3.26	2.98			2.98	3.15	3.43	3.75	3.99	3.75	3.99	
Percolation	(P)	2.50	2.50	2.50	2.50	2.50	2.50	2.50									2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50			2.50	2.50	2.50	2.50	2.50	2.50	2.50	
Total	(FWR)	Wet													4.19	7.78	9.70	6.89	5.80	6.21	6.49	6.25	6.49	6.35	6.18	5.57	3.71	1.73	0.15										
		Dry	6.35	6.18	5.54	3.71	1.73	0.18																						3.10	6.12	8.04	6.46	5.80	6.21	6.49	6.25	6.49	
10-day FWR			63.50	61.75	60.95	37.09	17.27	0.72							41.89	77.83	106.71	68.87	58.02	62.05	64.90	62.45	71.39	63.50	61.75	61.28	37.09	17.27	0.59	31.03	61.19	88.48	64.58	58.02	62.05	64.90	62.45	71.39	1,661
(G) Rainfall (2019)		mm/10day	11	6	17	17	1	2	4	5	16	20	13	1	33	13	66	52	40	90	104	79	126	137	44	255	36	46	13	101	59	211	81	119	56	111	4	135	2,124
Effective Rainfall	(ER)		0	0	0	0	0	0							23.1	0	46.2	36.4	28	62.1	41.6	55.3	50.4	54.8	30.8	51	25.2	17.3	0	31	41.3	42.2	56.7	47.6	39.2	44.4	0	54	879
(H) Irrigation Water Requirement	(IWR)	mm/10day	63.5	61.8	61.0	37.1	17.3	0.7							18.8	77.8	60.5	32.5	30.0	0.0	23.3	7.2	21.0	8.7	31.0	10.3	11.9	0.0	0.6	0.0	19.9	46.3	7.9	10.4	22.9	20.5	62.5	17.4	782
(F)-(G)		mm/day	6.35	6.18	5.54	3.71	1.73	0.18							1.88	7.78	5.50	3.25	3.00	0.00	2.33	0.72	1.91	0.87	3.10	0.93	1.19	0.00	0.15	0.00	1.99	4.21	0.79	1.04	2.29	2.05	6.25	1.58	
(I) Irrigation Efficiency	(IE)		0.5	0.5	0.5	0.5	0.5	0.5							0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
(J) Diversion Water Requirement	(DWR)	mm/day	12.70	12.35	11.08	7.42	3.45	0.36							4.37	18.10	12.79	7.55	6.98	0.00	5.42	1.66	4.44	2.02	7.20	2.17	2.77	0.00	0.34	0.00	3.98	8.41	1.58	2.08	4.57	4.10	12.49	3.16	
(H)/(I)		lit/sec/ha	1.47	1.43	1.28	0.86	0.40	0.04							0.51	2.09	1.48	0.87	0.81	0.00	0.63	0.19	0.51	0.23	0.83	0.25	0.32	0.00	0.04	0.00	0.46	0.97	0.18	0.24	0.53	0.47	1.45	0.37	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA Team's Modifications

Region: VI

Province: Antique — **Climate Type: I**

(A) Cropping Pattern (45 days Staggered Period)

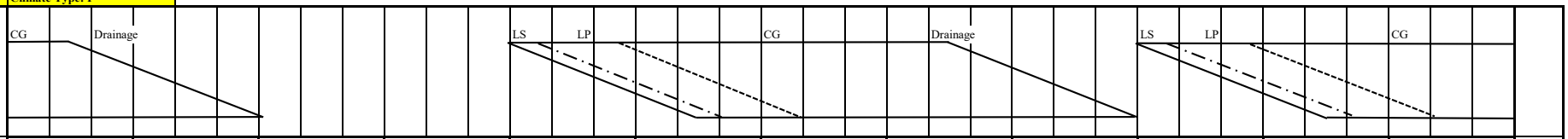
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 100 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	9									
		Dry	10	10	11	10	10	8	1																					10	10	11	10	10	10	10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.44			5.44			5.44			5.44			5.44			5.44			5.44			5.44			5.44			5.44			5.44			5.44		
(D) Area Factor																																						
Land Soaking Stage	(Als)														0.101	0.156	0.156	0.156	0.116	0.001																		
Land Preparation Stage	(Alp)	(Wet)													0.010	0.178	0.395	0.444	0.444	0.354	0.133	0.001																
Crop Growing Stage	(Acg)																0.016	0.200	0.422	0.644	0.867	0.999	1.000	1.000	0.975	0.756	0.533	0.311	0.090									
Land Soaking Stage	(Als)																													0.101	0.156	0.156	0.156	0.116	0.001			
Land Preparation Stage	(Alp)	(Dry)																												0.010	0.178	0.395	0.444	0.444	0.354	0.133	0.001	
Crop Growing Stage	(Acg)		1.000	0.972	0.767	0.533	0.311	0.111	0.001																							0.016	0.200	0.422	0.644	0.867	0.999	1.000
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.94	1.02	1.10	1.14	1.14	1.12	1.05	1.01	0.96	0.93	0.85									
		Dry	1.12	1.05	1.01	0.96	0.93	0.85	0.85																					0.80	0.82	0.85	0.90	0.94	1.02	1.10	1.14	1.14
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	150													28.12	28.12	28.12	28.12	28.12	28.12																		
(Dry)		100																												20.97	20.97	20.97	20.97	20.97	20.97			
Land Preparation Stage	(LP)														6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69								6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69	
Crop Growing Stage	(CG)		6.09	5.71	5.49	5.22	5.06	4.62	4.62								4.62	4.90	5.11	5.55	5.98	6.20	6.20	6.09	5.71	5.49	5.22	5.06	4.62			4.62	4.90	5.11	5.55	5.98	6.20	6.20
Percolation	(P)	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90								1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90			1.90	1.90	1.90	1.90	1.90	1.90	1.90
Total	(FWR)	Wet													2.91	5.58	7.13	8.71	9.19	7.19	7.72	8.10	8.10	7.99	7.42	5.59	3.80	2.16	0.59									
		Dry	7.99	7.40	5.67	3.80	2.16	0.72	0.01																					2.19	4.46	6.02	7.60	8.36	7.19	7.72	8.10	8.10
10-day FWR			79.93	73.99	62.39	37.96	21.64	5.79	0.01						29.07	55.76	78.45	87.14	91.90	71.92	77.25	81.00	89.12	79.93	74.22	61.49	37.96	21.64	5.28	21.85	44.62	66.19	76.00	83.62	71.85	77.25	81.00	89.12	1,835
(G) Rainfall (1991)		mm/10day	8	1	26	3	2	21	0	57	0	0	8	22	47	94	27	88	200	187	283	139	159	271	268	344	76	60	74	60	75	38	71	80	24	14	17	13	2,857
Effective Rainfall	(ER)		0	0	18.2	0	0	5.8	0						29.1	55.8	18.9	61.6	40	71.9	56.6	55.6	63.6	54.2	53.6	61.5	38	21.6	5.3	21.9	44.6	26.6	49.7	56	16.8	0	0	0	927
(H) Irrigation Water Requirement	(IWR)	mm/10day	79.9	74.0	44.2	38.0	21.6	0.0	0.0						0.0	0.0	59.6	25.5	51.9	0.0	20.6	25.4	25.5	25.7	20.6	0.0	0.0	0.0	0.0	0.0	0.0	39.6	26.3	27.6	55.1	77.2	81.0	89.1	909
(F)-(G)		mm/day	7.99	7.40	4.02	3.80	2.16	0.00	0.01						0.00	0.00	5.41	2.55	5.19	0.00	2.06	2.54	2.32	2.57	2.06	0.00	0.00	0.00	0.00	0.00	0.00	3.60	2.63	2.76	5.51	7.72	8.10	8.10	
(I) Irrigation Efficiency	(IE)		0.5	0.5	0.5	0.5	0.5	0.5	0.5						0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
(J) Diversion Water Requirement	(DWR)	mm/day	15.99	14.80	8.03	7.59	4.33	0.00	0.01						0.00	0.00	12.59	5.94	12.07	0.01	4.80	5.91	5.39	5.98	4.79	0.00	0.00	0.00	0.00	0.00	0.00	7.20	5.26	5.52	11.01	15.45	16.20	16.20	
(H)/(I)		lit/sec/ha	1.85	1.71	0.93	0.88	0.50	0.00	0.00						0.00	0.00	1.46	0.69	1.40	0.00	0.56	0.68	0.62	0.69	0.55	0.00	0.00	0.00	0.00	0.00	0.00	0.83	0.61	0.64	1.27	1.79	1.88	1.88	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA Team's Modifications

Region: VI

Province: Capiz — **Climate Type: III**

(A) Cropping Pattern (30 days Staggered Period)

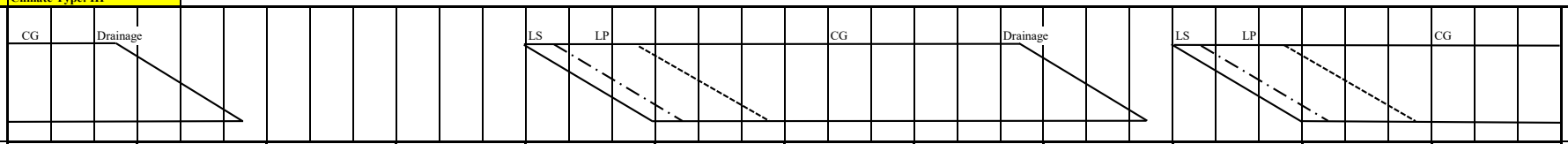
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4										
		Dry	10	10	11	10	10	4																						10	10	11	10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.50			5.50			5.50			5.50			5.50			5.50			5.50			5.50			5.50			5.50			5.50			5.50			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.152	0.233	0.232	0.060																					
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																			
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027										
Land Soaking Stage	(Als)																													0.152	0.233	0.232	0.060						
Land Preparation Stage	(Alp)	(Dry)																												0.015	0.267	0.592	0.640	0.367	0.060				
Crop Growing Stage	(Acg)		1.000	1.000	0.940	0.633	0.300	0.033																								0.024	0.300	0.633	0.940	1.000	1.000	1.000	
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.07	1.14	1.10	1.05	0.97	0.96	0.93	0.85										
		Dry	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.07	1.14	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150													27.27	27.27	27.27	27.27																					
(Dry)		100																												20.13	20.13	20.13	20.13						
Land Preparation Stage	(LP)														5.84	5.84	5.84	5.84	5.84	5.84										5.84	5.84	5.84	5.84	5.84	5.84				
Crop Growing Stage	(CG)		6.05	5.78	5.34	5.28	5.12	4.68									4.68	4.95	5.39	5.89	6.27	5.89	6.27	6.05	5.78	5.34	5.28	5.12	4.68			4.68	4.95	5.39	5.89	6.27	5.89	6.27	
Percolation	(P)	1.00	1.00	1.00	1.00	1.00	1.00	1.00									1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Total	(FWR)	Wet													4.23	7.91	9.92	7.16	6.19	6.82	7.27	6.89	7.27	7.05	6.78	5.99	3.98	1.83	0.15										
		Dry	7.05	6.78	5.95	3.98	1.83	0.19																						3.15	6.25	8.26	6.73	6.19	6.82	7.27	6.89	7.27	
10-day FWR			70.50	67.75	65.50	39.75	18.35	0.75							42.32	79.13	109.12	71.59	61.88	68.22	72.70	68.85	79.97	70.50	67.75	65.85	39.75	18.35	0.61	31.47	62.49	90.89	67.30	61.88	68.22	72.70	68.85	79.97	1,783
(G) Rainfall (1982)		mm/10day	0	9	60	14	16	20	0	17	166	12	13	3	6	72	49	65	185	176	96	200	67	39	186	115	187	65	56	168	76	45	65	48	11	50	21	20	2,398
Effective Rainfall	(ER)		0	0	42	0	0	0.8							0	50.4	34.3	45.5	61.9	68.2	67.2	40	46.9	27.3	67.8	46	39.8	18.4	0.6	31.5	53.2	31.5	45.5	33.6	0	35	14.7	14	916
(H) Irrigation Water Requirement	(IWR)	mm/10day	70.5	67.8	23.5	39.8	18.3	0.0							42.3	28.7	74.8	26.1	0.0	0.0	5.5	28.9	33.1	43.2	0.0	19.9	0.0	0.0	0.0	0.0	9.3	59.4	21.8	28.3	68.2	37.7	54.2	66.0	867
(F)-(G)		mm/day	7.05	6.78	2.14	3.98	1.83	0.00							4.23	2.87	6.80	2.61	0.00	0.00	0.55	2.89	3.01	4.32	0.00	1.80	0.00	0.00	0.00	0.00	0.93	5.40	2.18	2.83	6.82	3.77	5.42	6.00	
(I) Irrigation Efficiency	(IE)		0.5	0.5	0.5	0.5	0.5	0.5							0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
(J) Diversion Water Requirement	(DWR)	mm/day	14.10	13.55	4.27	7.95	3.67	0.00							9.84	6.68	15.82	6.07	0.00	0.00	1.28	6.71	6.99	10.05	0.00	4.20	0.00	0.00	0.00	0.00	1.86	10.80	4.36	5.66	13.64	7.54	10.83	11.99	
(H)/(I)		lit/sec/ha	1.63	1.57	0.49	0.92	0.42	0.00							1.14	0.77	1.83	0.70	0.00	0.00	0.15	0.78	0.81	1.16	0.00	0.49	0.00	0.00	0.00	0.00	0.21	1.25	0.50	0.65	1.58	0.87	1.25	1.39	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: VI

Province: Guimaras — **Climate Type: III**

(A) Cropping Pattern (30 days Staggered Period)

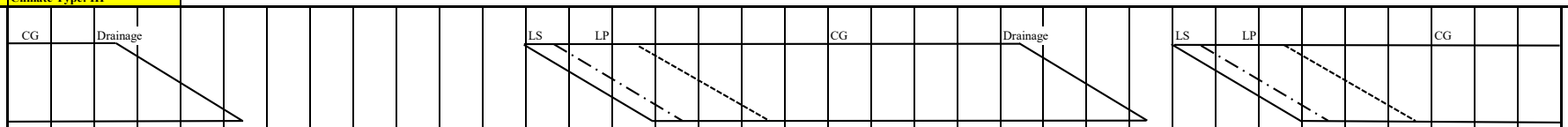
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
(B) Month																																							
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4										
		Dry	10	10	11	10	10	4																						10	10	11	10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.60			5.60			5.60			5.60			5.60			5.60			5.60			5.60			5.60			5.60			5.60			5.60			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.152	0.233	0.232	0.060																					
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																			
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027										
Land Soaking Stage	(Als)																													0.152	0.233	0.232	0.060						
Land Preparation Stage	(Alp)	(Dry)																												0.015	0.267	0.592	0.640	0.367	0.060				
Crop Growing Stage	(Acg)		1.000	1.000	0.940	0.633	0.300	0.033																								0.024	0.300	0.633	0.940	1.000	1.000	1.000	
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.07	1.14	1.10	1.05	0.97	0.96	0.93	0.85										
		Dry	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.07	1.14	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	142													27.21	27.21	27.21	27.21																					
(Dry)		85																												19.07	19.07	19.07	19.07						
Land Preparation Stage	(LP)														6.93	6.93	6.93	6.93	6.93	6.93										6.93	6.93	6.93	6.93	6.93	6.93				
Crop Growing Stage	(CG)		6.16	5.88	5.43	5.38	5.21	4.76									4.76	5.04	5.49	5.99	6.38	5.99	6.38	6.16	5.88	5.43	5.38	5.21	4.76			4.76	5.04	5.49	5.99	6.38	5.99	6.38	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00	2.00	2.00	2.00	
Total	(FWR)	Wet													4.24	8.19	10.58	8.18	7.28	7.93	8.38	7.99	8.38	8.16	7.88	7.02	4.67	2.16	0.18										
		Dry	8.16	7.88	6.99	4.67	2.16	0.22																						3.00	6.29	8.69	7.69	7.28	7.93	8.38	7.99	8.38	
10-day FWR			81.60	78.80	76.85	46.69	21.62	0.89							42.40	81.91	116.35	81.79	72.82	79.28	83.84	79.92	92.22	81.60	78.80	77.26	46.69	21.62	0.73	30.03	62.93	95.57	76.90	72.82	79.28	83.84	79.92	92.22	2,017
(G) Rainfall (1985)		mm/10day	10	37	15	5	17	24	4	7	24	5	24	56	44	71	36	50	106	163	99	84	148	105	59	38	140	84	87	75	163	32	44	49	100	18	56	4	2,083
Effective Rainfall	(ER)		0	25.9	0	0	0	0.9							30.8	49.7	25.2	35	42.4	65.2	69.3	58.8	59.2	42	41.3	26.6	46.7	21.6	0.7	30	62.9	22.4	30.8	34.3	70	0	39.2	0	931
(H) Irrigation Water Requirement	(IWR)	mm/10day	81.6	52.9	76.8	46.7	21.6	0.0							11.6	32.2	91.1	46.8	30.4	14.1	14.5	21.1	33.0	39.6	37.5	50.7	0.0	0.0	0.0	0.0	0.0	73.2	46.1	38.5	9.3	83.8	40.7	92.2	1,086
(F)-(G)		mm/day	8.16	5.29	6.99	4.67	2.16	0.00							1.16	3.22	8.29	4.68	3.04	1.41	1.45	2.11	3.00	3.96	3.75	4.61	0.00	0.00	0.00	0.00	0.00	6.65	4.61	3.85	0.93	8.38	4.07	8.38	
(I) Irrigation Efficiency	(IE)		0.5	0.5	0.5	0.5	0.5	0.5							0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
(J) Diversion Water Requirement	(DWR)	mm/day	16.32	10.58	13.97	9.34	4.32	0.00							2.70	7.49	19.27	10.88	7.08	3.27	3.38	4.91	6.98	9.21	8.72	10.71	0.00	0.00	0.00	0.00	0.00	13.30	9.22	7.70	1.86	16.77	8.14	16.77	
(H)/(I)		lit/sec/ha	1.89	1.22	1.62	1.08	0.50	0.00							0.31	0.87	2.23	1.26	0.82	0.38	0.39	0.57	0.81	1.07	1.01	1.24	0.00	0.00	0.00	0.00	0.00	1.54	1.07	0.89	0.21	1.94	0.94	1.94	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA Team's Modifications

Region: VI

Province: Iloilo — **Climate Type: I**

(A) Cropping Pattern (45 days Staggered Period)

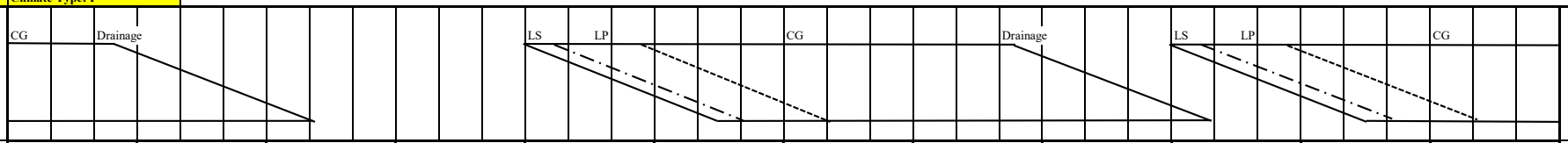
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	9								
		Dry	10	10	11	10	10	8	10	1																				10	10	11	10	10	10	10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.60			5.60			5.60			5.60			5.60			5.60			5.60			5.60			5.60			5.60			5.60			5.60		
(D) Area Factor																																						
Land Soaking Stage	(Als)														0.101	0.156	0.156	0.156	0.116	0.001																		
Land Preparation Stage	(Alp)	(Wet)													0.010	0.178	0.395	0.444	0.444	0.354	0.133	0.001																
Crop Growing Stage	(Acg)																0.016	0.200	0.422	0.644	0.867	0.999	1.000	1.000	1.000	0.964	0.756	0.533	0.311	0.090								
Land Soaking Stage	(Als)																													0.101	0.156	0.156	0.156	0.116	0.001			
Land Preparation Stage	(Alp)	(Dry)																												0.010	0.178	0.395	0.444	0.444	0.354	0.133	0.001	
Crop Growing Stage	(Acg)		1.000	1.000	0.964	0.756	0.533	0.333	0.133	0.001																						0.016	0.200	0.422	0.644	0.867	0.999	1.000
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.94	1.02	1.10	1.14	1.14	1.12	1.08	1.01	0.97	0.96	0.93	0.85								
		Dry	1.12	1.08	1.01	0.97	0.96	0.93	0.85	0.85																				0.80	0.82	0.85	0.90	0.94	1.02	1.10	1.14	1.14
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	142													26.27	26.27	26.27	26.27	26.27	26.27																		
(Dry)		85																												18.13	18.13	18.13	18.13	18.13	18.13			
Land Preparation Stage	(LP)														5.99	5.99	5.99	5.99	5.99	5.99	5.99	5.99								5.99	5.99	5.99	5.99	5.99	5.99	5.99	5.99	
Crop Growing Stage	(CG)		6.27	6.05	5.66	5.43	5.38	5.21	4.76	4.76							4.76	5.04	5.26	5.71	6.16	6.38	6.38	6.27	6.05	5.66	5.43	5.38	5.21	4.76		4.76	5.04	5.26	5.71	6.16	6.38	6.38
Percolation	(P)	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06							1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06		1.06	1.06	1.06	1.06	1.06	1.06	1.06
Total	(FWR)	Wet													2.71	5.16	6.56	7.98	8.38	6.51	7.06	7.44	7.44	7.33	7.11	6.47	4.91	3.43	1.95	0.52								
		Dry	7.33	7.11	6.47	4.91	3.43	2.09	0.77	0.01																				1.89	3.89	5.29	6.71	7.43	6.50	7.06	7.44	7.44
10-day FWR			73.32	71.08	71.22	49.08	34.30	16.70	7.74	0.01					27.14	51.65	72.13	79.77	83.75	65.07	70.56	74.43	81.88	73.32	71.08	71.22	49.08	34.30	19.49	23.63	38.94	58.15	67.07	74.31	64.99	70.56	74.43	81.88	1,802
(G) Rainfall (1982)		mm/10day	1	7	43	16	10	18	0	18	124	12	16	6	6	69	43	80	168	139	76	175	56	25	191	102	201	65	52	154	61	14	48	35	4	36	8	16	2,095
Effective Rainfall	(ER)		0	0	30.1	0	0	0	0	0					0	48.3	30.1	56	67.2	55.6	53.2	70	39.2	17.5	71.1	40.8	40.2	34.3	19.5	23.6	38.9	0	33.6	24.5	0	25.2	0	0	819
(H) Irrigation Water Requirement	(IWR)	mm/10day	73.3	71.1	41.1	49.1	34.3	16.7	7.7	0.0					27.1	3.3	42.0	23.8	16.6	9.5	17.4	4.4	42.7	55.8	0.0	30.4	8.9	0.0	0.0	0.0	0.0	58.2	33.5	49.8	65.0	45.4	74.4	81.9	983
(F)-(G)		mm/day	7.33	7.11	3.74	4.91	3.43	2.09	0.77	0.01					2.71	0.33	3.82	2.38	1.66	0.95	1.74	0.44	3.88	5.58	0.00	2.77	0.89	0.00	0.00	0.00	0.00	5.29	3.35	4.98	6.50	4.54	7.44	7.44	
(I) Irrigation Efficiency	(IE)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5					0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
(J) Diversion Water Requirement	(DWR)	mm/day	14.66	14.22	7.48	9.82	6.86	4.17	1.55	0.01					6.31	0.78	8.89	5.53	3.85	2.20	4.04	1.03	9.02	12.98	0.00	6.43	2.07	0.00	0.00	0.00	0.00	10.57	6.69	9.96	13.00	9.07	14.89	14.89	
(H)/(I)		lit/sec/ha	1.70	1.65	0.87	1.14	0.79	0.48	0.18	0.00					0.73	0.09	1.03	0.64	0.45	0.25	0.47	0.12	1.04	1.50	0.00	0.74	0.24	0.00	0.00	0.00	0.00	1.22	0.77	1.15	1.50	1.05	1.72	1.72	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA Team's Modifications

Region: VI

Province: Negros Occidental — **Climate Type: III**

(A) Cropping Pattern (30 days Staggered Period)

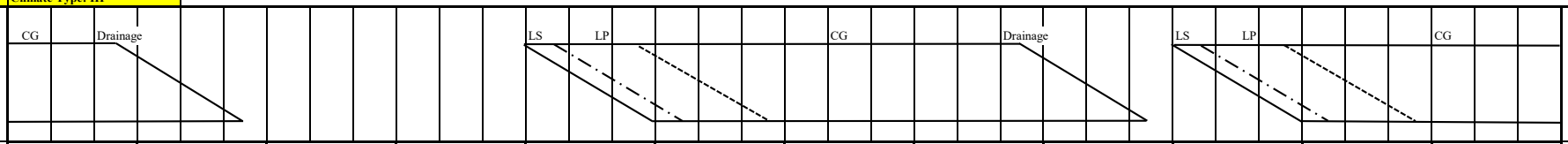
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4										
		Dry	10	10	11	10	10	4																						10	10	11	10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	7.00			7.00			7.00			7.00			7.00			7.00			7.00			7.00			7.00			7.00			7.00			7.00			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.152	0.233	0.232	0.060																					
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																			
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027										
Land Soaking Stage	(Als)																													0.152	0.233	0.232	0.060						
Land Preparation Stage	(Alp)	(Dry)																												0.015	0.267	0.592	0.640	0.367	0.060				
Crop Growing Stage	(Acg)		1.000	1.000	0.940	0.633	0.300	0.033																								0.024	0.300	0.633	0.940	1.000	1.000	1.000	
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.07	1.14	1.10	1.05	0.97	0.96	0.93	0.85										
		Dry	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.07	1.14	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	118													27.02	27.02	27.02	27.02																					
(Dry)		95																												23.73	23.73	23.73	23.73						
Land Preparation Stage	(LP)														10.16	10.16	10.16	10.16	10.16	10.16										10.16	10.16	10.16	10.16	10.16	10.16				
Crop Growing Stage	(CG)		7.70	7.35	6.79	6.72	6.51	5.95									5.95	6.30	6.86	7.49	7.98	7.49	7.98	7.70	7.35	6.79	6.72	6.51	5.95			5.95	6.30	6.86	7.49	7.98	7.49	7.98	
Percolation	(P)	4.00	4.00	4.00	4.00	4.00	4.00	4.00									4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00			4.00	4.00	4.00	4.00	4.00	4.00	4.00	
Total	(FWR)	Wet													4.26	9.01	12.52	11.21	10.60	11.41	11.98	11.49	11.98	11.70	11.35	10.20	6.79	3.15	0.27										
		Dry	11.70	11.35	10.14	6.79	3.15	0.33																						3.76	8.24	11.76	11.02	10.60	11.41	11.98	11.49	11.98	
10-day FWR			117.00	113.50	111.57	67.86	31.53	1.31							42.59	90.08	137.74	112.13	106.03	114.10	119.80	114.90	131.78	117.00	113.50	112.16	67.86	31.53	1.07	37.60	82.42	129.35	110.16	106.03	114.10	119.80	114.90	131.78	2,801
(G) Rainfall (2002)		mm/10day	35	0	1	3	30	8	2	8	50	2	1	39	41	19	66	51	169	57	156	127	69	51	155	137	77	132	38	32	59	175	95	19	12	4	0	59	1,979
Effective Rainfall	(ER)		24.5	0	0	0	21	0							28.7	0	46.2	35.7	67.6	39.9	62.4	50.8	48.3	35.7	62	54.8	53.9	31.5	1.1	22.4	41.3	70	66.5	0	0	0	0	41.3	906
(H) Irrigation Water Requirement	(IWR)	mm/10day	92.5	113.5	111.6	67.9	10.5	1.3							13.9	90.1	91.5	76.4	38.4	74.2	57.4	64.1	83.5	81.3	51.5	57.4	14.0	0.0	0.0	15.2	41.1	59.4	43.7	106.0	114.1	119.8	114.9	90.5	1,896
(F)-(G)		mm/day	9.25	11.35	10.14	6.79	1.05	0.33							1.39	9.01	8.32	7.64	3.84	7.42	5.74	6.41	7.59	8.13	5.15	5.21	1.40	0.00	0.00	1.52	4.11	5.40	4.37	10.60	11.41	11.98	11.49	8.23	
(I) Irrigation Efficiency	(IE)		0.5	0.5	0.5	0.5	0.5	0.5							0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
(J) Diversion Water Requirement	(DWR)	mm/day	18.50	22.70	20.29	13.57	2.11	0.66							3.23	20.95	19.35	17.78	8.94	17.26	13.35	14.91	17.65	18.91	11.98	12.13	3.25	0.00	0.00	3.04	8.22	10.79	8.73	21.21	22.82	23.96	22.98	16.45	
(H)/(I)		lit/sec/ha	2.14	2.63	2.35	1.57	0.24	0.08							0.37	2.42	2.24	2.06	1.03	2.00	1.55	1.73	2.04	2.19	1.39	1.40	0.38	0.00	0.00	0.35	0.95	1.25	1.01	2.45	2.64	2.77	2.66	1.90	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA Team's Modifications

Region: VII

Province: Bohol **Climate Type: IV**

(A) Cropping Pattern (60 days Staggered Period)

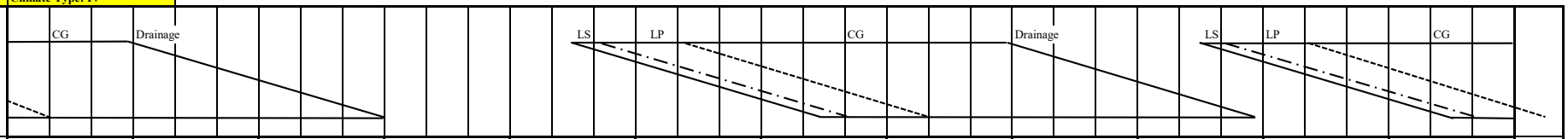
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 100 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	9								
		Dry	10	10	11	10	10	8	10	10	11																			5	11	10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	3.37			3.57			4.61			5.49			5.48			4.51			3.83			4.36			3.82			3.42			3.10			3.19			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.021	0.114	0.117	0.117	0.117	0.117	0.087	0.001																	
Land Preparation Stage	(Alp)	(Wet)														0.061	0.233	0.333	0.333	0.333	0.333	0.258	0.083																
Crop Growing Stage	(Acg)																	0.068	0.233	0.400	0.567	0.742	0.917	1.000	0.999	0.900	0.733	0.567	0.400	0.233	0.061								
Land Soaking Stage	(Als)																													0.021	0.114	0.117	0.117	0.117	0.117	0.087	0.001		
Land Preparation Stage	(Alp)	(Dry)	0.083																												0.061	0.233	0.333	0.333	0.333	0.333	0.258		
Crop Growing Stage	(Acg)		0.917	1.000	0.999	0.900	0.733	0.583	0.433	0.267	0.092																						0.068	0.233	0.400	0.567	0.742		
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.08	1.07	1.05	1.01	0.96	0.93	0.85								
		Dry	1.09	1.11	1.08	1.07	1.05	1.01	0.96	0.93	0.85																			0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150													28.60	28.60	27.75	27.75	27.75	27.15	27.15	27.15																	
(Dry)		120																												22.50	22.50	22.22	22.22	22.22	22.30	22.30	22.30		
Land Preparation Stage	(LP)		5.32													7.17	6.32	6.32	6.32	5.72	5.72	5.72	6.19								5.36	5.08	5.08	5.08	5.16	5.16	5.16	
Crop Growing Stage	(CG)		3.67	3.74	3.64	3.82	3.75	3.61	4.43	4.29	3.92							4.06	4.24	3.79	3.91	4.10	4.75	4.84	4.71	4.09	4.01	3.86	3.28	3.18	2.91		2.79	2.91	3.16	3.25	3.41	
Percolation	(P)	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35							2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35		2.35	2.35	2.35	2.35	2.35	
Total	(FWR)	Wet													0.60	3.70	4.72	5.79	6.89	7.54	7.81	6.29	7.03	7.19	7.05	5.79	4.66	3.52	2.25	1.29	0.32								
		Dry	5.96	6.09	5.98	5.55	4.47	3.47	2.93	1.77	0.58																			0.47	2.89	3.78	4.64	5.52	6.53	6.83	5.63	
10-day FWR			59.65	60.91	65.82	55.53	44.70	27.78	29.34	17.72	6.34				6.01	40.68	47.19	57.86	68.86	75.38	78.14	69.16	70.26	71.90	77.57	57.94	46.63	35.20	22.53	15.25	34.70	37.83	46.40	55.17	65.30	68.35	61.92	1,578
(G) Rainfall (1982)		mm/10day	21	31	77	58	27	24	1	83	152	10	9	3	5	46	24	81	93	27	50	81	29	22	144	46	63	61	14	75	35	18	19	18	16	41	7	5	1,516
Effective Rainfall	(ER)		14.7	21.7	53.9	40.6	18.9	16.8	0	17.7	6.3				6	16.8	47.2	57.9	18.9	35	56.7	20.3	15.4	57.6	32.2	44.1	42.7	0	22.5	15.3	0	0	0	0	28.7	0	0	708
(H) Irrigation Water Requirement	(IWR)	mm/10day	44.9	39.2	11.9	14.9	25.8	11.0	29.3	0.0	0.0				0.0	23.9	0.0	0.0	50.0	40.4	21.4	48.9	54.9	14.3	45.4	13.8	3.9	35.2	0.0	0.0	34.7	37.8	46.4	55.2	36.6	68.3	61.9	870
(F)-(G)		mm/day	4.49	3.92	1.08	1.49	2.58	1.37	2.93	0.00	0.00				0.00	2.17	0.00	0.00	5.00	4.04	2.14	4.44	5.49	1.43	4.12	1.38	0.39	3.52	0.00	0.00	3.86	3.78	4.64	5.52	3.66	6.83	5.63	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48				0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	9.36	8.17	2.26	3.11	5.38	2.86	6.11	0.00	0.00				0.00	4.52	0.00	0.00	10.41	8.41	4.47	9.25	11.43	2.98	8.59	2.88	0.82	7.33	0.00	0.00	8.03	7.88	9.67	11.49	7.62	14.24	11.73	
(H)/(I)		lit/sec/ha	1.08	0.95	0.26	0.36	0.62	0.33	0.71	0.00	0.00				0.00	0.52	0.00	0.00	1.20	0.97	0.52	1.07	1.32	0.34	0.99	0.33	0.09	0.85	0.00	0.00	0.93	0.91	1.12	1.33	0.88	1.65	1.36	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: VII

Province: Cebu — **Climate Type: III**

(A) Cropping Pattern (30 days Staggered Period)

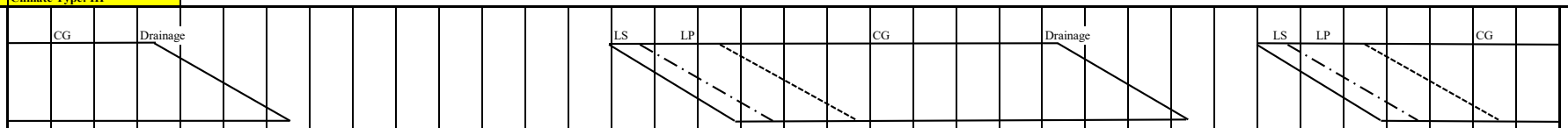
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 100 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	4								
		Dry	10	10	11	10	10	8	6																							11	10	10	10	10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.05			5.60			6.66			7.14			6.07			5.71			5.12			5.14			4.88			5.05			4.68			4.74		
(D) Area Factor																																						
Land Soaking Stage	(Als)																0.159	0.233	0.232	0.060																		
Land Preparation Stage	(Alp)	(Wet)															0.024	0.300	0.607	0.640	0.367	0.060																
Crop Growing Stage	(Acg)																		0.027	0.300	0.633	0.940	1.000	1.000	1.000	1.000	0.940	0.633	0.300	0.027								
Land Soaking Stage	(Als)																															0.159	0.233	0.232	0.060			
Land Preparation Stage	(Alp)	(Dry)																														0.024	0.300	0.607	0.640	0.367	0.060	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	0.940	0.633	0.333	0.060																									0.027	0.300	0.633	0.940	1.000
(E) Crop Coefficient	(Kc)	Wet															0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.01	0.96	0.93	0.85								
		Dry	1.17	1.14	1.10	1.01	0.96	0.93	0.85																							0.80	0.82	0.85	0.90	0.98	1.07	1.14
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	150															29.12	28.80	28.80	28.80																		
(Dry)		120																														23.94	23.61	23.61	23.61			
Land Preparation Stage	(LP)																7.69	7.37	7.37	7.37	6.86	6.86										6.79	6.47	6.47	6.47	6.52	6.52	
Crop Growing Stage	(CG)		5.91	5.76	5.56	5.66	5.38	5.21	5.66										4.85	5.14	5.02	5.48	5.84	6.01	5.86	5.65	4.93	4.68	4.54	4.29				3.98	4.21	4.65	5.07	5.40
Percolation	(P)	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35										2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35				2.35	2.35	2.35	2.35	2.35
Total	(FWR)	Wet															4.81	8.92	11.35	8.69	7.18	7.77	8.19	8.36	8.21	8.00	6.84	4.45	2.07	0.18								
		Dry	8.26	8.11	7.91	7.53	4.89	2.52	0.48																							3.97	7.44	9.57	7.53	6.82	7.37	7.75
10-day FWR			82.59	81.07	86.96	75.26	48.91	20.13	2.88								52.96	89.24	113.53	86.95	71.80	77.70	90.05	83.64	82.10	88.04	68.42	44.53	20.67	0.72		43.66	74.42	95.75	75.25	68.21	73.68	85.29	1,884
(G) Rainfall (2004)		mm/10day	3	1	56	25	22	33	48	28	10	1	8	16	42	91	30	88	52	34	15	83	77	77	31	22	16	66	30	96	18	24	5	37	40	52	0	26	1,303
Effective Rainfall	(ER)		0	0	39.2	17.5	15.4	20.1	2.9								21	61.6	36.4	23.8	0	58.1	53.9	53.9	21.7	15.4	0	44.5	20.7	0.7		16.8	0	25.9	28	36.4	0	18.2	632
(H) Irrigation Water Requirement	(IWR)	mm/10day	82.6	81.1	47.8	57.8	33.5	0.0	0.0								32.0	27.6	77.1	63.1	71.8	19.6	36.2	29.7	60.4	72.6	68.4	0.0	0.0	0.0		26.9	74.4	69.8	47.3	31.8	73.7	67.1	1,252
(F)-(G)		mm/day	8.26	8.11	4.34	5.78	3.35	0.00	0.00								2.91	2.76	7.71	6.31	7.18	1.96	3.29	2.97	6.04	6.60	6.84	0.00	0.00	0.00		2.44	7.44	6.98	4.73	3.18	7.37	6.10	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48								0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	17.21	16.89	9.04	12.03	6.98	0.00	0.00								6.05	5.76	16.07	13.16	14.96	4.08	6.85	6.20	12.58	13.76	14.25	0.00	0.00	0.00		5.09	15.50	14.55	9.84	6.63	15.35	12.71	
(H)/(I)		lit/sec/ha	1.99	1.95	1.05	1.39	0.81	0.00	0.00								0.70	0.67	1.86	1.52	1.73	0.47	0.79	0.72	1.46	1.59	1.65	0.00	0.00	0.00		0.59	1.79	1.68	1.14	0.77	1.78	1.47	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: VII

Province: Negros Oriental — **Climate Type: III**

(A) Cropping Pattern (30 days Staggered Period)

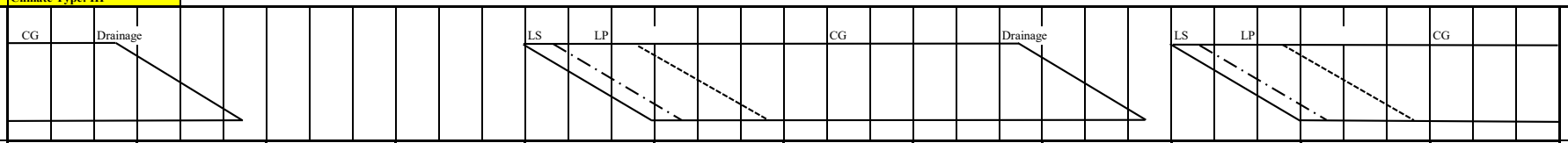
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4										
	Dry	10	10	11	10	10	4																						10	10	11	10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	5.01			5.58			6.67			7.17			6.03			5.62			5.02			5.03			4.78			4.96			4.62			4.69			
(D) Area Factor																																						
Land Soaking Stage	(Als)													0.152	0.233	0.232	0.060																					
Land Preparation Stage	(Alp) (Wet)													0.015	0.267	0.592	0.640	0.367	0.060																			
Crop Growing Stage	(Acg)															0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027										
Land Soaking Stage	(Als)																												0.152	0.233	0.232	0.060						
Land Preparation Stage	(Alp) (Dry)																												0.015	0.267	0.592	0.640	0.367	0.060				
Crop Growing Stage	(Acg)	1.000	1.000	0.940	0.633	0.300	0.033																								0.024	0.300	0.633	0.940	1.000	1.000	1.000	
(E) Crop Coefficient	(Kc) Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.07	1.14	1.10	1.05	0.97	0.96	0.93	0.85										
	Dry	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.07	1.14	
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 150													30.73	30.73	30.73	30.37																					
(Dry)	120																												25.51	25.51	25.51	25.21						
Land Preparation Stage	(LP)													9.31	9.31	9.31	8.95	8.95	8.95										8.36	8.36	8.36	8.07	8.07	8.07				
Crop Growing Stage	(CG)	5.51	5.26	4.86	5.36	5.19	4.74									5.13	5.06	5.51	6.01	5.72	5.37	5.72	5.53	5.28	4.88	4.59	4.45	4.06			4.22	4.16	4.53	4.94	5.35	5.02	5.35	
Percolation	(P) 4.00	4.00	4.00	4.00	4.00	4.00	4.00									4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00			4.00	4.00	4.00	4.00	4.00	4.00	4.00	
Total	(FWR) Wet													4.81	9.65	12.86	10.27	9.30	9.95	9.72	9.37	9.72	9.53	9.28	8.39	5.44	2.53	0.22										
	Dry	9.51	9.26	8.33	5.92	2.76	0.29																						4.00	8.18	11.07	9.12	8.36	8.89	9.35	9.02	9.35	
10-day FWR		95.11	92.61	91.61	59.23	27.57	1.15							48.11	96.46	141.45	102.65	93.01	99.49	97.23	93.71	106.95	95.33	92.82	92.30	54.37	25.34	0.87	40.03	81.77	121.74	91.22	83.58	88.91	93.47	90.18	102.81	2,401
(G) Rainfall (2005)	mm/10day	24	12	1	16	2	0	10	30	3	14	4	10	15	41	18	17	59	73	112	37	134	124	38	68	71	88	22	47	57	101	17	65	23	66	142	72	1,633
Effective Rainfall	(ER)	16.8	0	0	0	0	0							0	28.7	0	0	41.3	51.1	44.8	25.9	53.6	49.6	26.6	47.6	49.7	25.3	0.9	32.9	39.9	40.4	0	45.5	16.1	46.2	56.8	50.4	790
(H) Irrigation Water Requirement	(IWR) mm/10day	78.3	92.6	91.6	59.2	27.6	1.2							48.1	67.8	141.4	102.7	51.7	48.4	52.4	67.8	53.4	45.7	66.2	44.7	4.7	0.0	0.0	7.1	41.9	81.3	91.2	38.1	72.8	47.3	33.4	52.4	1,611
(F)-(G)	mm/day	7.83	9.26	8.33	5.92	2.76	0.29							4.81	6.78	12.86	10.27	5.17	4.84	5.24	6.78	4.85	4.57	6.62	4.06	0.47	0.00	0.00	0.71	4.19	7.39	9.12	3.81	7.28	4.73	3.34	4.76	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	16.31	19.29	17.35	12.34	5.74	0.60							10.02	14.12	26.79	21.39	10.77	10.08	10.92	14.13	10.10	9.53	13.79	8.47	0.97	0.00	0.00	1.48	8.72	15.40	19.00	7.93	15.17	9.85	6.95	9.93	
(H)/(I)	lit/sec/ha	1.89	2.23	2.01	1.43	0.66	0.07							1.16	1.63	3.10	2.48	1.25	1.17	1.26	1.64	1.17	1.10	1.60	0.98	0.11	0.00	0.00	0.17	1.01	1.78	2.20	0.92	1.76	1.14	0.80	1.15	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: VII

Province: Siquijor — **Climate Type: III**

(A) Cropping Pattern (30 days Staggered Period)

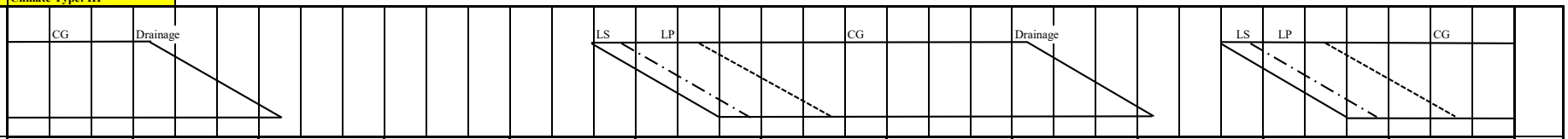
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 100 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	4									
		Dry	10	10	11	10	10	8	6																							11	10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.03			5.56			6.58			7.04			5.98			5.65			5.07			5.09			4.84			5.00			4.65			4.72			
(D) Area Factor																																							
Land Soaking Stage	(Als)																0.159	0.233	0.232	0.060																			
Land Preparation Stage	(Alp)	(Wet)															0.024	0.300	0.607	0.640	0.367	0.060																	
Crop Growing Stage	(Acg)																		0.027	0.300	0.633	0.940	1.000	1.000	1.000	1.000	0.940	0.633	0.300	0.027									
Land Soaking Stage	(Als)																															0.159	0.233	0.232	0.060				
Land Preparation Stage	(Alp)	(Dry)																														0.024	0.300	0.607	0.640	0.367	0.060		
Crop Growing Stage	(Acg)		1.000	1.000	1.000	0.940	0.633	0.333	0.060																									0.027	0.300	0.633	0.940	1.000	
(E) Crop Coefficient	(Kc)	Wet															0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.01	0.96	0.93	0.85									
		Dry	1.17	1.14	1.10	1.01	0.96	0.93	0.85																							0.80	0.82	0.85	0.90	0.98	1.07	1.14	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150															28.69	28.40	28.40	28.40																			
(Dry)		120																														23.54	23.23	23.23	23.23				
Land Preparation Stage	(LP)																7.26	6.97	6.97	6.97	6.46	6.46										6.40	6.09	6.09	6.09	6.15	6.15		
Crop Growing Stage	(CG)		5.89	5.73	5.53	5.62	5.34	5.17	5.59										4.80	5.09	4.97	5.42	5.78	5.96	5.80	5.60	4.89	4.65	4.50	4.25				3.95	4.19	4.63	5.05	5.38	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00										2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	2.00	
Total	(FWR)	Wet															4.74	8.71	11.00	8.29	6.78	7.37	7.78	7.96	7.80	7.60	6.48	4.21	1.95	0.17									
		Dry	7.89	7.73	7.53	7.16	4.64	2.39	0.46																							3.90	7.24	9.25	7.15	6.45	7.00	7.38	
10-day FWR			78.85	77.34	82.86	71.59	46.45	19.10	2.73								52.10	87.09	110.05	82.92	67.83	73.67	85.58	79.55	78.03	83.59	64.75	42.07	19.50	0.68		42.87	72.41	92.49	71.48	64.52	69.97	81.19	1,801
(G) Rainfall (1981)		mm/10day	31	40	35	29	0	0	1	0	19	5	1	6	12	15	10	16	68	83	57	33	30	12	46	2	17	31	25	26	36	15	35	47	52	81	0	10	926
Effective Rainfall	(ER)		21.7	28	24.5	20.3	0	0	0								0	0	47.6	58.1	39.9	23.1	21	0	32.2	0	0	21.7	17.5	0.7		0	24.5	32.9	36.4	56.7	0	0	507
(H) Irrigation Water Requirement	(IWR)	mm/10day	57.2	49.3	58.4	51.3	46.4	19.1	2.7								52.1	87.1	62.4	24.8	27.9	50.6	64.6	79.6	45.8	83.6	64.8	20.4	2.0	0.0		42.9	47.9	59.6	35.1	7.8	70.0	81.2	1,294
(F)-(G)		mm/day	5.72	4.93	5.31	5.13	4.64	2.39	0.46								4.74	8.71	6.24	2.48	2.79	5.06	5.87	7.96	4.58	7.60	6.48	2.04	0.20	0.00		3.90	4.79	5.96	3.51	0.78	7.00	7.38	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48								0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	11.91	10.28	11.05	10.68	9.68	4.97	0.95								9.87	18.14	13.01	5.17	5.82	10.54	12.23	16.57	9.55	15.83	13.49	4.24	0.42	0.00		8.12	9.98	12.41	7.31	1.63	14.58	15.38	
(H)/(I)		lit/sec/ha	1.38	1.19	1.28	1.24	1.12	0.58	0.11								1.14	2.10	1.51	0.60	0.67	1.22	1.42	1.92	1.10	1.83	1.56	0.49	0.05	0.00		0.94	1.16	1.44	0.85	0.19	1.69	1.78	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

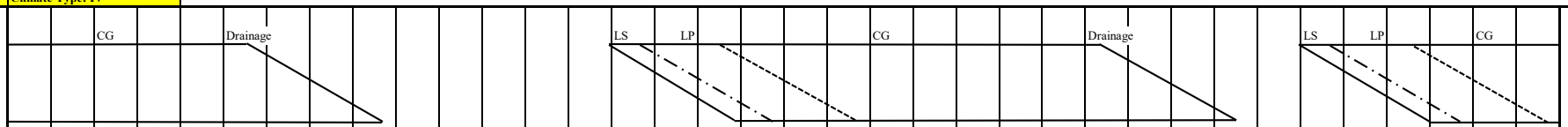
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: VIII
Province: Biliran — **Climate Type: IV**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	4								
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	5.04			5.58			6.63			7.10			6.04			5.70			5.11			5.13			4.87			5.03			4.67			4.74			
(D) Area Factor																																						
Land Soaking Stage	(Als)															0.159	0.233	0.232	0.060																			
Land Preparation Stage	(Alp) (Wet)															0.024	0.300	0.607	0.640	0.367	0.060																	
Crop Growing Stage	(Acg)																	0.027	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.940	0.633	0.300	0.270								
Land Soaking Stage	(Als)																															0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp) (Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc) Wet															0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85								
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 150															28.74	28.44	28.44	28.44																			
(Dry)	120																															23.25	23.25	23.25	23.31			
Land Preparation Stage	(LP)															7.32	7.02	7.02	7.02	6.50	6.50	6.497										6.11	6.11	6.11	6.17	6.17	6.17	
Crop Growing Stage	(CG)	5.75	5.90	5.75	6.14	5.86	5.41	6.36	6.17	5.64								4.85	5.13	5.01	5.47	5.83	6.00	5.85	5.64	5.11	4.72	4.68	4.68	4.28				3.97	4.27	4.65	5.07	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR) Wet															4.75	8.73	11.04	8.34	6.82	7.41	7.83	8.00	7.85	7.64	7.11	6.32	4.23	2.00	1.69								
	Dry	7.75	7.90	7.75	8.14	7.86	7.27	6.13	3.27	0.57																						3.63	7.05	9.08	7.61	6.46	7.01	
10-day FWR		77.46	78.97	85.20	81.38	78.59	58.17	61.31	32.66	3.96						52.20	87.32	110.43	83.36	68.20	74.09	86.08	80.02	78.48	84.07	71.14	63.20	42.25	20.03	6.78		36.26	70.49	90.81	76.08	64.56	77.06	1,981
(G) Rainfall (2002)	mm/10day	123	57	0	12	37	13	5	27	60	0	32	45	10	2	58	34	86	31	29	159	52	111	111	112	28	77	48	57	58	93	115	31	4	0	0	192	1,909
Effective Rainfall	(ER)	49.2	39.9	0	0	25.9	0	0	18.9	4						40.6	23.8	60.2	21.7	20.3	0	36.4	44.4	44.4	44.8	19.6	53.9	33.6	20	6.8		36.3	21.7	0	0	0	76.8	743
(H) Irrigation Water Requirement	(IWR) mm/10day	28.3	39.1	85.2	81.4	52.7	58.2	61.3	13.8	0.0						11.6	63.5	50.2	61.7	47.9	74.1	49.7	35.6	34.1	39.3	51.5	9.3	8.7	0.0	0.0		0.0	48.8	90.8	76.1	64.6	0.3	1,238
(F)-(G)	mm/day	2.83	3.91	7.75	8.14	5.27	7.27	6.13	1.38	0.00						1.05	6.35	5.02	6.17	4.79	7.41	4.52	3.56	3.41	3.57	5.15	0.93	0.87	0.00	0.00		0.00	4.88	9.08	7.61	6.46	0.02	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	5.89	8.14	16.14	16.95	10.98	15.15	12.77	2.87	0.00						2.20	13.23	10.46	12.85	9.98	15.44	9.41	7.42	7.10	7.44	10.74	1.94	1.80	0.00	0.00		0.00	10.16	18.92	15.85	13.45	0.05	
(H)/(I)	lit/sec/ha	0.68	0.94	1.87	1.96	1.27	1.75	1.48	0.33	0.00						0.25	1.53	1.21	1.49	1.16	1.79	1.09	0.86	0.82	0.86	1.24	0.22	0.21	0.00	0.00		0.00	1.18	2.19	1.83	1.56	0.01	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

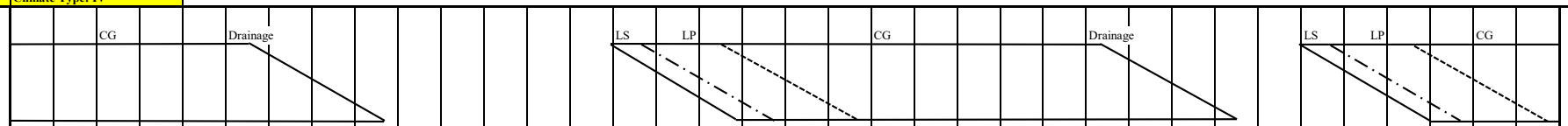
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: VIII
Province: Northern Leyte — **Climate Type: IV**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	4								
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.02			5.57			6.63			7.11			6.05			5.69			5.10			5.12			4.86			5.02			4.64			4.71			
(D) Area Factor																																							
Land Soaking Stage	(Als)																0.159	0.233	0.232	0.060																			
Land Preparation Stage	(Alp)	(Wet)															0.024	0.300	0.607	0.640	0.367	0.060																	
Crop Growing Stage	(Acg)																		0.027	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.940	0.633	0.300	0.270								
Land Soaking Stage	(Als)																																0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet															0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85								
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150															28.75	28.44	28.44	28.44																			
(Dry)		120																															23.23	23.23	23.23	23.29			
Land Preparation Stage	(LP)																7.32	7.01	7.01	7.01	6.49	6.49	6.488										6.08	6.08	6.08	6.14	6.14	6.14	
Crop Growing Stage	(CG)		5.72	5.87	5.72	6.13	5.85	5.40	6.36	6.17	5.64								4.84	5.12	5.00	5.46	5.81	5.99	5.84	5.63	5.10	4.71	4.67	4.67	4.27				3.94	4.24	4.62	5.04	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR)	Wet															4.75	8.73	11.04	8.33	6.81	7.40	7.81	7.99	7.84	7.63	7.10	6.31	4.22	2.00	1.69								
		Dry	7.72	7.87	7.72	8.13	7.85	7.26	6.13	3.27	0.57																						3.62	7.04	9.06	7.58	6.43	6.97	
10-day FWR			77.23	78.73	84.95	81.27	78.49	58.10	61.31	32.66	3.96						52.22	87.28	110.35	83.27	68.11	73.99	85.95	79.90	78.37	83.95	71.03	63.11	42.19	20.01	6.77		36.22	70.36	90.60	75.82	64.27	76.71	1,977
(G) Rainfall (2004)		mm/10day	11	0	242	54	91	109	94	100	24	6	10	52	62	151	42	97	43	32	11	84	95	69	27	24	15	89	25	108	22	81	18	85	82	131	6	66	2,258
Effective Rainfall	(ER)		0	0	48.4	37.8	63.7	43.6	61.3	32.7	4						29.4	67.9	30.1	22.4	0	58.8	66.5	48.3	18.9	16.8	0	62.3	17.5	20	6.8		0	59.5	57.4	52.4	0	46.2	973
(H) Irrigation Water Requirement	(IWR)	mm/10day	77.2	78.7	36.6	43.5	14.8	14.5	0.0	0.0	0.0						22.8	19.4	80.3	60.9	68.1	15.2	19.5	31.6	59.5	67.2	71.0	0.8	24.7	0.0	0.0		36.2	10.9	33.2	23.4	64.3	30.5	1,005
(F)-(G)		mm/day	7.72	7.87	3.32	4.35	1.48	1.81	0.00	0.00	0.00						2.07	1.94	8.03	6.09	6.81	1.52	1.77	3.16	5.95	6.10	7.10	0.08	2.47	0.00	0.00		3.62	1.09	3.32	2.34	6.43	2.77	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	16.09	16.40	6.92	9.06	3.08	3.78	0.00	0.00	0.00						4.32	4.04	16.72	12.68	14.19	3.16	3.68	6.58	12.39	12.72	14.80	0.17	5.14	0.00	0.00		7.55	2.26	6.92	4.88	13.39	5.78	
(H)/(I)		lit/sec/ha	1.86	1.90	0.80	1.05	0.36	0.44	0.00	0.00	0.00						0.50	0.47	1.94	1.47	1.64	0.37	0.43	0.76	1.43	1.47	1.71	0.02	0.60	0.00	0.00		0.87	0.26	0.80	0.56	1.55	0.67	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

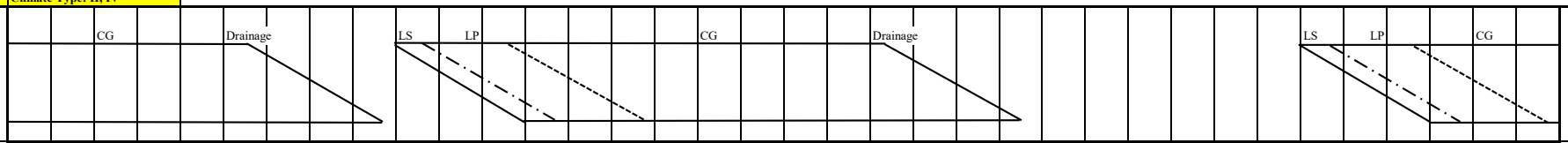
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: VIII
Province: Southern Leyte — **Climate Type: II, IV**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
(B) Month																																							
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet										10	10	10	10	10	11	10	10	10	10	10	11	10	10	5													
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.03			5.58			6.63			7.10			6.05			5.70			5.11			5.14			4.88			5.03			4.65			4.72			
(D) Area Factor																																							
Land Soaking Stage	(Als)											0.152	0.233	0.233	0.082																								
Land Preparation Stage	(Alp)	(Wet)										0.015	0.267	0.585	0.652	0.400	0.074																						
Crop Growing Stage	(Acg)													0.015	0.267	0.600	0.926	1.000	1.000	1.000	1.000	1.000	0.962	0.667	0.333	0.038													
Land Soaking Stage	(Als)																																0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet										0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85													
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150										29.68	29.68	29.68	28.75																								
(Dry)		120																															23.23	23.23	23.23	23.30			
Land Preparation Stage	(LP)											8.25	8.25	8.25	7.32	7.32	7.32																6.09	6.09	6.09	6.15	6.15	6.15	
Crop Growing Stage	(CG)		5.73	5.89	5.73	6.14	5.86	5.41	6.36	6.17	5.64			6.04	5.45	5.93	6.47	6.50	6.67	6.50	5.62	5.37	4.96	4.93	4.78	4.37									3.95	4.25	4.63	5.05	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	2.00	2.00	2.00	
Total	(FWR)	Wet										4.63	9.12	11.86	9.12	7.69	8.39	8.50	8.67	8.50	7.62	7.37	6.69	4.63	2.26	0.24													
		Dry	7.73	7.89	7.73	8.14	7.86	7.27	6.13	3.27	0.57																						3.62	7.04	9.07	7.59	6.44	6.98	
10-day FWR			77.34	78.85	85.08	81.38	78.59	58.17	61.31	32.66	3.96	46.35	91.17	118.60	91.21	76.87	92.27	84.98	86.69	84.98	76.21	73.66	73.62	46.25	22.58	1.21							36.23	70.40	90.67	75.91	64.37	76.82	2,038
(G) Rainfall (2004)		mm/10day	17	0	238	66	102	98	98	107	17	11	7	70	42	104	33	94	36	16	3	60	79	60	31	28	2	89	12	85	30	80	0	50	72	149	10	57	2,053
Effective Rainfall	(ER)		0	0	47.6	46.2	40.8	58.2	61.3	32.7	0	0	0	49	29.4	41.6	23.1	65.8	25.2	0	0	42	55.3	42	21.7	1.2							0	35	50.4	59.6	0	39.9	868
(H) Irrigation Water Requirement	(IWR)	mm/10day	77.3	78.9	37.5	35.2	37.8	0.0	0.0	0.0	4.0	46.3	91.2	69.6	61.8	35.3	69.2	19.2	61.5	85.0	76.2	31.7	18.3	4.3	0.9	0.0							36.2	35.4	40.3	16.3	64.4	36.9	1,170
(F)-(G)		mm/day	7.73	7.89	3.41	3.52	3.78	0.00	0.00	0.00	0.57	4.63	9.12	6.96	6.18	3.53	6.29	1.92	6.15	8.50	7.62	3.17	1.67	0.43	0.09	0.00							3.62	3.54	4.03	1.63	6.44	3.36	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	16.11	16.43	7.10	7.33	7.87	0.00	0.00	0.00	1.18	9.66	18.99	14.50	12.88	7.35	13.10	4.00	12.81	17.70	15.88	6.59	3.47	0.89	0.18	0.00							7.55	7.38	8.39	3.40	13.41	6.99	
(H)/(I)		lit/sec/ha	1.86	1.90	0.82	0.85	0.91	0.00	0.00	0.00	0.14	1.12	2.20	1.68	1.49	0.85	1.52	0.46	1.48	2.05	1.84	0.76	0.40	0.10	0.02	0.00							0.87	0.85	0.97	0.39	1.55	0.81	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

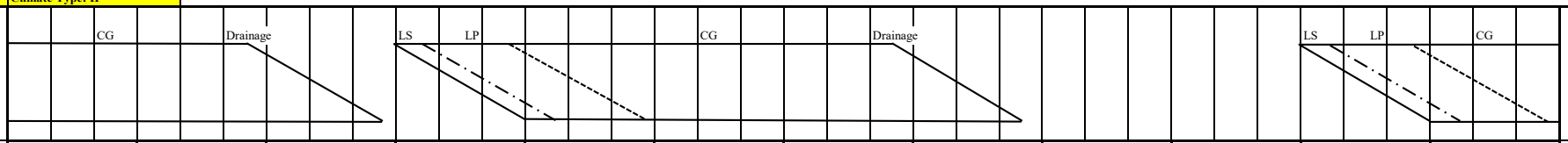
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: VIII
Province: Northern Samar — **Climate Type: II**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet										10	10	10	10	10	11	10	10	10	10	10	11	10	10	5													
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.04			5.59			6.65			7.15			6.09			5.74			5.14			5.16			4.90			5.05			4.67			4.73			
(D) Area Factor																																							
Land Soaking Stage	(Als)											0.152	0.233	0.233	0.082																								
Land Preparation Stage	(Alp)	(Wet)										0.015	0.267	0.585	0.652	0.400	0.074																						
Crop Growing Stage	(Acg)													0.015	0.267	0.600	0.926	1.000	1.000	1.000	1.000	1.000	0.962	0.667	0.333	0.038													
Land Soaking Stage	(Als)																																0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet										0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85													
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150										29.72	29.72	29.72	28.79																								
(Dry)		120																															23.25	23.25	23.25	23.31			
Land Preparation Stage	(LP)											8.29	8.29	8.29	7.36	7.36	7.36																6.11	6.11	6.11	6.16	6.16	6.16	
Crop Growing Stage	(CG)		5.75	5.90	5.75	6.15	5.87	5.42	6.38	6.18	5.65			6.08	5.48	5.97	6.52	6.54	6.72	6.54	5.65	5.40	4.99	4.95	4.80	4.39									3.97	4.26	4.64	5.06	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	2.00	2.00	2.00	
Total	(FWR)	Wet										4.64	9.14	11.90	9.16	7.72	8.43	8.54	8.72	8.54	7.65	7.40	6.72	4.64	2.26	0.24													
		Dry	7.75	7.90	7.75	8.15	7.87	7.28	6.15	3.27	0.57																						3.63	7.05	9.08	7.60	6.45	6.99	
10-day FWR			77.46	78.97	85.20	81.49	78.70	58.25	61.45	32.74	3.96	46.42	91.39	118.97	91.56	77.25	92.74	85.44	87.16	85.44	76.54	73.97	73.92	46.38	22.64	1.21							36.26	70.49	90.81	76.00	64.46	76.94	2,044
(G) Rainfall (1983)		mm/10day	48	36	57	7	11	5	26	8	17	2	11	15	1	3	25	12	21	104	116	179	100	62	32	22	29	72	88	87	139	73	53	223	180	219	185	209	2,477
Effective Rainfall	(ER)		33.6	25.2	39.9	0	0	0	18.2	0	0	0	0	0	0	0	17.5	0	14.7	41.6	46.4	71.6	70	43.4	22.4	1.2							36.3	44.6	72	43.8	64.5	41.8	749
(H) Irrigation Water Requirement	(IWR)	mm/10day	43.9	53.8	45.3	81.5	78.7	58.3	43.3	32.7	4.0	46.4	91.4	119.0	91.6	77.2	75.2	85.4	72.5	43.8	30.1	2.4	3.9	3.0	0.2	0.0							0.0	25.9	18.8	32.2	0.0	35.1	1,296
(F)-(G)		mm/day	4.39	5.38	4.12	8.15	7.87	7.28	4.33	3.27	0.57	4.64	9.14	11.90	9.16	7.72	6.84	8.54	7.25	4.38	3.01	0.24	0.36	0.30	0.02	0.00							0.00	2.59	1.88	3.22	0.00	3.19	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	9.14	11.20	8.58	16.98	16.39	15.17	9.01	6.82	1.18	9.67	19.04	24.79	19.08	16.09	14.25	17.80	15.10	9.13	6.28	0.49	0.74	0.62	0.05	0.00							0.00	5.39	3.92	6.71	0.00	6.66	
(H)/(I)		lit/sec/ha	1.06	1.30	0.99	1.96	1.90	1.76	1.04	0.79	0.14	1.12	2.20	2.87	2.21	1.86	1.65	2.06	1.75	1.06	0.73	0.06	0.09	0.07	0.01	0.00							0.00	0.62	0.45	0.78	0.00	0.77	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: VIII

Province: Western Samar — **Climate Type: II, IV**

(A) Cropping Pattern (30 days Staggered Period)

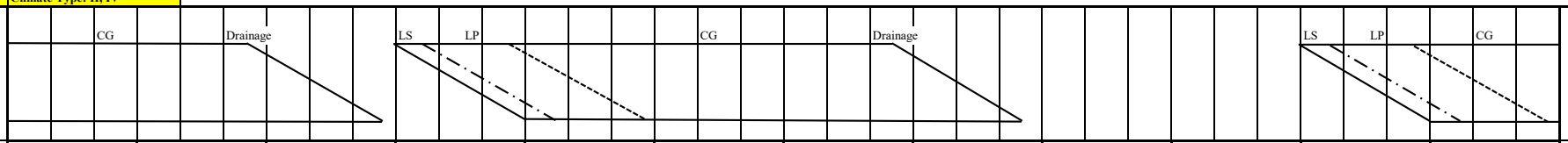
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
(B) Month																																							
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet										10	10	10	10	10	11	10	10	10	10	10	11	10	10	5													
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.01			5.56			6.62			7.12			6.05			5.68			5.09			5.10			4.85			5.00			4.64			4.70			
(D) Area Factor																																							
Land Soaking Stage	(Als)											0.152	0.233	0.233	0.082																								
Land Preparation Stage	(Alp)	(Wet)										0.015	0.267	0.585	0.652	0.400	0.074																						
Crop Growing Stage	(Acg)													0.015	0.267	0.600	0.926	1.000	1.000	1.000	1.000	1.000	0.962	0.667	0.333	0.038													
Land Soaking Stage	(Als)																																0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet										0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85													
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150										29.69	29.69	29.69	28.75																								
(Dry)		120																															23.23	23.23	23.23	23.28			
Land Preparation Stage	(LP)											8.27	8.27	8.27	7.32	7.32	7.32																6.08	6.08	6.08	6.14	6.14	6.14	
Crop Growing Stage	(CG)		5.71	5.86	5.71	6.12	5.84	5.39	6.36	6.16	5.63			6.05	5.45	5.93	6.47	6.48	6.65	6.48	5.60	5.34	4.94	4.90	4.74	4.34									3.94	4.23	4.61	5.03	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	2.00	2.00	2.00	
Total	(FWR)	Wet										4.64	9.13	11.87	9.12	7.69	8.39	8.48	8.65	8.48	7.60	7.34	6.67	4.60	2.25	0.24													
		Dry	7.71	7.86	7.71	8.12	7.84	7.25	6.12	3.26	0.56																						3.62	7.04	9.06	7.57	6.42	6.96	
10-day FWR			77.11	78.62	84.83	81.16	78.38	58.02	61.24	32.63	3.95	46.37	91.26	118.75	91.21	76.87	92.27	84.75	86.46	84.75	75.99	73.45	73.41	46.00	22.45	1.20							36.22	70.36	90.60	75.73	64.18	76.59	2,035
(G) Rainfall (1990)		mm/10day	187	0	76	12	18	8	39	21	0	9	15	28	18	170	107	57	168	117	79	121	45	75	83	33	24	90	105	144	148	126	127	233	40	84	32	110	2,749
Effective Rainfall	(ER)		74.8	0	53.2	0	0	0	27.3	14.7	0	0	0	19.6	0	68	42.8	39.9	67.2	46.8	55.3	48.4	31.5	46	22.5	1.2							36.2	46.6	28	58.8	22.4	44	895
(H) Irrigation Water Requirement	(IWR)	mm/10day	2.3	78.6	31.6	81.2	78.4	58.0	33.9	17.9	4.0	46.4	91.3	99.1	91.2	8.9	49.5	44.9	19.3	38.0	20.7	25.0	41.9	0.0	0.0	0.0							0.0	23.8	62.6	16.9	41.8	32.6	1,140
(F)-(G)		mm/day	0.23	7.86	2.88	8.12	7.84	7.25	3.39	1.79	0.56	4.64	9.13	9.91	9.12	0.89	4.50	4.49	1.93	3.80	2.07	2.50	3.81	0.00	0.00	0.00							0.00	2.38	6.26	1.69	4.18	2.96	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	0.48	16.38	5.99	16.91	16.33	15.11	7.07	3.73	1.18	9.66	19.01	20.66	19.00	1.85	9.37	9.34	4.01	7.91	4.31	5.22	7.94	0.00	0.00	0.00							0.00	4.95	13.04	3.53	8.70	6.17	
(H)/(I)		lit/sec/ha	0.06	1.90	0.69	1.96	1.89	1.75	0.82	0.43	0.14	1.12	2.20	2.39	2.20	0.21	1.08	1.08	0.46	0.92	0.50	0.60	0.92	0.00	0.00	0.00							0.00	0.57	1.51	0.41	1.01	0.71	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

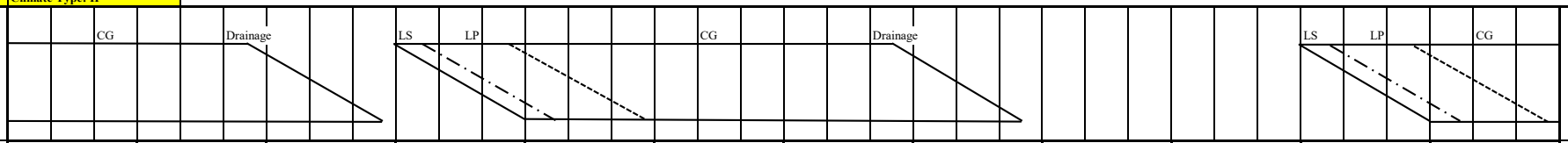
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: VIII
Province: Eastern Samar — **Climate Type: II**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet										10	10	10	10	10	11	10	10	10	10	10	11	10	10	5													
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.02			5.56			6.59			7.06			6.02			5.69			5.11			5.14			4.88			5.02			4.64			4.70			
(D) Area Factor																																							
Land Soaking Stage	(Als)											0.152	0.233	0.233	0.082																								
Land Preparation Stage	(Alp)	(Wet)										0.015	0.267	0.585	0.652	0.400	0.074																						
Crop Growing Stage	(Acg)													0.015	0.267	0.600	0.926	1.000	1.000	1.000	1.000	1.000	0.962	0.667	0.333	0.038													
Land Soaking Stage	(Als)																																0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet										0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85													
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150										29.64	29.64	29.64	28.73																								
(Dry)		120																															23.23	23.23	23.23	23.28			
Land Preparation Stage	(LP)											8.21	8.21	8.21	7.30	7.30	7.30																6.08	6.08	6.08	6.14	6.14	6.14	
Crop Growing Stage	(CG)		5.72	5.87	5.72	6.12	5.84	5.39	6.33	6.13	5.60			6.00	5.42	5.90	6.44	6.49	6.66	6.49	5.62	5.37	4.96	4.93	4.78	4.37									3.94	4.23	4.61	5.03	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	2.00	2.00	2.00	
Total	(FWR)	Wet										4.63	9.10	11.83	9.09	7.66	8.36	8.49	8.66	8.49	7.62	7.37	6.69	4.63	2.26	0.24													
		Dry	7.72	7.87	7.72	8.12	7.84	7.25	6.10	3.25	0.56																						3.62	7.04	9.06	7.57	6.42	6.96	
10-day FWR			77.23	78.73	84.95	81.16	78.38	58.02	61.03	32.51	3.94	46.29	90.99	118.31	90.94	76.59	91.92	84.87	86.57	84.87	76.21	73.66	73.62	46.25	22.58	1.21							36.22	70.36	90.60	75.73	64.18	76.59	2,035
(G) Rainfall (1990)		mm/10day	220	0	51	13	30	7	48	21	1	5	4	52	26	200	106	39	149	101	61	103	54	48	64	32	23	93	83	143	117	137	121	260	50	154	44	107	2,767
Effective Rainfall	(ER)		44	0	35.7	0	21	0	33.6	14.7	0	0	0	36.4	18.2	40	42.4	27.3	59.6	40.4	42.7	41.2	37.8	33.6	22.6	1.2							36.2	52	35	61.6	30.8	42.8	851
(H) Irrigation Water Requirement	(IWR)	mm/10day	33.2	78.7	49.3	81.2	57.4	58.0	27.4	17.8	3.9	46.3	91.0	81.9	72.7	36.6	49.5	57.6	27.0	44.5	33.5	32.5	35.8	12.7	0.0	0.0							0.0	18.4	55.6	14.1	33.4	33.8	1,184
(F)-(G)		mm/day	3.32	7.87	4.48	8.12	5.74	7.25	2.74	1.78	0.56	4.63	9.10	8.19	7.27	3.66	4.50	5.76	2.70	4.45	3.35	3.25	3.26	1.27	0.00	0.00							0.00	1.84	5.56	1.41	3.34	3.07	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	6.92	16.40	9.33	16.91	11.95	15.11	5.72	3.71	1.17	9.64	18.96	17.06	15.15	7.62	9.38	11.99	5.62	9.26	6.98	6.76	6.78	2.64	0.00	0.00							0.00	3.82	11.58	2.94	6.95	6.40	
(H)/(I)		lit/sec/ha	0.80	1.90	1.08	1.96	1.38	1.75	0.66	0.43	0.14	1.12	2.19	1.98	1.75	0.88	1.09	1.39	0.65	1.07	0.81	0.78	0.79	0.31	0.00	0.00							0.00	0.44	1.34	0.34	0.80	0.74	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Estimation based on Other Province's Operation

Region: IX

Province: Zamboanga del Norte — **Climate Type: III, IV**

(A) Cropping Pattern (45 days Staggered Period)

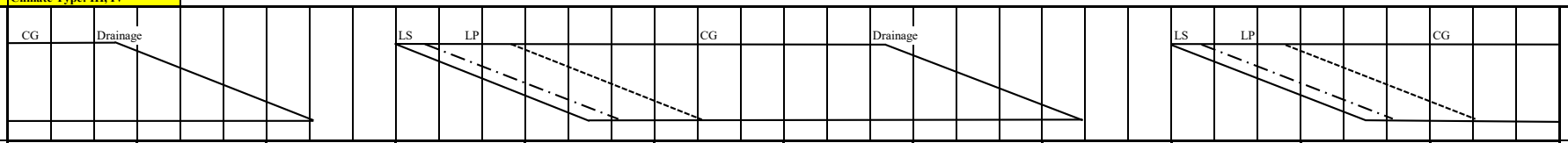
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet										10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	9											
		Dry	10	10	11	10	10	8	10	1																				10	10	11	10	10	10	10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.00			5.55			6.61			7.06			5.94			5.57			4.99			5.01			4.76			4.93			4.60			4.68		
(D) Area Factor																																						
Land Soaking Stage	(Als)											0.101	0.156	0.156	0.156	0.128	0.004																					
Land Preparation Stage	(Alp)	(Wet)										0.010	0.178	0.390	0.444	0.444	0.363	0.133	0.001																			
Crop Growing Stage	(Acg)													0.010	0.178	0.400	0.633	0.867	0.999	1.000	1.000	1.000	0.975	0.778	0.556	0.333	0.090											
Land Soaking Stage	(Als)																													0.101	0.156	0.156	0.156	0.116	0.001			
Land Preparation Stage	(Alp)	(Dry)																												0.010	0.178	0.395	0.444	0.444	0.354	0.133	0.001	
Crop Growing Stage	(Acg)		1.000	1.000	0.964	0.756	0.533	0.333	0.133	0.001																						0.016	0.200	0.422	0.644	0.867	0.999	1.000
(E) Crop Coefficient	(Kc)	Wet										0.80	0.82	0.85	0.90	0.94	1.02	1.10	1.14	1.14	1.12	1.08	1.01	0.97	0.96	0.93	0.85											
		Dry	1.12	1.08	1.01	0.97	0.96	0.93	0.85	0.85																				0.80	0.82	0.85	0.90	0.94	1.02	1.10	1.14	1.14
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	150										29.64	29.64	29.64	28.66	28.66	28.66	28.33	28.33	28.33	27.82	27.82																
(Dry)		120																												23.48	23.48	23.48	23.19	23.19	23.19	23.26	23.26	23.26
Land Preparation Stage	(LP)											8.21	8.21	8.21	7.23	7.23	7.23	6.90	6.90	6.90	6.39	6.39	6.39							6.34	6.34	6.34	6.05	6.05	6.05	6.12	6.12	6.12
Crop Growing Stage	(CG)		5.60	5.40	5.05	5.38	5.33	5.16	5.62	5.62				6.00	5.35	5.58	6.06	6.13	6.35	6.35	5.59	5.39	5.04	4.86	4.81	4.66	4.05					4.19	4.14	4.32	4.69	5.15	5.34	5.34
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00					2.00	2.00	2.00	2.00	2.00	2.00	2.00
Total	(FWR)	Wet										3.08	6.09	7.91	8.99	9.91	7.84	7.96	8.35	8.35	7.59	7.39	6.86	5.34	3.79	2.22	0.54											
		Dry	7.60	7.40	6.80	5.58	3.91	2.38	1.01	0.01																				2.43	4.79	6.27	7.53	8.04	6.47	7.01	7.33	7.34
10-day FWR			76.00	74.00	74.76	55.82	39.06	19.08	10.13	0.01		30.76	60.86	79.07	89.87	99.10	86.23	79.64	83.48	83.50	75.89	73.89	75.50	53.37	37.86	24.39	4.90			24.35	47.91	68.92	75.31	80.44	64.74	70.11	73.34	80.69	1,973
(G) Rainfall (1981)		mm/10day	37	38	39	23	11	1	2	4	46	3	30	54	61	38	66	49	119	106	66	53	114	39	77	56	80	97	51	42	88	68	142	109	91	88	3	57	2,048
Effective Rainfall	(ER)		25.9	0	27.3	16.1	0	0	0	0		0	21	37.8	42.7	26.6	46.2	34.3	47.6	42.4	46.2	37.1	45.6	27.3	37.9	24.4	4.9			24.4	47.9	47.6	56.8	43.6	63.7	61.6	0	39.9	977
(H) Irrigation Water Requirement	(IWR)	mm/10day	50.1	74.0	47.5	39.7	39.1	19.1	10.1	0.0		30.8	39.9	41.3	47.2	72.5	40.0	45.3	35.9	41.1	29.7	36.8	29.9	26.1	0.0	0.0	0.0			0.0	0.0	21.3	18.5	36.8	1.0	8.5	73.3	40.8	996
(F)-(G)		mm/day	5.01	7.40	4.31	3.97	3.91	2.38	1.01	0.01		3.08	3.99	4.13	4.72	7.25	3.64	4.53	3.59	4.11	2.97	3.68	2.72	2.61	0.00	0.00	0.00			0.00	0.00	1.94	1.85	3.68	0.10	0.85	7.33	3.71	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48			0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	10.44	15.42	8.99	8.27	8.14	4.97	2.11	0.02		6.41	8.30	8.60	9.83	15.10	7.58	9.45	7.48	8.56	6.19	7.67	5.66	5.43	0.00	0.00	0.00			0.00	0.00	4.04	3.86	7.68	0.22	1.77	15.28	7.72	
(H)/(I)		lit/sec/ha	1.21	1.78	1.04	0.96	0.94	0.58	0.24	0.00		0.74	0.96	1.00	1.14	1.75	0.88	1.09	0.87	0.99	0.72	0.89	0.66	0.63	0.00	0.00	0.00			0.00	0.00	0.47	0.45	0.89	0.03	0.21	1.77	0.89	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Based on NIA Present Operation with JICA Team's Modifications

Region: IX

Province: Zamboanga del Sur — **Climate Type: III, IV**

(A) Cropping Pattern (45 days Staggered Period)

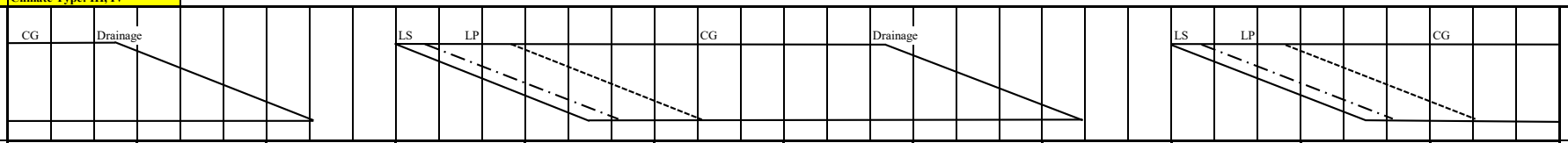
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet										10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	9											
		Dry	10	10	11	10	10	8	10	1																				10	10	11	10	10	10	10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	6.21			6.44			7.80			6.95			5.40			4.84			4.28			4.75			4.62			4.88			4.71			5.20		
(D) Area Factor																																						
Land Soaking Stage	(Als)											0.101	0.156	0.156	0.156	0.128	0.004																					
Land Preparation Stage	(Alp)	(Wet)										0.010	0.178	0.390	0.444	0.444	0.363	0.133	0.001																			
Crop Growing Stage	(Acg)													0.010	0.178	0.400	0.633	0.867	0.999	1.000	1.000	1.000	0.975	0.778	0.556	0.333	0.090											
Land Soaking Stage	(Als)																													0.101	0.156	0.156	0.156	0.116	0.001			
Land Preparation Stage	(Alp)	(Dry)																												0.010	0.178	0.395	0.444	0.444	0.354	0.133	0.001	
Crop Growing Stage	(Acg)		1.000	1.000	0.964	0.756	0.533	0.333	0.133	0.001																						0.016	0.200	0.422	0.644	0.867	0.999	1.000
(E) Crop Coefficient	(Kc)	Wet										0.80	0.82	0.85	0.90	0.94	1.02	1.10	1.14	1.14	1.12	1.08	1.01	0.97	0.96	0.93	0.85											
		Dry	1.12	1.08	1.01	0.97	0.96	0.93	0.85	0.85																				0.80	0.82	0.85	0.90	0.94	1.02	1.10	1.14	1.14
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	165										31.69	31.69	31.69	30.32	30.32	30.32	29.83	29.83	29.83	29.34	29.34																
(Dry)		145																												27.01	27.01	27.01	26.86	26.86	26.86	27.29	27.29	27.29
Land Preparation Stage	(LP)											8.12	8.12	8.12	6.75	6.75	6.75	6.26	6.26	6.26	5.77	5.77	5.77							6.29	6.29	6.29	6.14	6.14	6.14	6.58	6.58	6.58
Crop Growing Stage	(CG)		6.96	6.71	6.27	6.25	6.18	5.99	6.63	6.63				5.91	4.86	5.08	5.51	5.32	5.52	5.52	4.79	4.62	4.32	4.61	4.56	4.42	3.93					4.15	4.24	4.43	4.80	5.72	5.93	5.93
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00					2.00	2.00	2.00	2.00	2.00	2.00	2.00
Total	(FWR)	Wet										3.28	6.39	8.19	8.95	9.71	7.32	7.18	7.52	7.52	6.79	6.62	6.16	5.14	3.65	2.14	0.53											
		Dry	8.96	8.71	7.97	6.23	4.36	2.66	1.15	0.01																				2.79	5.33	6.80	8.17	8.56	6.58	7.57	7.93	7.93
10-day FWR			89.55	87.07	87.72	62.35	43.61	21.28	11.48	0.01		32.82	63.88	81.88	89.49	97.10	80.57	71.82	75.16	75.18	67.94	66.22	67.81	51.41	36.47	23.51	4.80			27.91	53.34	74.78	81.66	85.56	65.84	75.68	79.27	87.21	2,020
(G) Rainfall (1998)		mm/10day	4	11	11	3	8	13	11	1	5	1	3	21	20	36	70	68	76	150	60	94	112	68	90	83	44	50	87	158	119	114	148	102	114	66	63	67	2,151
Effective Rainfall	(ER)		0	0	0	0	0	0	0	0		0	0	14.7	14	25.2	49	47.6	53.2	60	42	65.8	44.8	47.6	36.5	23.5	4.8			27.9	47.6	45.6	59.2	40.8	45.6	46.2	44.1	46.9	933
(H) Irrigation Water Requirement	(IWR)	mm/10day	89.6	87.1	87.7	62.3	43.6	21.3	11.5	0.0		32.8	63.9	67.2	75.5	71.9	31.6	24.2	22.0	15.2	25.9	0.4	23.0	3.8	0.0	0.0	0.0			0.0	5.7	29.2	22.5	44.8	20.2	29.5	35.2	40.3	1,088
(F)-(G)		mm/day	8.96	8.71	7.97	6.23	4.36	2.66	1.15	0.01		3.28	6.39	6.72	7.55	7.19	2.87	2.42	2.20	1.52	2.59	0.04	2.09	0.38	0.00	0.00	0.00			0.00	0.57	2.65	2.25	4.48	2.02	2.95	3.52	3.66	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48			0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	18.66	18.14	16.61	12.99	9.09	5.54	2.39	0.02		6.84	13.31	13.99	15.73	14.98	5.98	5.05	4.58	3.16	5.40	0.09	4.36	0.79	0.00	0.00	0.00			0.00	1.20	5.53	4.68	9.33	4.22	6.14	7.33	7.63	
(H)/(I)		lit/sec/ha	2.16	2.10	1.92	1.50	1.05	0.64	0.28	0.00		0.79	1.54	1.62	1.82	1.73	0.69	0.58	0.53	0.37	0.63	0.01	0.50	0.09	0.00	0.00	0.00			0.00	0.14	0.64	0.54	1.08	0.49	0.71	0.85	0.88	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Estimation based on Other Province's Operation

Region: IX

Province: Zamboanga Sibugay — **Climate Type: III, IV**

(A) Cropping Pattern (45 days Staggered Period)

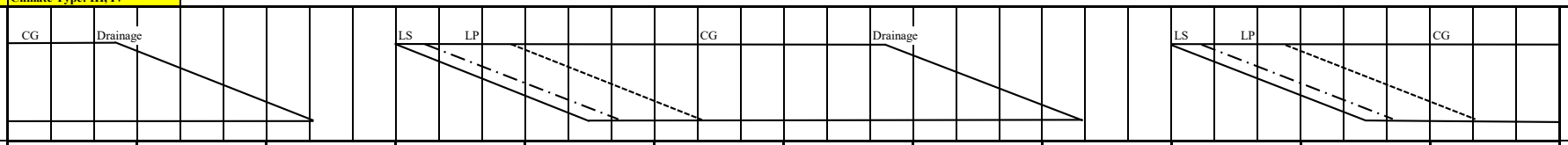
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet										10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	9												
	Dry	10	10	11	10	10	8	10	1																				10	10	11	10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	5.13			5.69			6.74			7.14			6.00			5.63			5.05			5.06			4.82			5.01			4.68			4.78			
(D) Area Factor																																						
Land Soaking Stage	(Als)										0.101	0.156	0.156	0.156	0.128	0.004																						
Land Preparation Stage	(Alp) (Wet)										0.010	0.178	0.390	0.444	0.444	0.363	0.133	0.001																				
Crop Growing Stage	(Acg)												0.010	0.178	0.400	0.633	0.867	0.999	1.000	1.000	1.000	0.975	0.778	0.556	0.333	0.090												
Land Soaking Stage	(Als)																												0.101	0.156	0.156	0.156	0.116	0.001				
Land Preparation Stage	(Alp) (Dry)																												0.010	0.178	0.395	0.444	0.444	0.354	0.133	0.001		
Crop Growing Stage	(Acg)	1.000	1.000	0.964	0.756	0.533	0.333	0.133	0.001																						0.016	0.200	0.422	0.644	0.867	0.999	1.000	
(E) Crop Coefficient (Kc)	Wet										0.80	0.82	0.85	0.90	0.94	1.02	1.10	1.14	1.14	1.12	1.08	1.01	0.97	0.96	0.93	0.85												
	Dry	1.12	1.08	1.01	0.97	0.96	0.93	0.85	0.85																				0.80	0.82	0.85	0.90	0.94	1.02	1.10	1.14	1.14	
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 150										29.71	29.71	29.71	28.71	28.71	28.71	28.38	28.38	28.38	27.87	27.87																	
(Dry)	120																												23.55	23.55	23.55	23.26	23.26	23.26	23.35	23.35	23.35	
Land Preparation Stage	(LP)										8.28	8.28	8.28	7.28	7.28	7.28	6.95	6.95	6.95	6.44	6.44	6.44							6.41	6.41	6.41	6.12	6.12	6.12	6.21	6.21	6.21	
Crop Growing Stage	(CG)	5.75	5.54	5.18	5.52	5.46	5.29	5.73	5.73				6.07	5.40	5.64	6.12	6.19	6.42	6.42	5.66	5.45	5.10	4.91	4.86	4.71	4.10					4.26	4.21	4.40	4.77	5.26	5.45	5.45	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00					2.00	2.00	2.00	2.00	2.00	2.00	2.00	
Total	(FWR) Wet										3.08	6.11	7.95	9.03	9.96	7.90	8.03	8.42	8.42	7.66	7.45	6.92	5.37	3.81	2.23	0.55												
	Dry	7.75	7.54	6.92	5.68	3.98	2.43	1.03	0.01																				2.44	4.81	6.31	7.59	8.12	6.55	7.12	7.45	7.45	
10-day FWR		77.46	75.40	76.15	56.85	39.77	19.43	10.28	0.01		30.84	61.09	79.46	90.28	99.63	86.87	80.28	84.17	84.18	76.56	74.54	76.15	53.75	38.13	24.56	4.94			24.43	48.15	69.36	75.88	81.15	65.51	71.18	74.48	81.94	1,993
(G) Rainfall (1981)	mm/10day	42	26	42	18	16	0	2	11	83	14	51	78	91	72	107	50	132	115	80	61	126	35	71	78	103	106	57	34	90	65	112	102	86	72	2	48	2,278
Effective Rainfall	(ER)	29.4	18.2	29.4	0	0	0	0	0		0	35.7	54.6	63.7	50.4	42.8	35	52.8	46	56	42.7	50.4	24.5	38.1	24.6	4.9			23.8	48.2	45.5	44.8	40.8	60.2	50.4	0	33.6	1,047
(H) Irrigation Water Requirement	(IWR) mm/10day	48.1	57.2	46.8	56.8	39.8	19.4	10.3	0.0		30.8	25.4	24.9	26.6	49.2	44.1	45.3	31.4	38.2	20.6	31.8	25.8	29.2	0.0	0.0	0.0			0.6	0.0	23.9	31.1	40.4	5.3	20.8	74.5	48.3	946
(F)-(G)	mm/day	4.81	5.72	4.25	5.68	3.98	2.43	1.03	0.01		3.08	2.54	2.49	2.66	4.92	4.01	4.53	3.14	3.82	2.06	3.18	2.34	2.92	0.00	0.00	0.00			0.06	0.00	2.17	3.11	4.04	0.53	2.08	7.45	4.39	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48			0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	10.01	11.92	8.85	11.84	8.29	5.06	2.14	0.02		6.42	5.29	5.18	5.54	10.26	8.35	9.43	6.53	7.95	4.28	6.63	4.88	6.09	0.00	0.00	0.00			0.13	0.00	4.52	6.47	8.41	1.11	4.33	15.52	9.16	
(H)/(I)	lit/sec/ha	1.16	1.38	1.02	1.37	0.96	0.59	0.25	0.00		0.74	0.61	0.60	0.64	1.19	0.97	1.09	0.76	0.92	0.50	0.77	0.56	0.71	0.00	0.00	0.00			0.02	0.00	0.52	0.75	0.97	0.13	0.50	1.80	1.06	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA Team's Modifications

Region: X

Province: Bukidnon — **Climate Type: III, IV**

(A) Cropping Pattern (60 days Staggered Period)

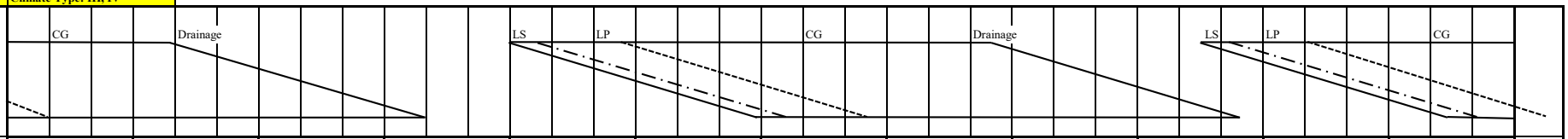
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
(B) Month																																							
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	4							
		Dry	10	10	11	10	10	8	10	10	11	10																			5	11	10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.00			4.00			4.00			4.00			4.00			4.00			4.00			4.00			4.00			4.00			4.00			4.00			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.076	0.117	0.117	0.117	0.117	0.116	0.030																		
Land Preparation Stage	(Alp)	(Wet)													0.008	0.133	0.296	0.333	0.333	0.333	0.320	0.183	0.027																
Crop Growing Stage	(Acg)																0.012	0.150	0.317	0.483	0.650	0.817	0.973	1.000	1.000	0.973	0.817	0.650	0.483	0.317	0.150	0.012							
Land Soaking Stage	(Als)																														0.021	0.114	0.117	0.117	0.117	0.117	0.087	0.001	
Land Preparation Stage	(Alp)	(Dry)	0.083																													0.061	0.233	0.333	0.333	0.333	0.333	0.258	
Crop Growing Stage	(Acg)		0.917	1.000	1.000	0.999	0.900	0.750	0.600	0.433	0.258	0.083																						0.068	0.233	0.400	0.567	0.742	
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.10	1.06	1.04	1.01	0.97	0.96	0.93	0.85							
		Dry	1.09	1.11	1.10	1.06	1.04	1.01	0.97	0.96	0.93	0.85																			0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150													26.85	26.85	26.85	26.85	26.85	26.85	26.85																		
(Dry)		120																													22.56	22.56	22.56	22.56	22.56	22.56	22.56	22.56	
Land Preparation Stage	(LP)		5.42												5.42	5.42	5.42	5.42	5.42	5.42	5.42	5.42	5.42								5.42	5.42	5.42	5.42	5.42	5.42	5.42	5.42	
Crop Growing Stage	(CG)		4.36	4.44	4.40	4.24	4.16	4.04	3.88	3.84	3.72	3.40					3.40	3.60	3.76	3.96	4.08	4.28	4.36	4.44	4.40	4.24	4.16	4.04	3.88	3.84	3.72	3.40		3.60	3.76	3.96	4.08	4.28	
Percolation	(P)	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90					1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90		1.90	1.90	1.90	1.90	1.90	
Total	(FWR)	Wet													2.08	3.86	4.81	5.77	6.74	7.75	6.43	6.04	6.24	6.34	6.30	5.97	4.95	3.86	2.79	1.82	0.84	0.06							
		Dry	6.19	6.34	6.30	6.13	5.45	4.46	3.47	2.49	1.45	0.44																			0.47	2.90	3.90	4.82	5.76	6.79	7.16	6.01	
10-day FWR			61.90	63.40	69.30	61.34	54.54	35.64	34.68	24.85	15.95	4.40			20.84	38.62	52.90	57.71	67.40	77.50	64.27	60.41	68.61	63.40	63.00	65.72	49.51	38.61	27.92	18.20	10.80	32.19	39.03	48.19	57.63	67.89	71.58	66.07	1,654
(G) Rainfall (1979)		mm/10day	13	13	37	29	11	25	106	34	25	10	39	54	35	146	132	102	167	193	97	125	91	61	40	116	47	137	111	109	78	100	107	48	62	62	28	74	2,664
Effective Rainfall	(ER)		0	0	25.9	20.3	0	17.5	34.7	23.8	16	0			20.8	38.6	52.8	40.8	66.8	77.2	64.3	50	63.7	42.7	28	46.4	32.9	38.6	27.9	18.2	10.8	32.2	39	33.6	43.4	43.4	19.6	51.8	1,122
(H) Irrigation Water Requirement	(IWR)	mm/10day	61.9	63.4	43.4	41.0	54.5	18.1	0.0	1.1	0.0	4.4			0.0	0.0	0.1	16.9	0.6	0.3	0.0	10.4	4.9	20.7	35.0	19.3	16.6	0.0	0.0	0.0	0.0	0.0	0.0	14.6	14.2	24.5	52.0	14.3	532
(F)-(G)		mm/day	6.19	6.34	3.95	4.10	5.45	2.27	0.00	0.11	0.00	0.44			0.00	0.00	0.01	1.69	0.06	0.03	0.00	1.04	0.45	2.07	3.50	1.76	1.66	0.00	0.00	0.00	0.00	0.00	0.00	1.46	1.42	2.45	5.20	1.30	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48			0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	12.90	13.21	8.22	8.55	11.36	4.72	0.00	0.22	0.00	0.92			0.00	0.00	0.02	3.52	0.13	0.06	0.00	2.17	0.93	4.31	7.29	3.66	3.46	0.00	0.00	0.00	0.00	0.00	0.00	3.04	2.97	5.10	10.83	2.70	
(H)/(I)		lit/sec/ha	1.49	1.53	0.95	0.99	1.32	0.55	0.00	0.03	0.00	0.11			0.00	0.00	0.00	0.41	0.01	0.01	0.00	0.25	0.11	0.50	0.84	0.42	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.34	0.59	1.25	0.31	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: X

Province: Camiguin — **Climate Type: IV**

(A) Cropping Pattern (30 days Staggered Period)

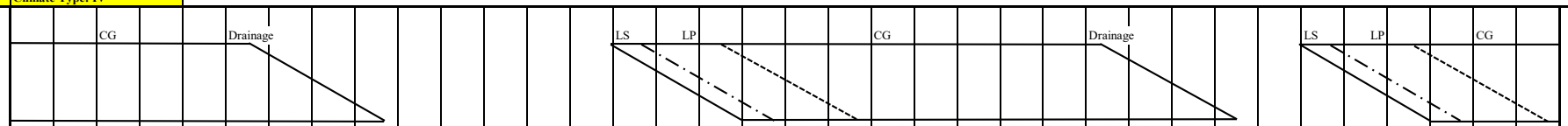
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	5								
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	5.01			5.54			6.57			7.04			5.99			5.67			5.09			5.11			4.85			5.01			4.65			4.71			
(D) Area Factor																																						
Land Soaking Stage	(Als)															0.154	0.226	0.226	0.079																			
Land Preparation Stage	(Alp) (Wet)															0.023	0.290	0.587	0.631	0.387	0.079																	
Crop Growing Stage	(Acg)																	0.026	0.090	0.613	0.921	1.000	1.000	1.000	1.000	1.000	0.942	0.645	0.323	0.040								
Land Soaking Stage	(Als)																															0.152	0.226	0.226	0.079			
Land Preparation Stage	(Alp) (Dry)																															0.015	0.258	0.566	0.663	0.419	0.072	
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc) Wet															0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85								
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 150															28.70	28.42	28.42	28.42																			
(Dry)	120																															23.23	23.23	23.23	23.29			
Land Preparation Stage	(LP)															7.27	6.99	6.99	6.99	6.48	6.48	6.479										6.09	6.09	6.09	6.14	6.14	6.14	
Crop Growing Stage	(CG)	5.71	5.86	5.71	6.09	5.82	5.37	6.31	6.11	5.58								4.82	5.10	4.99	5.45	5.80	5.98	5.83	5.62	5.09	4.70	4.66	4.66	4.26				3.95	4.24	4.62	5.04	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR) Wet															4.59	8.45	10.70	7.29	6.79	7.37	7.80	7.98	7.83	7.62	7.09	6.32	4.29	2.15	0.25								
	Dry	7.71	7.86	7.71	8.09	7.82	7.23	6.09	3.24	0.56																						3.62	6.82	8.79	7.58	6.54	6.96	
10-day FWR		77.11	78.62	84.83	80.94	78.17	57.87	60.89	32.44	3.93						50.46	84.49	107.03	72.95	67.91	73.70	85.83	79.79	78.25	83.83	70.93	63.16	42.93	21.51	1.25		36.23	68.23	87.88	75.80	65.44	76.57	1,949
(G) Rainfall (2015)	mm/10day	225	113	134	67	0	5	10	8	15	0	17	0	18	0	1	37	65	64	41	0	60	39	36	24	21	24	14	41	50	0	57	2	61	15	217	0	1,481
Effective Rainfall	(ER)	45	45.2	53.6	46.9	0	0	0	0	0						0	25.9	45.5	44.8	28.7	0	42	27.3	25.2	16.8	14.7	16.8	0	21.5	1.3		36.2	0	42.7	0	43.4	0	624
(H) Irrigation Water Requirement	(IWR) mm/10day	32.1	33.4	31.2	34.0	78.2	57.9	60.9	32.4	3.9						50.5	58.6	61.5	28.1	39.2	73.7	43.8	52.5	53.1	67.0	56.2	46.4	42.9	0.0	0.0		0.0	68.2	45.2	75.8	22.0	76.6	1,325
(F)-(G)	mm/day	3.21	3.34	2.84	3.40	7.82	7.23	6.09	3.24	0.56						4.59	5.86	6.15	2.81	3.92	7.37	3.98	5.25	5.31	6.09	5.62	4.64	4.29	0.00	0.00		0.00	6.82	4.52	7.58	2.20	6.96	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	6.69	6.96	5.91	7.09	16.29	15.07	12.69	6.76	1.17						9.56	12.21	12.82	5.86	8.17	15.35	8.30	10.93	11.05	12.70	11.71	9.66	8.94	0.00	0.00		0.00	14.21	9.41	15.79	4.59	14.50	
(H)/(I)	lit/sec/ha	0.77	0.81	0.68	0.82	1.88	1.74	1.47	0.78	0.14						1.11	1.41	1.48	0.68	0.95	1.78	0.96	1.27	1.28	1.47	1.36	1.12	1.04	0.00	0.00		0.00	1.65	1.09	1.83	0.53	1.68	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: X

Province: Lanao del Norte — **Climate Type: III, IV**

(A) Cropping Pattern (45 days Staggered Period)

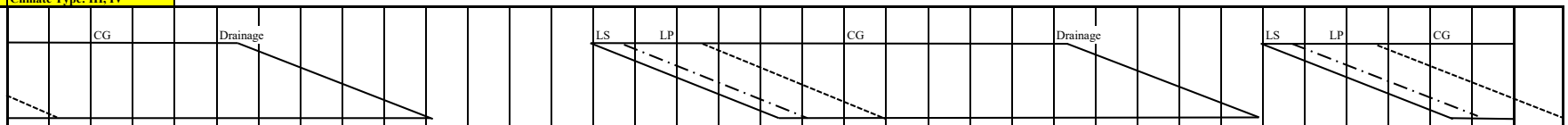
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	9						
		Dry	10	10	11	10	10	8	10	10	11	10	1																				10	10	10	10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.99			5.53			6.58			7.04			5.93			5.56			4.98			4.99			4.76			4.93			4.59			4.67		
(D) Area Factor																																						
Land Soaking Stage	(Als)																0.106	0.156	0.156	0.156	0.116	0.001																
Land Preparation Stage	(Alp)	(Wet)															0.016	0.200	0.404	0.444	0.444	0.354	0.122															
Crop Growing Stage	(Acg)																		0.018	0.200	0.422	0.644	0.878	1.000	1.000	1.000	1.000	0.960	0.756	0.533	0.311	0.082						
Land Soaking Stage	(Als)																																0.101	0.156	0.156	0.156	0.115	0.004
Land Preparation Stage	(Alp)	(Dry)	0.133	0.001																													0.010	0.178	0.390	0.444	0.444	0.299
Crop Growing Stage	(Acg)		0.867	0.999	1.000	1.000	1.000	0.988	0.822	0.600	0.303	0.133	0.001																						0.010	0.178	0.400	0.697
(E) Crop Coefficient	(Kc)	Wet															0.80	0.82	0.85	0.90	0.94	1.02	1.10	1.14	1.14	1.12	1.08	1.01	0.97	0.96	0.93	0.85						
		Dry	1.10	1.14	1.14	1.12	1.08	1.01	0.97	0.96	0.93	0.90	0.85																				0.80	0.82	0.85	0.90	0.94	1.02
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	150															28.65	28.32	28.32	28.32	27.81	27.81																
(Dry)		120																															23.18	23.18	23.18	23.25	23.25	23.25
Land Preparation Stage	(LP)		6.39	6.39													7.22	6.89	6.89	6.89	6.38	6.38	6.38										6.04	6.04	6.04	6.11	6.11	6.11
Crop Growing Stage	(CG)		5.49	5.69	5.69	6.19	5.97	5.59	6.38	6.32	6.12	6.34	5.98						4.73	5.00	4.68	5.08	5.48	5.69	5.69	5.59	5.14	4.81	4.62	4.73	4.58	4.19			3.90	4.20	4.39	4.76
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00						2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00
Total	(FWR)	Wet															3.15	5.80	7.32	8.88	8.88	6.85	7.34	7.69	7.69	7.59	7.14	6.54	5.00	3.59	2.05	0.51						
		Dry	7.34	7.69	7.69	8.19	7.97	7.49	6.89	4.99	2.46	1.11	0.01																				2.40	4.69	6.03	7.44	7.94	6.63
10-day FWR			73.43	76.87	84.57	81.94	79.72	59.95	68.90	49.90	27.06	11.09	0.01				34.67	57.97	73.24	88.79	88.79	68.46	80.79	76.89	76.89	83.48	71.41	65.35	50.03	35.89	20.48	4.57	24.02	46.91	60.31	74.44	79.43	72.97	1,949
(G) Rainfall (1997)		mm/10day	31	56	66	57	76	34	178	1	13	41	16	3	49	30	27	59	88	57	172	133	114	29	57	58	162	139	154	80	54	119	25	135	19	26	25	55	2,438
Effective Rainfall	(ER)		21.7	39.2	46.2	39.9	53.2	23.8	68.9	0	0	11.1	0				18.9	41.3	61.6	39.9	68.8	53.2	45.6	20.3	39.9	40.6	64.8	55.6	50	35.9	20.5	4.6	17.5	46.9	0	18.2	17.5	38.5	1,104
(H) Irrigation Water Requirement	(IWR)	mm/10day	51.7	37.7	38.4	42.0	26.5	36.2	0.0	49.9	27.1	0.0	0.0				15.8	16.7	11.6	48.9	20.0	15.3	35.2	56.6	37.0	42.9	6.6	9.8	0.0	0.0	0.0	0.0	6.5	0.0	60.3	56.2	61.9	34.5	845
(F)-(G)		mm/day	5.17	3.77	3.49	4.20	2.65	4.52	0.00	4.99	2.46	0.00	0.01				1.43	1.67	1.16	4.89	2.00	1.53	3.20	5.66	3.70	3.90	0.66	0.98	0.00	0.00	0.00	0.00	0.65	0.00	6.03	5.62	6.19	3.13	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48				0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	10.78	7.85	7.27	8.76	5.53	9.42	0.00	10.40	5.13	0.00	0.02				2.99	3.47	2.42	10.19	4.17	3.18	6.66	11.79	7.71	8.12	1.38	2.03	0.00	0.00	0.00	0.00	1.36	0.00	12.56	11.72	12.90	6.53	
(H)/(I)		lit/sec/ha	1.25	0.91	0.84	1.01	0.64	1.09	0.00	1.20	0.59	0.00	0.00				0.35	0.40	0.28	1.18	0.48	0.37	0.77	1.36	0.89	0.94	0.16	0.24	0.00	0.00	0.00	0.00	0.16	0.00	1.45	1.36	1.49	0.76	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: X

Province: Misamis Occidental — **Climate Type: III, IV**

(A) Cropping Pattern (30 days Staggered Period)

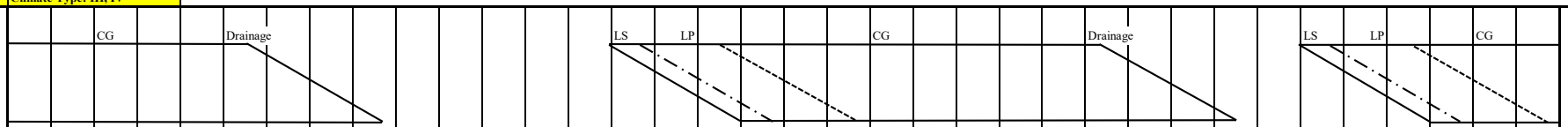
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	5								
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	4.96			5.49			6.53			7.00			5.95			5.59			5.01			5.02			4.79			4.95			4.59			4.66			
(D) Area Factor																																						
Land Soaking Stage	(Als)															0.154	0.226	0.226	0.079																			
Land Preparation Stage	(Alp) (Wet)															0.023	0.290	0.587	0.631	0.387	0.079																	
Crop Growing Stage	(Acg)																	0.026	0.090	0.613	0.921	1.000	1.000	1.000	1.000	1.000	0.942	0.645	0.323	0.040								
Land Soaking Stage	(Als)																															0.152	0.226	0.226	0.079			
Land Preparation Stage	(Alp) (Dry)																															0.015	0.258	0.566	0.663	0.419	0.072	
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc) Wet															0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85								
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 150															28.66	28.35	28.35	28.35																			
(Dry)	120																															23.18	23.18	23.18	23.24			
Land Preparation Stage	(LP)															7.24	6.92	6.92	6.92	6.41	6.41	6.409										6.04	6.04	6.04	6.10	6.10	6.10	
Crop Growing Stage	(CG)	5.65	5.80	5.65	6.04	5.76	5.33	6.27	6.07	5.55								4.75	5.03	4.91	5.36	5.71	5.87	5.72	5.52	5.03	4.65	4.60	4.60	4.21				3.90	4.19	4.57	4.99	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR) Wet															4.58	8.41	10.64	7.24	6.72	7.29	7.71	7.87	7.72	7.52	7.03	6.26	4.26	2.13	0.25								
	Dry	7.65	7.80	7.65	8.04	7.76	7.19	6.06	3.23	0.56																						3.61	6.80	8.75	7.53	6.50	6.91	
10-day FWR		76.54	78.03	84.20	80.39	77.65	57.49	60.61	32.29	3.91						50.39	84.13	106.44	72.38	67.16	72.85	84.83	78.73	77.23	82.74	70.30	62.61	42.56	21.33	1.24		36.14	67.97	87.46	75.35	64.96	75.99	1,934
(G) Rainfall (1998)	mm/10day	7	19	16	7	4	20	12	1	5	0	0	16	9	11	46	49	68	115	57	72	97	65	81	47	42	34	68	123	80	108	183	89	114	86	87	98	1,936
Effective Rainfall	(ER)	0	0	0	0	0	14	0	0	0						32.2	34.3	47.6	46	39.9	50.4	67.9	45.5	56.7	32.9	29.4	23.8	42.6	21.3	1.2		36.1	62.3	45.6	60.2	60.9	68.6	919
(H) Irrigation Water Requirement	(IWR) mm/10day	76.5	78.0	84.2	80.4	77.6	43.5	60.6	32.3	3.9						18.2	49.8	58.8	26.4	27.3	22.5	16.9	33.2	20.5	49.8	40.9	38.8	0.0	0.0	0.0		0.0	5.7	41.9	15.1	4.1	7.4	1,014
(F)-(G)	mm/day	7.65	7.80	7.65	8.04	7.76	5.44	6.06	3.23	0.56						1.65	4.98	5.88	2.64	2.73	2.25	1.54	3.32	2.05	4.53	4.09	3.88	0.00	0.00	0.00		0.00	0.57	4.19	1.51	0.41	0.67	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	15.95	16.26	15.95	16.75	16.18	11.33	12.63	6.73	1.16						3.44	10.38	12.26	5.50	5.68	4.68	3.21	6.92	4.28	9.44	8.52	8.09	0.00	0.00	0.00		0.00	1.18	8.72	3.16	0.85	1.40	
(H)/(I)	lit/sec/ha	1.85	1.88	1.85	1.94	1.87	1.31	1.46	0.78	0.13						0.40	1.20	1.42	0.64	0.66	0.54	0.37	0.80	0.49	1.09	0.99	0.94	0.00	0.00	0.00		0.00	0.14	1.01	0.37	0.10	0.16	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: X

Province: Misamis Oriental — **Climate Type: III**

(A) Cropping Pattern (30 days Staggered Period)

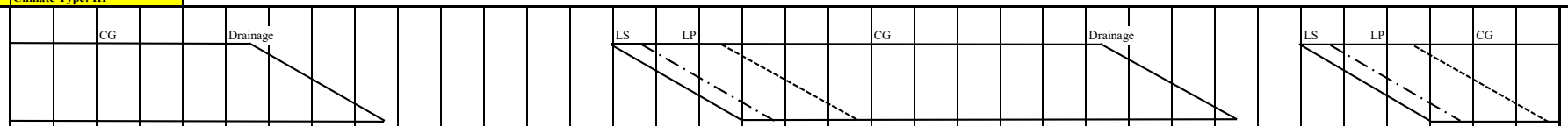
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	5								
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	4.96			5.50			6.54			7.00			5.93			5.58			5.01			5.03			4.78			4.93			4.58			4.66			
(D) Area Factor																																						
Land Soaking Stage	(Als)															0.154	0.226	0.226	0.079																			
Land Preparation Stage	(Alp) (Wet)															0.023	0.290	0.587	0.631	0.387	0.079																	
Crop Growing Stage	(Acg)																	0.026	0.090	0.613	0.921	1.000	1.000	1.000	1.000	1.000	0.942	0.645	0.323	0.040								
Land Soaking Stage	(Als)																															0.152	0.226	0.226	0.079			
Land Preparation Stage	(Alp) (Dry)																															0.015	0.258	0.566	0.663	0.419	0.072	
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc) Wet															0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85								
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 150															28.65	28.34	28.34	28.34																			
(Dry)	120																															23.17	23.17	23.17	23.24			
Land Preparation Stage	(LP)															7.22	6.91	6.91	6.91	6.41	6.41	6.409										6.03	6.03	6.03	6.10	6.10	6.10	
Crop Growing Stage	(CG)	5.65	5.80	5.65	6.05	5.78	5.34	6.28	6.08	5.56								4.74	5.02	4.91	5.36	5.71	5.89	5.73	5.53	5.02	4.64	4.59	4.58	4.19				3.89	4.19	4.57	4.99	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR) Wet															4.58	8.41	10.64	7.23	6.72	7.29	7.71	7.89	7.73	7.53	7.02	6.25	4.25	2.13	0.25								
	Dry	7.65	7.80	7.65	8.05	7.78	7.20	6.07	3.23	0.56																						3.61	6.79	8.74	7.53	6.50	6.91	
10-day FWR		76.54	78.03	84.20	80.50	77.75	57.57	60.68	32.33	3.92						50.35	84.09	106.36	72.31	67.16	72.85	84.83	78.85	77.34	82.86	70.19	62.52	42.50	21.27	1.24		36.13	67.93	87.39	75.35	64.96	75.99	1,934
(G) Rainfall (1982)	mm/10day	21	56	103	130	50	32	1	57	185	39	14	10	13	35	45	90	111	40	45	62	35	44	150	44	55	42	20	40	56	35	22	22	20	54	36	9	1,823
Effective Rainfall	(ER)	14.7	39.2	41.2	52	35	22.4	0	32.3	3.9						31.5	63	44.4	28	31.5	43.4	24.5	30.8	60	30.8	38.5	29.4	14	21.3	1.2		15.4	15.4	14	37.8	25.2	0	841
(H) Irrigation Water Requirement	(IWR) mm/10day	61.8	38.8	43.0	28.5	42.8	35.2	60.7	0.0	0.0						18.9	21.1	62.0	44.3	35.7	29.5	60.3	48.1	17.3	52.1	31.7	33.1	28.5	0.0	0.0		20.7	52.5	73.4	37.5	39.8	76.0	1,093
(F)-(G)	mm/day	6.18	3.88	3.91	2.85	4.28	4.40	6.07	0.00	0.00						1.71	2.11	6.20	4.43	3.57	2.95	5.48	4.81	1.73	4.73	3.17	3.31	2.85	0.00	0.00		2.07	5.25	7.34	3.75	3.98	6.91	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	12.88	8.09	8.14	5.94	8.91	9.16	12.64	0.00	0.00						3.57	4.39	12.91	9.23	7.43	6.14	11.43	10.01	3.61	9.86	6.60	6.90	5.94	0.00	0.00		4.32	10.94	15.29	7.82	8.28	14.39	
(H)/(I)	lit/sec/ha	1.49	0.94	0.94	0.69	1.03	1.06	1.46	0.00	0.00						0.41	0.51	1.49	1.07	0.86	0.71	1.32	1.16	0.42	1.14	0.76	0.80	0.69	0.00	0.00		0.50	1.27	1.77	0.91	0.96	1.67	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: XI

Province: Compostela Valley — **Climate Type: IV**

(A) Cropping Pattern (30 days Staggered Period)

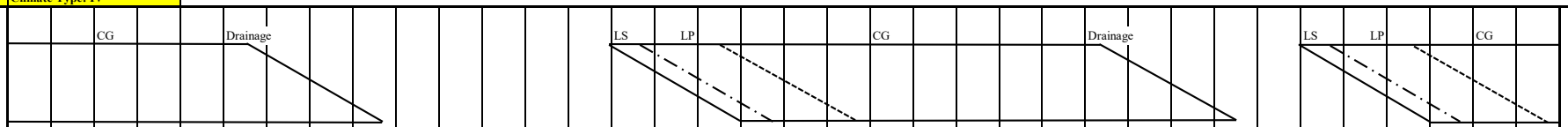
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	4								
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	4.78			5.30			6.30			6.75			5.73			5.39			4.85			4.88			4.65			4.81			4.44			4.51			
(D) Area Factor																																						
Land Soaking Stage	(Als)															0.159	0.233	0.232	0.060																			
Land Preparation Stage	(Alp) (Wet)															0.024	0.300	0.607	0.640	0.367	0.060																	
Crop Growing Stage	(Acg)																	0.027	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.940	0.633	0.300	0.027								
Land Soaking Stage	(Als)																															0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp) (Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc) Wet															0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85								
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 150															28.47	28.17	28.17	28.17																			
(Dry)	120																															23.05	23.05	23.05	23.11			
Land Preparation Stage	(LP)															7.04	6.74	6.74	6.74	6.27	6.27	6.268										5.91	5.91	5.91	5.97	5.97	5.97	
Crop Growing Stage	(CG)	5.45	5.59	5.45	5.83	5.57	5.14	6.05	5.86	5.36								4.58	4.85	4.75	5.19	5.53	5.71	5.56	5.37	4.88	4.51	4.46	4.47	4.09				3.77	4.06	4.42	4.83	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR) Wet															4.70	8.59	10.81	8.06	6.58	7.13	7.53	7.71	7.56	7.37	6.88	6.12	4.09	1.94	0.16								
	Dry	7.45	7.59	7.45	7.83	7.57	7.01	5.90	3.14	0.54																						3.59	6.95	8.91	7.40	6.24	6.76	
10-day FWR		74.49	75.93	81.94	78.30	75.65	56.04	58.99	31.44	3.81						51.65	85.87	108.07	80.61	65.75	71.34	82.82	77.10	75.63	81.05	68.83	61.20	40.92	19.42	0.66		35.92	69.48	89.13	74.05	62.39	74.39	1,913
(G) Rainfall (1987)	mm/10day	60	224	18	196	16	69	58	75	35	2	1	53	17	47	72	116	41	62	101	54	91	57	111	49	36	37	30	103	141	78	66	80	66	17	109	131	2,519
Effective Rainfall	(ER)	42	44.8	0	78.3	0	48.3	40.6	31.4	3.8						50.4	46.4	28.7	43.4	40.4	37.8	63.7	39.9	44.4	34.3	25.2	25.9	21	19.4	0.7		35.9	56	46.2	0	43.6	52.4	1,045
(H) Irrigation Water Requirement	(IWR) mm/10day	32.5	31.1	81.9	0.0	75.7	7.7	18.4	0.0	0.0						1.3	39.5	79.4	37.2	25.4	33.5	19.1	37.2	31.2	46.7	43.6	35.3	19.9	0.0	0.0		0.0	13.5	42.9	74.0	18.8	22.0	868
(F)-(G)	mm/day	3.25	3.11	7.45	0.00	7.57	0.97	1.84	0.00	0.00						0.11	3.95	7.94	3.72	2.54	3.35	1.74	3.72	3.12	4.25	4.36	3.53	1.99	0.00	0.00		0.00	1.35	4.29	7.40	1.88	2.00	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	6.77	6.48	15.52	0.00	15.76	2.02	3.83	0.00	0.00						0.24	8.22	16.53	7.75	5.28	6.99	3.62	7.75	6.51	8.85	9.09	7.35	4.15	0.00	0.00		0.00	2.81	8.94	15.43	3.92	4.16	
(H)/(I)	lit/sec/ha	0.78	0.75	1.80	0.00	1.82	0.23	0.44	0.00	0.00						0.03	0.95	1.91	0.90	0.61	0.81	0.42	0.90	0.75	1.02	1.05	0.85	0.48	0.00	0.00		0.00	0.33	1.04	1.79	0.45	0.48	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA Team's Modifications

Region: XI

Province: Davao del Norte — **Climate Type: IV**

(A) Cropping Pattern (20 days Staggered Period)

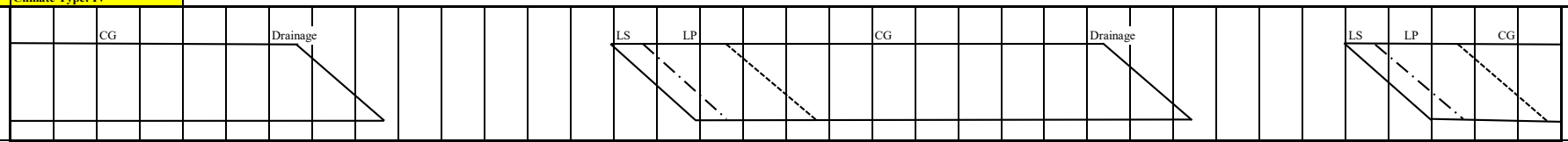
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	4									
	Dry	10	10	11	10	10	8	10	10	7																							10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	7.96			6.07			6.09			4.49			3.46			3.59			3.15			3.61			4.45			5.45			6.20			7.35			
(D) Area Factor																																						
Land Soaking Stage	(Als)															0.239	0.348	0.090																				
Land Preparation Stage	(Alp) (Wet)															0.036	0.450	0.870	0.550	0.090																		
Crop Growing Stage	(Acg)																	0.040	0.450	0.910	1.000	1.000	1.000	1.000	1.000	1.000	0.910	0.450	0.040									
Land Soaking Stage	(Als)																															0.228	0.350	0.123				
Land Preparation Stage	(Alp) (Dry)																															0.023	0.400	0.855	0.600	0.111		
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	1.000	0.978	0.600	0.111																								0.023	0.400	0.889		
(E) Crop Coefficient	(Kc) Wet															0.80	0.82	0.85	0.93	1.03	1.12	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85									
	Dry	1.12	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85																						0.80	0.82	0.85	0.93	1.03		
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 95															18.62	18.73	18.73																				
(Dry)	66																															16.88	16.88	17.90				
Land Preparation Stage	(LP)															5.04	5.16	5.16	5.16	4.77												7.46	7.46	8.47	8.47	8.47		
Crop Growing Stage	(CG)	8.92	9.39	9.47	6.80	6.43	6.13	5.85	5.66	5.18								3.05	3.34	3.24	3.53	3.72	4.30	4.04	3.83	4.49	4.27	4.14	4.63					6.25	6.84	7.57		
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00					2.00	2.00	2.00		
Total	(FWR) Wet															4.63	8.84	6.38	5.24	5.20	5.53	5.72	6.30	6.04	5.83	6.49	5.71	2.76	0.27									
	Dry	10.92	11.39	11.47	8.80	8.43	8.13	7.67	4.60	0.80																						4.02	8.89	9.63	8.62	9.45		
10-day FWR		109.15	113.93	126.20	87.98	84.34	65.05	76.74	45.98	5.58						50.94	88.40	63.76	52.40	52.02	55.28	62.89	62.96	60.43	64.09	64.95	57.08	27.62	1.06			40.21	88.92	96.31	86.15	103.93	1,894	
(G) Rainfall(1981)	mm/10day	81	77	74	66	27	11	3	3	145	6	72	40	111	56	56	72	79	82	60	51	56	54	30	61	50	81	159	62	80	51	85	50	60	159	26	26	2,262
Effective Rainfall	(ER)	56.7	53.9	51.8	46.2	18.9	0	0	0	5.6						39.2	50.4	55.3	52.4	42	35.7	39.2	37.8	21	42.7	35	56.7	27.6	1.1				35	42	63.6	18.2	18.2	946
(H) Irrigation Water Requirement	(IWR) mm/10day	52.5	60.0	74.4	41.8	65.4	65.0	76.7	46.0	0.0						11.7	38.0	8.5	0.0	10.0	19.6	23.7	25.2	39.4	21.4	29.9	0.4	0.0	0.0				5.2	46.9	32.7	68.0	85.7	948
(F)-(G)	mm/day	5.25	6.00	6.76	4.18	6.54	8.13	7.67	4.60	0.00						1.07	3.80	0.85	0.00	1.00	1.96	2.15	2.52	3.94	1.94	2.99	0.04	0.00	0.00				0.52	4.69	3.27	6.80	7.79	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48				0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	10.93	12.51	14.09	8.71	13.63	16.94	15.99	9.58	0.00						2.22	7.92	1.76	0.00	2.09	4.08	4.49	5.24	8.22	4.05	6.24	0.08	0.00	0.00				1.09	9.78	6.81	14.16	16.24	
(H)/(I)	lit/sec/ha	1.26	1.45	1.63	1.01	1.58	1.96	1.85	1.11	0.00						0.26	0.92	0.20	0.00	0.24	0.47	0.52	0.61	0.95	0.47	0.72	0.01	0.00	0.00				0.13	1.13	0.79	1.64	1.88	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: XI

Province: Davao del Sur — **Climate Type: IV**

(A) Cropping Pattern (30 days Staggered Period)

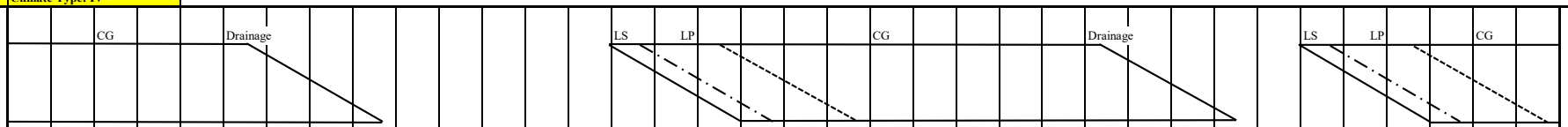
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	4								
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	4.96			5.50			6.53			6.98			5.88			5.52			4.96			4.97			4.74			4.91			4.56			4.65			
(D) Area Factor																																						
Land Soaking Stage	(Als)															0.159	0.233	0.232	0.060																			
Land Preparation Stage	(Alp) (Wet)															0.024	0.300	0.607	0.640	0.367	0.060																	
Crop Growing Stage	(Acg)																	0.027	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.940	0.633	0.300	0.027								
Land Soaking Stage	(Als)																															0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp) (Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc) Wet															0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85								
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 150															28.60	28.29	28.29	28.29																			
(Dry)	120																															23.16	23.16	23.16	23.23			
Land Preparation Stage	(LP)															7.17	6.86	6.86	6.86	6.36	6.36	6.365										6.01	6.01	6.01	6.09	6.09	6.09	
Crop Growing Stage	(CG)	5.65	5.80	5.65	6.05	5.78	5.34	6.27	6.07	5.55								4.69	4.97	4.86	5.31	5.65	5.81	5.67	5.47	4.98	4.60	4.55	4.57	4.17				3.88	4.19	4.56	4.98	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR) Wet															4.72	8.65	10.91	8.18	6.68	7.25	7.65	7.81	7.67	7.47	6.98	6.20	4.15	1.97	0.17								
	Dry	7.65	7.80	7.65	8.05	7.78	7.20	6.06	3.23	0.56																						3.61	7.00	9.00	7.53	6.37	6.91	
10-day FWR		76.54	78.03	84.20	80.50	77.75	57.57	60.61	32.29	3.91						51.92	86.48	109.06	81.76	66.79	72.51	84.20	78.15	76.66	82.14	69.77	62.02	41.46	19.70	0.67		36.10	70.01	90.01	75.29	63.71	76.01	1,946
(G) Rainfall (2002)	mm/10day	117	12	2	22	74	7	36	23	24	2	15	30	78	65	49	57	136	101	20	49	21	80	19	67	84	50	64	33	54	50	42	42	27	3	2	55	1,612
Effective Rainfall	(ER)	46.8	0	0	15.4	51.8	0	25.2	16.1	3.9						34.3	39.9	54.4	40.4	14	34.3	14.7	56	0	46.9	58.8	35	41.5	19.7	0.7		29.4	29.4	18.9	0	0	38.5	766
(H) Irrigation Water Requirement	(IWR) mm/10day	29.7	78.0	84.2	65.1	26.0	57.6	35.4	16.2	0.0						17.6	46.6	54.7	41.4	52.8	38.2	69.5	22.1	76.7	35.2	11.0	27.0	0.0	0.0	0.0		6.7	40.6	71.1	75.3	63.7	37.5	1,180
(F)-(G)	mm/day	2.97	7.80	7.65	6.51	2.60	7.20	3.54	1.62	0.00						1.60	4.66	5.47	4.14	5.28	3.82	6.32	2.21	7.67	3.20	1.10	2.70	0.00	0.00	0.00		0.67	4.06	7.11	7.53	6.37	3.41	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	6.20	16.26	15.95	13.56	5.41	14.99	7.38	3.37	0.00						3.34	9.70	11.39	8.62	11.00	7.96	13.16	4.61	15.97	6.67	2.29	5.63	0.00	0.00	0.00		1.40	8.46	14.81	15.68	13.27	7.10	
(H)/(I)	lit/sec/ha	0.72	1.88	1.85	1.57	0.63	1.74	0.85	0.39	0.00						0.39	1.12	1.32	1.00	1.27	0.92	1.52	0.53	1.85	0.77	0.26	0.65	0.00	0.00	0.00		0.16	0.98	1.71	1.82	1.54	0.82	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: XI

Province: Davao Oriental — **Climate Type: II, IV**

(A) Cropping Pattern (30 days Staggered Period)

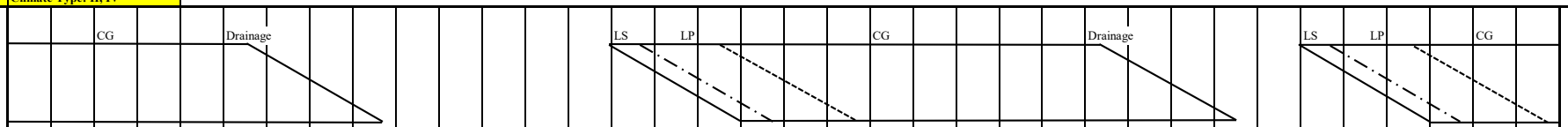
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	4								
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.94			5.47			6.47			6.92			5.87			5.54			4.98			5.00			4.77			4.93			4.57			4.64			
(D) Area Factor																																							
Land Soaking Stage	(Als)																0.159	0.233	0.232	0.060																			
Land Preparation Stage	(Alp)	(Wet)															0.024	0.300	0.607	0.640	0.367	0.060																	
Crop Growing Stage	(Acg)																		0.027	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.940	0.633	0.300	0.027								
Land Soaking Stage	(Als)																																0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet															0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85								
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150															28.59	28.30	28.30	28.30																			
(Dry)		120																															23.16	23.16	23.16	23.23			
Land Preparation Stage	(LP)																7.17	6.88	6.88	6.88	6.38	6.38	6.382										6.02	6.02	6.02	6.08	6.08	6.08	
Crop Growing Stage	(CG)		5.63	5.78	5.63	6.02	5.74	5.31	6.21	6.02	5.50								4.71	4.99	4.88	5.33	5.68	5.85	5.70	5.50	5.01	4.63	4.58	4.58	4.19				3.88	4.18	4.55	4.96	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR)	Wet															4.72	8.66	10.92	8.19	6.70	7.27	7.68	7.85	7.70	7.50	7.01	6.23	4.16	1.98	0.17								
		Dry	7.63	7.78	7.63	8.02	7.74	7.17	6.02	3.21	0.55																						3.61	7.01	9.01	7.52	6.36	6.90	
10-day FWR			76.32	77.80	83.95	80.17	77.44	57.34	60.19	32.07	3.88						51.90	86.57	109.21	81.94	66.98	72.72	84.45	78.50	77.00	82.50	70.09	62.29	41.65	19.75	0.67		36.11	70.05	90.08	75.20	63.62	75.90	1,946
(G) Rainfall (2016)		mm/10day	11	0	3	1	38	6	13	47	9	7	15	9	36	91	46	44	84	122	103	46	58	54	36	31	77	82	60	136	123	146	135	65	89	95	104	103	2,125
Effective Rainfall	(ER)		0	0	0	0	26.6	0	0	32.1	0						32.2	30.8	58.8	48.8	41.2	32.2	40.6	37.8	25.2	21.7	53.9	57.4	41.7	19.8	0.7		36.1	45.5	62.3	66.5	41.6	41.2	895
(H) Irrigation Water Requirement	(IWR)	mm/10day	76.3	77.8	83.9	80.2	50.8	57.3	60.2	0.0	3.9						19.7	55.8	50.4	33.1	25.8	40.5	43.8	40.7	51.8	60.8	16.2	4.9	0.0	0.0	0.0		0.0	24.6	27.8	8.7	22.0	34.7	1,052
(F)-(G)		mm/day	7.63	7.78	7.63	8.02	5.08	7.17	6.02	0.00	0.55						1.79	5.58	5.04	3.31	2.58	4.05	3.99	4.07	5.18	5.53	1.62	0.49	0.00	0.00	0.00		0.00	2.46	2.78	0.87	2.20	3.15	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	15.90	16.21	15.90	16.70	10.59	14.93	12.54	0.00	1.16						3.73	11.62	10.50	6.90	5.37	8.44	8.30	8.48	10.79	11.52	3.37	1.02	0.00	0.00	0.00		0.00	5.11	5.79	1.81	4.59	6.57	
(H)/(I)		lit/sec/ha	1.84	1.88	1.84	1.93	1.23	1.73	1.45	0.00	0.13						0.43	1.34	1.22	0.80	0.62	0.98	0.96	0.98	1.25	1.33	0.39	0.12	0.00	0.00	0.00		0.00	0.59	0.67	0.21	0.53	0.76	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: XII

Province: Sarangani — **Climate Type: IV**

(A) Cropping Pattern (60 days Staggered Period)

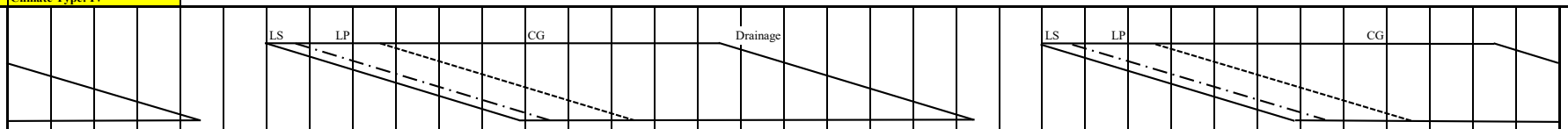
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 100 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet							10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	4														
		Dry	10	10	11	10	4																				10	10	10	10	10	11	10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.94			5.48			6.50			6.92			5.83			5.47			4.90			4.91			4.69			4.87			4.53			4.62			
(D) Area Factor																																								
Land Soaking Stage	(Als)								0.076	0.117	0.117	0.117	0.117	0.116	0.030																								
Land Preparation Stage	(Alp)	(Wet)							0.008	0.133	0.296	0.333	0.333	0.333	0.320	0.183	0.027																						
Crop Growing Stage	(Acg)										0.012	0.150	0.317	0.483	0.650	0.817	0.973	1.000	0.979	0.833	0.667	0.500	0.325	0.150	0.013														
Land Soaking Stage	(Als)																										0.076	0.117	0.117	0.117	0.117	0.116	0.030						
Land Preparation Stage	(Alp)	(Dry)																									0.008	0.133	0.293	0.333	0.333	0.333	0.320	0.183	0.030				
Crop Growing Stage	(Acg)		0.667	0.500	0.325	0.150	0.013																						0.008	0.133	0.300	0.475	0.650	0.817	0.970	1.000	0.987	0.842	
(E) Crop Coefficient	(Kc)	Wet							0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.08	1.07	1.05	1.01	0.96	0.93	0.85														
		Dry	1.05	1.01	0.96	0.93	0.85																				0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.08	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																						
Land Soaking Stage (Wet)	(LS)	150							29.15	29.15	29.15	29.52	29.52	29.52	28.56																								
(Dry)		120																									23.27	23.43	23.27	23.27	23.27	23.27	23.13						
Land Preparation Stage	(LP)								7.72	7.72	7.72	8.09	8.09	8.09	7.13	7.13	7.13										6.13	6.13	6.13	6.29	6.29	6.29	5.99	5.99	5.99				
Crop Growing Stage	(CG)		5.19	4.99	4.74	5.10	4.66		5.20	5.33	5.53	6.23	6.50	6.85	5.95	6.24	6.35	6.07	5.91	5.85	5.15	4.95	4.70	4.57	4.17		3.75	3.85	3.99	4.38	4.58	4.82	4.62	4.85	4.94	5.13	4.99	4.94	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
Total	(FWR)	Wet							2.28	4.44	5.79	7.38	8.84	10.39	8.30	8.04	8.32	8.07	7.74	6.54	4.77	3.47	2.18	0.98	0.08														
		Dry	4.79	3.49	2.19	1.06	0.09																				1.82	3.56	4.57	5.66	6.79	8.03	6.91	6.69	6.91	7.13	6.90	5.85	
10-day FWR			47.94	34.95	24.10	10.64	0.35		22.77	44.37	63.64	73.82	88.43	103.93	83.04	80.35	91.54	80.72	77.42	65.41	47.66	34.75	23.97	9.85	0.32		18.18	35.56	45.66	56.65	67.89	88.36	69.13	66.90	69.09	71.28	68.99	64.31	1,832
(G) Rainfall (1997)		mm/10day	4	71	26	58	87	46	90	3	0	55	28	1	36	57	13	16	42	60	69	82	27	18	32	22	31	40	27	40	19	60	34	38	52	21	34	77	1,416
Effective Rainfall	(ER)		0	35	18.2	10.6	0.4		22.8	0	0	38.5	19.6	0	25.2	39.9	0	0	29.4	42	47.7	34.8	18.9	0	0.3		18.2	28	18.9	28	0	42	23.8	26.6	36.4	14.7	23.8	53.9	698
(H) Irrigation Water Requirement	(IWR)	mm/10day	47.9	0.0	5.9	0.0	0.0		0.0	44.4	63.6	35.3	68.8	103.9	57.8	40.5	91.5	80.7	48.0	23.4	0.0	0.0	5.1	9.8	0.0		0.0	7.6	26.8	28.6	67.9	46.4	45.3	40.3	32.7	56.6	45.2	10.4	1,135
(F)-(G)		mm/day	4.79	0.00	0.54	0.00	0.00		0.00	4.44	5.79	3.53	6.88	10.39	5.78	4.05	8.32	8.07	4.80	2.34	0.00	0.00	0.46	0.98	0.00		0.00	0.76	2.68	2.86	6.79	4.21	4.53	4.03	3.27	5.66	4.52	0.95	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	9.99	0.00	1.12	0.00	0.00		0.00	9.24	12.05	7.36	14.34	21.65	12.05	8.43	17.34	16.82	10.00	4.88	0.00	0.00	0.96	2.05	0.00		0.00	1.58	5.57	5.97	14.14	8.78	9.44	8.39	6.81	11.79	9.41	1.97	
(H)/(I)		lit/sec/ha	1.16	0.00	0.13	0.00	0.00		0.00	1.07	1.40	0.85	1.66	2.51	1.39	0.98	2.01	1.95	1.16	0.56	0.00	0.00	0.11	0.24	0.00		0.00	0.18	0.65	0.69	1.64	1.02	1.09	0.97	0.79	1.36	1.09	0.23	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA Team's Modifications

Region: XII

Province: South Cotabato — **Climate Type: III, IV**

(A) Cropping Pattern (60 days Staggered Period)

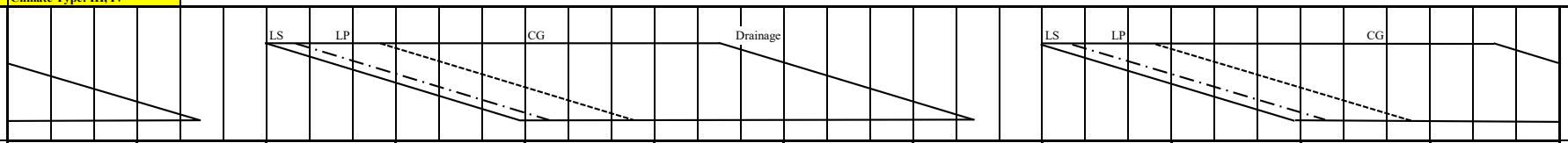
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 100 days

(Drainage: 15 days)



			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
(B) Month																																							
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet							10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	4														
		Dry	10	10	11	10	4																				10	10	10	10	10	11	10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	6.87			6.87			6.87			6.87			6.87			6.87			6.87			6.87			6.87			6.87			6.87			6.87			
(D) Area Factor																																							
Land Soaking Stage	(Als)								0.076	0.117	0.117	0.117	0.117	0.116	0.030																								
Land Preparation Stage	(Alp)	(Wet)							0.008	0.133	0.296	0.333	0.333	0.333	0.320	0.183	0.027																						
Crop Growing Stage	(Acg)										0.012	0.150	0.317	0.483	0.650	0.817	0.973	1.000	0.979	0.833	0.667	0.500	0.325	0.150	0.013														
Land Soaking Stage	(Als)																										0.076	0.117	0.117	0.117	0.117	0.116	0.030						
Land Preparation Stage	(Alp)	(Dry)																									0.008	0.133	0.293	0.333	0.333	0.333	0.320	0.183	0.030				
Crop Growing Stage	(Acg)		0.667	0.500	0.325	0.150	0.013																						0.008	0.133	0.300	0.475	0.650	0.817	0.970	1.000	0.987	0.842	
(E) Crop Coefficient	(Kc)	Wet							0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.08	1.07	1.05	1.01	0.96	0.93	0.85														
		Dry	1.05	1.01	0.96	0.93	0.85																				0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.08	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150							29.37	29.37	29.37	29.37	29.37	29.37	29.37																								
(Dry)		150																									29.37	29.37	29.37	29.37	29.37	29.37	29.37						
Land Preparation Stage	(LP)								7.95	7.95	7.95	7.95	7.95	7.95	7.95	7.95	7.95										7.95	7.95	7.95	7.95	7.95	7.95	7.95	7.95	7.95				
Crop Growing Stage	(CG)		7.21	6.94	6.60	6.39	5.84		5.50	5.63	5.84	6.18	6.46	6.80	7.01	7.35	7.49	7.63	7.42	7.35	7.21	6.94	6.60	6.39	5.84		5.50	5.63	5.84	6.18	6.46	6.80	7.01	7.35	7.49	7.63	7.42	7.35	
Percolation	(P)	1.90	1.90	1.90	1.90	1.90	1.90		1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90		1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	
Total	(FWR)	Wet							2.30	4.49	5.88	7.30	8.73	10.26	9.21	9.01	9.35	9.53	9.12	7.71	6.08	4.42	2.76	1.24	0.10														
		Dry	6.08	4.42	2.76	1.24	0.10																				2.30	4.49	5.83	7.16	8.59	10.19	9.21	9.01	9.35	9.53	9.20	7.79	
10-day FWR			60.79	44.19	30.37	12.43	0.40		22.96	44.94	64.70	72.95	87.32	102.56	92.14	90.12	102.84	95.26	91.24	77.06	60.79	44.19	30.37	12.43	0.40		22.96	44.94	58.27	71.58	85.90	112.05	92.14	90.12	93.45	95.26	91.98	85.68	2,185
(G) Rainfall (2019)		mm/10day	5	13	48	12	2	0	7	50	13	55	3	8	24	34	69	121	55	104	83	65	100	20	38	115	49	30	16	68	50	73	20	33	34	30	39	11	1,497
Effective Rainfall	(ER)		0	0	30.4	0	0		0	35	0	38.5	0	0	16.8	23.8	48.3	48.4	38.5	41.6	58.1	44.2	30.4	12.4	0.4		23	21	0	47.6	35	51.1	14	23.1	23.8	21	27.3	0	754
(H) Irrigation Water Requirement	(IWR)	mm/10day	60.8	44.2	0.0	12.4	0.4		23.0	9.9	64.7	34.5	87.3	102.6	75.3	66.3	54.5	46.9	52.7	35.5	2.7	0.0	0.0	0.0	0.0		0.0	23.9	58.3	24.0	50.9	61.0	78.1	67.0	69.7	74.3	64.7	85.7	1,431
(F)-(G)		mm/day	6.08	4.42	0.00	1.24	0.10		2.30	0.99	5.88	3.45	8.73	10.26	7.53	6.63	4.96	4.69	5.27	3.55	0.27	0.00	0.00	0.00	0.00		0.00	2.39	5.83	2.40	5.09	5.54	7.81	6.70	6.97	7.43	6.47	7.79	
(I) Irrigation Efficiency	(IE)		0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
(J) Diversion Water Requirement	(DWR)	mm/day	12.16	8.84	0.00	2.49	0.20		4.59	1.99	11.76	6.89	17.46	20.51	15.07	13.26	9.92	9.37	10.55	7.09	0.54	0.00	0.00	0.00	0.00		0.00	4.79	11.65	4.80	10.18	11.08	15.63	13.40	13.93	14.85	12.94	15.58	
(H)/(I)		lit/sec/ha	1.41	1.02	0.00	0.29	0.02		0.53	0.23	1.36	0.80	2.02	2.37	1.74	1.54	1.15	1.08	1.22	0.82	0.06	0.00	0.00	0.00	0.00		0.00	0.55	1.35	0.56	1.18	1.28	1.81	1.55	1.61	1.72	1.50	1.80	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA Team's Modifications

Region: XII

Province: North Cotabato — **Climate Type: III, IV**

(A) Cropping Pattern (60 days Staggered Period)

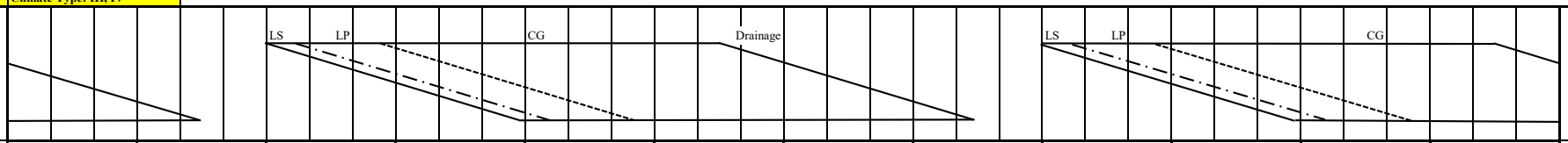
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 100 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet							10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	4													
		Dry	10	10	11	10	4																				10	10	10	10	10	11	10	10	10	10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	6.78			6.78			6.78			6.78			6.78			6.78			6.78			6.78			6.78			6.78			6.78			6.78		
(D) Area Factor																																						
Land Soaking Stage	(Als)								0.076	0.117	0.117	0.117	0.117	0.116	0.030																							
Land Preparation Stage	(Alp)	(Wet)							0.008	0.133	0.296	0.333	0.333	0.333	0.320	0.183	0.027																					
Crop Growing Stage	(Acg)										0.012	0.150	0.317	0.483	0.650	0.817	0.973	1.000	0.979	0.833	0.667	0.500	0.325	0.150	0.013													
Land Soaking Stage	(Als)																										0.076	0.117	0.117	0.117	0.117	0.116	0.030					
Land Preparation Stage	(Alp)	(Dry)																									0.008	0.133	0.293	0.333	0.333	0.333	0.320	0.183	0.030			
Crop Growing Stage	(Acg)		0.667	0.500	0.325	0.150	0.013																						0.008	0.133	0.300	0.475	0.650	0.817	0.970	1.000	0.987	0.842
(E) Crop Coefficient	(Kc)	Wet							0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.08	1.07	1.05	1.01	0.96	0.93	0.85													
		Dry	1.05	1.01	0.96	0.93	0.85																				0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.08	1.07
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	165							32.50	32.50	32.50	32.50	32.50	32.50	32.50																							
(Dry)		145																									29.64	29.64	29.64	29.64	29.64	29.64	29.64					
Land Preparation Stage	(LP)								8.93	8.93	8.93	8.93	8.93	8.93	8.93	8.93	8.93										8.93	8.93	8.93	8.93	8.93	8.93	8.93	8.93	8.93			
Crop Growing Stage	(CG)		7.12	6.85	6.51	6.31	5.76		5.42	5.56	5.76	6.10	6.37	6.71	6.92	7.25	7.39	7.53	7.32	7.25	7.12	6.85	6.51	6.31	5.76		5.42	5.56	5.76	6.10	6.37	6.71	6.92	7.25	7.39	7.53	7.32	7.25
Percolation	(P)	2.96	2.96	2.96	2.96	2.96	2.96		2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96		2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96
Total	(FWR)	Wet							2.54	4.99	6.55	8.13	9.73	11.41	10.25	9.98	10.31	10.49	10.07	8.51	6.72	4.90	3.08	1.39	0.11													
		Dry	6.72	4.90	3.08	1.39	0.11																				2.32	4.66	6.15	7.65	9.24	11.01	10.16	9.98	10.31	10.49	10.15	8.60
10-day FWR			67.23	49.04	33.85	13.90	0.45		25.41	49.89	72.04	81.34	97.33	114.14	102.51	99.79	113.43	104.86	100.66	85.09	67.23	49.04	33.85	13.90	0.45		23.24	46.55	61.53	76.46	92.40	121.06	101.65	99.79	103.07	104.86	101.49	94.61	2,402
(G) Rainfall (1982)		mm/10day	9	36	68	88	45	11	5	35	100	64	33	49	49	68	70	173	93	33	58	76	39	133	245	73	50	36	29	81	44	77	42	52	40	69	40	12	2,225
Effective Rainfall	(ER)		0	25.2	33.9	13.9	0.5		0	24.5	33.3	11.3	0	34.3	34.3	47.6	49	69.2	65.1	23.1	40.6	49	27.3	13.9	0.5		23.2	25.2	20.3	56.7	30.8	53.9	29.4	36.4	28	48.3	28	0	977
(H) Irrigation Water Requirement	(IWR)	mm/10day	67.2	23.8	0.0	0.0	0.0		25.4	25.4	38.7	70.0	97.3	79.8	68.2	52.2	64.4	35.7	35.6	62.0	26.6	0.0	6.6	0.0	0.0		0.0	21.4	41.2	19.8	61.6	67.2	72.2	63.4	75.1	56.6	73.5	94.6	1,426
(F)-(G)		mm/day	6.72	2.38	0.00	0.00	0.00		2.54	2.54	3.52	7.00	9.73	7.98	6.82	5.22	5.86	3.57	3.56	6.20	2.66	0.00	0.60	0.00	0.00		0.00	2.14	4.12	1.98	6.16	6.11	7.22	6.34	7.51	5.66	7.35	8.60	
(I) Irrigation Efficiency	(IE)		0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
(J) Diversion Water Requirement	(DWR)	mm/day	13.45	4.77	0.00	0.00	0.00		5.08	5.08	7.04	14.01	19.47	15.97	13.64	10.44	11.71	7.13	7.11	12.40	5.33	0.00	1.19	0.00	0.00		0.00	4.27	8.25	3.95	12.32	12.21	14.45	12.68	15.01	11.31	14.70	17.20	
(H)/(I)		lit/sec/ha	1.56	0.55	0.00	0.00	0.00		0.59	0.59	0.82	1.62	2.25	1.85	1.58	1.21	1.36	0.83	0.82	1.43	0.62	0.00	0.14	0.00	0.00		0.00	0.49	0.95	0.46	1.43	1.41	1.67	1.47	1.74	1.31	1.70	1.99	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: XII

Province: Sultan Kudarat — **Climate Type: III, IV**

(A) Cropping Pattern (60 days Staggered Period)

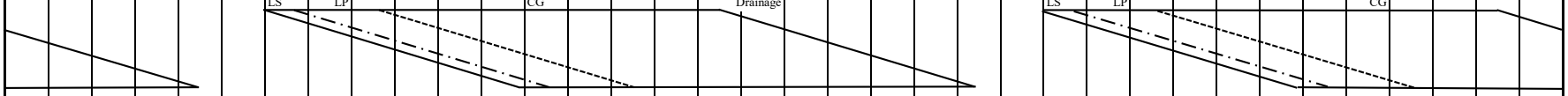
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 100 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet							10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	4														
	Dry	10	10	11	10	4																				10	10	10	10	10	11	10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	5.00			5.55			6.59			7.02			5.90			5.53			4.95			4.97			4.73			4.91			4.57			4.67			
(D) Area Factor																																						
Land Soaking Stage	(Als)							0.076	0.117	0.117	0.117	0.117	0.116	0.030																								
Land Preparation Stage	(Alp) (Wet)							0.008	0.133	0.296	0.333	0.333	0.333	0.320	0.183	0.027																						
Crop Growing Stage	(Acg)									0.012	0.150	0.317	0.483	0.650	0.817	0.973	1.000	0.979	0.833	0.667	0.500	0.325	0.150	0.013														
Land Soaking Stage	(Als)																									0.076	0.117	0.117	0.117	0.117	0.116	0.030						
Land Preparation Stage	(Alp) (Dry)																									0.008	0.133	0.293	0.333	0.333	0.333	0.320	0.183	0.030				
Crop Growing Stage	(Acg)	0.667	0.500	0.325	0.150	0.013																						0.008	0.133	0.300	0.475	0.650	0.817	0.970	1.000	0.987	0.842	
(E) Crop Coefficient (Kc)	Wet							0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.08	1.07	1.05	1.01	0.96	0.93	0.85														
	Dry	1.05	1.01	0.96	0.93	0.85																				0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.08	1.07	
(F) Farm Water Requirement (FWR)	mm/day																																					
Land Soaking Stage (Wet) (LS)	150							29.23	29.23	29.23	29.61	29.61	29.61	28.62																								
(Dry)	120																									23.31	23.46	23.31	23.31	23.31	23.31	23.16						
Land Preparation Stage	(LP)							7.80	7.80	7.80	8.18	8.18	8.18	7.19	7.19	7.19										6.16	6.16	6.16	6.32	6.32	6.32	6.02	6.02	6.02				
Crop Growing Stage	(CG)	5.25	5.05	4.80	5.16	4.72		5.27	5.40	5.60	6.32	6.60	6.95	6.02	6.31	6.43	6.14	5.97	5.92	5.20	5.00	4.75	4.62	4.22		3.78	3.88	4.02	4.42	4.62	4.86	4.66	4.89	4.98	5.18	5.04	5.00	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
Total	(FWR) Wet							2.28	4.46	5.82	7.43	8.91	10.48	8.37	8.11	8.40	8.14	7.80	6.59	4.80	3.50	2.19	0.99	0.08														
	Dry	4.84	3.53	2.21	1.07	0.09																				1.82	3.56	4.58	5.69	6.82	8.07	6.95	6.73	6.95	7.18	6.95	5.89	
10-day FWR		48.36	35.25	24.31	10.74	0.35		22.84	44.57	64.01	74.35	89.13	104.80	83.72	81.08	92.37	81.38	78.05	65.95	48.01	35.00	24.14	9.93	0.32		18.20	35.65	45.80	56.85	68.16	88.74	69.52	67.31	69.53	71.84	69.52	64.81	1,845
(G) Rainfall (1997)	mm/10day	8	43	43	45	75	51	153	8	7	80	32	11	44	82	17	38	73	91	140	91	45	14	63	29	78	51	51	51	22	83	52	74	14	20	16	72	1,867
Effective Rainfall	(ER)	0	30.1	24.3	10.7	0.4		22.8	0	0	56	22.4	0	30.8	57.4	0	26.6	51.1	63.7	48	35	24.1	0	0.3		18.2	35.7	35.7	35.7	15.4	58.1	36.4	51.8	0	14	0	50.4	855
(H) Irrigation Water Requirement	(IWR) mm/10day	48.4	5.2	0.0	0.0	0.0		0.0	44.6	64.0	18.3	66.7	104.8	52.9	23.7	92.4	54.8	26.9	2.2	0.0	0.0	0.0	9.9	0.0		0.0	0.0	10.1	21.2	52.8	30.6	33.1	15.5	69.5	57.8	69.5	14.4	989
(F)-(G)	mm/day	4.84	0.52	0.00	0.00	0.00		0.00	4.46	5.82	1.83	6.67	10.48	5.29	2.37	8.40	5.48	2.69	0.22	0.00	0.00	0.00	0.99	0.00		0.00	0.00	1.01	2.12	5.28	2.79	3.31	1.55	6.95	5.78	6.95	1.31	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	10.07	1.07	0.00	0.00	0.00		0.00	9.29	12.12	3.82	13.90	21.83	11.02	4.93	17.49	11.41	5.61	0.47	0.00	0.00	0.00	2.07	0.00		0.00	0.00	2.11	4.41	10.99	5.80	6.90	3.23	14.48	12.05	14.48	2.73	
(H)/(I)	lit/sec/ha	1.17	0.12	0.00	0.00	0.00		0.00	1.07	1.40	0.44	1.61	2.53	1.28	0.57	2.02	1.32	0.65	0.05	0.00	0.00	0.00	0.24	0.00		0.00	0.00	0.24	0.51	1.27	0.67	0.80	0.37	1.68	1.39	1.68	0.32	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Based on NIA Present Operation with JICA Team's Modifications

Region: CARAGA

Province: Agusan del Norte — **Climate Type: IV**

(A) Cropping Pattern (20 days Staggered Period)

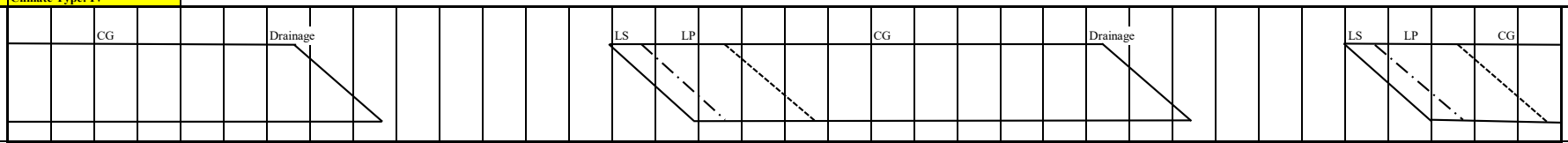
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	4								
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.94			5.48			6.51			6.99			5.95			5.60			5.03			5.06			4.80			4.95			4.58			4.65		
(D) Area Factor																																						
Land Soaking Stage	(Als)																0.239	0.348	0.090																			
Land Preparation Stage	(Alp)	(Wet)															0.036	0.450	0.870	0.550	0.090																	
Crop Growing Stage	(Acg)																		0.040	0.450	0.910	1.000	1.000	1.000	1.000	1.000	1.000	0.910	0.450	0.040								
Land Soaking Stage	(Als)																																0.228	0.350	0.123			
Land Preparation Stage	(Alp)	(Dry)																															0.023	0.400	0.855	0.600	0.111	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	1.000	0.978	0.600	0.111																								0.023	0.400	0.889	
(E) Crop Coefficient	(Kc)	Wet															0.80	0.82	0.85	0.93	1.03	1.12	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85								
		Dry	1.12	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85																						0.80	0.82	0.85	0.93	1.03	
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	150															28.66	28.36	28.36																			
(Dry)		120																															23.17	23.17	23.23			
Land Preparation Stage	(LP)																7.24	6.93	6.93	6.93	6.43												6.03	6.03	6.09	6.09	6.09	
Crop Growing Stage	(CG)		5.53	5.83	5.88	6.14	5.81	5.53	6.25	6.05	5.53								4.76	5.21	5.18	5.63	5.94	6.02	5.67	5.36	4.85	4.61	4.46	4.21					3.95	4.32	4.79	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00					2.00	2.00	2.00	
Total	(FWR)	Wet															7.11	12.99	8.85	7.05	7.11	7.63	7.94	8.02	7.67	7.36	6.85	6.01	2.91	0.25								
		Dry	7.53	7.83	7.88	8.14	7.81	7.53	8.07	4.83	0.84																						5.42	10.52	8.20	6.19	6.71	
10-day FWR			75.33	78.29	86.66	81.38	78.09	60.28	80.68	48.33	5.85						78.22	129.86	88.50	70.54	71.13	76.34	87.29	80.21	76.67	81.00	68.48	60.13	29.09	0.99			54.22	105.23	82.03	61.85	73.83	1,971
(G) Rainfall (1983)		mm/10day	39	25	18	14	16	15	29	15	12	1	15	13	4	5	55	37	25	136	121	126	194	53	81	56	40	70	82	68	60	74	86	146	89	161	284	289	2,554
Effective Rainfall	(ER)		27.3	10	0	0	0	0	20.3	0	0	0	0	0	0	0	38.5	25.9	17.5	54.4	48.4	50.4	77.6	37.1	56.7	39.2	28	49	29.1	1				54.2	62.3	64.4	56.8	57.8	906
(H) Irrigation Water Requirement	(IWR)	mm/10day	48.0	68.3	86.7	81.4	78.1	60.3	60.4	48.3	5.9						39.7	104.0	71.0	16.1	22.7	25.9	9.7	43.1	20.0	41.8	40.5	11.1	0.0	0.0				0.0	42.9	17.6	5.1	16.0	1,065
(F)-(G)		mm/day	4.80	6.83	7.88	8.14	7.81	7.53	6.04	4.83	0.84						3.61	10.40	7.10	1.61	2.27	2.59	0.88	4.31	2.00	3.80	4.05	1.11	0.00	0.00				0.00	4.29	1.76	0.51	1.46	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48				0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	10.01	14.23	16.41	16.95	16.27	15.70	12.58	10.07	1.74						7.52	21.66	14.79	3.36	4.74	5.40	1.84	8.98	4.16	7.92	8.43	2.32	0.00	0.00				0.00	8.94	3.67	1.05	3.04	
(H)/(I)		lit/sec/ha	1.16	1.65	1.90	1.96	1.88	1.82	1.46	1.17	0.20						0.87	2.51	1.71	0.39	0.55	0.63	0.21	1.04	0.48	0.92	0.98	0.27	0.00	0.00				0.00	1.04	0.43	0.12	0.35	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: CARAGA

Province: Agusan del Sur — **Climate Type: IV**

(A) Cropping Pattern (20 days Staggered Period)

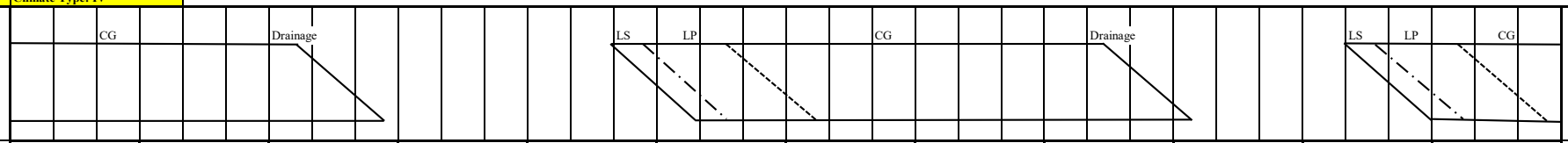
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	4									
		Dry	10	10	11	10	10	8	10	10	7																							10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.95			5.49			6.52			6.99			5.95			5.60			5.03			5.06			4.81			4.97			4.59			4.65			
(D) Area Factor																																							
Land Soaking Stage	(Als)																0.239	0.348	0.090																				
Land Preparation Stage	(Alp)	(Wet)															0.036	0.450	0.870	0.550	0.090																		
Crop Growing Stage	(Acg)																		0.040	0.450	0.910	1.000	1.000	1.000	1.000	1.000	1.000	0.910	0.450	0.040									
Land Soaking Stage	(Als)																																0.228	0.350	0.123				
Land Preparation Stage	(Alp)	(Dry)																															0.023	0.400	0.855	0.600	0.111		
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	1.000	0.978	0.600	0.111																								0.023	0.400	0.889		
(E) Crop Coefficient	(Kc)	Wet															0.80	0.82	0.85	0.93	1.03	1.12	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85									
		Dry	1.12	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85																						0.80	0.82	0.85	0.93	1.03	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150															28.66	28.36	28.36																				
(Dry)		120																															23.18	23.18	23.23				
Land Preparation Stage	(LP)																7.24	6.93	6.93	6.93	6.43												6.04	6.04	6.09	6.09	6.09		
Crop Growing Stage	(CG)		5.54	5.84	5.89	6.15	5.82	5.54	6.26	6.06	5.54								4.76	5.21	5.18	5.63	5.94	6.02	5.67	5.36	4.86	4.62	4.47	4.22						3.95	4.32	4.79	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00						2.00	2.00	2.00	
Total	(FWR)	Wet															7.11	12.99	8.85	7.05	7.11	7.63	7.94	8.02	7.67	7.36	6.86	6.02	2.91	0.25									
		Dry	7.54	7.84	7.89	8.15	7.82	7.54	8.08	4.84	0.84																						5.42	10.53	8.20	6.19	6.71	
10-day FWR			75.44	78.41	86.80	81.49	78.19	60.36	80.77	48.38	5.86						78.22	129.86	88.50	70.54	71.13	76.34	87.29	80.21	76.67	81.00	68.58	60.22	29.13	1.00			54.24	105.29	82.03	61.85	73.83		1,972
(G) Rainfall (1983)		mm/10day	18	8	3	11	14	14	19	15	70	0	10	14	12	6	96	68	76	234	173	125	238	80	104	76	66	125	135	74	62	69	100	146	66	126	265	314		3,032
Effective Rainfall	(ER)		0	0	0	0	0	0	0	0	5.9						67.2	47.6	53.2	46.8	69.2	50	47.6	56	41.6	53.2	46.2	50	29.1	1			54.2	46.2	50.4	53	62.8		931
(H) Irrigation Water Requirement	(IWR)	mm/10day	75.4	78.4	86.8	81.5	78.2	60.4	80.8	48.4	0.0						11.0	82.3	35.3	23.7	1.9	26.3	39.7	24.2	35.1	27.8	22.4	10.2	0.0	0.0			0.0	59.1	31.6	8.9	11.0		1,040
(F)-(G)		mm/day	7.54	7.84	7.89	8.15	7.82	7.54	8.08	4.84	0.00						1.00	8.23	3.53	2.37	0.19	2.63	3.61	2.42	3.51	2.53	2.24	1.02	0.00	0.00			0.00	5.91	3.16	0.89	1.00		
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48			0.48	0.48	0.48	0.48	0.48		
(J) Diversion Water Requirement	(DWR)	mm/day	15.72	16.34	16.44	16.98	16.29	15.72	16.83	10.08	0.00						2.09	17.14	7.35	4.95	0.40	5.49	7.52	5.04	7.31	5.27	4.66	2.13	0.00	0.00			0.00	12.31	6.59	1.84	2.09		
(H)/(I)		lit/sec/ha	1.82	1.89	1.90	1.96	1.89	1.82	1.95	1.17	0.00						0.24	1.98	0.85	0.57	0.05	0.64	0.87	0.58	0.85	0.61	0.54	0.25	0.00	0.00			0.00	1.42	0.76	0.21	0.24		

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: CARAGA

Province: Dinagat Islands — **Climate Type: II**

(A) Cropping Pattern (30 days Staggered Period)

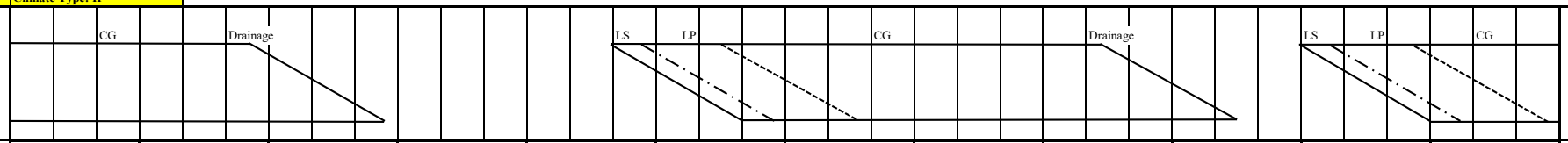
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	4								
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	5.04			5.57			6.59			7.03			6.00			5.68			5.12			5.14			4.88			5.02			4.64			4.72			
(D) Area Factor																																						
Land Soaking Stage	(Als)															0.159	0.233	0.232	0.060																			
Land Preparation Stage	(Alp) (Wet)															0.024	0.300	0.607	0.640	0.367	0.060																	
Crop Growing Stage	(Acg)																	0.027	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.940	0.633	0.300	0.027								
Land Soaking Stage	(Als)																															0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp) (Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc) Wet															0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85								
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 150															28.71	28.43	28.43	28.43																			
(Dry)	120																															23.23	23.23	23.23	23.30			
Land Preparation Stage	(LP)															7.28	7.00	7.00	7.00	6.51	6.51											6.08	6.08	6.08	6.15	6.15	6.15	
Crop Growing Stage	(CG)	5.75	5.90	5.75	6.13	5.85	5.40	6.33	6.13	5.60								4.83	5.11	5.02	5.48	5.84	6.01	5.86	5.65	5.12	4.73	4.68	4.67	4.27				3.94	4.25	4.63	5.05	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR) Wet															4.74	8.72	11.03	8.32	6.83	7.42	7.84	8.01	7.86	7.65	7.12	6.33	4.23	2.00	0.17								
	Dry	7.75	7.90	7.75	8.13	7.85	7.26	6.10	3.25	0.56																						3.62	7.04	9.06	7.59	6.44	6.98	
10-day FWR		77.46	78.97	85.20	81.27	78.49	58.10	61.03	32.51	3.94						52.13	87.23	110.27	83.18	68.30	74.20	86.20	80.14	78.60	84.19	71.24	63.30	42.31	20.01	0.68		36.22	70.36	90.60	75.91	64.37	76.82	1,973
(G) Rainfall (1990)	mm/10day	215	10	55	8	39	2	52	10	2	1	0	117	8	132	25	27	89	55	27	96	18	42	37	17	16	77	50	82	74	106	64	158	83	56	5	96	1,951
Effective Rainfall	(ER)	43	0	38.5	0	27.3	0	36.4	0	0						17.5	18.9	62.3	38.5	18.9	67.2	0	29.4	25.9	0	0	53.9	35	20	0.7		36.2	63.2	58.1	39.2	0	67.2	797
(H) Irrigation Water Requirement	(IWR) mm/10day	34.5	79.0	46.7	81.3	51.2	58.1	24.6	32.5	3.9						34.6	68.3	48.0	44.7	49.4	7.0	86.2	50.7	52.7	84.2	71.2	9.4	7.3	0.0	0.0		0.0	7.2	32.5	36.7	64.4	9.6	1,176
(F)-(G)	mm/day	3.45	7.90	4.25	8.13	5.12	7.26	2.46	3.25	0.56						3.15	6.83	4.80	4.47	4.94	0.70	7.84	5.07	5.27	7.65	7.12	0.94	0.73	0.00	0.00		0.00	0.72	3.25	3.67	6.44	0.87	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	7.18	16.45	8.85	16.93	10.66	15.13	5.13	6.77	1.17						6.56	14.24	9.99	9.31	10.29	1.46	16.33	10.57	10.98	15.95	14.84	1.96	1.52	0.00	0.00		0.00	1.49	6.77	7.65	13.41	1.82	
(H)/(I)	lit/sec/ha	0.83	1.90	1.02	1.96	1.23	1.75	0.59	0.78	0.14						0.76	1.65	1.16	1.08	1.19	0.17	1.89	1.22	1.27	1.85	1.72	0.23	0.18	0.00	0.00		0.00	0.17	0.78	0.89	1.55	0.21	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: CARAGA

Province: Surigao del Norte — **Climate Type: II**

(A) Cropping Pattern (30 days Staggered Period)

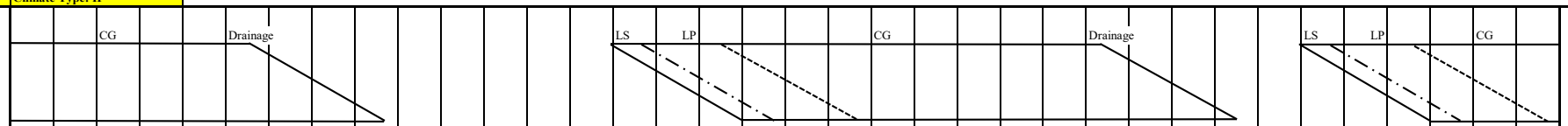
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	4								
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	5.01			5.55			6.58			7.05			6.01			5.68			5.11			5.14			4.88			5.02			4.64			4.70			
(D) Area Factor																																						
Land Soaking Stage	(Als)															0.159	0.233	0.232	0.060																			
Land Preparation Stage	(Alp) (Wet)															0.024	0.300	0.607	0.640	0.367	0.060																	
Crop Growing Stage	(Acg)																	0.027	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.940	0.633	0.300	0.027								
Land Soaking Stage	(Als)																															0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp) (Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc) Wet															0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85								
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 150															28.72	28.43	28.43	28.43																			
(Dry)	120																															23.23	23.23	23.23	23.28			
Land Preparation Stage	(LP)															7.29	7.00	7.00	7.00	6.50	6.50											6.08	6.08	6.08	6.14	6.14	6.14	
Crop Growing Stage	(CG)	5.71	5.86	5.71	6.11	5.83	5.38	6.32	6.12	5.59								4.83	5.11	5.01	5.47	5.83	6.01	5.86	5.65	5.12	4.73	4.68	4.67	4.27				3.94	4.23	4.61	5.03	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR) Wet															4.74	8.72	11.03	8.32	6.82	7.41	7.83	8.01	7.86	7.65	7.12	6.33	4.23	2.00	0.17								
	Dry	7.71	7.86	7.71	8.11	7.83	7.24	6.10	3.25	0.56																						3.62	7.04	9.06	7.57	6.42	6.96	
10-day FWR		77.11	78.62	84.83	81.05	78.28	57.95	60.96	32.48	3.93						52.15	87.23	110.27	83.18	68.20	74.09	86.08	80.14	78.60	84.19	71.24	63.30	42.31	20.01	0.68		36.22	70.36	90.60	75.73	64.18	76.59	1,971
(G) Rainfall (1990)	mm/10day	219	11	63	27	46	10	30	33	45	25	0	171	21	161	34	28	99	67	19	95	28	32	39	19	23	83	53	129	51	70	100	184	109	73	39	101	2,337
Effective Rainfall	(ER)	43.8	0	44.1	18.9	32.2	0	21	23.1	3.9						23.8	19.6	69.3	46.9	0	66.5	19.6	22.4	27.3	0	16.1	58.1	37.1	20	0.7		36.2	70.4	43.6	51.1	27.3	40.4	883
(H) Irrigation Water Requirement	(IWR) mm/10day	33.3	78.6	40.7	62.2	46.1	57.9	40.0	9.4	0.0						28.4	67.6	41.0	36.3	68.2	7.6	66.5	57.7	51.3	84.2	55.1	5.2	5.2	0.0	0.0		0.0	0.0	47.0	24.6	36.9	36.2	1,087
(F)-(G)	mm/day	3.33	7.86	3.70	6.22	4.61	7.24	4.00	0.94	0.00						2.58	6.76	4.10	3.63	6.82	0.76	6.04	5.77	5.13	7.65	5.51	0.52	0.52	0.00	0.00		0.00	0.00	4.70	2.46	3.69	3.29	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	6.94	16.38	7.71	12.95	9.60	15.09	8.33	1.95	0.00						5.37	14.09	8.54	7.56	14.21	1.58	12.59	12.03	10.69	15.95	11.49	1.08	1.09	0.00	0.00		0.00	0.00	9.79	5.13	7.68	6.85	
(H)/(I)	lit/sec/ha	0.80	1.90	0.89	1.50	1.11	1.75	0.96	0.23	0.00						0.62	1.63	0.99	0.87	1.64	0.18	1.46	1.39	1.24	1.85	1.33	0.13	0.13	0.00	0.00		0.00	0.00	1.13	0.59	0.89	0.79	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: CARAGA

Province: Surigao del Sur — **Climate Type: II**

(A) Cropping Pattern (30 days Staggered Period)

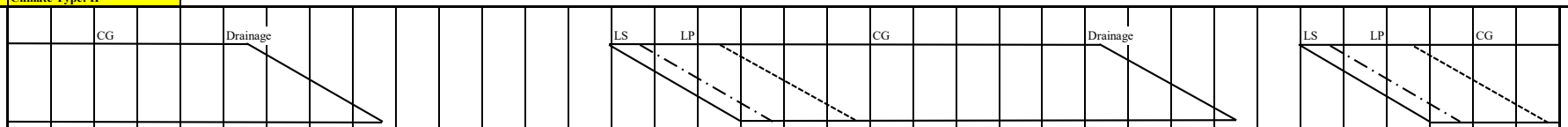
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	4								
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	4.96			5.49			6.51			6.97			5.95			5.62			5.06			5.08			4.83			4.99			4.59			4.66			
(D) Area Factor																																						
Land Soaking Stage	(Als)															0.159	0.233	0.232	0.060																			
Land Preparation Stage	(Alp) (Wet)															0.024	0.300	0.607	0.640	0.367	0.060																	
Crop Growing Stage	(Acg)																	0.027	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.940	0.633	0.300	0.027								
Land Soaking Stage	(Als)																															0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp) (Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc) Wet															0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85								
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 150															28.66	28.37	28.37	28.37																			
(Dry)	120																															23.18	23.18	23.18	23.24			
Land Preparation Stage	(LP)															7.24	6.95	6.95	6.95	6.45	6.45											6.04	6.04	6.04	6.10	6.10	6.10	
Crop Growing Stage	(CG)	5.65	5.80	5.65	6.04	5.76	5.33	6.25	6.05	5.53								4.78	5.06	4.96	5.41	5.77	5.94	5.79	5.59	5.07	4.69	4.64	4.64	4.24				3.90	4.19	4.57	4.99	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR) Wet															4.73	8.69	10.98	8.27	6.77	7.36	7.77	7.94	7.79	7.59	7.07	6.28	4.20	1.99	0.17								
	Dry	7.65	7.80	7.65	8.04	7.76	7.19	6.05	3.22	0.56																						3.61	7.01	9.02	7.54	6.38	6.92	
10-day FWR		76.54	78.03	84.20	80.39	77.65	57.49	60.47	32.22	3.90						52.04	86.95	109.82	82.65	67.73	73.57	85.45	79.44	77.91	83.47	70.72	62.84	42.01	19.92	0.67		36.14	70.14	90.23	75.37	63.80	76.13	1,958
(G) Rainfall (1991)	mm/10day	110	135	76	175	20	86	20	217	26	22	53	112	24	71	182	69	59	90	129	101	54	117	18	97	52	20	24	55	42	36	17	32	100	80	121	7	2,649
Effective Rainfall	(ER)	44	54	53.2	70	14	57.5	14	32.2	3.9						52	48.3	41.3	63	51.6	40.4	37.8	46.8	0	67.9	36.4	14	16.8	19.9	0.7		0	22.4	40	56	48.4	0	1,047
(H) Irrigation Water Requirement	(IWR) mm/10day	32.5	24.0	31.0	10.4	63.6	0.0	46.5	0.0	0.0						0.0	38.6	68.5	19.7	16.1	33.2	47.7	32.6	77.9	15.6	34.3	48.8	25.2	0.0	0.0		36.1	47.7	50.2	19.4	15.4	76.1	911
(F)-(G)	mm/day	3.25	2.40	2.82	1.04	6.36	0.00	4.65	0.00	0.00						0.00	3.86	6.85	1.97	1.61	3.32	4.33	3.26	7.79	1.42	3.43	4.88	2.52	0.00	0.00		3.61	4.77	5.02	1.94	1.54	6.92	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	6.78	5.01	5.87	2.16	13.26	0.00	9.68	0.00	0.00						0.00	8.05	14.27	4.09	3.36	6.91	9.03	6.80	16.23	2.95	7.15	10.17	5.25	0.00	0.00		7.53	9.95	10.46	4.04	3.21	14.42	
(H)/(I)	lit/sec/ha	0.78	0.58	0.68	0.25	1.53	0.00	1.12	0.00	0.00						0.00	0.93	1.65	0.47	0.39	0.80	1.04	0.79	1.88	0.34	0.83	1.18	0.61	0.00	0.00		0.87	1.15	1.21	0.47	0.37	1.67	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: ARMM

Province: Basilan — **Climate Type: IV**

(A) Cropping Pattern (30 days Staggered Period)

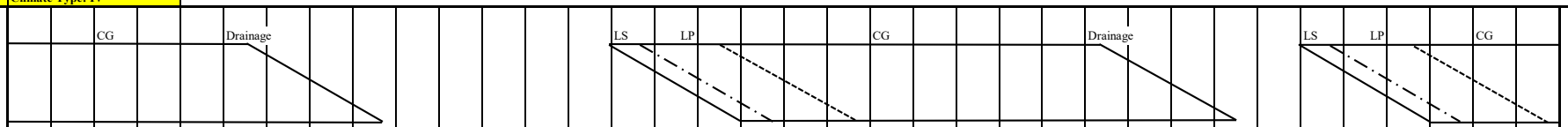
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	5								
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	5.09			5.65			6.68			7.09			5.97			5.61			5.03			5.04			4.80			4.98			4.64			4.75			
(D) Area Factor																																						
Land Soaking Stage	(Als)															0.154	0.226	0.226	0.079																			
Land Preparation Stage	(Alp) (Wet)															0.023	0.290	0.587	0.631	0.387	0.079																	
Crop Growing Stage	(Acg)																	0.026	0.090	0.613	0.921	1.000	1.000	1.000	1.000	1.000	0.942	0.645	0.323	0.040								
Land Soaking Stage	(Als)																															0.152	0.226	0.226	0.079			
Land Preparation Stage	(Alp) (Dry)																															0.015	0.258	0.566	0.663	0.419	0.072	
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc) Wet																	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85								
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																								0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 150															28.68	28.37	28.37	28.37																			
(Dry)	120																															23.23	23.23	23.23	23.32			
Land Preparation Stage	(LP)															7.25	6.94	6.94	6.94	6.43	6.43	6.426										6.08	6.08	6.08	6.18	6.18	6.18	
Crop Growing Stage	(CG)	5.80	5.96	5.80	6.22	5.93	5.48	6.41	6.21	5.68								4.77	5.05	4.93	5.38	5.73	5.90	5.75	5.54	5.04	4.66	4.61	4.63	4.23				3.94	4.28	4.66	5.08	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR) Wet															4.58	8.42	10.66	7.25	6.73	7.31	7.73	7.90	7.75	7.54	7.04	6.27	4.26	2.14	0.25								
	Dry	7.80	7.96	7.80	8.22	7.93	7.34	6.17	3.28	0.57																						3.62	6.82	8.78	7.62	6.58	7.00	
10-day FWR		78.03	79.55	85.83	82.15	79.33	58.71	61.67	32.85	3.98						50.42	84.22	106.58	72.52	67.35	73.07	85.08	78.97	77.46	82.98	70.40	62.70	42.62	21.42	1.25		36.22	68.19	87.81	76.15	65.82	77.04	1,950
(G) Rainfall (1983)	mm/10day	10	0	11	6	5	0	3	4	5	8	0	13	37	8	39	19	28	51	44	111	132	37	21	50	57	87	103	35	62	20	32	47	81	32	26	86	1,310
Effective Rainfall	(ER)	0	0	0	0	0	0	0	0	0						27.3	0	19.6	35.7	30.8	44.4	52.8	25.9	14.7	35	39.9	60.9	41.2	21.4	1.3		22.4	32.9	56.7	22.4	18.2	60.2	664
(H) Irrigation Water Requirement	(IWR) mm/10day	78.0	79.6	85.8	82.2	79.3	58.7	61.7	32.8	4.0						23.1	84.2	87.0	36.8	36.5	28.7	32.3	53.1	62.8	48.0	30.5	1.8	1.4	0.0	0.0		13.8	35.3	31.1	53.8	47.6	16.8	1,287
(F)-(G)	mm/day	7.80	7.96	7.80	8.22	7.93	7.34	6.17	3.28	0.57						2.10	8.42	8.70	3.68	3.65	2.87	2.93	5.31	6.28	4.36	3.05	0.18	0.14	0.00	0.00		1.38	3.53	3.11	5.38	4.76	1.53	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	16.26	16.57	16.26	17.11	16.53	15.29	12.85	6.84	1.18						4.38	17.55	18.12	7.67	7.61	5.97	6.11	11.06	13.07	9.09	6.35	0.37	0.30	0.00	0.00		2.88	7.35	6.48	11.20	9.92	3.19	
(H)/(I)	lit/sec/ha	1.88	1.92	1.88	1.98	1.91	1.77	1.49	0.79	0.14						0.51	2.03	2.10	0.89	0.88	0.69	0.71	1.28	1.51	1.05	0.74	0.04	0.03	0.00	0.00		0.33	0.85	0.75	1.30	1.15	0.37	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: ARMM

Province: Lanao del Sur — **Climate Type: III**

(A) Cropping Pattern (60 days Staggered Period)

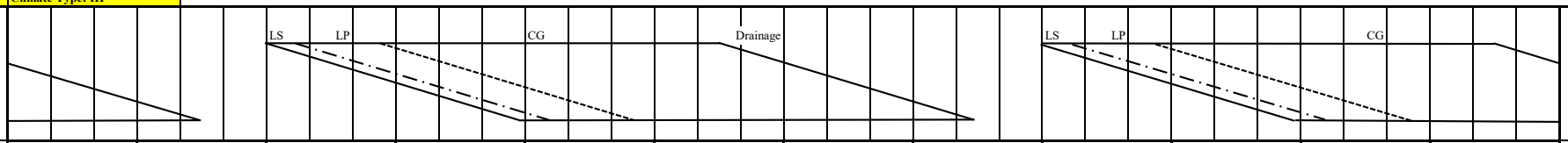
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 100 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet							10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	4														
		Dry	10	10	11	10	4																				10	10	10	10	10	11	10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.76			5.29			6.28			6.70			5.65			5.30			4.74			4.75			4.53			4.69			4.37			4.47			
(D) Area Factor																																							
Land Soaking Stage	(Als)								0.076	0.117	0.117	0.117	0.117	0.116	0.030																								
Land Preparation Stage	(Alp)	(Wet)							0.008	0.133	0.296	0.333	0.333	0.333	0.320	0.183	0.027																						
Crop Growing Stage	(Acg)										0.012	0.150	0.317	0.483	0.650	0.817	0.973	1.000	0.979	0.833	0.667	0.500	0.325	0.150	0.013														
Land Soaking Stage	(Als)																										0.076	0.117	0.117	0.117	0.117	0.116	0.030						
Land Preparation Stage	(Alp)	(Dry)																									0.008	0.133	0.293	0.333	0.333	0.333	0.320	0.183	0.030				
Crop Growing Stage	(Acg)		0.667	0.500	0.325	0.150	0.013																						0.008	0.133	0.300	0.475	0.650	0.817	0.970	1.000	0.987	0.842	
(E) Crop Coefficient	(Kc)	Wet							0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.08	1.07	1.05	1.01	0.96	0.93	0.85														
		Dry	1.05	1.01	0.96	0.93	0.85																				0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.08	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150							28.95	28.95	28.95	29.32	29.32	29.32	28.40																								
(Dry)		120																									23.13	23.27	23.13	23.13	23.13	23.13	22.99						
Land Preparation Stage	(LP)								7.53	7.53	7.53	7.90	7.90	7.90	6.97	6.97	6.97										5.99	5.99	5.99	6.13	6.13	6.13	5.85	5.85	5.85				
Crop Growing Stage	(CG)		5.00	4.81	4.57	4.92	4.50		5.02	5.15	5.34	6.03	6.30	6.63	5.76	6.05	6.16	5.88	5.72	5.67	4.98	4.79	4.55	4.42	4.04		3.62	3.71	3.85	4.22	4.41	4.64	4.46	4.68	4.76	4.96	4.83	4.78	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
Total	(FWR)	Wet							2.26	4.39	5.70	7.26	8.69	10.20	8.13	7.85	8.13	7.88	7.56	6.39	4.65	3.39	2.13	0.96	0.08														
		Dry	4.67	3.40	2.14	1.04	0.08																				1.81	3.52	4.51	5.57	6.67	7.88	6.76	6.52	6.74	6.96	6.74	5.71	
10-day FWR			46.68	34.04	23.49	10.38	0.34		22.61	43.89	62.74	72.65	86.91	102.01	81.29	78.49	89.39	78.83	75.62	63.90	46.54	33.94	23.42	9.63	0.31		18.06	35.19	45.07	55.74	66.69	86.67	67.58	65.24	67.36	69.62	67.39	62.82	1,794
(G) Rainfall (1982)		mm/10day	14	34	76	92	62	20	6	41	148	97	47	50	40	75	134	192	127	69	76	114	39	168	314	99	78	62	54	98	62	93	63	77	63	101	40	8	2,933
Effective Rainfall	(ER)		0	23.8	23.5	10.4	0.3		0	28.7	59.2	67.9	32.9	35	28	52.5	53.6	76.8	50.8	48.3	46.5	33.9	23.4	9.6	0.3		18.1	34.2	37.8	55.7	43.4	65.1	44.1	53.9	44.1	40.4	28	0	1,170
(H) Irrigation Water Requirement	(IWR)	mm/10day	46.7	10.2	0.0	0.0	0.0		22.6	15.2	3.5	4.7	54.0	67.0	53.3	26.0	35.8	2.0	24.8	15.6	0.0	0.0	0.0	0.0	0.0		0.0	0.0	7.3	0.0	23.3	21.6	23.5	11.3	23.3	29.2	39.4	62.8	623
(F)-(G)		mm/day	4.67	1.02	0.00	0.00	0.00		2.26	1.52	0.32	0.47	5.40	6.70	5.33	2.60	3.25	0.20	2.48	1.56	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.73	0.00	2.33	1.96	2.35	1.13	2.33	2.92	3.94	5.71	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	9.72	2.13	0.00	0.00	0.00		4.71	3.16	0.67	0.99	11.25	13.96	11.10	5.41	6.78	0.42	5.17	3.25	0.00	0.00	0.00	0.00	0.00		0.00	0.00	1.51	0.00	4.85	4.08	4.89	2.36	4.85	6.09	8.21	11.90	
(H)/(I)		lit/sec/ha	1.13	0.25	0.00	0.00	0.00		0.55	0.37	0.08	0.11	1.30	1.62	1.28	0.63	0.78	0.05	0.60	0.38	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.18	0.00	0.56	0.47	0.57	0.27	0.56	0.70	0.95	1.38	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: ARMM

Province: Maguindanao — **Climate Type: III, IV**

(A) Cropping Pattern (60 days Staggered Period)

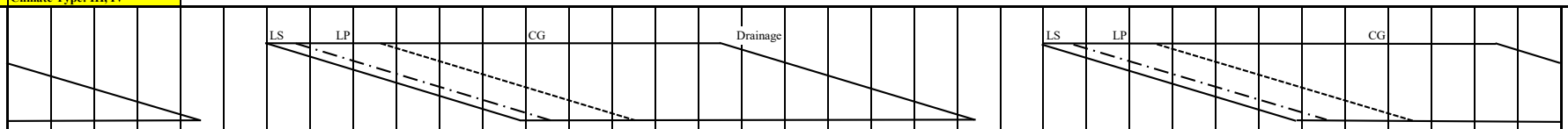
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 100 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet							10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	4														
		Dry	10	10	11	10	4																				10	10	10	10	10	11	10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.13			5.69			6.76			7.19			6.03			5.64			5.06			5.07			4.83			5.01			4.68			4.78			
(D) Area Factor																																							
Land Soaking Stage	(Als)								0.076	0.117	0.117	0.117	0.117	0.116	0.030																								
Land Preparation Stage	(Alp)	(Wet)							0.008	0.133	0.296	0.333	0.333	0.333	0.320	0.183	0.027																						
Crop Growing Stage	(Acg)										0.012	0.150	0.317	0.483	0.650	0.817	0.973	1.000	0.979	0.833	0.667	0.500	0.325	0.150	0.013														
Land Soaking Stage	(Als)																										0.076	0.117	0.117	0.117	0.117	0.116	0.030						
Land Preparation Stage	(Alp)	(Dry)																									0.008	0.133	0.293	0.333	0.333	0.333	0.320	0.183	0.030				
Crop Growing Stage	(Acg)		0.667	0.500	0.325	0.150	0.013																						0.008	0.133	0.300	0.475	0.650	0.817	0.970	1.000	0.987	0.842	
(E) Crop Coefficient	(Kc)	Wet							0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.08	1.07	1.05	1.01	0.96	0.93	0.85														
		Dry	1.05	1.01	0.96	0.93	0.85																				0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.08	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150							29.38	29.38	29.38	29.76	29.76	29.76	28.73																								
(Dry)		120																									23.39	23.55	23.39	23.39	23.39	23.39	23.26						
Land Preparation Stage	(LP)								7.95	7.95	7.95	8.33	8.33	8.33	7.31	7.31	7.31										6.25	6.25	6.25	6.41	6.41	6.41	6.12	6.12	6.12				
Crop Growing Stage	(CG)		5.39	5.18	4.92	5.29	4.84		5.41	5.54	5.75	6.47	6.76	7.12	6.15	6.45	6.57	6.26	6.09	6.03	5.31	5.11	4.86	4.72	4.31		3.86	3.96	4.11	4.51	4.71	4.96	4.77	5.01	5.10	5.31	5.16	5.11	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
Total	(FWR)	Wet							2.30	4.49	5.88	7.53	9.03	10.63	8.50	8.24	8.54	8.26	7.92	6.69	4.88	3.56	2.23	1.01	0.08														
		Dry	4.93	3.59	2.25	1.09	0.09																				1.83	3.59	4.62	5.74	6.88	8.15	7.06	6.84	7.07	7.31	7.07	5.99	
10-day FWR			49.27	35.91	24.76	10.94	0.36		22.96	44.94	64.71	75.25	90.31	106.29	84.98	82.42	93.92	82.60	79.21	66.93	48.78	35.55	24.52	10.07	0.33		18.28	35.87	46.17	57.37	68.84	89.69	70.59	68.45	70.72	73.06	70.69	65.90	1,871
(G) Rainfall (1982)		mm/10day	9	28	50	70	46	9	16	31	65	68	30	41	41	51	89	163	89	45	36	67	28	106	280	70	41	30	23	83	37	74	34	54	49	68	41	11	2,073
Effective Rainfall	(ER)		0	19.6	24.8	10.9	0.4		0	21.7	45.5	47.6	21	28.7	28.7	35.7	62.3	65.2	62.3	31.5	25.2	35.6	19.6	10.1	0.3		18.3	21	16.1	57.4	25.9	51.8	23.8	37.8	34.3	47.6	28.7	0	959
(H) Irrigation Water Requirement	(IWR)	mm/10day	49.3	16.3	0.0	0.0	0.0		23.0	23.2	19.2	27.7	69.3	77.6	56.3	46.7	31.6	17.4	16.9	35.4	23.6	0.0	4.9	0.0	0.0		0.0	14.9	30.1	0.0	42.9	37.9	46.8	30.6	36.4	25.5	42.0	65.9	911
(F)-(G)		mm/day	4.93	1.63	0.00	0.00	0.00		2.30	2.32	1.75	2.77	6.93	7.76	5.63	4.67	2.87	1.74	1.69	3.54	2.36	0.00	0.45	0.00	0.00		0.00	1.49	3.01	0.00	4.29	3.44	4.68	3.06	3.64	2.55	4.20	5.99	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	10.26	3.40	0.00	0.00	0.00		4.78	4.84	3.64	5.76	14.44	16.16	11.72	9.73	5.99	3.63	3.52	7.38	4.91	0.00	0.93	0.00	0.00		0.00	3.10	6.27	0.00	8.95	7.18	9.75	6.39	7.59	5.30	8.75	12.48	
(H)/(I)		lit/sec/ha	1.19	0.39	0.00	0.00	0.00		0.55	0.56	0.42	0.67	1.67	1.87	1.36	1.13	0.69	0.42	0.41	0.85	0.57	0.00	0.11	0.00	0.00		0.00	0.36	0.73	0.00	1.04	0.83	1.13	0.74	0.88	0.61	1.01	1.44	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: ARMM

Province: Sulu — **Climate Type: IV**

(A) Cropping Pattern (30 days Staggered Period)

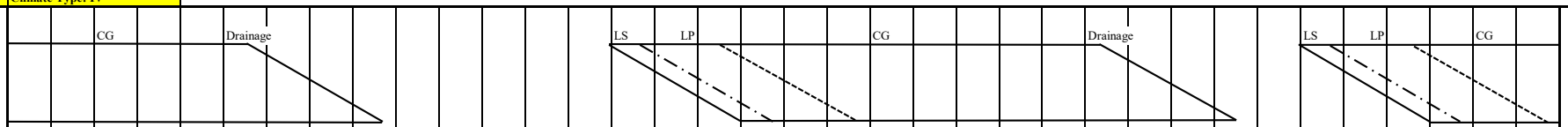
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	5								
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	5.10			5.63			6.66			7.10			6.00			5.66			5.09			5.10			4.86			5.03			4.68			4.77			
(D) Area Factor																																						
Land Soaking Stage	(Als)															0.154	0.226	0.226	0.079																			
Land Preparation Stage	(Alp) (Wet)															0.023	0.290	0.587	0.631	0.387	0.079																	
Crop Growing Stage	(Acg)																	0.026	0.090	0.613	0.921	1.000	1.000	1.000	1.000	1.000	0.942	0.645	0.323	0.040								
Land Soaking Stage	(Als)																															0.152	0.226	0.226	0.079			
Land Preparation Stage	(Alp) (Dry)																															0.015	0.258	0.566	0.663	0.419	0.072	
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc) Wet																	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85				0.85	0.90	0.98	1.07	
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																								0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 150															28.71	28.41	28.41	28.41																			
(Dry)	120																															23.26	23.26	23.26	23.34			
Land Preparation Stage	(LP)															7.28	6.98	6.98	6.98	6.48	6.48	6.479										6.12	6.12	6.12	6.20	6.20	6.20	
Crop Growing Stage	(CG)	5.81	5.97	5.81	6.19	5.91	5.46	6.39	6.19	5.66								4.81	5.09	4.99	5.45	5.80	5.97	5.81	5.61	5.10	4.71	4.67	4.68	4.28				3.98	4.29	4.67	5.10	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR) Wet															4.59	8.44	10.70	7.29	6.79	7.37	7.80	7.97	7.81	7.61	7.10	6.32	4.30	2.16	0.25								
	Dry	7.81	7.97	7.81	8.19	7.91	7.32	6.15	3.28	0.57																						3.63	6.84	8.81	7.63	6.60	7.02	
10-day FWR		78.14	79.67	85.95	81.93	79.12	58.55	61.53	32.78	3.97						50.47	84.45	106.95	72.88	67.91	73.70	85.83	79.67	78.14	83.71	71.03	63.25	42.99	21.57	1.26		36.27	68.36	88.10	76.33	66.02	77.27	1,958
(G) Rainfall (1993)	mm/10day	19	1	7	37	6	17	20	0	5	9	46	22	29	20	30	51	16	40	54	1	58	48	7	33	19	18	8	34	81	62	8	59	57	11	17	91	1,041
Effective Rainfall	(ER)	0	0	0	25.9	0	0	14	0	0						21	35.7	0	28	37.8	0	40.6	33.6	0	23.1	0	0	0	21.6	1.3		0	41.3	39.9	0	0	63.7	428
(H) Irrigation Water Requirement	(IWR) mm/10day	78.1	79.7	86.0	56.0	79.1	58.6	47.5	32.8	4.0						29.5	48.7	107.0	44.9	30.1	73.7	45.2	46.1	78.1	60.6	71.0	63.2	43.0	0.0	0.0		36.3	27.1	48.2	76.3	66.0	13.6	1,530
(F)-(G)	mm/day	7.81	7.97	7.81	5.60	7.91	7.32	4.75	3.28	0.57						2.68	4.87	10.70	4.49	3.01	7.37	4.11	4.61	7.81	5.51	7.10	6.32	4.30	0.00	0.00		3.63	2.71	4.82	7.63	6.60	1.23	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	16.28	16.60	16.28	11.67	16.48	15.25	9.90	6.83	1.18						5.58	10.16	22.28	9.35	6.27	15.35	8.57	9.60	16.28	11.48	14.80	13.18	8.96	0.00	0.00		7.56	5.64	10.04	15.90	13.75	2.57	
(H)/(I)	lit/sec/ha	1.88	1.92	1.88	1.35	1.91	1.76	1.15	0.79	0.14						0.65	1.18	2.58	1.08	0.73	1.78	0.99	1.11	1.88	1.33	1.71	1.53	1.04	0.00	0.00		0.87	0.65	1.16	1.84	1.59	0.30	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: NIA PRESENT OPERATION WITH JICA TEAM'S MODIFICATIONS

Estimation based on Other Province's Operation

Region: ARMM

Province: Tawi-Tawi — **Climate Type: IV**

(A) Cropping Pattern (30 days Staggered Period)

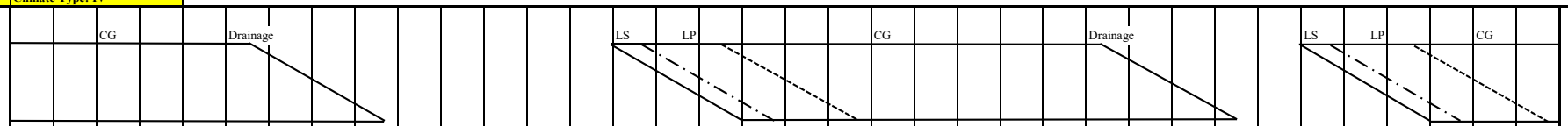
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	5								
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	5.10			5.64			6.68			7.12			6.02			5.68			5.10			5.11			4.87			5.04			4.68			4.77			
(D) Area Factor																																						
Land Soaking Stage	(Als)															0.154	0.226	0.226	0.079																			
Land Preparation Stage	(Alp) (Wet)															0.023	0.290	0.587	0.631	0.387	0.079																	
Crop Growing Stage	(Acg)																	0.026	0.090	0.613	0.921	1.000	1.000	1.000	1.000	1.000	0.942	0.645	0.323	0.040								
Land Soaking Stage	(Als)																															0.152	0.226	0.226	0.079			
Land Preparation Stage	(Alp) (Dry)																															0.015	0.258	0.566	0.663	0.419	0.072	
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc) Wet																	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85								
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																								0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 150															28.73	28.43	28.43	28.43																			
(Dry)	120																															23.26	23.26	23.26	23.34			
Land Preparation Stage	(LP)															7.30	7.00	7.00	7.00	6.49	6.49	6.488										6.12	6.12	6.12	6.20	6.20	6.20	
Crop Growing Stage	(CG)	5.81	5.97	5.81	6.20	5.92	5.47	6.41	6.21	5.68								4.83	5.11	5.00	5.46	5.81	5.98	5.83	5.62	5.11	4.72	4.68	4.69	4.28				3.98	4.29	4.67	5.10	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR) Wet															4.59	8.45	10.71	7.30	6.80	7.38	7.81	7.98	7.83	7.62	7.11	6.33	4.31	2.16	0.25								
	Dry	7.81	7.97	7.81	8.20	7.92	7.33	6.17	3.28	0.57																						3.63	6.84	8.81	7.63	6.60	7.02	
10-day FWR		78.14	79.67	85.95	82.04	79.22	58.63	61.67	32.85	3.98						50.51	84.54	107.10	73.02	68.01	73.80	85.95	79.79	78.25	83.83	71.14	63.34	43.06	21.60	1.26		36.27	68.36	88.10	76.33	66.02	77.27	1,960
(G) Rainfall (1993)	mm/10day	25	8	16	27	1	28	37	0	3	34	40	12	12	46	20	23	9	15	76	5	42	39	19	11	9	18	7	24	43	39	8	71	27	31	16	140	981
Effective Rainfall	(ER)	17.5	0	0	18.9	0	19.6	25.9	0	0						14	16.1	0	0	53.2	0	29.4	27.3	0	0	0	0	0	16.8	1.3		0	49.7	18.9	21.7	0	56	386
(H) Irrigation Water Requirement	(IWR) mm/10day	60.6	79.7	86.0	63.1	79.2	39.0	35.8	32.8	4.0						36.5	68.4	107.1	73.0	14.8	73.8	56.6	52.5	78.3	83.8	71.1	63.3	43.1	4.8	0.0		36.3	18.7	69.2	54.6	66.0	21.3	1,573
(F)-(G)	mm/day	6.06	7.97	7.81	6.31	7.92	4.88	3.58	3.28	0.57						3.32	6.84	10.71	7.30	1.48	7.38	5.14	5.25	7.83	7.62	7.11	6.33	4.31	0.48	0.00		3.63	1.87	6.92	5.46	6.60	1.93	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	12.63	16.60	16.28	13.15	16.50	10.16	7.45	6.84	1.18						6.91	14.26	22.31	15.21	3.08	15.38	10.71	10.93	16.30	15.88	14.82	13.20	8.97	1.00	0.00		7.56	3.89	14.42	11.38	13.75	4.03	
(H)/(I)	lit/sec/ha	1.46	1.92	1.88	1.52	1.91	1.18	0.86	0.79	0.14						0.80	1.65	2.58	1.76	0.36	1.78	1.24	1.27	1.89	1.84	1.72	1.53	1.04	0.12	0.00		0.87	0.45	1.67	1.32	1.59	0.47	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: CAR
Province: Abra — **Climate Type: I**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)

				CG			Drainage									LS	LP				CG						Drainage			LS	LP			CG				
(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet																10	10	10	10	10	11	10	10	11	10	10	10	10	10	5							
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.64			5.21			6.29			6.80			5.75			5.44			4.86			4.84			4.61			4.76			4.39			4.39			
(D) Area Factor																																							
Land Soaking Stage	(Als)																	0.152	0.233	0.233	0.082																		
Land Preparation Stage	(Alp)	(Wet)																0.015	0.267	0.585	0.652	0.400	0.074																
Crop Growing Stage	(Acg)																			0.015	0.267	0.600	0.926	1.000	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.038							
Land Soaking Stage	(Als)																																0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85							
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150																28.22	28.22	28.22	27.71																		
(Dry)		100																															20.15	20.15	20.15	20.15			
Land Preparation Stage	(LP)		6.08	6.08														6.79	6.79	6.79	6.28	6.28	6.28										5.86	5.86	5.86	5.86	5.86	5.86	
Crop Growing Stage	(CG)		5.29	5.43	5.29	5.73	5.47	5.05	6.04	5.85	5.35									4.62	4.37	4.76	5.20	5.52	5.66	5.52	5.07	4.84	4.47	4.57	4.43	4.05			3.73	3.95	4.30	4.70	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00	
Total	(FWR)	Wet																4.39	8.39	10.64	8.07	6.57	7.13	7.52	7.66	7.52	7.07	6.84	6.20	4.38	2.14	0.23							
		Dry	7.29	7.43	7.29	7.73	7.47	6.92	5.89	3.14	0.54																						3.15	6.26	8.21	7.06	6.13	6.64	
10-day FWR			72.90	74.29	80.19	77.31	74.71	55.36	58.92	31.40	3.81							43.91	83.86	106.44	80.66	65.68	78.45	75.18	76.63	82.69	70.71	68.41	62.00	43.82	21.40	1.15	31.51	62.60	82.11	70.64	61.27	72.99	1,871
(G) Rainfall (2015)		mm/10day	0	18	0	0	4	7	2	1	29	12	4	35	59	13	116	28	52	62	233	289	87	133	141	306	120	30	12	29	189	26	5	16	12	0	142	1	2,213
Effective Rainfall	(ER)		0	0	0	0	0	0	0	0	3.8							19.6	36.4	43.4	46.6	57.8	60.9	53.2	56.4	61.2	48	21	0	20.3	21.4	1.2	0	0	0	0	56.8	0	608
(H) Irrigation Water Requirement	(IWR)	mm/10day	72.9	74.3	80.2	77.3	74.7	55.4	58.9	31.4	0.0							24.3	47.5	63.0	34.1	7.9	17.6	22.0	20.2	21.5	22.7	47.4	62.0	23.5	0.0	0.0	31.5	62.6	82.1	70.6	4.5	73.0	1,263
(F)-(G)		mm/day	7.29	7.43	7.29	7.73	7.47	6.92	5.89	3.14	0.00							2.43	4.75	6.30	3.41	0.79	1.60	2.20	2.02	1.95	2.27	4.74	6.20	2.35	0.00	0.00	3.15	6.26	8.21	7.06	0.45	6.64	
(I) Irrigation Efficiency	(IE)		0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54							0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54	0.54	0.54	0.54	0.54	
(J) Diversion Water Requirement	(DWR)	mm/day	13.50	13.76	13.50	14.32	13.83	12.81	10.91	5.81	0.00							5.06	9.89	13.13	7.10	1.64	3.32	4.58	4.21	4.07	4.73	9.88	12.92	4.90	0.00	0.00	5.83	11.59	15.20	13.08	0.83	12.29	
(H)/(I)		lit/sec/ha	1.56	1.59	1.56	1.66	1.60	1.48	1.26	0.67	0.00							0.59	1.14	1.52	0.82	0.19	0.38	0.53	0.49	0.47	0.55	1.14	1.49	0.57	0.00	0.00	0.68	1.34	1.76	1.51	0.10	1.42	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	150

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: CAR

Province: Apayao — **Climate Type: III**

(A) Cropping Pattern (30 days Staggered Period)

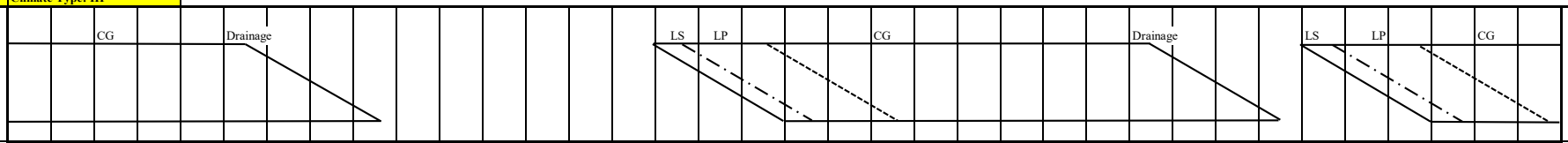
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet																10	10	10	10	10	11	10	10	11	10	10	10	10	10	5							
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.46			5.02			6.12			6.71			5.76			5.51			4.93			4.90			4.64			4.71			4.29			4.23			
(D) Area Factor																																							
Land Soaking Stage	(Als)																	0.152	0.233	0.233	0.082																		
Land Preparation Stage	(Alp)	(Wet)																0.015	0.267	0.585	0.652	0.400	0.074																
Crop Growing Stage	(Acg)																			0.015	0.267	0.600	0.926	1.000	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.038							
Land Soaking Stage	(Als)																																0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85							
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150																28.28	28.28	28.28	27.77																		
(Dry)		100																															20.06	20.06	20.06	20.01			
Land Preparation Stage	(LP)		5.92	5.92														6.85	6.85	6.85	6.34	6.34	6.34										5.78	5.78	5.78	5.72	5.72	5.72	
Crop Growing Stage	(CG)		5.08	5.22	5.08	5.52	5.27	4.87	5.88	5.69	5.20									4.68	4.44	4.83	5.28	5.59	5.73	5.59	5.10	4.87	4.50	4.52	4.38	4.00			3.65	3.81	4.15	4.53	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00	
Total	(FWR)	Wet																4.40	8.42	10.70	8.13	6.63	7.21	7.59	7.73	7.59	7.10	6.87	6.23	4.35	2.12	0.23							
		Dry	7.08	7.22	7.08	7.52	7.27	6.74	5.77	3.08	0.53																						3.14	6.22	8.14	6.92	5.98	6.47	
10-day FWR			70.84	72.18	77.93	75.22	72.71	53.91	57.73	30.77	3.73							44.01	84.17	106.95	81.28	66.34	79.26	75.86	77.33	83.45	71.04	68.72	62.28	43.50	21.25	1.14	31.36	62.16	81.37	69.22	59.76	71.13	1,857
(G) Rainfall (2004)		mm/10day	9	16	19	18	4	14	20	5	12	3	0	15	42	67	107	98	37	209	45	35	56	57	51	148	73	55	11	43	5	14	0	93	457	174	0	0	2,012
Effective Rainfall	(ER)		0	0	0	0	0	0	14	0	0							44	25.9	41.8	31.5	24.5	39.2	39.9	35.7	59.2	51.1	38.5	0	30.1	0	0	0	62.2	81.4	69.2	0	0	688
(H) Irrigation Water Requirement	(IWR)	mm/10day	70.8	72.2	77.9	75.2	72.7	53.9	43.7	30.8	3.7							0.0	58.3	65.2	49.8	41.8	40.1	36.0	41.6	24.2	19.9	30.2	62.3	13.4	21.2	1.1	31.4	0.0	0.0	0.0	59.8	71.1	1,168
(F)-(G)		mm/day	7.08	7.22	7.08	7.52	7.27	6.74	4.37	3.08	0.53							0.00	5.83	6.52	4.98	4.18	3.64	3.60	4.16	2.20	1.99	3.02	6.23	1.34	2.12	0.23	3.14	0.00	0.00	0.00	5.98	6.47	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	14.76	15.04	14.76	15.67	15.15	14.04	9.11	6.41	1.11							0.00	12.14	13.57	10.37	8.72	7.59	7.49	8.67	4.59	4.15	6.30	12.97	2.79	4.43	0.48	6.53	0.00	0.00	0.00	12.45	13.47	
(H)/(I)		lit/sec/ha	1.71	1.74	1.71	1.81	1.75	1.62	1.05	0.74	0.13							0.00	1.41	1.57	1.20	1.01	0.88	0.87	1.00	0.53	0.48	0.73	1.50	0.32	0.51	0.06	0.76	0.00	0.00	0.00	1.44	1.56	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: CAR

Province: Benguet — **Climate Type: I**

(A) Cropping Pattern (30 days Staggered Period)

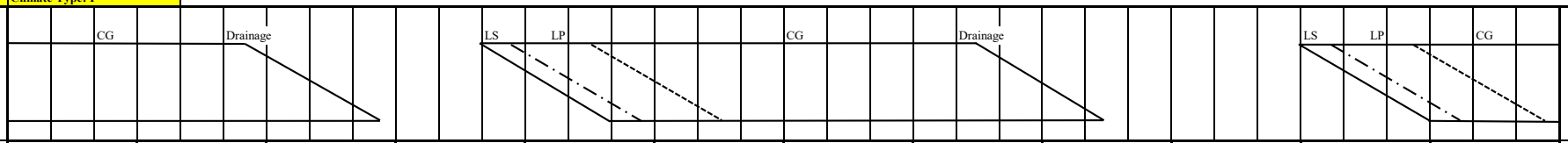
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet												10	10	10	11	10	10	10	10	10	11	10	10	11	10	4											
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	4.55			5.10			6.15			6.64			5.63			5.32			4.75			4.73			4.51			4.65			4.29			4.31			
(D) Area Factor																																							
Land Soaking Stage	(Als)												0.138	0.233	0.233	0.074																							
Land Preparation Stage	(Alp) (Wet)												0.014	0.267	0.585	0.642	0.367	0.060																					
Crop Growing Stage	(Acg)														0.015	0.283	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.958	0.650	0.300	0.027											
Land Soaking Stage	(Als)																															0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp) (Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc) Wet												0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85												
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR) mm/day																																						
Land Soaking Stage (Wet)	(LS) 125												25.70	24.81	24.81	24.81																							
(Dry)	100																															20.06	20.06	20.06	20.08	20.08	20.08	
Land Preparation Stage	(LP)	6.00	6.00										7.84	6.95	6.95	6.95	6.68	6.68														5.78	5.78	5.78	5.79	5.79	5.79	
Crop Growing Stage	(CG)	5.19	5.32	5.19	5.61	5.36	4.95	5.90	5.72	5.23					4.79	5.07	5.21	5.69	6.06	5.56	5.42	5.23	4.97	4.59	4.54	4.19	3.83							3.65	3.88	4.22	4.61	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00					2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00							2.00	2.00	2.00	2.00	
Total	(FWR) Wet												3.66	7.64	9.95	8.30	7.02	7.63	8.06	7.56	7.42	7.23	6.97	6.31	4.25	1.86	0.16											
	Dry	7.19	7.32	7.19	7.61	7.36	6.82	5.79	3.09	0.53																						3.14	6.22	8.14	6.99	6.05	6.55	
10-day FWR		71.87	73.24	79.06	76.10	73.55	54.52	57.94	30.88	3.74			36.56	76.38	99.51	91.31	70.18	76.32	80.65	75.58	74.15	79.48	69.67	63.11	46.77	18.58	0.63					31.36	62.16	81.37	69.93	60.51	72.06	1,857
(G) Rainfall (1981)	mm/10day	3	0	8	0	4	12	6	4	13	0	5	116	47	133	150	116	215	79	128	146	99	126	120	170	86	109	111	48	6	129	15	12	168	0	0	49	2,433
Effective Rainfall	(ER)	0	0	0	0	0	0	0	0	0			36.6	32.9	53.2	60	46.4	43	55.3	51.2	58.4	69.3	50.4	48	46.8	18.6	0.6					0	0	67.2	0	0	34.3	772
(H) Irrigation Water Requirement	(IWR) mm/10day	71.9	73.2	79.1	76.1	73.6	54.5	57.9	30.9	3.7			0.0	43.5	46.3	31.3	23.8	33.3	25.3	24.4	15.8	10.2	19.3	15.1	0.0	0.0	0.0					31.4	62.2	14.2	69.9	60.5	37.8	1,085
(F)-(G)	mm/day	7.19	7.32	7.19	7.61	7.36	6.82	5.79	3.09	0.53			0.00	4.35	4.63	2.85	2.38	3.33	2.53	2.44	1.58	0.93	1.93	1.51	0.00	0.00	0.00					3.14	6.22	1.42	6.99	6.05	3.43	
(I) Irrigation Efficiency	(IE)	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54			0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48					0.54	0.54	0.54	0.54	0.54	0.54	
(J) Diversion Water Requirement	(DWR) mm/day	13.31	13.56	13.31	14.09	13.62	12.62	10.73	5.72	0.99			0.00	9.06	9.65	5.93	4.95	6.94	5.28	5.08	3.28	1.93	4.01	3.15	0.00	0.00	0.00					5.81	11.51	2.62	12.95	11.21	6.36	
(H)/(I)	lit/sec/ha	1.54	1.57	1.54	1.63	1.58	1.46	1.24	0.66	0.11			0.00	1.05	1.12	0.69	0.57	0.80	0.61	0.59	0.38	0.22	0.46	0.36	0.00	0.00	0.00					0.67	1.33	0.30	1.50	1.30	0.74	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

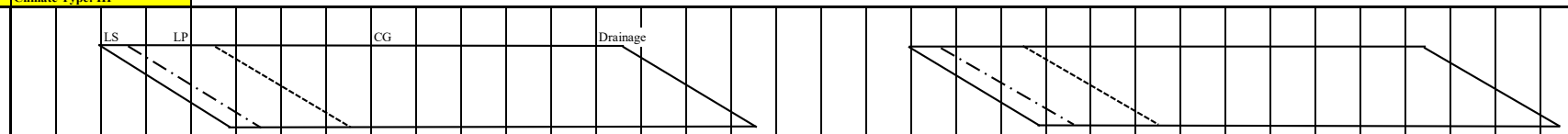
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: CAR
Province: Ifugao
Climate Type: III

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet																					11	10	10	11	10	10	10	10	10	11	10	10	10	10	4		
		Dry			11	10	10	8	10	10	11	10	10	10	10	10	11	10	6																				
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.45			5.00			6.06			6.65			5.71			5.45			4.88			4.87			4.61			4.67			4.26			4.22			
(D) Area Factor																																							
Land Soaking Stage	(Als)																						0.159	0.233	0.232	0.055													
Land Preparation Stage	(Alp)	(Wet)																					0.024	0.300	0.607	0.645	0.350	0.042											
Crop Growing Stage	(Acg)																								0.027	0.300	0.650	0.958	1.000	1.000	1.000	1.000	1.000	0.940	0.633	0.300	0.027		
Land Soaking Stage	(Als)				0.159	0.233	0.232	0.075																															
Land Preparation Stage	(Alp)	(Dry)			0.024	0.300	0.607	0.625	0.367	0.107																													
Crop Growing Stage	(Acg)						0.027	0.300	0.633	0.893	1.000	1.000	1.000	1.000	1.000	0.965	0.717	0.367	0.060																				
(E) Crop Coefficient	(Kc)	Wet																					0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85		
		Dry			0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																				
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150																					27.22	27.21	27.21	27.21													
(Dry)		100			19.70	20.19	20.19	20.19																															
Land Preparation Stage	(LP)				5.42	5.90	5.90	5.90	6.83	6.83													5.79	5.79	5.79	5.79	5.56	5.56											
Crop Growing Stage	(CG)						4.25	4.50	5.94	6.48	6.91	7.78	7.58	7.32	6.00	5.54	5.48	5.07	4.63						4.14	4.38	4.52	4.93	5.26	5.46	5.32	5.14	4.47	4.13	4.09	3.92	3.59		
Percolation	(P)	1.50					1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50						1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50		
Total	(FWR)	Wet																					4.47	8.08	9.98	6.99	5.86	6.40	6.76	6.96	6.82	6.64	5.97	5.29	3.54	1.63	0.14		
		Dry			3.26	6.47	8.42	7.00	7.22	7.86	8.41	9.28	9.08	8.82	7.50	6.79	5.01	2.41	0.37																				
10-day FWR					35.89	64.73	84.20	56.01	72.16	78.61	92.49	92.81	90.81	88.15	74.96	67.92	55.06	24.11	2.21				49.14	80.77	99.78	76.93	58.56	63.96	67.55	69.64	68.24	73.01	59.73	52.94	35.38	16.27	0.55		1,853
(G) Rainfall (1993)		mm/10day	0	6	9	28	7	2	7	6	20	4	36	36	12	30	33	63	43	75	34	103	94	50	176	92	79	171	65	341	31	40	135	34	56	85	55	37	2,095
Effective Rainfall	(ER)				0	19.6	0	0	0	0	14	0	25.2	25.2	0	21	23.1	24.1	2.2				49.1	35	70.4	64.4	55.3	64	45.5	68.2	21.7	28	54	23.8	35.4	16.3	0.6		786
(H) Irrigation Water Requirement	(IWR)	mm/10day			35.9	45.1	84.2	56.0	72.2	78.6	78.5	92.8	65.6	63.0	75.0	46.9	32.0	0.0	0.0				0.0	45.8	29.4	12.5	3.3	0.0	22.1	1.4	46.5	45.0	5.7	29.1	0.0	0.0	0.0		1,067
(F)-(G)		mm/day			3.26	4.51	8.42	7.00	7.22	7.86	7.14	9.28	6.56	6.30	7.50	4.69	2.91	0.00	0.00				0.00	4.58	2.94	1.14	0.33	0.00	2.21	0.14	4.65	4.09	0.57	2.91	0.00	0.00	0.00		
(I) Irrigation Efficiency	(IE)				0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48				0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		
(J) Diversion Water Requirement	(DWR)	mm/day			6.80	9.40	17.54	14.59	15.03	16.38	14.87	19.33	13.67	13.11	15.62	9.78	6.05	0.00	0.00				0.00	9.53	6.12	2.37	0.68	0.00	4.59	0.30	9.70	8.52	1.19	6.07	0.00	0.00	0.00		
(H)/(I)		lit/sec/ha			0.79	1.09	2.03	1.69	1.74	1.90	1.72	2.24	1.58	1.52	1.81	1.13	0.70	0.00	0.00				0.00	1.10	0.71	0.27	0.08	0.00	0.53	0.03	1.12	0.99	0.14	0.70	0.00	0.00	0.00		

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: CAR
Province: Kalinga — **Climate Type: III**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)

			CG			Drainage										LS	LP				CG						Drainage				LS	LP			CG				

(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11		
(Based on Cropping Pattern)	Wet																10	10	10	10	10	11	10	10	11	10	10	10	10	10	5								
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11		
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	4.34			4.89			5.95			6.52			5.59			5.33			4.77			4.76			4.51			4.58			4.17			4.13				
(D) Area Factor																																							
Land Soaking Stage	(Als)																0.152	0.233	0.233	0.082																			
Land Preparation Stage	(Alp) (Wet)																0.015	0.267	0.585	0.652	0.400	0.074																	
Crop Growing Stage	(Acg)																		0.015	0.267	0.600	0.926	1.000	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.038								
Land Soaking Stage	(Als)																															0.152	0.233	0.233	0.082				
Land Preparation Stage	(Alp) (Dry)																															0.015	0.267	0.585	0.652	0.400	0.074		
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926		
(E) Crop Coefficient (Kc)	Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85								
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07		
(F) Farm Water Requirement (FWR)	mm/day																																						
Land Soaking Stage (Wet)	(LS) 150																28.31	28.31	28.31	27.82																			
(Dry)	100																															20.15	20.15	20.15	20.11				
Land Preparation Stage	(LP)	6.01	6.01														6.88	6.88	6.88	6.39	6.39	6.39										5.86	5.86	5.86	5.82	5.82	5.82		
Crop Growing Stage	(CG)	4.95	5.08	4.95	5.38	5.13	4.74	5.71	5.53	5.06									4.53	4.29	4.67	5.10	5.43	5.57	5.43	4.96	4.74	4.37	4.40	4.26	3.89			3.54	3.72	4.05	4.42		
Percolation	(P) 2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19									2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19			2.19	2.19	2.19	2.19		
Total	(FWR) Wet																4.41	8.43	10.72	8.18	6.67	7.23	7.62	7.76	7.62	7.15	6.93	6.29	4.39	2.15	0.23								
	Dry	7.14	7.27	7.14	7.57	7.32	6.80	5.79	3.09	0.54																						3.15	6.26	8.21	7.02	6.07	6.55		
10-day FWR		71.38	72.68	78.51	75.69	73.25	54.41	57.92	30.89	3.75							44.06	84.33	107.22	81.77	66.74	79.50	76.16	77.59	83.78	71.51	69.26	62.89	43.93	21.48	1.16	31.50	62.58	82.08	70.24	60.72	72.06	1,869	
(G) Rainfall (1994)	mm/10day	6	0	0	3	1	1	0	12	10	19	7	20	79	70	81	109	66	91	246	275	230	291	62	150	204	99	42	2	34	44	1	0	8	2	0	9	2,274	
Effective Rainfall	(ER)	0	0	0	0	0	0	0	0	0							43.6	46.2	63.7	49.2	55	46	58.2	43.4	60	40.8	69.3	29.4	0	21.5	1.2	0	0	0	0	0	0	628	
(H) Irrigation Water Requirement	(IWR) mm/10day	71.4	72.7	78.5	75.7	73.2	54.4	57.9	30.9	3.8							0.5	38.1	43.5	32.6	11.7	33.5	18.0	34.2	23.8	30.7	0.0	33.5	43.9	0.0	0.0	31.5	62.6	82.1	70.2	60.7	72.1	1,242	
(F)-(G)	mm/day	7.14	7.27	7.14	7.57	7.32	6.80	5.79	3.09	0.54							0.05	3.81	4.35	3.26	1.17	3.05	1.80	3.42	2.16	3.07	0.00	3.35	4.39	0.00	0.00	3.15	6.26	8.21	7.02	6.07	6.55		
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		
(J) Diversion Water Requirement	(DWR) mm/day	14.87	15.14	14.87	15.77	15.26	14.17	12.07	6.44	1.12							0.10	7.94	9.07	6.78	2.45	6.34	3.74	7.12	4.50	6.40	0.00	6.98	9.15	0.00	0.00	6.56	13.04	17.10	14.63	12.65	13.65		
(H)/(I)	lit/sec/ha	1.72	1.75	1.72	1.83	1.77	1.64	1.40	0.74	0.13							0.01	0.92	1.05	0.79	0.28	0.73	0.43	0.82	0.52	0.74	0.00	0.81	1.06	0.00	0.00	0.76	1.51	1.98	1.69	1.46	1.58		

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

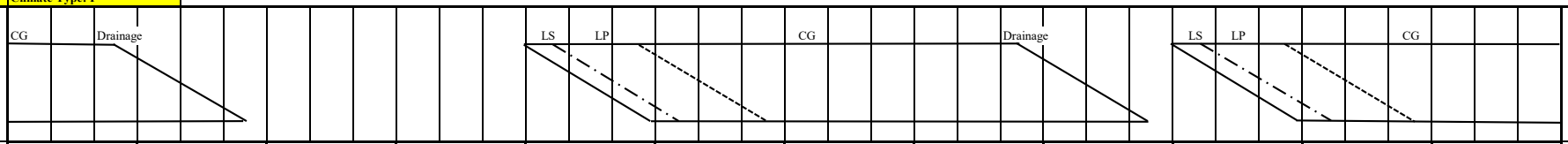
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: CAR
Province: Mountain Province — **Climate Type: I**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4									
		Dry	10	10	11	10	10	4																						10	10	11	10	10	10	10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.36			4.91			5.97			6.54			5.61			5.35			4.79			4.78			4.53			4.59			4.18			4.14		
(D) Area Factor																																						
Land Soaking Stage	(Als)														0.152	0.233	0.261	0.060																				
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																		
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027									
Land Soaking Stage	(Als)																													0.152	0.233	0.232	0.060					
Land Preparation Stage	(Alp)	(Dry)																												0.015	0.267	0.592	0.640	0.367	0.055			
Crop Growing Stage	(Acg)		1.000	1.000	0.940	0.683	0.400	0.033																								0.024	0.300	0.633	0.945	1.000	1.000	1.000
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85									
		Dry	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	150													27.87	27.87	27.87	27.64																				
(Dry)		150																												26.97	26.97	26.97	26.61					
Land Preparation Stage	(LP)														6.44	6.44	6.44	6.21	6.21	6.21										5.54	5.54	5.54	5.18	5.18	5.18			
Crop Growing Stage	(CG)		4.80	4.58	4.23	4.71	4.57	4.17									4.77	4.82	5.24	5.72	5.46	5.60	5.46	5.26	5.02	4.64	4.35	4.21	3.85			3.90	3.76	4.10	4.47	4.72	4.84	4.72
Percolation	(P)	1.50	1.50	1.50	1.50	1.50	1.50	1.50									1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50			1.50	1.50	1.50	1.50	1.50	1.50	1.50
Total	(FWR)	Wet													4.33	8.21	11.23	7.53	6.55	7.16	6.96	7.10	6.96	6.76	6.52	5.80	3.70	1.71	0.14									
		Dry	6.30	6.08	5.39	4.24	2.43	0.19																						4.18	7.76	9.67	6.49	5.44	5.93	6.22	6.34	6.22
10-day FWR			62.96	60.78	59.24	42.44	24.27	0.75							43.32	82.11	123.57	75.26	65.47	71.64	69.61	71.04	76.57	67.58	65.19	63.79	37.02	17.14	0.58	41.82	77.62	106.32	64.89	54.43	59.29	62.20	63.44	68.42	1,779
(G) Rainfall (2006)		mm/10day	0	0	72	17	2	15	8	55	18	2	37	3	7	81	97	20	49	40	55	179	178	92	106	109	44	127	72	38	24	184	91	95	28	108	44	4	2,101
Effective Rainfall	(ER)		0	0	50.4	0	0	0							0	56.7	67.9	14	34.3	28	38.5	71	71.2	64.4	42.4	43.6	30.8	17.1	0.6	26.6	16.8	73.6	63.7	54.4	19.6	43.2	30.8	0	960
(H) Irrigation Water Requirement	(IWR)	mm/10day	63.0	60.8	8.8	42.4	24.3	0.7							43.3	25.4	55.7	61.3	31.2	43.6	31.1	0.0	5.4	3.2	22.8	20.2	6.2	0.0	0.0	15.2	60.8	32.7	1.2	0.0	39.7	19.0	32.6	68.4	819
(F)-(G)		mm/day	6.30	6.08	0.80	4.24	2.43	0.19							4.33	2.54	5.06	6.13	3.12	4.36	3.11	0.00	0.49	0.32	2.28	1.84	0.62	0.00	0.00	1.52	6.08	2.97	0.12	0.00	3.97	1.90	3.26	6.22	
(I) Irrigation Efficiency	(IE)		0.54	0.54	0.54	0.54	0.54	0.54							0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54	0.54	0.54	0.54	0.54
(J) Diversion Water Requirement	(DWR)	mm/day	11.66	11.26	1.49	7.86	4.49	0.35							9.03	5.29	10.54	12.76	6.49	9.09	6.48	0.00	1.02	0.66	4.75	3.82	1.30	0.00	0.00	3.17	12.67	6.20	0.22	0.00	7.35	3.52	6.04	11.52	
(H)/(I)		lit/sec/ha	1.35	1.30	0.17	0.91	0.52	0.04							1.04	0.61	1.22	1.48	0.75	1.05	0.75	0.00	0.12	0.08	0.55	0.44	0.15	0.00	0.00	0.37	1.47	0.72	0.03	0.00	0.85	0.41	0.70	1.33	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

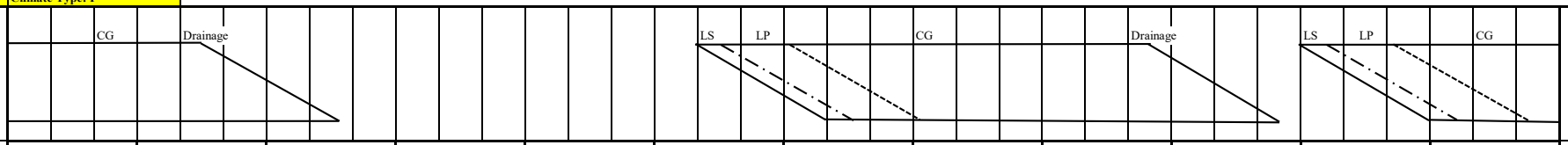
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: I
Province: Ilocos Norte — **Climate Type: I**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 15 days
Seeding to Drainage: 100 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet																	10	10	10	10	11	10	10	11	10	10	10	10	10	5							
		Dry	10	10	11	10	10	8	10	7																							10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.81			5.39			6.51			7.07			6.00			5.65			5.06			5.02			4.79			4.96			4.56			4.54			
(D) Area Factor																																							
Land Soaking Stage	(Als)																	0.156	0.233	0.233	0.082																		
Land Preparation Stage	(Alp)	(Wet)																0.015	0.267	0.493	0.485	0.217	0.002																
Crop Growing Stage	(Acg)																			0.107	0.433	0.783	0.998	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.038								
Land Soaking Stage	(Als)																															0.156	0.233	0.233	0.082				
Land Preparation Stage	(Alp)	(Dry)																														0.015	0.267	0.493	0.485	0.233	0.006		
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	0.948	0.700	0.400	0.074																								0.107	0.433	0.767	0.994		
(E) Crop Coefficient	(Kc)	Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.01	0.96	0.93	0.85								
		Dry	1.14	1.17	1.14	1.10	1.01	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07		
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	165																30.54	30.54	30.02	30.02																		
(Dry)		145																														26.73	26.73	26.73	26.71	26.71	26.71		
Land Preparation Stage	(LP)																	6.97	6.97	6.45	6.45	6.45	6.42									6.01	6.01	6.01	6.00	6.00	6.00		
Crop Growing Stage	(CG)		5.48	5.63	5.48	5.93	5.44	5.17	6.05	5.53										4.30	4.55	4.96	5.37	5.72	5.87	5.46	5.27	4.84	4.76	4.61	4.22			3.88	4.09	4.45	4.86		
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00										2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00		
Total	(FWR)	Wet																4.87	8.98	10.85	8.43	6.85	7.37	7.72	7.87	7.46	7.27	6.55	4.51	2.20	0.24								
		Dry	7.48	7.63	7.48	7.93	7.06	5.02	3.22	0.56																						4.26	7.83	9.82	7.73	6.34	6.85		
10-day FWR			74.83	76.28	82.32	79.29	70.57	40.18	32.22	3.90								48.69	89.78	108.51	84.29	75.34	73.69	77.23	86.61	74.61	72.69	65.51	45.10	22.02	1.18	42.60	78.33	98.20	77.33	63.43	75.38	1,820	
(G) Rainfall (1998)		mm/10day	0	1	9	4	4	4	4	7	4	0	52	4	34	44	180	53	37	42	119	21	61	115	70	50	177	61	82	121	147	110	12	4	159	9	79	15	1,895	
Effective Rainfall	(ER)		0	0	0	0	0	0	0	0									25.9	29.4	47.6	14.7	42.7	46	49	35	70.8	42.7	57.4	45.1	22	1.2	0	0	63.6	0	55.3	0	648	
(H) Irrigation Water Requirement	(IWR)	mm/10day	74.8	76.3	82.3	79.3	70.6	40.2	32.2	3.9									22.8	60.4	60.9	69.6	32.6	27.7	28.2	51.6	3.8	30.0	8.1	0.0	0.0	0.0	42.6	78.3	34.6	77.3	8.1	75.4	1,172	
(F)-(G)		mm/day	7.48	7.63	7.48	7.93	7.06	5.02	3.22	0.56									2.28	6.04	6.09	6.96	2.97	2.77	2.82	4.69	0.38	3.00	0.81	0.00	0.00	0.00	4.26	7.83	3.46	7.73	0.81	6.85		
(I) Irrigation Efficiency	(IE)		0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54									0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54	0.54	0.54	0.54	0.54		
(J) Diversion Water Requirement	(DWR)	mm/day	13.86	14.13	13.86	14.68	13.07	9.30	5.97	1.03									4.75	12.58	12.69	14.50	6.18	5.77	5.88	9.77	0.79	6.25	1.69	0.00	0.00	0.00	7.89	14.51	6.41	14.32	1.51	12.69		
(H)/(I)		lit/sec/ha	1.60	1.63	1.60	1.70	1.51	1.08	0.69	0.12									0.55	1.46	1.47	1.68	0.72	0.67	0.68	1.13	0.09	0.72	0.20	0.00	0.00	0.00	0.91	1.68	0.74	1.66	0.17	1.47		

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

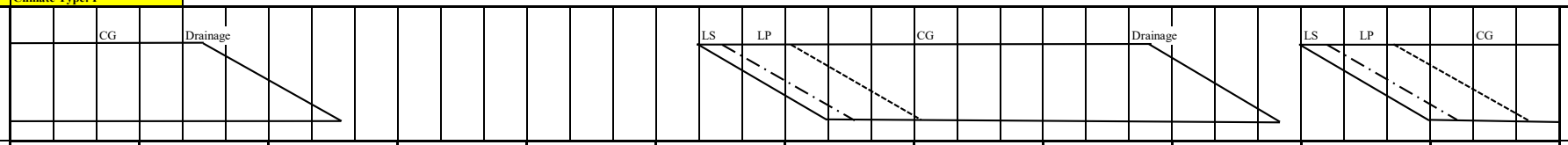
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: I
Province: Ilocos Sur — **Climate Type: I**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 15 days
Seeding to Drainage: 100 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet																	10	10	10	10	11	10	10	11	10	10	10	10	10	5							
		Dry	10	10	11	10	10	8	10	7																							10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.74			5.29			6.35			6.84			5.81			5.50			4.91			4.90			4.66			4.83			4.46			4.49			
(D) Area Factor																																							
Land Soaking Stage	(Als)																	0.156	0.233	0.233	0.082																		
Land Preparation Stage	(Alp)	(Wet)																0.015	0.267	0.493	0.485	0.217	0.002																
Crop Growing Stage	(Acg)																			0.107	0.433	0.783	0.998	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.038								
Land Soaking Stage	(Als)																															0.156	0.233	0.233	0.082				
Land Preparation Stage	(Alp)	(Dry)																														0.015	0.267	0.493	0.485	0.233	0.006		
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	0.948	0.700	0.400	0.074																								0.107	0.433	0.767	0.994		
(E) Crop Coefficient	(Kc)	Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.01	0.96	0.93	0.85								
		Dry	1.14	1.17	1.14	1.10	1.01	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07		
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	165																30.41	30.41	29.89	29.89																		
(Dry)		145																														26.64	26.64	26.64	26.67	26.67	26.67		
Land Preparation Stage	(LP)																	6.84	6.84	6.32	6.32	6.32	6.31									5.92	5.92	5.92	5.95	5.95	5.95		
Crop Growing Stage	(CG)		5.40	5.55	5.40	5.82	5.34	5.08	5.91	5.40										4.17	4.42	4.81	5.24	5.59	5.73	5.31	5.13	4.71	4.64	4.49	4.11			3.79	4.04	4.40	4.80		
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00										2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00		
Total	(FWR)	Wet																4.85	8.91	10.74	8.30	6.71	7.24	7.59	7.73	7.31	7.13	6.42	4.43	2.16	0.23								
		Dry	7.40	7.55	7.40	7.82	6.96	4.95	3.16	0.55																						4.24	7.79	9.75	7.69	6.30	6.80		
10-day FWR			74.04	75.46	81.44	78.19	69.61	39.64	31.62	3.83								48.47	89.12	107.42	82.96	73.76	72.41	75.86	85.06	73.12	71.26	64.25	44.27	21.62	1.16	42.45	77.89	97.47	76.89	62.96	74.79		1,797
(G) Rainfall (2002)		mm/10day	0	0	0	4	1	3	0	1	12	1	20	5	0	79	212	128	74	75	445	51	276	218	118	21	63	71	30	70	10	16	62	8	0	0	0	5		2,079
Effective Rainfall	(ER)		0	0	0	0	0	0	0	0									48.5	52.5	89	35.7	55.2	43.6	47.2	14.7	44.1	49.7	21	44.3	0	0	42.5	0	0	0	0	0		588
(H) Irrigation Water Requirement	(IWR)	mm/10day	74.0	75.5	81.4	78.2	69.6	39.6	31.6	3.8									0.0	36.6	18.4	47.3	18.6	28.8	28.7	70.4	29.0	21.6	43.2	0.0	21.6	1.2	0.0	77.9	97.5	76.9	63.0	74.8		1,209
(F)-(G)		mm/day	7.40	7.55	7.40	7.82	6.96	4.95	3.16	0.55									0.00	3.66	1.84	4.73	1.69	2.88	2.87	6.40	2.90	2.16	4.32	0.00	2.16	0.23	0.00	7.79	9.75	7.69	6.30	6.80		
(I) Irrigation Efficiency	(IE)		0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54									0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54	0.54	0.54	0.54	0.54		
(J) Diversion Water Requirement	(DWR)	mm/day	13.71	13.97	13.71	14.48	12.89	9.18	5.86	1.01									0.00	7.63	3.84	9.85	3.51	6.00	5.97	13.33	6.05	4.49	9.01	0.00	4.50	0.48	0.00	14.42	18.05	14.24	11.66	12.59		
(H)/(I)		lit/sec/ha	1.59	1.62	1.59	1.68	1.49	1.06	0.68	0.12									0.00	0.88	0.44	1.14	0.41	0.69	0.69	1.54	0.70	0.52	1.04	0.00	0.52	0.06	0.00	1.67	2.09	1.65	1.35	1.46		

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

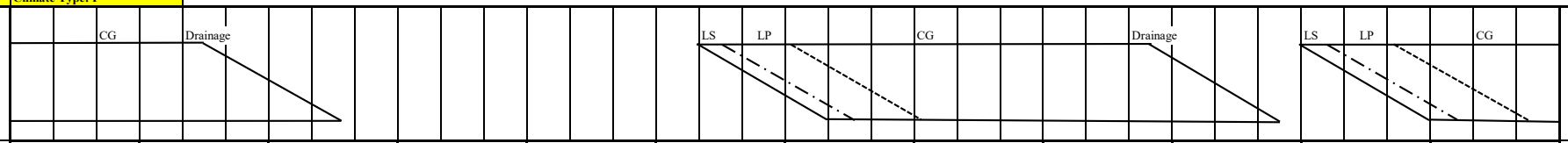
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: I
Province: La Union — **Climate Type: I**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 15 days
Seeding to Drainage: 100 days
(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet																	10	10	10	10	11	10	10	11	10	10	10	10	10	5							
	Dry	10	10	11	10	10	8	10	7																							10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	4.69			5.23			6.28			6.78			5.76			5.45			4.87			4.85			4.62			4.78			4.41			4.44			
(D) Area Factor																																						
Land Soaking Stage	(Als)																0.156	0.233	0.233	0.082																		
Land Preparation Stage	(Alp) (Wet)																0.015	0.267	0.493	0.485	0.217	0.002																
Crop Growing Stage	(Acg)																		0.107	0.433	0.783	0.998	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.038								
Land Soaking Stage	(Als)																														0.156	0.233	0.233	0.082				
Land Preparation Stage	(Alp) (Dry)																														0.015	0.267	0.493	0.485	0.233	0.006		
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	0.948	0.700	0.400	0.074																								0.107	0.433	0.767	0.994		
(E) Crop Coefficient (Kc)	Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.01	0.96	0.93	0.85								
	Dry	1.14	1.17	1.14	1.10	1.01	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07		
(F) Farm Water Requirement (FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS) 165																30.37	30.37	29.86	29.86																		
(Dry)	145																														26.60	26.60	26.60	26.62	26.62	26.62		
Land Preparation Stage	(LP)																6.80	6.80	6.29	6.29	6.29	6.27									5.88	5.88	5.88	5.91	5.91	5.91		
Crop Growing Stage	(CG)	5.35	5.49	5.35	5.75	5.28	5.02	5.84	5.34										4.14	4.38	4.77	5.19	5.53	5.67	5.27	5.08	4.67	4.59	4.45	4.06			3.75	4.00	4.35	4.75		
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00										2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00		
Total	(FWR) Wet																4.84	8.89	10.71	8.26	6.67	7.19	7.53	7.67	7.27	7.08	6.39	4.39	2.15	0.23								
	Dry	7.35	7.49	7.35	7.75	6.90	4.91	3.14	0.54																						4.24	7.77	9.71	7.64	6.25	6.75		
10-day FWR		73.47	74.87	80.81	77.53	69.04	39.32	31.36	3.80								48.39	88.90	107.12	82.61	73.34	71.88	75.29	84.42	72.67	70.82	63.86	43.95	21.46	1.15	42.37	77.67	97.11	76.44	62.48	74.20	1,786	
(G) Rainfall (1994)	mm/10day	6	0	0	3	1	1	0	12	10	19	7	20	79	70	81	109	66	91	246	275	230	291	62	150	204	99	42	2	34	44	1	0	8	2	0	9	2,274
Effective Rainfall	(ER)	0	0	0	0	0	0	0	0									46.2	63.7	49.2	55	46	58.2	43.4	60	40.8	69.3	29.4	0	21.5	1.2	0	0	0	0	0	0	584
(H) Irrigation Water Requirement	(IWR) mm/10day	73.5	74.9	80.8	77.5	69.0	39.3	31.4	3.8									2.2	25.2	57.9	27.6	27.3	13.7	31.9	24.4	31.9	1.5	34.5	43.9	0.0	0.0	42.4	77.7	97.1	76.4	62.5	74.2	1,203
(F)-(G)	mm/day	7.35	7.49	7.35	7.75	6.90	4.91	3.14	0.54									0.22	2.52	5.79	2.76	2.49	1.37	3.19	2.22	3.19	0.15	3.45	4.39	0.00	0.00	4.24	7.77	9.71	7.64	6.25	6.75	
(I) Irrigation Efficiency	(IE)	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54									0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54	0.54	0.54	0.54	0.54		
(J) Diversion Water Requirement	(DWR) mm/day	13.60	13.87	13.60	14.36	12.78	9.10	5.81	1.01									0.46	5.25	12.07	5.75	5.18	2.85	6.64	4.62	6.64	0.32	7.18	9.16	0.00	0.00	7.85	14.38	17.98	14.16	11.57	12.49	
(H)/(I)	lit/sec/ha	1.57	1.60	1.57	1.66	1.48	1.05	0.67	0.12									0.05	0.61	1.40	0.67	0.60	0.33	0.77	0.54	0.77	0.04	0.83	1.06	0.00	0.00	0.91	1.66	2.08	1.64	1.34	1.45	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: I

Province: Pangasinan — **Climate Type: I**

(A) Cropping Pattern (45 days Staggered Period)

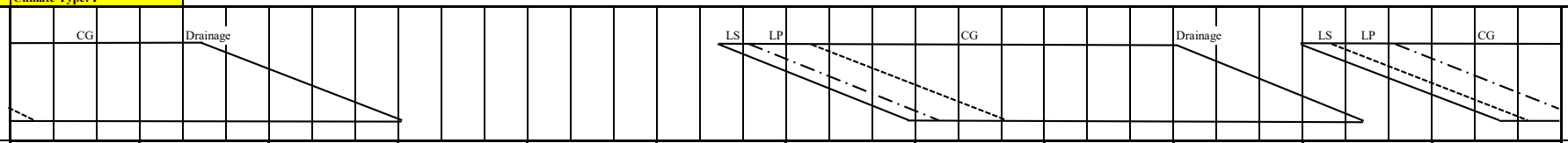
Paddy-Paddy

LS: 7 days

LP: 15 days

Seeding to Drainage: 100 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet																	5	10	10	10	11	10	10	11	10	10	10	10	10	11	10	4					
		Dry	10	10	11	10	10	8	10	10	11	1																					10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.99			5.57			6.68			7.21			6.08			5.69			5.07			5.05			4.82			5.02			4.66			4.69			
(D) Area Factor																																							
Land Soaking Stage	(Als)																	0.028	0.151	0.156	0.156	0.155	0.040																
Land Preparation Stage	(Alp)	(Wet)																	0.071	0.279	0.333	0.333	0.316	0.133	0.001														
Crop Growing Stage	(Acg)																			0.010	0.178	0.411	0.644	0.867	0.999	1.000	1.000	1.000	0.910	0.689	0.456	0.222	0.018						
Land Soaking Stage	(Als)																															0.101	0.156	0.156	0.156	0.128	0.004		
Land Preparation Stage	(Alp)	(Dry)	0.040																													0.010	0.178	0.329	0.333	0.333	0.252		
Crop Growing Stage	(Acg)		0.960	1.000	1.000	1.000	0.972	0.800	0.600	0.378	0.144	0.001																						0.071	0.289	0.511	0.744		
(E) Crop Coefficient	(Kc)	Wet																0.80	0.82	0.85	0.90	0.94	1.02	1.10	1.14	1.14	1.12	1.05	1.01	0.96	0.93	0.90	0.85						
		Dry	1.10	1.14	1.14	1.12	1.05	1.01	0.96	0.93	0.90	0.85																				0.80	0.82	0.85	0.90	0.94	1.02		
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	165																30.58	30.58	30.03	30.03	30.03	30.02																
(Dry)		145																														26.82	26.82	26.82	26.84	26.84	26.84		
Land Preparation Stage	(LP)		6.39																7.01	6.46	6.46	6.46	6.44	6.44	6.44							6.10	6.10	6.10	6.13	6.13	6.13		
Crop Growing Stage	(CG)		5.49	5.69	5.69	6.24	5.85	5.63	6.41	6.21	6.01	6.13								4.31	4.56	4.77	5.15	5.56	5.76	5.49	5.40	5.06	5.07	4.82	4.67	4.19	3.96	3.96	4.22	4.41	4.78		
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00		
Total	(FWR)	Wet																0.86	5.11	6.55	8.01	9.59	7.84	7.41	7.76	7.49	7.40	7.06	6.43	4.70	3.04	1.38	0.11						
		Dry	7.45	7.69	7.69	8.24	7.63	6.10	5.05	3.10	1.15	0.01																				2.77	5.27	6.61	8.03	8.75	6.70		
10-day FWR			74.45	76.89	84.57	82.38	76.29	48.80	50.48	31.04	12.69	0.01						4.28	51.15	65.51	80.05	105.46	78.42	74.07	85.31	74.95	73.98	70.61	64.34	46.98	33.45	41.44	53.12	66.14	80.25	87.51	73.68		1,848
(G) Rainfall (1982)		mm/10day	1	0	0	0	3	1	0	0	25	46	30	9	20	76	54	84	51	145	242	161	187	102	115	285	66	40	73	34	94	7	13	14	3	19	2	0		2,002
Effective Rainfall	(ER)		0	0	0	0	0	0	0	0	12.7	0.01							4.3	51.2	48.4	64.4	74.8	40.8	46	57	46.2	28	51.1	23.8	47	0	0	0	0	0	0	0		596
(H) Irrigation Water Requirement	(IWR)	mm/10day	74.5	76.9	84.6	82.4	76.3	48.8	50.5	31.0	0.0	0.0							0.0	0.0	17.1	15.7	30.7	37.6	28.1	28.3	28.7	46.0	19.5	40.5	0.0	33.4	41.4	53.1	66.1	80.3	87.5	73.7		1,253
(F)-(G)		mm/day	7.45	7.69	7.69	8.24	7.63	6.10	5.05	3.10	0.00	0.00							0.00	0.00	1.71	1.57	2.79	3.76	2.81	2.57	2.87	4.60	1.95	4.05	0.00	3.04	4.14	5.31	6.61	8.03	8.75	6.70		
(I) Irrigation Efficiency	(IE)		0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54							0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54	0.54	0.54		
(J) Diversion Water Requirement	(DWR)	mm/day	13.787	14.238	14.238	15.256	14.127	11.297	9.3476	5.7487	0	0							0	0	3.5647	3.2606	5.8075	7.8378	5.8484	5.3622	5.9892	9.58	4.0646	8.4456	0	6.3352	8.6342	11.067	12.247	14.862	16.205	12.405		
(H)/(I)		lit/sec/ha	1.60	1.65	1.65	1.77	1.64	1.31	1.08	0.67	0.00	0.00							0.00	0.00	0.41	0.38	0.67	0.91	0.68	0.62	0.69	1.11	0.47	0.98	0.00	0.73	1.00	1.28	1.42	1.72	1.88	1.44		

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

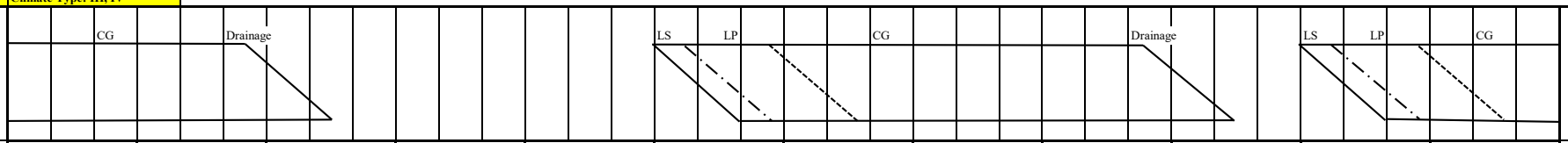
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: II
Province: Batanes — **Climate Type: III, IV**

(A) Cropping Pattern (20 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet																10	10	10	10	10	11	10	10	11	10	10	10	10	5								
		Dry	10	10	11	10	10	8	10	7																							10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.74			5.28			6.35			6.91			5.98			5.74			5.18			5.16			4.89			4.99			4.54			4.49			
(D) Area Factor																																							
Land Soaking Stage	(Als)																	0.228	0.350	0.123																			
Land Preparation Stage	(Alp)	(Wet)																0.023	0.400	0.855	0.600	0.123																	
Crop Growing Stage	(Acg)																			0.023	0.400	0.878	1.000	1.000	1.000	1.000	1.000	1.000	0.938	0.500	0.063								
Land Soaking Stage	(Als)																																0.228	0.350	0.123				
Land Preparation Stage	(Alp)	(Dry)																															0.023	0.400	0.855	0.600	0.123		
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.972	0.600	0.123																									0.023	0.400	0.878	1.000	
(E) Crop Coefficient	(Kc)	Wet																0.80	0.82	0.85	0.93	1.03	1.12	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85								
		Dry	1.18	1.19	1.12	1.06	1.01	0.96	0.93	0.85																							0.80	0.82	0.85	0.93	1.03	1.12	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150																28.48	28.48	28.48																			
(Dry)		100																															20.28	20.28	20.28				
Land Preparation Stage	(LP)																	7.05	7.05	7.05	6.56	6.56											6.00	6.00	6.00	5.95	5.95		
Crop Growing Stage	(CG)		5.59	5.64	5.31	5.60	5.33	5.07	5.91	5.40										4.88	4.82	5.34	5.80	6.09	6.14	5.78	5.18	4.94	4.69	4.64	4.24				3.86	4.18	4.62	5.03	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00										2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR)	Wet																6.66	12.79	9.69	6.66	7.25	7.80	8.09	8.14	7.78	7.18	6.94	6.28	3.32	0.39								
		Dry	7.59	7.64	7.31	7.60	7.33	6.87	4.74	0.91																							4.76	9.50	7.76	6.04	6.55	7.03	
10-day FWR			75.93	76.41	80.40	75.97	73.33	54.97	47.43	6.37								66.56	127.88	96.90	66.62	72.47	85.82	80.89	81.40	85.57	71.83	69.39	62.79	33.20	1.97		47.62	94.96	77.55	60.41	65.48	77.32	1,917
(G) Rainfall (1997)		mm/10day	24	21	12	22	21	12	4	3	50	0	17	0	5	17	67	75	34	41	47	8	0	32	31	115	31	0	36	0	210	97	39	4	5	80	0	0	1,160
Effective Rainfall	(ER)		16.8	14.7	0	0	0	0	0	0								52.5	23.8	28.7	32.9	0	0	22.4	21.7	46	21.7	0	25.2	0	2		27.3	0	0	56	0	0	392
(H) Irrigation Water Requirement	(IWR)	mm/10day	59.1	61.7	80.4	76.0	73.3	55.0	47.4	6.4								14.1	104.1	68.2	33.7	72.5	85.8	58.5	59.7	39.6	50.1	69.4	37.6	33.2	0.0		20.3	95.0	77.6	4.4	65.5	77.3	1,526
(F)-(G)		mm/day	5.91	6.17	7.31	7.60	7.33	6.87	4.74	0.91								1.41	10.41	6.82	3.37	7.25	7.80	5.85	5.97	3.60	5.01	6.94	3.76	3.32	0.00		2.03	9.50	7.76	0.44	6.55	7.03	
(I) Irrigation Efficiency	(IE)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5								0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43		0.5	0.5	0.5	0.5	0.5	0.5	
(J) Diversion Water Requirement	(DWR)	mm/day	11.83	12.34	14.62	15.19	14.67	13.74	9.49	1.82								3.27	24.21	15.86	7.84	16.85	18.14	13.60	13.88	8.37	11.66	16.14	8.74	7.72	0.00		4.06	18.99	15.51	0.88	13.10	14.06	
(H)/(I)		lit/sec/ha	1.37	1.43	1.69	1.76	1.70	1.59	1.10	0.21								0.38	2.80	1.84	0.91	1.95	2.10	1.57	1.61	0.97	1.35	1.87	1.01	0.89	0.00		0.47	2.20	1.80	0.10	1.52	1.63	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: II

Province: Cagayan — **Climate Type: III, IV**

(A) Cropping Pattern (30 days Staggered Period)

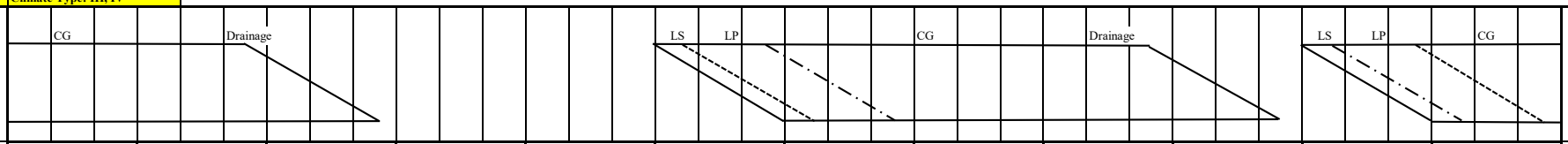
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet																10	10	10	10	10	11	10	10	11	10	10	10	10	10	5							
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.75			5.31			6.42			7.01			6.03			5.75			5.15			5.13			4.85			4.95			4.52			4.49			
(D) Area Factor																																							
Land Soaking Stage	(Als)																	0.152	0.233	0.233	0.082																		
Land Preparation Stage	(Alp)	(Wet)																0.015	0.267	0.585	0.652	0.400	0.074																
Crop Growing Stage	(Acg)																			0.015	0.267	0.600	0.926	1.000	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.038							
Land Soaking Stage	(Als)																																0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85							
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150																28.49	28.49	28.49	27.96	27.96	27.96																
(Dry)		120																															23.12	23.12	23.12	23.09	23.09	23.09	
Land Preparation Stage	(LP)																	7.06	7.06	7.06	6.53	6.53	6.53	6.51	6.51								5.98	5.98	5.98	5.95	5.95	5.95	
Crop Growing Stage	(CG)		5.42	5.56	5.42	5.84	5.58	5.15	6.16	5.97	5.46								4.72	4.89	4.64	5.05	5.51	5.85	6.00	5.85	5.34	5.09	4.70	4.75	4.60	4.21			3.84	4.04	4.40	4.80	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00	
Total	(FWR)	Wet																4.44	8.52	10.87	8.32	6.84	7.44	7.85	8.00	7.85	7.34	7.09	6.42	4.50	2.20	0.24							
		Dry	7.42	7.56	7.42	7.84	7.58	7.01	5.98	3.19	0.55																						3.60	6.98	8.97	7.39	6.22	6.74	
10-day FWR			74.15	75.58	81.57	78.41	75.76	56.12	59.84	31.88	3.86							44.36	85.23	108.71	83.23	68.41	81.82	78.48	80.02	86.33	73.35	70.93	64.23	45.04	21.99	1.18	36.04	69.83	89.72	73.87	62.21	74.15	1,936
(G) Rainfall (1997)		mm/10day	34	20	15	6	20	2	4	2	76	16	14	11	19	4	66	21	12	32	20	13	32	45	40	125	25	9	56	142	320	24	219	8	3	49	62	20	1,586
Effective Rainfall	(ER)		23.8	14	0	0	14	0	0	0	3.9							14.7	0	22.4	14	0	22.4	31.5	28	50	17.5	0	39.2	45	22	1.2	36	0	0	34.3	43.4	14	491
(H) Irrigation Water Requirement	(IWR)	mm/10day	50.4	61.6	81.6	78.4	61.8	56.1	59.8	31.9	0.0							29.7	85.2	86.3	69.2	68.4	59.4	47.0	52.0	36.3	55.9	70.9	25.0	0.0	0.0	0.0	0.0	69.8	89.7	39.6	18.8	60.2	1,445
(F)-(G)		mm/day	5.04	6.16	7.42	7.84	6.18	7.01	5.98	3.19	0.00							2.97	8.52	8.63	6.92	6.84	5.40	4.70	5.20	3.30	5.59	7.09	2.50	0.00	0.00	0.00	0.00	6.98	8.97	3.96	1.88	5.47	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	10.49	12.828	15.448	16.335	12.866	14.614	12.466	6.6422	0							6.1795	17.756	17.982	14.423	14.252	11.254	9.7879	10.838	6.8807	11.635	14.776	5.2144	0	0	0	0	14.548	18.691	8.2434	3.9179	11.393	
(H)/(I)		lit/sec/ha	1.21	1.48	1.79	1.89	1.49	1.69	1.44	0.77	0.00							0.72	2.06	2.08	1.67	1.65	1.30	1.13	1.25	0.80	1.35	1.71	0.60	0.00	0.00	0.00	0.00	1.68	2.16	0.95	0.45	1.32	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

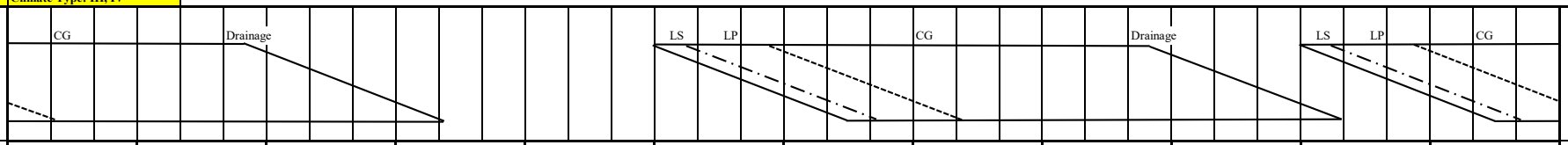
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: II
Province: Isabela — **Climate Type: III, IV**

(A) Cropping Pattern (45 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet																10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	9					
		Dry	10	10	11	10	10	8	10	10	11	10	1																				10	10	10	10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.69			5.25			6.36			6.96			5.99			5.71			5.10			5.09			4.81			4.89			4.46			4.43		
(D) Area Factor																																						
Land Soaking Stage	(Als)																	0.101	0.156	0.156	0.156	0.128	0.004															
Land Preparation Stage	(Alp)	(Wet)																0.010	0.178	0.390	0.444	0.444	0.363	0.133	0.001													
Crop Growing Stage	(Acg)																			0.010	0.178	0.400	0.633	0.867	0.999	1.000	1.000	1.000	0.972	0.778	0.544	0.311	0.090					
Land Soaking Stage	(Als)																																0.101	0.156	0.156	0.156	0.128	0.004
Land Preparation Stage	(Alp)	(Dry)	0.133	0.001																													0.010	0.178	0.391	0.444	0.444	0.362
Crop Growing Stage	(Acg)		0.867	0.999	1.000	1.000	1.000	0.988	0.822	0.600	0.367	0.133	0.001																						0.009	0.178	0.400	0.633
(E) Crop Coefficient	(Kc)	Wet																0.80	0.82	0.85	0.90	0.94	1.02	1.10	1.14	1.14	1.12	1.08	1.01	0.97	0.96	0.93	0.85					
		Dry	1.10	1.14	1.14	1.12	1.08	1.01	0.97	0.96	0.93	0.85	0.85																				0.80	0.82	0.85	0.90	0.94	1.02
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	150																28.45	28.45	28.45	27.92	27.92	27.92															
(Dry)		120																															23.07	23.07	23.07	23.04	23.04	23.04
Land Preparation Stage	(LP)		6.13	6.13														7.02	7.02	7.02	6.49	6.49	6.49	6.48	6.48								5.92	5.92	5.92	5.90	5.90	5.90
Crop Growing Stage	(CG)		5.16	5.35	5.35	5.88	5.67	5.30	6.17	6.11	5.91	5.92	5.92						4.68	4.85	4.59	4.79	5.20	5.60	5.80	5.80	5.39	5.19	4.86	4.74	4.69	4.55	3.79		3.79	3.99	4.16	4.52
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00						2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00
Total	(FWR)	Wet																2.94	5.69	7.25	8.41	9.17	7.03	7.45	7.80	7.80	7.39	7.19	6.67	5.25	3.64	2.04	0.52					
		Dry	7.02	7.35	7.35	7.88	7.67	7.21	6.72	4.86	2.90	1.05	0.01																				2.39	4.65	5.97	7.28	8.03	6.35
10-day FWR			70.22	73.45	80.81	78.80	76.70	57.72	67.15	48.63	31.95	10.53	0.01					29.44	56.89	72.47	84.09	91.72	77.28	74.50	78.01	85.83	73.87	71.95	66.66	52.46	36.42	22.40	28.58	46.53	59.67	72.79	80.34	69.89	1,928
(G) Rainfall (2014)		mm/10day	10	33	5	18	9	5	0	0	84	6	4	44	51	3	9	41	13	34	36	58	75	32	64	80	84	189	20	99	66	112	3	140	127	225	99	4	1,882
Effective Rainfall	(ER)		0	23.1	0	0	0	0	0	0	32	0	0					28.7	0	23.8	25.2	40.6	52.5	22.4	44.8	56	58.8	72	14	52.5	36.4	22.4	0	46.5	50.8	45	69.3	0	817
(H) Irrigation Water Requirement	(IWR)	mm/10day	70.2	50.4	80.8	78.8	76.7	57.7	67.2	48.6	0.0	10.5	0.0					0.7	56.9	48.7	58.9	51.1	24.8	52.1	33.2	29.8	15.1	0.0	52.7	0.0	0.0	0.0	28.6	0.0	8.9	27.8	11.0	69.9	1,111
(F)-(G)		mm/day	7.02	5.04	7.35	7.88	7.67	7.21	6.72	4.86	0.00	1.05	0.01					0.07	5.69	4.87	5.89	5.11	2.25	5.21	3.32	2.71	1.51	0.00	5.27	0.00	0.00	0.00	2.86	0.00	0.89	2.78	1.10	6.35	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48					0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	14.629	10.49	15.305	16.417	15.979	15.031	13.99	10.132	0	2.1934	0.0165					0.1542	11.852	10.139	12.268	10.649	4.6936	10.854	6.9193	5.6494	3.14	0	10.971	0	0	0	5.9545	0	1.8485	5.7896	2.2997	13.237	
(H)/(I)		lit/sec/ha	1.69	1.21	1.77	1.90	1.85	1.74	1.62	1.17	0.00	0.25	0.00					0.02	1.37	1.17	1.42	1.23	0.54	1.26	0.80	0.65	0.36	0.00	1.27	0.00	0.00	0.00	0.69	0.00	0.21	0.67	0.27	1.53	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: II

Province: Nueva Vizcaya — **Climate Type: III, IV**

(A) Cropping Pattern (30 days Staggered Period)

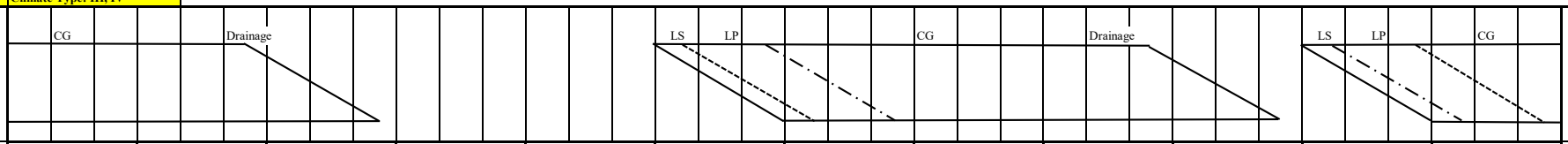
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet																10	10	10	10	10	11	10	10	11	10	10	10	10	10	5							
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	4.39			4.94			5.99			6.55			5.62			5.33			4.76			4.75			4.51			4.59			4.18			4.15			
(D) Area Factor																																						
Land Soaking Stage	(Als)																0.152	0.233	0.233	0.082																		
Land Preparation Stage	(Alp) (Wet)																0.015	0.267	0.585	0.652	0.400	0.074																
Crop Growing Stage	(Acg)																		0.015	0.267	0.600	0.926	1.000	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.038							
Land Soaking Stage	(Als)																															0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp) (Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc) Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85							
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 150																28.12	28.12	28.12	27.62	27.62	27.62																
(Dry)	120																															22.82	22.82	22.82	22.79	22.79	22.79	
Land Preparation Stage	(LP)																6.69	6.69	6.69	6.19	6.19	6.19	6.18	6.18								5.68	5.68	5.68	5.65	5.65	5.65	
Crop Growing Stage	(CG)	5.00	5.14	5.00	5.43	5.19	4.79	5.75	5.57	5.09								4.37	4.53	4.28	4.66	5.09	5.42	5.56	5.42	4.96	4.74	4.37	4.41	4.27	3.90			3.55	3.74	4.07	4.44	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00	
Total	(FWR) Wet																4.37	8.34	10.56	7.98	6.47	7.03	7.42	7.56	7.42	6.96	6.74	6.11	4.27	2.09	0.22							
	Dry	7.00	7.14	7.00	7.43	7.19	6.66	5.68	3.03	0.52																						3.55	6.83	8.72	7.09	5.90	6.38	
10-day FWR		70.05	71.36	77.05	74.34	71.87	53.30	56.81	30.28	3.67							43.74	83.38	105.64	79.78	64.74	77.29	74.15	75.58	81.57	69.61	67.36	61.07	42.73	20.87	1.12	35.54	68.33	87.23	70.86	59.01	70.20	1,849
(G) Rainfall (1995)	mm/10day	19	1	4	17	8	1	14	0	7	13	5	9	8	90	112	46	16	22	98	64	203	77	95	121	71	130	88	134	1	89	137	3	6	39	99	154	2,001
Effective Rainfall	(ER)	0	0	0	0	0	0	0	0	0							32.2	0	15.4	68.6	44.8	40.6	53.9	66.5	48.4	49.7	52	61.1	42.7	0	1.1	35.5	0	0	27.3	59	61.6	760
(H) Irrigation Water Requirement	(IWR) mm/day	70.0	71.4	77.1	74.3	71.9	53.3	56.8	30.3	3.7							11.5	83.4	90.2	11.2	19.9	36.7	20.3	9.1	33.2	19.9	15.4	0.0	0.0	20.9	0.0	0.0	68.3	87.2	43.6	0.0	8.6	1,088
(F)-(G)	mm/day	7.00	7.14	7.00	7.43	7.19	6.66	5.68	3.03	0.52							1.15	8.34	9.02	1.12	1.99	3.34	2.03	0.91	3.02	1.99	1.54	0.00	0.00	2.09	0.00	0.00	6.83	8.72	4.36	0.00	0.78	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	14.59	14.87	14.59	15.49	14.97	13.88	11.84	6.31	1.09							2.41	17.37	18.80	2.33	4.16	6.95	4.22	1.89	6.28	4.15	3.20	0.00	0.00	4.35	0.00	0.00	14.24	18.17	9.07	0.00	1.63	
(H)/(I)	lit/sec/ha	1.69	1.72	1.69	1.79	1.73	1.61	1.37	0.73	0.13							0.28	2.01	2.18	0.27	0.48	0.80	0.49	0.22	0.73	0.48	0.37	0.00	0.00	0.50	0.00	0.00	1.65	2.10	1.05	0.00	0.19	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: II

Province: Qurino — **Climate Type: III, IV**

(A) Cropping Pattern (30 days Staggered Period)

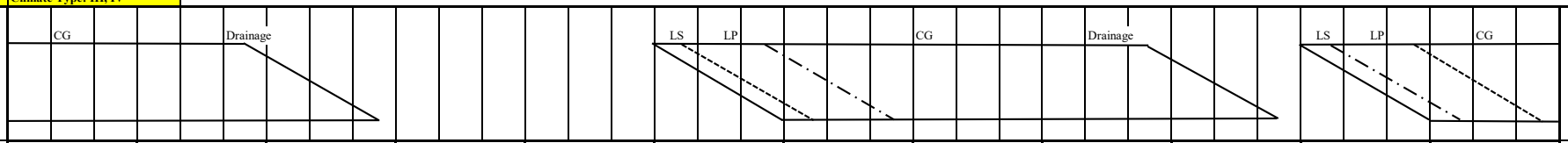
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet																10	10	10	10	10	11	10	10	11	10	10	10	10	10	5							
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.59			5.15			6.23			6.81			5.86			5.59			5.00			5.01			4.73			4.79			4.37			4.34			
(D) Area Factor																																							
Land Soaking Stage	(Als)																	0.152	0.233	0.233	0.082																		
Land Preparation Stage	(Alp)	(Wet)																0.015	0.267	0.585	0.652	0.400	0.074																
Crop Growing Stage	(Acg)																			0.015	0.267	0.600	0.926	1.000	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.038							
Land Soaking Stage	(Als)																																0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85							
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150																28.35	28.35	28.35	27.83	27.83	27.83																
(Dry)		120																															22.99	22.99	22.99	22.96	22.96	22.96	
Land Preparation Stage	(LP)																	6.92	6.92	6.92	6.40	6.40	6.40	6.41	6.41								5.85	5.85	5.85	5.82	5.82	5.82	
Crop Growing Stage	(CG)		5.23	5.37	5.23	5.67	5.41	5.00	5.98	5.79	5.30								4.58	4.75	4.50	4.90	5.35	5.71	5.86	5.71	5.20	4.97	4.59	4.60	4.45	4.07			3.71	3.91	4.25	4.64	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00	
Total	(FWR)	Wet																4.41	8.45	10.75	8.19	6.70	7.28	7.71	7.86	7.71	7.20	6.97	6.31	4.40	2.15	0.23							
		Dry	7.23	7.37	7.23	7.67	7.41	6.86	5.85	3.12	0.54																						3.58	6.92	8.86	7.25	6.08	6.58	
10-day FWR			72.33	73.70	79.56	76.65	74.08	54.90	58.50	31.18	3.78							44.13	84.52	107.54	81.90	67.00	80.08	77.11	78.62	84.83	72.03	69.67	63.11	44.01	21.49	1.15	35.82	69.17	88.62	72.54	60.80	72.41	1,901
(G) Rainfall (1992)		mm/10day	22	10	25	12	3	15	11	17	40	0	64	27	36	91	170	42	11	51	34	120	79	68	66	155	224	207	194	35	87	75	17	57	0	6	48	8	2,127
Effective Rainfall	(ER)		15.4	0	17.5	0	0	0	0	0	3.8							29.4	0	35.7	23.8	48	55.3	47.6	46.2	62	44.8	41.4	63.1	24.5	21.5	1.2	0	39.9	0	0	33.6	0	655
(H) Irrigation Water Requirement	(IWR)	mm/10day	56.9	73.7	62.1	76.7	74.1	54.9	58.5	31.2	0.0							14.7	84.5	71.8	58.1	19.0	24.8	29.5	32.4	22.8	27.2	28.3	0.0	19.5	0.0	0.0	35.8	29.3	88.6	72.5	27.2	72.4	1,247
(F)-(G)		mm/day	5.69	7.37	5.64	7.67	7.41	6.86	5.85	3.12	0.00							1.47	8.45	7.18	5.81	1.90	2.25	2.95	3.24	2.08	2.72	2.83	0.00	1.95	0.00	0.00	3.58	2.93	8.86	7.25	2.72	6.58	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	11.86	15.35	11.75	15.97	15.43	14.30	12.19	6.49	0.00							3.07	17.61	14.97	12.10	3.96	4.69	6.15	6.75	4.32	5.67	5.89	0.00	4.06	0.00	0.00	7.46	6.10	18.46	15.11	5.67	13.71	
(H)/(I)		lit/sec/ha	1.37	1.78	1.36	1.85	1.79	1.65	1.41	0.75	0.00							0.36	2.04	1.73	1.40	0.46	0.54	0.71	0.78	0.50	0.66	0.68	0.00	0.47	0.00	0.00	0.86	0.71	2.14	1.75	0.66	1.59	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

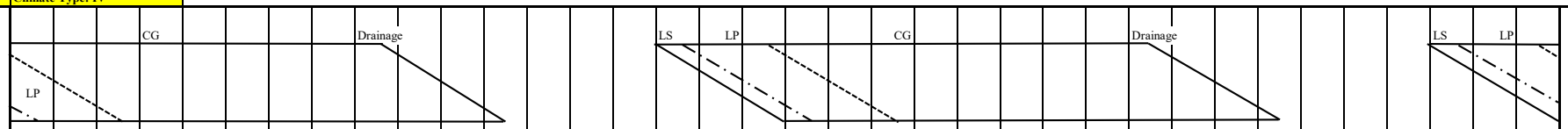
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: III
Province: Aurora — **Climate Type: IV**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet																10	10	10	10	10	11	10	10	11	10	10	10	10	10	5						
		Dry	10	10	11	10	10	8	10	10	11	10	10	6																						10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.65			5.17			6.21			6.76			5.82			5.55			4.97			4.98			4.73			4.82			4.41			4.40		
(D) Area Factor																																						
Land Soaking Stage	(Als)																	0.152	0.233	0.233	0.082																	
Land Preparation Stage	(Alp)	(Wet)																0.015	0.267	0.585	0.652	0.400	0.074															
Crop Growing Stage	(Acg)																			0.015	0.267	0.600	0.926	1.000	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.038						
Land Soaking Stage	(Als)		0.060																																	0.152	0.233	0.232
Land Preparation Stage	(Alp)	(Dry)	0.640	0.367	0.060																															0.015	0.267	0.592
Crop Growing Stage	(Acg)		0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.973	0.700	0.367	0.075																								0.024
(E) Crop Coefficient	(Kc)	Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85						
		Dry	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	150																28.31	28.31	28.31	27.80																	
(Dry)		100	20.38																																	20.16	20.16	20.16
Land Preparation Stage	(LP)		6.09	6.09	6.09													6.88	6.88	6.88	6.37	6.37	6.37													5.87	5.87	5.87
Crop Growing Stage	(CG)		4.19	4.56	4.98	5.89	6.05	5.89	6.83	6.52	6.02	6.49	6.29	5.75						4.72	4.47	4.87	5.32	5.68	5.83	5.68	5.20	4.97	4.59	4.63	4.48	4.10				3.52	3.61	3.74
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00						2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00
Total	(FWR)	Wet																4.41	8.43	10.72	8.16	6.67	7.25	7.68	7.83	7.68	7.20	6.97	6.31	4.42	2.16	0.23						
		Dry	6.98	6.39	6.92	7.89	8.05	7.89	8.83	8.52	7.81	5.94	3.04	0.58																						3.15	6.26	8.29
10-day FWR			69.77	63.86	76.15	78.94	80.49	63.15	88.31	85.21	85.88	59.43	30.41	3.49				44.07	84.35	107.25	81.64	66.72	79.73	76.77	78.27	84.45	72.03	69.67	63.11	44.20	21.59	1.16				31.52	62.65	91.20	1,945
(G) Rainfall (1979)	(R)	mm/10day	23	33	42	48	33	29	27	4	27	12	118	35	8	141	86	65	62	102	108	19	122	116	27	30	37	96	210	158	29	39	148	77	39	12	17	53	2,232
Effective Rainfall (10 days)	(ER)		16.1	23.1	29.4	33.6	23.1	20.3	18.9	0	18.9	0	30.4	3.5				44.1	43.4	40.8	43.2	0	48.8	46.4	18.9	21	25.9	67.2	42	44.2	20.3	1.2				0	0	37.1	762
(H) Irrigation Water Requirement	(IWR)	mm/10day	53.7	40.8	46.7	45.3	57.4	42.9	69.4	85.2	67.0	59.4	0.0	0.0				0.0	40.9	66.4	38.4	66.7	30.9	30.4	59.4	63.4	46.1	2.5	21.1	0.0	1.3	0.0				31.5	62.6	54.1	1,184
(F)-(G)		mm/day	5.37	4.08	4.25	4.53	5.74	5.36	6.94	8.52	6.09	5.94	0.00	0.00				0.00	4.09	6.64	3.84	6.67	2.81	3.04	5.94	5.77	4.61	0.25	2.11	0.00	0.13	0.00				3.15	6.26	4.92	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48				0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48				0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	11.18	8.49	8.85	9.45	11.96	11.16	14.46	17.75	12.69	12.38	0.00	0.00				0.00	8.53	13.84	8.01	13.90	5.86	6.33	12.37	12.02	9.61	0.51	4.40	0.00	0.27	0.00				6.57	13.05	10.25	
(H)/(I)		lit/sec/ha	1.29	0.98	1.02	1.09	1.38	1.29	1.67	2.05	1.47	1.43	0.00	0.00				0.00	0.99	1.60	0.93	1.61	0.68	0.73	1.43	1.39	1.11	0.06	0.51	0.00	0.03	0.00				0.76	1.51	1.19	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

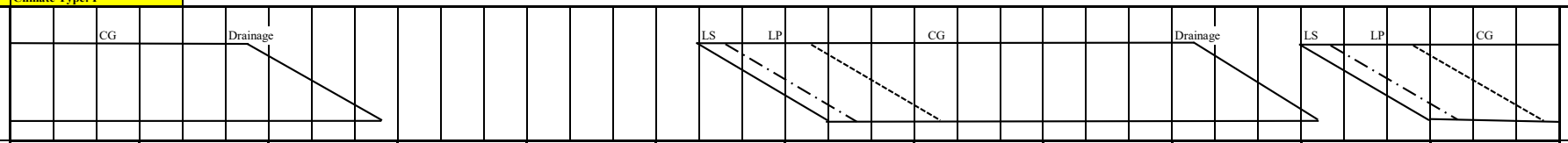
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: III
Province: Bataan — **Climate Type: I**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet																	10	10	10	10	11	10	10	11	10	10	10	10	10	11	4						
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.98			5.55			6.65			7.19			6.07			5.68			5.06			5.05			4.82			5.01			4.65			4.68			
(D) Area Factor																																							
Land Soaking Stage	(Als)																	0.152	0.233	0.233	0.082																		
Land Preparation Stage	(Alp)	(Wet)																0.015	0.267	0.585	0.652	0.400	0.060																
Crop Growing Stage	(Acg)																			0.015	0.267	0.600	0.940	1.000	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.027						
Land Soaking Stage	(Als)																															0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																														0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																							0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85						
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																					0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	165																30.57	30.57	30.02	30.02																		
(Dry)		145																														26.81	26.81	26.81	26.83			
Land Preparation Stage	(LP)																	7.00	7.00	6.45	6.45	6.45	6.44									6.09	6.09	6.09	6.12	6.12	6.12	
Crop Growing Stage	(CG)		5.68	5.83	5.68	6.11	5.83	5.38	6.38	6.18	5.65									4.30	4.55	4.96	5.40	5.76	5.91	5.49	5.30	5.06	4.86	4.81	4.66	3.95		3.95	4.21	4.59	5.01	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00	
Total	(FWR)	Wet																4.75	8.99	10.87	8.42	6.76	7.35	7.76	7.91	7.49	7.30	7.06	6.57	4.54	2.22	0.16						
		Dry	7.68	7.83	7.68	8.11	7.83	7.24	6.15	3.27	0.57																					4.17	7.87	9.90	7.85	6.40	6.94	
10-day FWR			76.77	78.27	84.45	81.05	78.28	57.95	61.45	32.74	3.96							47.52	89.91	108.65	84.19	74.32	73.46	77.57	86.99	74.95	73.02	70.61	65.72	45.42	24.39	42.30	78.72	98.99	78.48	63.99	76.36	1,990
(G) Rainfall (1981)		mm/10day	1	0	1	0	0	0	0	0	0	0	1	15	13	31	63	164	251	98	178	219	59	242	122	37	31	74	120	71	22	58	47	32	114	4	0	31	2,099
Effective Rainfall (10 days)	(ER)		0	0	0	0	0	0	0	0	0								47.5	68.6	71.2	43.8	41.3	48.4	48.8	25.9	21.7	51.8	48	49.7	15.4	24.4	32.9	22.4	45.6	0	0	21.7	729
(H) Irrigation Water Requirement	(IWR)	mm/10day	76.8	78.3	84.4	81.1	78.3	57.9	61.5	32.7	4.0								0.0	21.3	37.5	40.4	33.0	25.1	28.8	61.1	53.2	21.2	22.6	16.0	30.0	0.0	9.4	56.3	53.4	78.5	64.0	54.7	1,261
(F)-(G)		mm/day	7.68	7.83	7.68	8.11	7.83	7.24	6.15	3.27	0.57								0.00	2.13	3.75	4.04	3.00	2.51	2.88	5.55	5.32	2.12	2.26	1.60	3.00	0.00	0.94	5.63	5.34	7.85	6.40	4.9691	
(I) Irrigation Efficiency	(IE)		0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54								0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54	0.54	0.54	0.54	0.54	
(J) Diversion Water Requirement	(DWR)	mm/day	14.22	14.49	14.22	15.01	14.50	13.41	11.38	6.06	1.05								0.00	4.44	7.80	8.41	6.25	5.22	5.99	11.57	11.09	4.42	4.71	3.34	6.25	0.00	1.74	10.43	9.89	14.53	11.85	9.202	
(H)/(I)		lit/sec/ha	1.65	1.68	1.65	1.74	1.68	1.55	1.32	0.70	0.12								0.00	0.51	0.90	0.97	0.72	0.60	0.69	1.34	1.28	0.51	0.55	0.39	0.72	0.00	0.20	1.21	1.14	1.68	1.37	1.07	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: III
Province: Bulacan — **Climate Type: I**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)

			CG			Drainage										LS	LP				CG						Drainage			LS	LP			CG				

(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet																	10	10	10	10	11	10	10	11	10	10	10	10	10	11	4						
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	4.91			5.49			6.60			7.16			6.07			5.67			5.05			5.03			4.80			4.97			4.60			4.62			
(D) Area Factor																																						
Land Soaking Stage	(Als)																0.152	0.233	0.233	0.082																		
Land Preparation Stage	(Alp) (Wet)																0.015	0.267	0.585	0.652	0.400	0.060																
Crop Growing Stage	(Acg)																		0.015	0.267	0.600	0.940	1.000	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.027							
Land Soaking Stage	(Als)																														0.152	0.233	0.233	0.082				
Land Preparation Stage	(Alp) (Dry)																														0.015	0.267	0.585	0.652	0.400	0.074		
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																							0.015	0.267	0.600	0.926		
(E) Crop Coefficient (Kc)	Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85							
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																					0.80	0.82	0.85	0.90	0.98	1.07		
(F) Farm Water Requirement (FWR)	mm/day																																					
Land Soaking Stage (Wet) (LS)	145																27.70	27.70	27.16	27.16																		
(Dry)	116																														22.62	22.62	22.62	22.64				
Land Preparation Stage	(LP)																6.99	6.99	6.44	6.44	6.44	6.43									6.05	6.05	6.05	6.07	6.07	6.07		
Crop Growing Stage	(CG)	5.60	5.74	5.60	6.04	5.76	5.33	6.34	6.14	5.61									4.29	4.55	4.95	5.38	5.73	5.89	5.47	5.28	5.04	4.82	4.77	4.62	3.91		3.91	4.16	4.53	4.94		
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00		
Total	(FWR) Wet																4.32	8.32	10.19	8.18	6.75	7.32	7.73	7.89	7.47	7.28	7.04	6.53	4.52	2.21	0.16							
	Dry	7.60	7.74	7.60	8.04	7.76	7.19	6.11	3.26	0.56																					3.53	6.89	8.90	7.46	6.34	6.88		
10-day FWR		75.97	77.45	83.57	80.39	77.65	57.49	61.10	32.55	3.94							43.16	83.21	101.92	81.76	74.22	73.25	77.34	86.74	74.72	72.80	70.40	65.34	45.16	24.26	35.93	68.85	88.97	74.55	63.43	75.66	1,932
(G) Rainfall (1982)	mm/10day	14	4	1	5	37	1	0	0	50	37	65	20	5	58	83	55	34	104	194	236	198	118	107	185	121	19	74	73	67	28	97	64	19	104	39	0	2,316
Effective Rainfall (10 days)	(ER)	0	0	0	0	25.9	0	0	0	3.9								23.8	41.6	77.6	47.2	74.2	47.2	42.8	74	48.4	0	51.8	51.1	45.2	19.6	35.9	44.8	0	41.6	27.3	0	824
(H) Irrigation Water Requirement	(IWR) mm/10day	76.0	77.4	83.6	80.4	51.7	57.5	61.1	32.6	0.0								19.4	41.6	24.3	34.6	0.0	26.0	34.5	12.7	26.3	72.8	18.6	14.2	0.0	4.7	0.0	24.1	89.0	33.0	36.1	75.7	1,108
(F)-(G)	mm/day	7.60	7.74	7.60	8.04	5.17	7.19	6.11	3.26	0.00								1.94	4.16	2.43	3.46	0.00	2.60	3.45	1.16	2.63	7.28	1.86	1.42	0.00	0.42	0.00	2.41	8.90	3.30	3.61	6.88	
(I) Irrigation Efficiency	(IE)	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54								0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54	0.54	0.54	0.54	0.54	
(J) Diversion Water Requirement	(DWR) mm/day	14.07	14.34	14.07	14.89	9.58	13.31	11.32	6.03	0.00								4.03	8.67	5.07	7.20	0.00	5.43	7.20	2.41	5.48	15.17	3.88	2.97	0.00	0.88	0.00	4.45	16.48	6.10	6.69	12.74	
(H)/(I)	lit/sec/ha	1.63	1.66	1.63	1.72	1.11	1.54	1.31	0.70	0.00								0.47	1.00	0.59	0.83	0.00	0.63	0.83	0.28	0.63	1.76	0.45	0.34	0.00	0.10	0.00	0.52	1.91	0.71	0.77	1.47	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

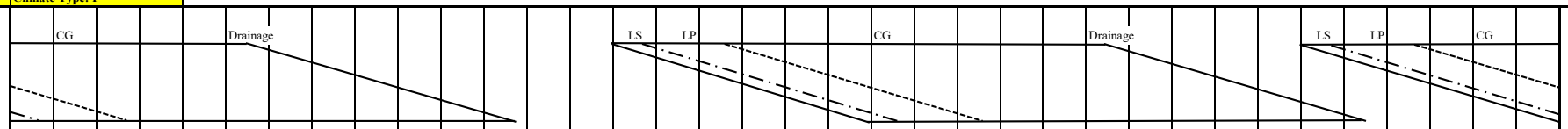
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: III
Province: Nueva Ecija — **Climate Type: I**

(A) Cropping Pattern (60 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	4					
		Dry	10	10	11	10	10	8	10	10	11	10	10	7																			10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.82			5.39			6.50			7.06			5.98			5.60			4.99			4.96			4.74			4.90			4.51			4.53			
(D) Area Factor																																							
Land Soaking Stage	(Als)																0.078	0.115	0.115	0.115	0.115	0.115	0.037																
Land Preparation Stage	(Alp)	(Wet)															0.012	0.148	0.298	0.328	0.328	0.328	0.316	0.180	0.030														
Crop Growing Stage	(Acg)																		0.013	0.148	0.311	0.475	0.648	0.820	0.970	1.000	1.000	0.970	0.820	0.656	0.492	0.320	0.148	0.013					
Land Soaking Stage	(Als)		0.040																														0.075	0.115	0.115	0.115	0.115	0.115	
Land Preparation Stage	(Alp)	(Dry)	0.320	0.197	0.037																												0.007	0.131	0.288	0.328	0.328	0.328	
Crop Growing Stage	(Acg)		0.639	0.803	0.963	1.000	1.000	0.991	0.869	0.705	0.533	0.361	0.197	0.040																					0.007	0.161	0.295	0.467	
(E) Crop Coefficient	(Kc)	Wet																	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.10	1.06	1.04	1.01	0.97	0.96	0.93	0.85					
		Dry	1.02	1.07	1.09	1.11	1.10	1.06	1.04	1.01	0.97	0.96	0.93	0.85																					0.85	0.90	0.94	0.99	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	165															30.83	30.50	30.50	30.50	29.96	29.96	29.96																
(Dry)		145	26.96																														26.68	26.68	26.68	26.70	26.70	26.70	
Land Preparation Stage	(LP)		6.24	6.24	6.24												7.26	6.93	6.93	6.93	6.39	6.39	6.39	6.36	6.36								5.97	5.97	5.97	5.99	5.99	5.99	
Crop Growing Stage	(CG)		4.92	5.16	5.25	5.98	5.93	5.71	6.76	6.57	6.31	6.78	6.57	6.00					4.76	5.04	4.69	4.94	5.09	5.31	5.41	5.51	5.21	5.02	4.93	4.95	4.75	4.70	4.19	3.83	3.83	4.08	4.26	4.48	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00					2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
Total	(FWR)	Wet															2.49	4.53	5.66	6.82	7.62	8.84	7.72	7.14	7.38	7.51	7.21	6.81	5.68	4.56	3.32	2.15	0.92	0.08					
		Dry	7.50	6.98	7.22	7.98	7.93	7.64	7.61	6.04	4.43	3.17	1.69	0.32																			2.04	3.85	4.83	6.01	6.88	8.06	
10-day FWR			74.95	69.77	79.38	79.83	79.29	61.15	76.12	60.38	48.69	31.69	16.87	2.24			27.41	45.33	56.60	68.22	76.23	88.39	84.95	71.38	73.75	82.56	72.14	68.14	56.82	45.59	33.22	23.60	29.60	38.81	48.28	60.13	68.80	88.69	1,989
(G) Rainfall (1994)	(R)	mm/10day	50	0	0	24	0	0	10	33	7	29	3	12	80	31	31	63	19	90	239	216	196	128	48	119	167	122	69	6	39	46	0	4	2	5	9	44	1,941
Effective Rainfall (10 days)	(ER)		35	0	0	16.8	0	0	0	23.1	0	20.3	0	0			21.7	44.1	13.3	63	47.8	43.2	78.4	51.2	33.6	47.6	66.8	48.8	48.3	0	27.3	23.6	0	0	0	0	0	30.8	785
(H) Irrigation Water Requirement	(IWR)	mm/10day	40.0	69.8	79.4	63.0	79.3	61.2	76.1	37.3	48.7	11.4	16.9	2.2			5.7	1.2	43.3	5.2	28.4	45.2	6.5	20.2	40.2	35.0	5.3	19.3	8.5	45.6	5.9	0.0	29.6	38.8	48.3	60.1	68.8	57.9	1,204
(F)-(G)		mm/day	4.00	6.98	7.22	6.30	7.93	7.64	7.61	3.73	4.43	1.14	1.69	0.32			0.52	0.12	4.33	0.52	2.84	4.52	0.60	2.02	4.02	3.18	0.53	1.93	0.85	4.56	0.59	0.00	2.96	3.88	4.83	6.01	6.88	5.26	
(I) Irrigation Efficiency	(IE)		0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54			0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54	0.54	0.54	
(J) Diversion Water Requirement	(DWR)	mm/day	7.40	12.92	13.36	11.67	14.68	14.16	14.10	6.90	8.20	2.11	3.12	0.59			1.08	0.26	9.02	1.09	5.92	9.41	1.24	4.20	8.36	6.62	1.11	4.03	1.78	9.50	1.23	0.00	6.17	8.09	8.94	11.13	12.74	9.75	
(H)/(I)		lit/sec/ha	0.86	1.50	1.55	1.35	1.70	1.64	1.63	0.80	0.95	0.24	0.36	0.07			0.13	0.03	1.04	0.13	0.69	1.09	0.14	0.49	0.97	0.77	0.13	0.47	0.21	1.10	0.14	0.00	0.71	0.94	1.03	1.29	1.47	1.13	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

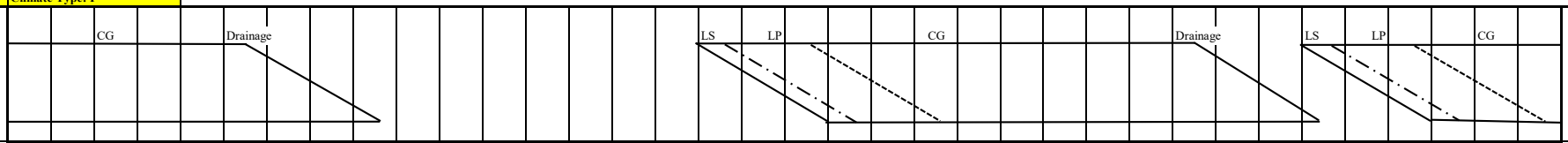
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: III
Province: Pampanga — **Climate Type: I**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet																	10	10	10	10	11	10	10	11	10	10	10	10	10	11	4						
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.93			5.52			6.66			7.23			6.12			5.71			5.09			5.07			4.83			4.99			4.61			4.63			
(D) Area Factor																																							
Land Soaking Stage	(Als)																	0.152	0.233	0.233	0.082																		
Land Preparation Stage	(Alp)	(Wet)																0.015	0.267	0.585	0.652	0.400	0.060																
Crop Growing Stage	(Acg)																			0.015	0.267	0.600	0.940	1.000	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.027						
Land Soaking Stage	(Als)																															0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																														0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																							0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85						
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																					0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	145																27.74	27.74	27.19	27.19																		
(Dry)		116																														22.63	22.63	22.63	22.65			
Land Preparation Stage	(LP)																	7.02	7.02	6.48	6.48	6.48	6.46									6.06	6.06	6.06	6.07	6.07	6.07	
Crop Growing Stage	(CG)		5.62	5.77	5.62	6.07	5.80	5.35	6.39	6.19	5.66									4.33	4.58	4.99	5.42	5.78	5.93	5.51	5.31	5.07	4.84	4.79	4.64	3.92		3.92	4.17	4.54	4.95	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00	
Total	(FWR)	Wet																4.32	8.34	10.22	8.21	6.78	7.37	7.78	7.93	7.51	7.31	7.07	6.55	4.53	2.21	0.16						
		Dry	7.62	7.77	7.62	8.07	7.80	7.21	6.15	3.28	0.57																					3.53	6.89	8.90	7.46	6.35	6.89	
10-day FWR			76.20	77.68	83.82	80.72	77.96	57.72	61.53	32.78	3.97							43.22	83.39	102.21	82.11	74.63	73.67	77.80	87.25	75.06	73.13	70.72	65.53	45.29	24.32	35.94	68.90	89.04	74.64	63.52	75.78	1,939
(G) Rainfall (1997)		mm/10day	1	0	1	11	5	3	6	0	4	10	20	7	39	7	352	20	53	66	102	119	222	127	364	170	39	70	83	48	40	1	1	18	0	0	3	2	2,014
Effective Rainfall (10 days)	(ER)		0	0	0	0	0	0	0	0	0								37.1	46.2	40.8	47.6	44.4	50.8	72.8	68	27.3	49	58.1	33.6	28	0	0	0	0	0	0	0	604
(H) Irrigation Water Requirement	(IWR)	mm/10day	76.2	77.7	83.8	80.7	78.0	57.7	61.5	32.8	4.0								6.1	37.2	61.4	34.5	30.2	22.9	5.0	19.3	47.8	24.1	12.6	31.9	17.3	24.3	35.9	68.9	89.0	74.6	63.5	75.8	1,335
(F)-(G)		mm/day	7.62	7.77	7.62	8.07	7.80	7.21	6.15	3.28	0.57								0.61	3.72	6.14	3.45	2.75	2.29	0.50	1.75	4.78	2.41	1.26	3.19	1.73	2.21	3.59	6.89	8.90	7.46	6.35	6.89	
(I) Irrigation Efficiency	(IE)		0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54								0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54	0.54	0.54	0.54	0.54	
(J) Diversion Water Requirement	(DWR)	mm/day	14.11	14.39	14.11	14.95	14.44	13.36	11.39	6.07	1.05								1.27	7.75	12.79	7.19	5.73	4.76	1.04	3.65	9.95	5.03	2.63	6.65	3.60	4.61	6.66	12.76	16.49	13.82	11.76	12.76	
(H)/(I)		lit/sec/ha	1.63	1.66	1.63	1.73	1.67	1.55	1.32	0.70	0.12								0.15	0.90	1.48	0.83	0.66	0.55	0.12	0.42	1.15	0.58	0.30	0.77	0.42	0.53	0.77	1.48	1.91	1.60	1.36	1.48	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

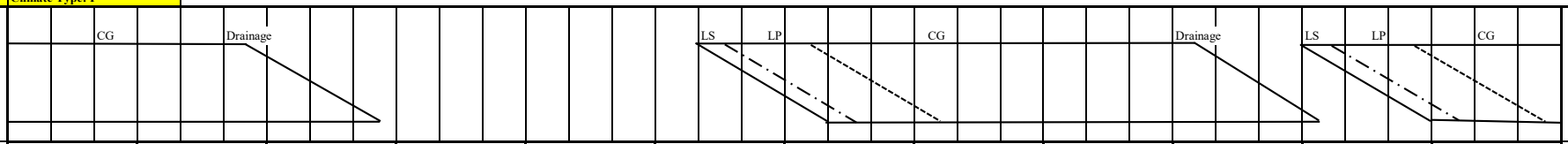
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: III
Province: Tarlac — **Climate Type: I**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet																	10	10	10	10	11	10	10	11	10	10	10	10	10	11	4						
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	4.94			5.54			6.69			7.25			6.11			5.69			5.07			5.05			4.81			4.98			4.60			4.63			
(D) Area Factor																																						
Land Soaking Stage	(Als)																0.152	0.233	0.233	0.082																		
Land Preparation Stage	(Alp) (Wet)																0.015	0.267	0.585	0.652	0.400	0.060																
Crop Growing Stage	(Acg)																		0.015	0.267	0.600	0.940	1.000	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.027						
Land Soaking Stage	(Als)																														0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp) (Dry)																														0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																							0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc) Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85						
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																					0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 165																30.58	30.58	30.03	30.03																		
(Dry)	145																														26.76	26.76	26.76	26.79			
Land Preparation Stage	(LP)																7.01	7.01	6.46	6.46	6.46	6.44									6.05	6.05	6.05	6.07	6.07	6.07	
Crop Growing Stage	(CG)	5.63	5.78	5.63	6.09	5.82	5.37	6.42	6.22	5.69									4.31	4.56	4.97	5.40	5.76	5.91	5.48	5.29	5.05	4.83	4.78	4.63	3.91		3.91	4.17	4.54	4.95	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00	
Total	(FWR) Wet																4.75	9.00	10.87	8.43	6.77	7.35	7.76	7.91	7.48	7.29	7.05	6.54	4.52	2.21	0.16						
	Dry	7.63	7.78	7.63	8.09	7.82	7.23	6.17	3.29	0.57																					4.16	7.85	9.86	7.80	6.35	6.89	
10-day FWR		76.32	77.80	83.95	80.94	78.17	57.87	61.74	32.89	3.98							47.53	89.96	108.72	84.28	74.42	73.46	77.57	86.99	74.83	72.91	70.51	65.44	45.23	24.29	42.22	78.50	98.62	78.04	63.52	75.78	1,986
(G) Rainfall (1979)	mm/10day	2	3	4	3	9	1	1	1	5	3	11	17	4	177	138	86	59	103	130	42	150	197	130	56	44	77	95	283	36	24	24	11	4	1	1	28	1,960
Effective Rainfall (10 days)	(ER)	0	0	0	0	0	0	0	0	0								41.3	41.2	52	29.4	60	73.5	52	22.4	30.8	53.9	66.5	56.6	25.2	16.8	16.8	0	0	0	0	19.6	658
(H) Irrigation Water Requirement	(IWR) mm/10day	76.3	77.8	83.9	80.9	78.2	57.9	61.7	32.9	4.0								6.2	48.8	56.7	54.9	14.4	0.0	25.6	64.6	44.0	19.0	4.0	8.8	20.0	7.5	25.4	78.5	98.6	78.0	63.5	56.2	1,329
(F)-(G)	mm/day	7.63	7.78	7.63	8.09	7.82	7.23	6.17	3.29	0.57								0.62	4.88	5.67	5.49	1.31	0.00	2.56	5.87	4.40	1.90	0.40	0.88	2.00	0.68	2.54	7.85	9.86	7.80	6.35	5.11	
(I) Irrigation Efficiency	(IE)	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54								0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54	0.54	0.54	0.54	0.54	
(J) Diversion Water Requirement	(DWR) mm/day	14.13	14.41	14.13	14.99	14.48	13.40	11.43	6.09	1.05								1.30	10.16	11.82	11.43	2.73	0.00	5.33	12.23	9.17	3.96	0.83	1.84	4.17	1.42	4.71	14.54	18.26	14.45	11.76	9.46	
(H)/(I)	lit/sec/ha	1.64	1.67	1.64	1.73	1.68	1.55	1.32	0.70	0.12								0.15	1.18	1.37	1.32	0.32	0.00	0.62	1.42	1.06	0.46	0.10	0.21	0.48	0.16	0.54	1.68	2.11	1.67	1.36	1.09	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

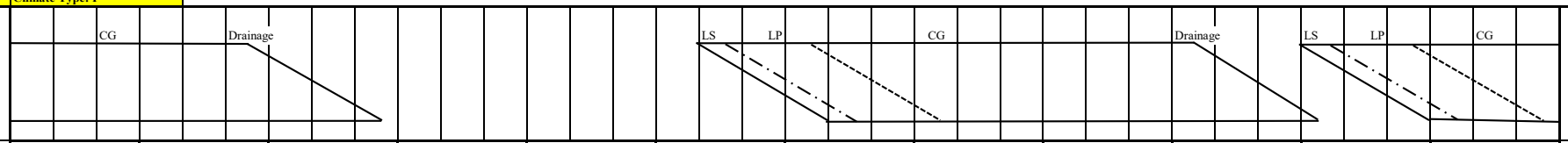
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: III
Province: Zambales — **Climate Type: I**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet																	10	10	10	10	11	10	10	11	10	10	10	10	10	11	4						
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	4.91			5.49			6.59			7.10			5.99			5.60			4.99			4.97			4.75			4.94			4.59			4.62			
(D) Area Factor																																						
Land Soaking Stage	(Als)																0.152	0.233	0.233	0.082																		
Land Preparation Stage	(Alp) (Wet)																0.015	0.267	0.585	0.652	0.400	0.060																
Crop Growing Stage	(Acg)																		0.015	0.267	0.600	0.940	1.000	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.027						
Land Soaking Stage	(Als)																														0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp) (Dry)																														0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																							0.015	0.267	0.600	0.926	
(E) Crop Coefficient (Kc)	Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85						
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																					0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement (FWR)	mm/day																																					
Land Soaking Stage (Wet) (LS)	134																25.97	25.97	25.43	25.43																		
(Dry)	110																														21.65	21.65	21.65	21.68			
Land Preparation Stage	(LP)																6.83	6.83	6.29	6.29	6.29	6.27									5.94	5.94	5.94	5.97	5.97	5.97	
Crop Growing Stage	(CG)	5.60	5.74	5.60	6.04	5.76	5.33	6.33	6.13	5.60									4.24	4.49	4.89	5.32	5.67	5.81	5.42	5.23	4.99	4.79	4.74	4.59	3.90		3.90	4.16	4.53	4.94	
Percolation	(P) 1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90									1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90		1.90	1.90	1.90	1.90	
Total	(FWR) Wet																4.05	7.87	9.70	7.89	6.59	7.16	7.57	7.71	7.32	7.13	6.89	6.41	4.43	2.16	0.16						
	Dry	7.50	7.64	7.50	7.94	7.66	7.09	6.03	3.21	0.56																					3.38	6.63	8.61	7.28	6.24	6.78	
10-day FWR		74.97	76.45	82.47	79.39	76.65	56.70	60.30	32.11	3.89							40.50	78.74	96.99	78.94	72.50	71.61	75.66	84.86	73.15	71.25	68.88	64.11	44.30	23.79	34.43	66.31	86.07	72.85	62.43	74.56	1,885
(G) Rainfall (1980)	mm/10day	2	4	6	2	16	1	4	3	30	3	15	6	13	65	122	71	66	106	216	129	278	40	136	197	109	230	97	42	33	96	236	21	11	21	8	3	2,438
Effective Rainfall (10 days)	(ER)	0	0	0	0	0	0	0	0	3.9								40.5	42.4	43.2	51.6	55.6	28	54.4	78.8	43.6	46	67.9	29.4	23.1	23.8	34.4	14.7	0	14.7	0	0	696
(H) Irrigation Water Requirement	(IWR) mm/10day	75.0	76.4	82.5	79.4	76.6	56.7	60.3	32.1	0.0								0.0	36.3	53.8	27.3	16.9	43.6	21.3	6.1	29.6	25.3	1.0	34.7	21.2	0.0	0.0	51.6	86.1	58.1	62.4	74.6	1,189
(F)-(G)	mm/day	7.50	7.64	7.50	7.94	7.66	7.09	6.03	3.21	0.00								0.00	3.63	5.38	2.73	1.54	4.36	2.13	0.55	2.96	2.53	0.10	3.47	2.12	0.00	0.00	5.16	8.61	5.81	6.24	6.78	
(I) Irrigation Efficiency	(IE)	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54								0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54	0.54	0.54	0.54	0.54	
(J) Diversion Water Requirement	(DWR) mm/day	13.88	14.16	13.88	14.70	14.19	13.13	11.17	5.95	0.00								0.00	7.57	11.21	5.70	3.20	9.09	4.43	1.15	6.16	5.26	0.20	7.23	4.42	0.00	0.00	9.56	15.94	10.77	11.56	12.55	
(H)/(I)	lit/sec/ha	1.61	1.64	1.61	1.70	1.64	1.52	1.29	0.69	0.00								0.00	0.88	1.30	0.66	0.37	1.05	0.51	0.13	0.71	0.61	0.02	0.84	0.51	0.00	0.00	1.11	1.84	1.25	1.34	1.45	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

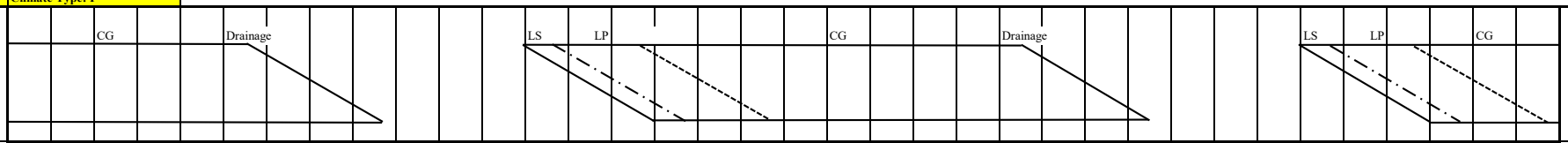
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: IV-A
Province: Batangas — **Climate Type: I**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4										
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.99			5.55			6.66			7.19			6.09			5.69			5.08			5.07			4.83			5.00			4.64			4.68			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.152	0.233	0.232	0.060																					
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																			
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027										
Land Soaking Stage	(Als)																																0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85										
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	80													18.79	18.79	18.79	18.44																					
(Dry)		46																															12.65	12.65	12.65	12.69			
Land Preparation Stage	(LP)														7.36	7.36	7.36	7.01	7.01	7.01													6.08	6.08	6.08	6.12	6.12	6.12	
Crop Growing Stage	(CG)		5.69	5.84	5.69	6.11	5.83	5.38	6.39	6.19	5.66						5.18	5.12	5.58	6.09	5.79	5.94	5.79	5.58	5.32	4.92	4.64	4.49	4.11						3.94	4.21	4.59	5.01	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00						2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00						2.00	2.00	2.00	2.00	
Total	(FWR)	Wet													2.97	6.34	8.89	7.73	7.37	8.02	7.79	7.94	7.79	7.58	7.32	6.54	4.20	1.95	0.16										
		Dry	7.69	7.84	7.69	8.11	7.83	7.24	6.15	3.28	0.57																						2.01	4.57	6.60	6.69	6.40	6.94	
10-day FWR			76.89	78.38	84.57	81.05	78.28	57.95	61.53	32.78	3.97				29.66	63.42	97.76	77.27	73.67	80.23	77.91	79.44	85.70	75.77	73.24	71.91	42.01	19.48	0.66				20.15	45.73	65.96	66.88	63.99	76.36	1,843
(G) Rainfall (2015)		mm/10day	29	30	0	1	9	4	1	1	17	2	2	14	24	0	20	50	65	34	190	26	77	67	80	173	99	91	46	104	79	4	59	2	20	2	261	0	1,683
Effective Rainfall	(ER)		20.3	21	0	0	0	0	0	0	0				16.8	0	14	35	45.5	23.8	76	18.2	53.9	46.9	56	69.2	42	19.5	0.7				20.2	0	14	0	52.2	0	645
(H) Irrigation Water Requirement	(IWR)	mm/10day	56.6	57.4	84.6	81.1	78.3	57.9	61.5	32.8	4.0				12.9	63.4	83.8	42.3	28.2	56.4	1.9	61.2	31.8	28.9	17.2	2.7	0.0	0.0	0.0				0.0	45.7	52.0	66.9	11.8	76.4	1,198
(F)-(G)		mm/day	5.66	5.74	7.69	8.11	7.83	7.24	6.15	3.28	0.57				1.29	6.34	7.61	4.23	2.82	5.64	0.19	6.12	2.89	2.89	1.72	0.25	0.00	0.00	0.00				0.00	4.57	5.20	6.69	1.18	6.94	
(I) Irrigation Efficiency	(IE)		0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54				0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48				0.54	0.54	0.54	0.54	0.54	0.54	
(J) Diversion Water Requirement	(DWR)	mm/day	10.48	10.63	14.24	15.01	14.50	13.41	11.39	6.07	1.05				2.68	13.21	15.86	8.81	5.87	11.76	0.40	12.76	6.02	6.01	3.59	0.51	0.00	0.00	0.00				0.00	8.47	9.62	12.39	2.18	12.86	
(H)/(I)		lit/sec/ha	1.21	1.23	1.65	1.74	1.68	1.55	1.32	0.70	0.12				0.31	1.53	1.84	1.02	0.68	1.36	0.05	1.48	0.70	0.70	0.42	0.06	0.00	0.00	0.00				0.00	0.98	1.11	1.43	0.25	1.49	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

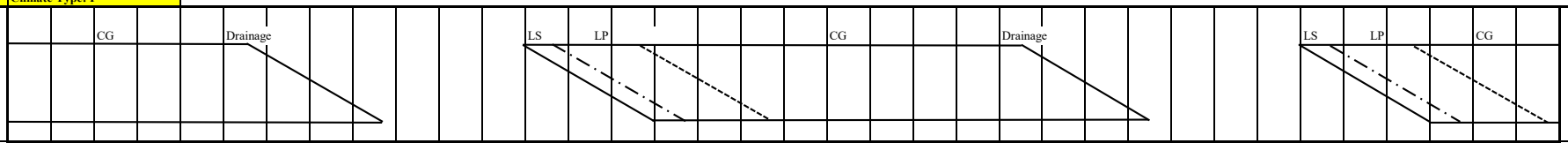
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: IV-A
Province: Cavita
Climate Type: I

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4										
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.94			5.51			6.62			7.17			6.06			5.67			5.05			5.04			4.80			4.99			4.61			4.64			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.152	0.233	0.232	0.060																					
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																			
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027										
Land Soaking Stage	(Als)																																0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85										
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	80													18.76	18.76	18.76	18.42																					
(Dry)		46																															12.63	12.63	12.63	12.65			
Land Preparation Stage	(LP)														7.33	7.33	7.33	6.99	6.99	6.99													6.06	6.06	6.06	6.08	6.08	6.08	
Crop Growing Stage	(CG)		5.63	5.78	5.63	6.06	5.79	5.34	6.36	6.16	5.63						5.15	5.10	5.56	6.07	5.76	5.91	5.76	5.54	5.29	4.89	4.61	4.46	4.08						3.92	4.18	4.55	4.96	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00						2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00						2.00	2.00	2.00	2.00	
Total	(FWR)	Wet													2.96	6.33	8.87	7.71	7.35	8.00	7.76	7.91	7.76	7.54	7.29	6.51	4.18	1.94	0.16										
		Dry	7.63	7.78	7.63	8.06	7.79	7.21	6.12	3.26	0.56																						2.01	4.56	6.57	6.65	6.36	6.90	
10-day FWR			76.32	77.80	83.95	80.61	77.86	57.64	61.24	32.63	3.95				29.62	63.29	97.52	77.09	73.49	80.02	77.57	79.09	85.33	75.44	72.92	71.61	41.83	19.39	0.66				20.10	45.60	65.74	66.53	63.62	75.90	1,834
(G) Rainfall (1981)		mm/10day	1	0	11	0	7	0	0	1	2	0	0	14	7	18	45	96	183	67	152	130	40	132	40	18	35	83	109	60	30	75	105	58	108	5	1	62	1,695
Effective Rainfall	(ER)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	31.5	67.2	73.2	46.9	60.8	52	28	52.8	28	0	24.5	19.4	0.7				20.1	40.6	43.2	0	0	43.4	632
(H) Irrigation Water Requirement	(IWR)	mm/10day	76.3	77.8	83.9	80.6	77.9	57.6	61.2	32.6	4.0				29.6	63.3	66.0	9.9	0.3	33.1	16.8	27.1	57.3	22.6	44.9	71.6	17.3	0.0	0.0				0.0	5.0	22.5	66.5	63.6	32.5	1,202
(F)-(G)		mm/day	7.63	7.78	7.63	8.06	7.79	7.21	6.12	3.26	0.56				2.96	6.33	6.00	0.99	0.03	3.31	1.68	2.71	5.21	2.26	4.49	6.51	1.73	0.00	0.00				0.00	0.50	2.25	6.65	6.36	2.95	
(I) Irrigation Efficiency	(IE)		0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54				0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48				0.54	0.54	0.54	0.54	0.54	0.54	
(J) Diversion Water Requirement	(DWR)	mm/day	14.13	14.41	14.13	14.93	14.42	13.34	11.34	6.04	1.05				6.17	13.19	12.50	2.06	0.06	6.90	3.49	5.64	10.86	4.72	9.36	13.56	3.61	0.00	0.00				0.00	0.93	4.17	12.32	11.78	5.47	
(H)/(I)		lit/sec/ha	1.64	1.67	1.64	1.73	1.67	1.54	1.31	0.70	0.12				0.71	1.53	1.45	0.24	0.01	0.80	0.40	0.65	1.26	0.55	1.08	1.57	0.42	0.00	0.00				0.00	0.11	0.48	1.43	1.36	0.63	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

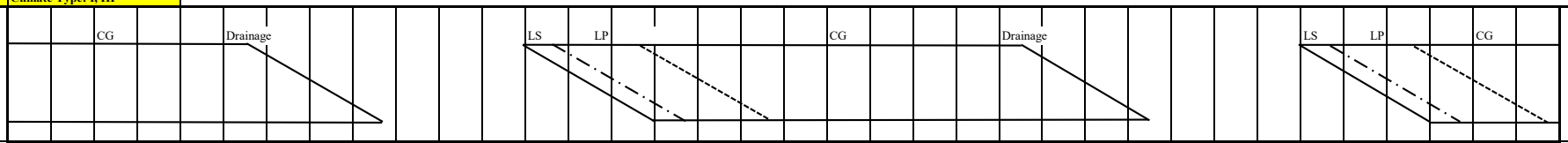
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: IV-A
Province: Laguna — **Climate Type: I, III**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4										
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.90			5.46			6.56			7.10			6.04			5.66			5.05			5.04			4.80			4.96			4.58			4.61			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.152	0.233	0.232	0.060																					
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																			
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027										
Land Soaking Stage	(Als)																																0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85										
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	80													18.74	18.74	18.74	18.41																					
(Dry)		46																															12.60	12.60	12.60	12.63			
Land Preparation Stage	(LP)														7.32	7.32	7.32	6.98	6.98	6.98													6.03	6.03	6.03	6.06	6.06	6.06	
Crop Growing Stage	(CG)		5.59	5.73	5.59	6.01	5.73	5.30	6.30	6.10	5.58						5.13	5.09	5.55	6.06	5.76	5.91	5.76	5.54	5.29	4.89	4.61	4.46	4.08						3.89	4.15	4.52	4.93	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00						2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00						2.00	2.00	2.00	2.00	
Total	(FWR)	Wet													2.96	6.32	8.85	7.70	7.34	7.99	7.76	7.91	7.76	7.54	7.29	6.51	4.18	1.94	0.16										
		Dry	7.59	7.73	7.59	8.01	7.73	7.16	6.08	3.24	0.56																						2.01	4.55	6.55	6.63	6.33	6.87	
10-day FWR			75.86	77.33	83.45	80.06	77.33	57.26	60.82	32.40	3.92				29.59	63.20	97.35	77.00	73.39	79.92	77.57	79.09	85.33	75.44	72.92	71.61	41.83	19.39	0.66				20.06	45.46	65.52	66.26	63.33	75.55	1,829
(G) Rainfall (1982)		mm/10day	16	8	3	7	18	10	0	4	55	23	38	5	10	46	59	59	25	70	115	210	137	102	65	99	160	39	78	89	80	25	81	93	36	130	117	0	2,112
Effective Rainfall	(ER)		0	0	0	0	0	0	0	0	3.9				0	32.2	41.3	41.3	17.5	49	46	42	54.8	40.8	45.5	69.3	41.8	19.4	0.7				20.1	45.5	25.2	52	46.8	0	735
(H) Irrigation Water Requirement	(IWR)	mm/10day	75.9	77.3	83.4	80.1	77.3	57.3	60.8	32.4	0.0				29.6	31.0	56.1	35.7	55.9	30.9	31.6	37.1	30.5	34.6	27.4	2.3	0.0	0.0	0.0				0.0	0.0	40.3	14.3	16.5	75.5	1,094
(F)-(G)		mm/day	7.59	7.73	7.59	8.01	7.73	7.16	6.08	3.24	0.00				2.96	3.10	5.10	3.57	5.59	3.09	3.16	3.71	2.78	3.46	2.74	0.21	0.00	0.00	0.00				0.00	0.00	4.03	1.43	1.65	6.87	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48				0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48				0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	15.80	16.11	15.80	16.68	16.11	14.91	12.67	6.75	0.00				6.16	6.46	10.62	7.44	11.64	6.44	6.58	7.73	5.78	7.22	5.71	0.44	0.00	0.00	0.00				0.00	0.00	8.40	2.97	3.44	14.31	
(H)/(I)		lit/sec/ha	1.83	1.86	1.83	1.93	1.86	1.73	1.47	0.78	0.00				0.71	0.75	1.23	0.86	1.35	0.75	0.76	0.89	0.67	0.84	0.66	0.05	0.00	0.00	0.00				0.00	0.00	0.97	0.34	0.40	1.66	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

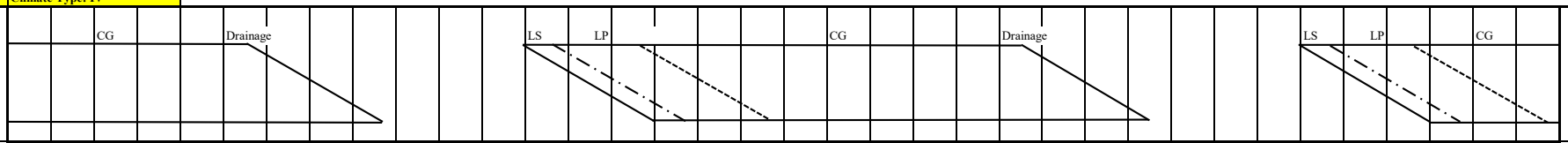
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: IV-A
Province: Quezon
Climate Type: IV

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4										
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.93			5.48			6.56			7.09			6.05			5.70			5.11			5.11			4.85			4.99			4.60			4.64			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.152	0.233	0.232	0.060																					
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																			
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027										
Land Soaking Stage	(Als)																																0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85										
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	80													18.75	18.75	18.75	18.44																					
(Dry)		46																															12.62	12.62	12.62	12.65			
Land Preparation Stage	(LP)														7.32	7.32	7.32	7.02	7.02	7.02													6.05	6.05	6.05	6.08	6.08	6.08	
Crop Growing Stage	(CG)		5.62	5.77	5.62	6.03	5.75	5.32	6.30	6.10	5.58						5.14	5.13	5.59	6.10	5.83	5.98	5.83	5.62	5.37	4.96	4.66	4.51	4.12						3.91	4.18	4.55	4.96	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00						2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00						2.00	2.00	2.00	2.00	
Total	(FWR)	Wet													2.96	6.32	8.86	7.74	7.38	8.03	7.83	7.98	7.83	7.62	7.37	6.57	4.21	1.95	0.17										
		Dry	7.62	7.77	7.62	8.03	7.75	7.18	6.08	3.24	0.56																						2.01	4.56	6.57	6.65	6.36	6.90	
10-day FWR			76.20	77.68	83.82	80.28	77.54	57.41	60.82	32.40	3.92				29.60	63.25	97.44	77.36	73.77	80.34	78.25	79.79	86.08	76.21	73.66	72.31	42.13	19.53	0.66				20.09	45.55	65.67	66.53	63.62	75.90	1,838
(G) Rainfall (1994)		mm/10day	178	1	22	19	35	1	22	43	16	30	16	43	31	30	32	50	36	87	172	113	144	35	9	72	97	85	93	39	45	59	17	42	33	61	31	164	2,003
Effective Rainfall	(ER)		71.2	0	15.4	0	24.5	0	15.4	30.1	0				21.7	21	22.4	35	25.2	60.9	68.8	45.2	57.6	24.5	0	50.4	42.1	19.5	0.7				0	29.4	23.1	42.7	21.7	65.6	834
(H) Irrigation Water Requirement	(IWR)	mm/10day	5.0	77.7	68.4	80.3	53.0	57.4	45.4	2.3	3.9				7.9	42.2	75.0	42.4	48.6	19.4	9.5	34.6	28.5	51.7	73.7	21.9	0.0	0.0	0.0				20.1	16.2	42.6	23.8	41.9	10.3	1,004
(F)-(G)		mm/day	0.50	7.77	6.22	8.03	5.30	7.18	4.54	0.23	0.56				0.79	4.22	6.82	4.24	4.86	1.94	0.95	3.46	2.59	5.17	7.37	1.99	0.00	0.00	0.00				2.01	1.62	4.26	2.38	4.19	0.94	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48				0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48				0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	1.04	16.18	12.96	16.73	11.05	14.95	9.46	0.48	1.17				1.65	8.80	14.21	8.82	10.12	4.05	1.97	7.21	5.39	10.77	15.34	4.15	0.00	0.00	0.00				4.19	3.36	8.87	4.96	8.73	1.95	
(H)/(I)		lit/sec/ha	0.12	1.87	1.50	1.94	1.28	1.73	1.10	0.06	0.14				0.19	1.02	1.64	1.02	1.17	0.47	0.23	0.83	0.62	1.25	1.78	0.48	0.00	0.00	0.00				0.48	0.39	1.03	0.57	1.01	0.23	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

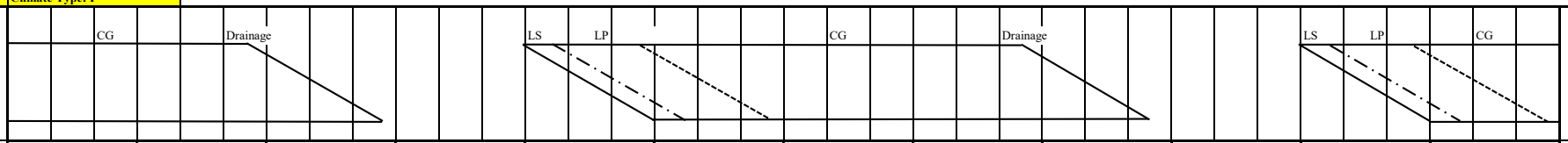
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: IV-A
Province: Rizal
Climate Type: I

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4										
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.85			5.40			6.48			7.03			5.97			5.60			4.99			4.96			4.74			4.92			4.54			4.71			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.152	0.233	0.232	0.060																					
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																			
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027										
Land Soaking Stage	(Als)																																0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85										
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	80													18.68	18.68	18.68	18.36																					
(Dry)		46																															12.57	12.57	12.57	12.72			
Land Preparation Stage	(LP)														7.25	7.25	7.25	6.93	6.93	6.93													6.00	6.00	6.00	6.14	6.14	6.14	
Crop Growing Stage	(CG)		5.53	5.67	5.53	5.94	5.67	5.24	6.22	6.03	5.51						5.07	5.04	5.49	5.99	5.69	5.84	5.69	5.46	5.21	4.81	4.55	4.41	4.03						3.86	4.24	4.62	5.04	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00						2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00						2.00	2.00	2.00	2.00	
Total	(FWR)	Wet													2.95	6.29	8.80	7.65	7.28	7.93	7.69	7.84	7.69	7.46	7.21	6.44	4.15	1.92	0.16										
		Dry	7.53	7.67	7.53	7.94	7.67	7.10	6.03	3.21	0.56																						2.00	4.53	6.52	6.71	6.43	6.97	
10-day FWR			75.29	76.75	82.82	79.40	76.70	56.80	60.26	32.11	3.89				29.48	62.90	96.78	76.47	72.82	79.28	76.89	78.38	84.57	74.56	72.08	70.80	41.46	19.22	0.65				20.00	45.29	65.23	67.15	64.27	76.71	1,819
(G) Rainfall (1984)		mm/10day	11	82	38	5	9	8	8	62	1	0	53	89	77	58	37	55	89	166	127	58	73	121	115	197	42	73	80	124	124	280	61	18	47	19	37	1	2,445
Effective Rainfall	(ER)		0	57.4	26.6	0	0	0	0	32.1	0				29.5	40.6	25.9	38.5	62.3	66.4	50.8	40.6	51.1	48.4	46	70.8	29.4	19.2	0.7				20	0	32.9	0	25.9	0	815
(H) Irrigation Water Requirement	(IWR)	mm/10day	75.3	19.3	56.2	79.4	76.7	56.8	60.3	0.0	3.9				0.0	22.3	70.9	38.0	10.5	12.9	26.1	37.8	33.5	26.2	26.1	0.0	12.1	0.0	0.0				0.0	45.3	32.3	67.1	38.4	76.7	1,004
(F)-(G)		mm/day	7.53	1.93	5.11	7.94	7.67	7.10	6.03	0.00	0.56				0.00	2.23	6.44	3.80	1.05	1.29	2.61	3.78	3.04	2.62	2.61	0.00	1.21	0.00	0.00				0.00	4.53	3.23	6.71	3.84	6.97	
(I) Irrigation Efficiency	(IE)		0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54				0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48				0.54	0.54	0.54	0.54	0.54	0.54	
(J) Diversion Water Requirement	(DWR)	mm/day	13.94	3.58	9.46	14.70	14.20	13.15	11.16	0.00	1.03				0.00	4.65	13.42	7.91	2.19	2.68	5.43	7.87	6.34	5.45	5.43	0.00	2.51	0.00	0.00				0.00	8.39	5.99	12.44	7.11	12.91	
(H)/(I)		lit/sec/ha	1.61	0.41	1.10	1.70	1.64	1.52	1.29	0.00	0.12				0.00	0.54	1.55	0.92	0.25	0.31	0.63	0.91	0.73	0.63	0.63	0.00	0.29	0.00	0.00				0.00	0.97	0.69	1.44	0.82	1.49	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

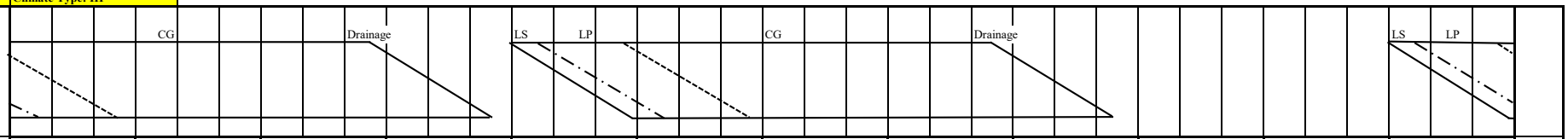
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: IV-B
Province: Marinduque — **Climate Type: III**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4									
		Dry	10	10	11	10	10	8	10	10	11	10	10	6																						10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.99			5.55			6.63			7.15			6.08			5.72			5.12			5.13			4.87			5.03			4.65			4.70		
(D) Area Factor																																						
Land Soaking Stage	(Als)														0.152	0.233	0.232	0.060																				
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																		
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027									
Land Soaking Stage	(Als)		0.060																																	0.152	0.233	0.232
Land Preparation Stage	(Alp)	(Dry)	0.640	0.367	0.055																															0.065	0.267	0.592
Crop Growing Stage	(Acg)		0.300	0.633	0.945	1.000	1.000	1.000	1.000	1.000	0.973	0.700	0.367	0.075																								0.024
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.12	1.14	1.10	1.05	0.97	0.96	0.93	0.85									
		Dry	0.90	0.98	1.07	1.14	1.12	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	150													28.78	28.78	28.78	28.46																				
(Dry)		120	23.53																																	23.28	23.28	23.28
Land Preparation Stage	(LP)		6.39	6.39	6.39										7.35	7.35	7.35	7.03	7.03	7.03																6.14	6.14	6.14
Crop Growing Stage	(CG)		4.49	4.89	5.34	6.33	6.22	6.33	7.29	6.96	6.43	6.86	6.65	6.08			5.17	5.15	5.61	6.12	5.84	5.73	5.84	5.64	5.39	4.98	4.68	4.53	4.14									4.00
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00
Total	(FWR)	Wet													4.48	8.67	11.20	8.35	7.40	8.06	7.84	7.73	7.84	7.64	7.39	6.59	4.23	1.96	0.17									
		Dry	7.45	6.71	7.29	8.33	8.22	8.33	9.29	8.96	8.20	6.20	3.17	0.61																						3.94	7.06	9.18	
10-day FWR			74.50	67.07	80.16	83.27	82.16	66.62	92.93	89.62	90.24	62.05	31.74	3.63	44.85	86.68	123.20	83.54	73.96	80.55	78.37	77.34	86.20	76.43	73.87	72.52	42.25	19.59	0.66							39.37	70.62	100.95	2,055
(G) Rainfall (2015)		mm/10day	35	58	0	1	33	2	15	11	14	0	28	2	24	0	1	57	58	47	80	6	50	29	37	66	49	76	18	58	103	19	56	21	24	1	297	0	1,376
Effective Rainfall	(ER)		24.5	40.6	0	0	23.1	0	0	0	0	0	19.6	0	16.8	0	0	39.9	40.6	32.9	56	0	35	20.3	25.9	46.2	34.3	19.6	0							0	59.4	0	535
(H) Irrigation Water Requirement	(IWR)	mm/10day	50.0	26.5	80.2	83.3	59.1	66.6	92.9	89.6	90.2	62.0	12.1	3.6	28.0	86.7	123.2	43.6	33.4	47.7	22.4	77.3	51.2	56.1	48.0	26.3	8.0	0.0	0.7							39.4	11.2	100.9	1,520
(F)-(G)		mm/day	5.00	2.65	7.29	8.33	5.91	8.33	9.29	8.96	8.20	6.20	1.21	0.61	2.80	8.67	11.20	4.36	3.34	4.77	2.24	7.73	4.65	5.61	4.80	2.39	0.80	0.00	0.17							3.94	1.12	9.18	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	10.42	5.51	15.18	17.35	12.30	17.35	19.36	18.67	17.09	12.93	2.53	1.26	5.84	18.06	23.33	9.09	6.95	9.93	4.66	16.11	9.70	11.69	9.99	4.98	1.66	0.00	0.35							8.20	2.34	19.12	
(H)/(I)		lit/sec/ha	1.21	0.64	1.76	2.01	1.42	2.01	2.24	2.16	1.98	1.50	0.29	0.15	0.68	2.09	2.70	1.05	0.80	1.15	0.54	1.86	1.12	1.35	1.16	0.58	0.19	0.00	0.04							0.95	0.27	2.21	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

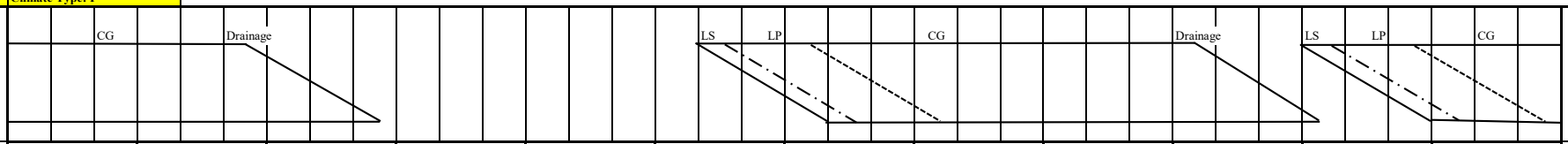
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: IV-B
Province: Occidental Mindoro — **Climate Type: I**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet																	10	10	10	10	11	10	10	11	10	10	10	10	10	11	4						
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	4.91			5.46			6.53			7.03			5.93			5.54			4.94			4.93			4.70			4.89			4.56			4.61			
(D) Area Factor																																						
Land Soaking Stage	(Als)																0.152	0.233	0.233	0.082																		
Land Preparation Stage	(Alp) (Wet)																0.015	0.267	0.585	0.652	0.400	0.060																
Crop Growing Stage	(Acg)																		0.015	0.267	0.600	0.940	1.000	1.000	1.000	1.000	1.000	0.958	0.667	0.333	0.027							
Land Soaking Stage	(Als)																														0.152	0.233	0.233	0.082				
Land Preparation Stage	(Alp) (Dry)																														0.015	0.267	0.585	0.652	0.400	0.074		
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																							0.015	0.267	0.600	0.926		
(E) Crop Coefficient	(Kc) Wet																0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85							
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																					0.80	0.82	0.85	0.90	0.98	1.07		
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 165																30.45	30.45	29.92	29.92																		
(Dry)	145																														26.73	26.73	26.73	26.77				
Land Preparation Stage	(LP)																6.88	6.88	6.35	6.35	6.35	6.34									6.01	6.01	6.01	6.06	6.06	6.06		
Crop Growing Stage	(CG)	5.60	5.74	5.60	6.01	5.73	5.30	6.27	6.07	5.55									4.20	4.45	4.84	5.28	5.62	5.77	5.36	5.17	4.94	4.74	4.69	4.55	3.88		3.88	4.15	4.52	4.93		
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00		
Total	(FWR) Wet																4.73	8.93	10.78	8.31	6.64	7.22	7.62	7.77	7.36	7.17	6.94	6.46	4.47	2.18	0.16							
	Dry	7.60	7.74	7.60	8.01	7.73	7.16	6.06	3.23	0.56																					4.15	7.83	9.83	7.79	6.33	6.87		
10-day FWR		75.97	77.45	83.57	80.06	77.33	57.26	60.61	32.29	3.91							47.31	89.30	107.77	83.13	73.08	72.19	76.20	85.45	73.58	71.70	69.35	64.60	44.65	23.98	42.16	78.33	98.33	77.86	63.33	75.55	1,966	
(G) Rainfall (2003)	mm/10day	9	6	0	4	3	0	4	3	3	0	4	28	7	19	409	18	132	133	58	86	213	185	184	134	205	80	92	27	120	20	38	90	0	0	32	20	2,366	
Effective Rainfall	(ER)	0	0	0	0	0	0	0	0	0								47.3	53.2	40.6	60.2	42.6	72.2	73.6	53.6	41	56	64.4	18.9	44.7	14	26.6	63	0	0	22.4	14	808	
(H) Irrigation Water Requirement	(IWR) mm/10day	76.0	77.4	83.6	80.1	77.3	57.3	60.6	32.3	3.9								0.0	36.1	67.2	22.9	30.5	0.0	2.6	31.8	32.6	15.7	5.0	45.7	0.0	10.0	15.6	15.3	98.3	77.9	40.9	61.5	1,158	
(F)-(G)	mm/day	7.60	7.74	7.60	8.01	7.73	7.16	6.06	3.23	0.56								0.00	3.61	6.72	2.29	2.77	0.00	0.26	2.90	3.26	1.57	0.50	4.57	0.00	0.91	1.56	1.53	9.83	7.79	4.09	5.60		
(I) Irrigation Efficiency	(IE)	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54								0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54	0.54	0.54	0.54	0.54		
(J) Diversion Water Requirement	(DWR) mm/day	14.07	14.34	14.07	14.83	14.32	13.25	11.22	5.98	1.03								0.00	7.52	13.99	4.78	5.77	0.00	0.54	6.03	6.79	3.27	1.03	9.52	0.00	1.89	2.88	2.84	18.21	14.42	7.58	10.36		
(H)/(I)	lit/sec/ha	1.63	1.66	1.63	1.72	1.66	1.53	1.30	0.69	0.12								0.00	0.87	1.62	0.55	0.67	0.00	0.06	0.70	0.79	0.38	0.12	1.10	0.00	0.22	0.33	0.33	2.11	1.67	0.88	1.20		

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

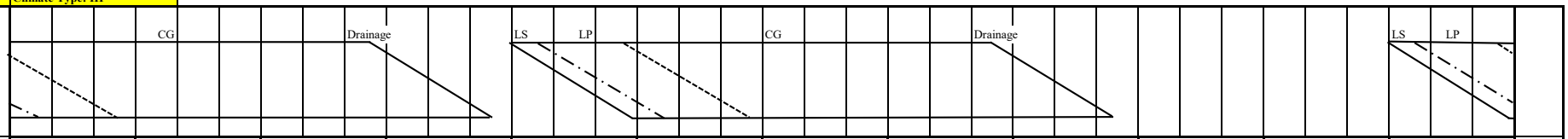
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: IV-B
Province: Oriental Mindoro — **Climate Type: III**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4									
		Dry	10	10	11	10	10	8	10	10	11	10	10	6																						10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.85			5.40			6.46			6.99			5.94			5.58			4.99			4.99			4.75			4.90			4.53			4.57		
(D) Area Factor																																						
Land Soaking Stage	(Als)														0.152	0.233	0.232	0.060																				
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																		
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027									
Land Soaking Stage	(Als)		0.060																																	0.152	0.233	0.232
Land Preparation Stage	(Alp)	(Dry)	0.640	0.367	0.055																															0.065	0.267	0.592
Crop Growing Stage	(Acg)		0.300	0.633	0.945	1.000	1.000	1.000	1.000	1.000	0.973	0.700	0.367	0.075																								0.024
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.12	1.14	1.10	1.05	0.97	0.96	0.93	0.85									
		Dry	0.90	0.98	1.07	1.14	1.12	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	100													21.51	21.51	21.51	21.20																				
(Dry)		60	14.84																																	14.59	14.59	14.59
Land Preparation Stage	(LP)		6.27	6.27	6.27										7.23	7.23	7.23	6.91	6.91	6.91																6.02	6.02	6.02
Crop Growing Stage	(CG)		4.37	4.75	5.19	6.16	6.05	6.16	7.11	6.78	6.27	6.71	6.50	5.94			5.05	5.02	5.47	5.97	5.69	5.59	5.69	5.49	5.24	4.84	4.56	4.42	4.04									3.88
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00
Total	(FWR)	Wet													3.38	6.94	9.44	7.80	7.26	7.91	7.69	7.59	7.69	7.49	7.24	6.46	4.15	1.93	0.16									
		Dry	6.81	6.58	7.14	8.16	8.05	8.16	9.11	8.78	8.04	6.10	3.12	0.60																						2.61	5.01	7.09
10-day FWR			68.11	65.75	78.53	81.56	80.48	65.25	91.06	87.83	88.47	60.97	31.20	3.57	33.78	69.42	103.83	78.01	72.64	79.07	76.89	75.89	84.57	74.89	72.40	71.10	41.52	19.25	0.65							26.10	50.08	78.01	1,911
(G) Rainfall (1982)		mm/10day	4	6	16	14	8	8	0	23	44	12	41	4	11	71	76	72	85	119	98	200	85	72	85	108	183	20	34	62	43	31	56	71	21	21	15	33	1,852
Effective Rainfall	(ER)		0	0	0	0	0	0	0	16.1	30.8	0	28.7	0	0	49.7	53.2	50.4	59.5	47.6	68.6	40	59.5	50.4	59.5	43.2	41.5	14	0.7							14.7	0	23.1	751
(H) Irrigation Water Requirement	(IWR)	mm/10day	68.1	65.8	78.5	81.6	80.5	65.2	91.1	71.7	57.7	61.0	2.5	3.6	33.8	19.7	50.6	27.6	13.1	31.5	8.3	35.9	25.1	24.5	12.9	27.9	0.0	5.3	0.0							11.4	50.1	54.9	1,160
(F)-(G)		mm/day	6.81	6.58	7.14	8.16	8.05	8.16	9.11	7.17	5.24	6.10	0.25	0.60	3.38	1.97	4.60	2.76	1.31	3.15	0.83	3.59	2.28	2.45	1.29	2.54	0.00	0.53	0.00							1.14	5.01	4.99	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	14.19	13.70	14.87	16.99	16.77	16.99	18.97	14.94	10.92	12.70	0.52	1.24	7.04	4.11	9.59	5.75	2.74	6.56	1.73	7.48	4.75	5.10	2.69	5.29	0.00	1.09	0.00							2.37	10.43	10.40	
(H)/(I)		lit/sec/ha	1.64	1.59	1.72	1.97	1.94	1.97	2.20	1.73	1.26	1.47	0.06	0.14	0.81	0.48	1.11	0.67	0.32	0.76	0.20	0.87	0.55	0.59	0.31	0.61	0.00	0.13	0.00							0.27	1.21	1.20	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: IV-B

Province: Palawan — **Climate Type: I, III**

(A) Cropping Pattern (30 days Staggered Period)

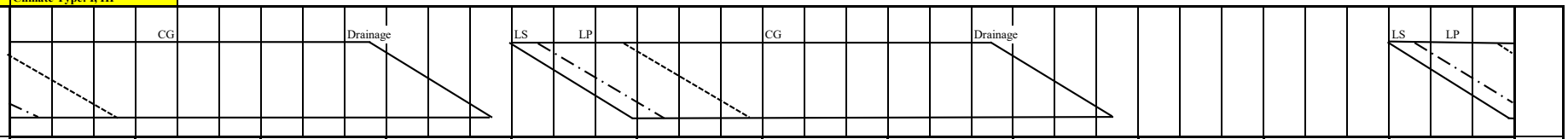
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)	Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4									
	Dry	10	10	11	10	10	8	10	10	11	10	10	6																						10	10	11
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	5.07			5.62			6.69			7.17			6.04			5.67			5.08			5.08			4.83			5.00			4.66			4.75			
(D) Area Factor																																					
Land Soaking Stage	(Als)													0.152	0.233	0.232	0.060																				
Land Preparation Stage	(Alp) (Wet)													0.015	0.267	0.592	0.640	0.367	0.060																		
Crop Growing Stage	(Acg)															0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027									
Land Soaking Stage	(Als)	0.060																																	0.152	0.233	0.232
Land Preparation Stage	(Alp) (Dry)	0.640	0.367	0.055																															0.065	0.267	0.592
Crop Growing Stage	(Acg)	0.300	0.633	0.945	1.000	1.000	1.000	1.000	1.000	0.973	0.700	0.367	0.075																								0.024
(E) Crop Coefficient	(Kc) Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.12	1.14	1.10	1.05	0.97	0.96	0.93	0.85									
	Dry	0.90	0.98	1.07	1.14	1.12	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85
(F) Farm Water Requirement	(FWR) mm/day																																				
Land Soaking Stage (Wet)	(LS) 150													28.74	28.74	28.74	28.42																				
(Dry)	120	23.60																																	23.32	23.32	23.32
Land Preparation Stage	(LP)	6.46	6.46	6.46										7.32	7.32	7.32	6.99	6.99	6.99																6.18	6.18	6.18
Crop Growing Stage	(CG)	4.56	4.97	5.42	6.41	6.29	6.41	7.36	7.02	6.49	6.88	6.67	6.09			5.13	5.10	5.56	6.07	5.79	5.69	5.79	5.59	5.33	4.93	4.64	4.49	4.11									4.04
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00
Total	(FWR) Wet													4.48	8.65	11.17	8.31	7.35	8.00	7.79	7.69	7.79	7.59	7.33	6.55	4.20	1.95	0.16									
	Dry	7.52	6.78	7.37	8.41	8.29	8.41	9.36	9.02	8.26	6.22	3.18	0.61																						3.95	7.08	9.21
10-day FWR		75.21	67.83	81.09	84.07	82.94	67.25	93.59	90.25	90.86	62.18	31.81	3.64	44.79	86.50	122.87	83.09	73.49	80.02	77.91	76.90	85.70	75.88	73.34	72.01	42.01	19.48	0.66							39.47	70.84	101.36	2,057
(G) Rainfall (1982)	mm/10day	2	10	6	3	3	1	0	12	11	5	10	6	14	57	56	45	52	197	76	154	73	49	114	174	206	31	34	81	28	28	37	23	11	18	53	46	1,726
Effective Rainfall	(ER)	0	0	0	0	0	0	0	0	0	0	0	0	0	39.9	39.2	31.5	36.4	78.8	53.2	61.6	51.1	34.3	45.6	69.6	41.2	19.5	0.7							0	37.1	32.2	672
(H) Irrigation Water Requirement	(IWR) mm/10day	75.2	67.8	81.1	84.1	82.9	67.3	93.6	90.2	90.9	62.2	31.8	3.6	44.8	46.6	83.7	51.6	37.1	1.2	24.7	15.3	34.6	41.6	27.7	2.4	0.8	0.0	0.0							39.5	33.7	69.2	1,385
(F)-(G)	mm/day	7.52	6.78	7.37	8.41	8.29	8.41	9.36	9.02	8.26	6.22	3.18	0.61	4.48	4.66	7.61	5.16	3.71	0.12	2.47	1.53	3.15	4.16	2.77	0.22	0.08	0.00	0.00							3.95	3.37	6.29	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	15.67	14.13	15.36	17.51	17.28	17.51	19.50	18.80	17.21	12.95	6.63	1.26	9.33	9.71	15.85	10.75	7.73	0.25	5.15	3.19	6.55	8.66	5.78	0.46	0.17	0.00	0.00							8.22	7.03	13.10	
(H)/(I)	lit/sec/ha	1.81	1.64	1.78	2.03	2.00	2.03	2.26	2.18	1.99	1.50	0.77	0.15	1.08	1.12	1.83	1.24	0.89	0.03	0.60	0.37	0.76	1.00	0.67	0.05	0.02	0.00	0.00							0.95	0.81	1.52	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

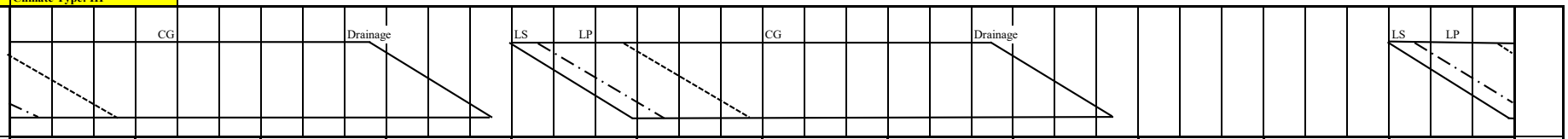
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: IV-B
Province: Romblon — **Climate Type: III**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4									
		Dry	10	10	11	10	10	8	10	10	11	10	10	6																						10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.02			5.57			6.65			7.15			6.07			5.71			5.10			5.11			4.86			5.02			4.66			4.71		
(D) Area Factor																																						
Land Soaking Stage	(Als)														0.152	0.233	0.232	0.060																				
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																		
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027									
Land Soaking Stage	(Als)		0.060																																	0.152	0.233	0.232
Land Preparation Stage	(Alp)	(Dry)	0.640	0.367	0.055																															0.065	0.267	0.592
Crop Growing Stage	(Acg)		0.300	0.633	0.945	1.000	1.000	1.000	1.000	1.000	0.973	0.700	0.367	0.075																								0.024
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.12	1.14	1.10	1.05	0.97	0.96	0.93	0.85									
		Dry	0.90	0.98	1.07	1.14	1.12	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	150													28.77	28.77	28.77	28.45																				
(Dry)		120	23.56																																	23.29	23.29	23.29
Land Preparation Stage	(LP)		6.42	6.42	6.42										7.34	7.34	7.34	7.02	7.02	7.02																6.14	6.14	6.14
Crop Growing Stage	(CG)		4.52	4.92	5.37	6.35	6.24	6.35	7.32	6.98	6.45	6.86	6.65	6.08			5.16	5.14	5.60	6.11	5.81	5.71	5.81	5.62	5.37	4.96	4.67	4.52	4.13									4.00
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00
Total	(FWR)	Wet													4.48	8.66	11.19	8.34	7.39	8.04	7.81	7.71	7.81	7.62	7.37	6.57	4.22	1.96	0.17									
		Dry	7.48	6.74	7.32	8.35	8.24	8.35	9.32	8.98	8.22	6.20	3.17	0.61																						3.94	7.07	9.18	
10-day FWR			74.76	67.35	80.51	83.50	82.38	66.80	93.15	89.83	90.45	62.05	31.74	3.63	44.83	86.64	123.12	83.45	73.86	80.45	78.14	77.12	85.95	76.21	73.66	72.31	42.19	19.56	0.66							39.39	70.67	101.03	2,055
(G) Rainfall (1983)		mm/10day	20	16	17	2	6	5	7	3	7	2	8	5	4	0	8	21	18	67	102	220	87	94	58	51	37	84	132	90	101	82	23	56	57	22	21	0	1,533
Effective Rainfall	(ER)		14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14.7	0	46.9	40.8	44	60.9	65.8	40.6	35.7	25.9	19.6	0.7							15.4	14.7	0	440
(H) Irrigation Water Requirement	(IWR)	mm/10day	60.8	67.4	80.5	83.5	82.4	66.8	93.2	89.8	90.4	62.0	31.7	3.6	44.8	86.6	123.1	68.7	73.9	33.5	37.3	33.1	25.1	10.4	33.1	36.6	16.3	0.0	0.0							24.0	56.0	101.0	1,616
(F)-(G)		mm/day	6.08	6.74	7.32	8.35	8.24	8.35	9.32	8.98	8.22	6.20	3.17	0.61	4.48	8.66	11.19	6.87	7.39	3.35	3.73	3.31	2.28	1.04	3.31	3.33	1.63	0.00	0.00							2.40	5.60	9.18	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	12.66	14.03	15.25	17.40	17.16	17.40	19.41	18.71	17.13	12.93	6.61	1.26	9.34	18.05	23.32	14.32	15.39	6.99	7.78	6.90	4.75	2.17	6.89	6.93	3.39	0.00	0.00							5.00	11.66	19.13	
(H)/(I)		lit/sec/ha	1.47	1.62	1.76	2.01	1.99	2.01	2.25	2.17	1.98	1.50	0.77	0.15	1.08	2.09	2.70	1.66	1.78	0.81	0.90	0.80	0.55	0.25	0.80	0.80	0.39	0.00	0.00							0.58	1.35	2.21	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: V

Province: Albay — **Climate Type: II**

(A) Cropping Pattern (30 days Staggered Period)

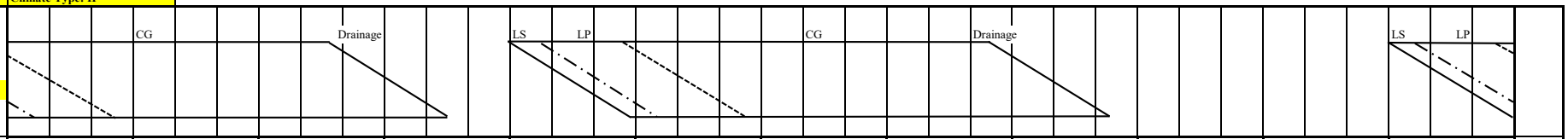
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: Wet=110 days, Dry=100 days

(Drainage: 15 days)



			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
(B) Month																																							
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4										
		Dry	10	10	11	10	10	8	10	10	11	10	6																							10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.98			5.53			6.60			7.11			6.06			5.70			5.10			5.11			4.85			5.01			4.63			4.68			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.152	0.233	0.232	0.060																					
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																			
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027										
Land Soaking Stage	(Als)		0.060																																	0.152	0.233	0.232	
Land Preparation Stage	(Alp)	(Dry)	0.640	0.367	0.060																															0.015	0.267	0.592	
Crop Growing Stage	(Acg)		0.300	0.633	0.940	1.000	1.000	1.000	1.000	0.985	0.717	0.367	0.060																									0.024	
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85										
		Dry	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.01	0.96	0.93	0.85																							0.80	0.82	0.85	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150													28.76	28.76	28.76	28.44																					
(Dry)		120	23.53																																	23.26	23.26	23.26	
Land Preparation Stage	(LP)		6.38	6.38	6.38										7.33	7.33	7.33	7.02	7.02	7.02																6.12	6.12	6.12	
Crop Growing Stage	(CG)		4.48	4.88	5.33	6.30	6.47	6.30	7.26	6.67	6.34	6.61	6.04				5.15	5.13	5.59	6.10	5.81	5.97	5.81	5.62	5.37	4.96	4.66	4.51	4.12									3.98	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	
Total	(FWR)	Wet													4.48	8.66	11.19	8.34	7.38	8.03	7.81	7.97	7.81	7.62	7.37	6.57	4.21	1.95	0.17										
		Dry	7.44	6.70	7.27	8.30	8.47	8.30	9.26	8.54	5.98	3.16	0.48																							3.63	7.05	9.16	
10-day FWR			74.41	66.98	79.99	83.04	84.70	66.43	92.60	85.36	65.75	31.61	2.90		44.82	86.59	123.04	83.36	73.77	80.34	78.14	79.67	85.95	76.21	73.66	72.31	42.13	19.53	0.66							36.27	70.53	100.78	1,962
(G) Rainfall (2002)		mm/10day	9	133	25	44	37	22	9	13	63	0	2	91	32	16	84	12	61	25	49	133	89	45	151	63	41	211	35	29	29	138	238	69	17	138	13	95	2,261
Effective Rainfall	(ER)		0	53.2	17.5	30.8	25.9	15.4	0	0	44.1	0	0		22.4	0	58.8	0	42.7	17.5	34.3	53.2	62.3	31.5	60.4	44.1	28.7	19.5	0.7							36.3	0	66.5	766
(H) Irrigation Water Requirement	(IWR)	mm/10day	74.4	13.8	62.5	52.2	58.8	51.0	92.6	85.4	21.6	31.6	2.9		22.4	86.6	64.2	83.4	31.1	62.8	43.8	26.5	23.7	44.7	13.3	28.2	13.4	0.0	0.0							0.0	70.5	34.3	1,196
(F)-(G)		mm/day	7.44	1.38	5.68	5.22	5.88	6.38	9.26	8.54	1.97	3.16	0.48		2.24	8.66	5.84	8.34	3.11	6.28	4.38	2.65	2.15	4.47	1.33	2.56	1.34	0.00	0.00							0.00	7.05	3.12	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	15.50	2.87	11.84	10.88	12.25	13.29	19.29	17.78	4.10	6.58	1.01		4.67	18.04	12.17	17.37	6.47	13.09	9.13	5.51	4.48	9.31	2.76	5.34	2.80	0.00	0.00							0.00	14.69	6.49	
(H)/(I)		lit/sec/ha	1.79	0.33	1.37	1.26	1.42	1.54	2.23	2.06	0.47	0.76	0.12		0.54	2.09	1.41	2.01	0.75	1.52	1.06	0.64	0.52	1.08	0.32	0.62	0.32	0.00	0.00							0.00	1.70	0.75	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: V

Province: Camarines Norte — **Climate Type: II, III, IV**

(A) Cropping Pattern (30 days Staggered Period)

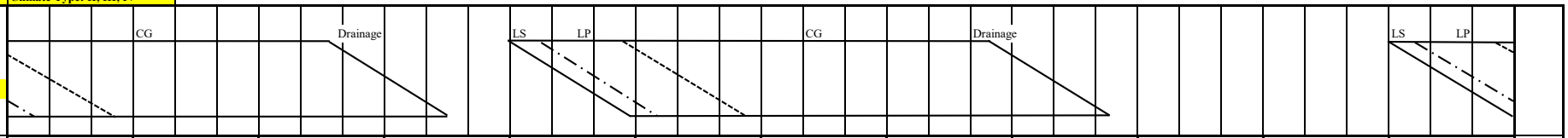
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: Wet=110 days, Dry=100 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4										
		Dry	10	10	11	10	10	8	10	10	11	10	6																							10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.97			5.52			6.60			7.13			6.09			5.74			5.13			5.15			4.88			5.02			4.63			4.67			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.152	0.233	0.232	0.060																					
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																			
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027										
Land Soaking Stage	(Als)		0.060																																	0.152	0.233	0.232	
Land Preparation Stage	(Alp)	(Dry)	0.640	0.367	0.060																															0.015	0.267	0.592	
Crop Growing Stage	(Acg)		0.300	0.633	0.940	1.000	1.000	1.000	1.000	0.985	0.717	0.367	0.060																									0.024	
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85										
		Dry	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.01	0.96	0.93	0.85																							0.80	0.82	0.85	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150													28.79	28.79	28.79	28.48																					
(Dry)		120	23.52																																	23.25	23.25	23.25	
Land Preparation Stage	(LP)		6.37	6.37	6.37										7.36	7.36	7.36	7.05	7.05	7.05																6.11	6.11	6.11	
Crop Growing Stage	(CG)		4.47	4.87	5.32	6.29	6.46	6.29	7.26	6.67	6.34	6.63	6.06				5.18	5.17	5.63	6.14	5.85	6.00	5.85	5.67	5.41	5.00	4.68	4.54	4.15									3.97	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	
Total	(FWR)	Wet													4.49	8.67	11.21	8.37	7.41	8.08	7.85	8.00	7.85	7.67	7.41	6.61	4.23	1.96	0.17										
		Dry	7.43	6.69	7.26	8.29	8.46	8.29	9.26	8.54	5.98	3.17	0.48																							3.63	7.05	9.15	
10-day FWR			74.32	66.88	79.87	82.93	84.58	66.34	92.60	85.36	65.75	31.68	2.90		44.86	86.72	123.28	83.71	74.15	80.76	78.48	80.02	86.33	76.65	74.08	72.72	42.31	19.62	0.66							36.26	70.49	100.70	1,965
(G) Rainfall (1980)		mm/10day	12	45	28	17	64	9	13	24	116	22	15	12	9	39	115	99	75	104	57	105	95	39	82	126	107	81	78	52	59	88	209	66	16	52	84	28	2,242
Effective Rainfall	(ER)		0	31.5	19.6	0	44.8	0	0	16.8	46.4	15.4	0		0	27.3	46	69.3	52.5	41.6	39.9	42	66.5	27.3	57.4	50.4	42.3	19.6	0.7							36.3	58.8	19.6	872
(H) Irrigation Water Requirement	(IWR)	mm/10day	74.3	35.4	60.3	82.9	39.8	66.3	92.6	68.6	19.3	16.3	2.9		44.9	59.4	77.3	14.4	21.6	39.2	38.6	38.0	19.8	49.4	16.7	22.3	0.0	0.0	0.0							0.0	11.7	81.1	1,093
(F)-(G)		mm/day	7.43	3.54	5.48	8.29	3.98	8.29	9.26	6.86	1.76	1.63	0.48		4.49	5.94	7.03	1.44	2.16	3.92	3.86	3.80	1.80	4.94	1.67	2.03	0.00	0.00	0.00							0.00	1.17	7.37	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	15.48	7.37	11.42	17.28	8.29	17.28	19.29	14.28	3.66	3.39	1.01		9.35	12.38	14.64	3.00	4.51	8.16	8.04	7.92	3.76	10.28	3.47	4.23	0.00	0.00	0.00							0.00	2.44	15.36	
(H)/(I)		lit/sec/ha	1.79	0.85	1.32	2.00	0.96	2.00	2.23	1.65	0.42	0.39	0.12		1.08	1.43	1.69	0.35	0.52	0.94	0.93	0.92	0.43	1.19	0.40	0.49	0.00	0.00	0.00							0.00	0.28	1.78	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

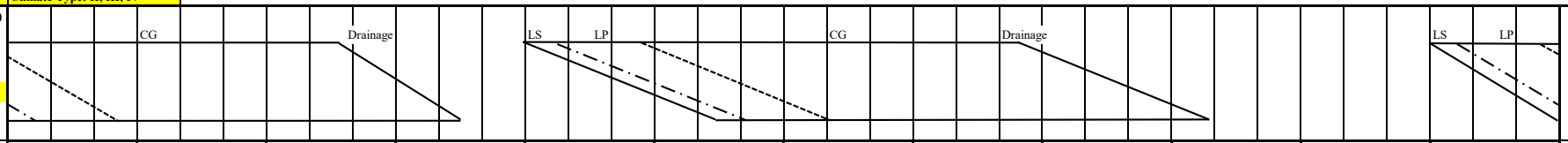
CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: V

Province: Camarines Sur — **Climate Type: II, III, IV**

(A) Cropping Pattern (30 & 45 days Staggered Period)

Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: Wet=110 days, Dry=100 days
(Drainage: 15 days)



			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
(B) Month																																							
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	9									
		Dry	10	10	11	10	10	8	10	10	11	10	6																							10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.98			5.53			6.60			7.13			6.07			5.72			5.11			5.12			4.87			5.02			4.64			4.68			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.101	0.156	0.156	0.156	0.116	0.001																			
Land Preparation Stage	(Alp)	(Wet)													0.010	0.178	0.395	0.444	0.444	0.354	0.133	0.001																	
Crop Growing Stage	(Acg)																0.015	0.200	0.422	0.644	0.867	0.999	1.000	1.000	1.000	0.964	0.756	0.533	0.311	0.090									
Land Soaking Stage	(Als)		0.060																																	0.152	0.233	0.232	
Land Preparation Stage	(Alp)	(Dry)	0.640	0.367	0.060																															0.015	0.267	0.592	
Crop Growing Stage	(Acg)		0.300	0.633	0.940	1.000	1.000	1.000	1.000	0.985	0.717	0.367	0.060																									0.024	
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.94	1.02	1.10	1.14	1.14	1.12	1.08	1.01	0.97	0.96	0.93	0.85									
		Dry	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.01	0.96	0.93	0.85																							0.80	0.82	0.85	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	165													30.91	30.91	30.91	30.61	30.61	30.61																			
(Dry)		145	27.10																																	26.83	26.83	26.83	
Land Preparation Stage	(LP)		6.38	6.38	6.38										7.34	7.34	7.34	7.03	7.03	7.03	6.50	6.50														6.12	6.12	6.12	
Crop Growing Stage	(CG)		4.48	4.88	5.33	6.30	6.47	6.30	7.26	6.67	6.34	6.63	6.06				5.16	5.15	5.38	5.83	5.62	5.83	5.83	5.73	5.53	5.17	4.72	4.68	4.53	4.27								3.98	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	
Total	(FWR)	Wet													3.20	6.13	7.83	9.33	9.79	7.57	7.47	7.82	7.83	7.73	7.53	6.91	5.08	3.56	2.03	0.56									
		Dry	7.66	6.70	7.27	8.30	8.47	8.30	9.26	8.54	5.98	3.17	0.48																							4.17	7.89	9.99	
10-day FWR			76.55	66.98	79.99	83.04	84.70	66.43	92.60	85.36	65.75	31.68	2.90		31.96	61.29	86.13	93.27	97.86	75.66	74.71	78.24	86.08	77.34	75.30	76.04	50.83	35.58	20.31	5.08						41.70	78.86	109.90	1,992
(G) Rainfall (1987)		mm/10day	43	22	22	20	5	15	18	16	7	0	32	1	3	5	34	44	62	34	44	134	49	17	117	76	142	73	33	82	1	117	10	207	273	301	144	109	2,312
Effective Rainfall	(ER)		30.1	15.4	15.4	14	0	0	0	0	0	0	2.9		0	0	23.8	30.8	43.4	23.8	30.8	53.6	34.3	0	46.8	53.2	50.8	35.6	20.3	5.1						41.7	57.6	43.6	673
(H) Irrigation Water Requirement	(IWR)	mm/10day	46.5	51.6	64.6	69.0	84.7	66.4	92.6	85.4	65.7	31.7	0.0		32.0	61.3	62.3	62.5	54.5	51.9	43.9	24.6	51.8	77.3	28.5	22.8	0.0	0.0	0.0	0.0						0.0	21.3	66.3	1,319
(F)-(G)		mm/day	4.65	5.16	5.87	6.90	8.47	8.30	9.26	8.54	5.98	3.17	0.00		3.20	6.13	5.67	6.25	5.45	5.19	4.39	2.46	4.71	7.73	2.85	2.08	0.00	0.00	0.00	0.00						0.00	2.13	6.03	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	9.68	10.75	12.23	14.38	17.65	17.30	19.29	17.78	12.45	6.60	0.00		6.66	12.77	11.80	13.01	11.35	10.80	9.15	5.13	9.81	16.11	5.94	4.33	0.00	0.00	0.00	0.00						0.00	4.43	12.56	
(H)/(I)		lit/sec/ha	1.12	1.24	1.42	1.66	2.04	2.00	2.23	2.06	1.44	0.76	0.00		0.77	1.48	1.37	1.51	1.31	1.25	1.06	0.59	1.14	1.86	0.69	0.50	0.00	0.00	0.00	0.00						0.00	0.51	1.45	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: V

Province: Catanduanes — **Climate Type: II**

(A) Cropping Pattern (30 days Staggered Period)

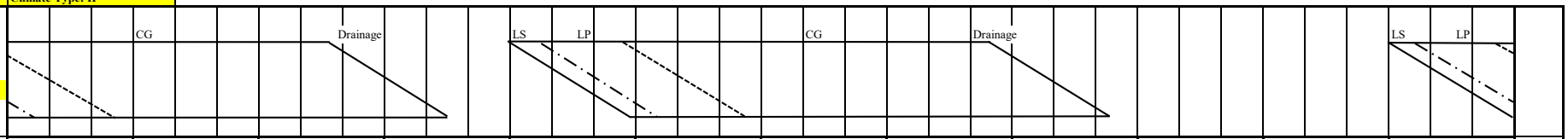
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: Wet=110 days, Dry=100 days

(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)	Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4									
	Dry	10	10	11	10	10	8	10	10	11	10	6																							10	10	11
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	5.00			5.55			6.61			7.11			6.07			5.74			5.14			5.15			4.89			5.03			4.65			4.70			
(D) Area Factor																																					
Land Soaking Stage	(Als)													0.152	0.233	0.232	0.060																				
Land Preparation Stage	(Alp) (Wet)													0.015	0.267	0.592	0.640	0.367	0.060																		
Crop Growing Stage	(Acg)															0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027									
Land Soaking Stage	(Als)	0.060																																	0.152	0.233	0.232
Land Preparation Stage	(Alp) (Dry)	0.640	0.367	0.060																															0.015	0.267	0.592
Crop Growing Stage	(Acg)	0.300	0.633	0.940	1.000	1.000	1.000	1.000	0.985	0.717	0.367	0.060																									0.024
(E) Crop Coefficient	(Kc) Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85									
	Dry	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.01	0.96	0.93	0.85																							0.80	0.82	0.85
(F) Farm Water Requirement	(FWR) mm/day																																				
Land Soaking Stage (Wet)	(LS) 150													28.77	28.77	28.77	28.48																				
(Dry)	120	23.54																																	23.28	23.28	23.28
Land Preparation Stage	(LP)	6.40	6.40	6.40										7.34	7.34	7.34	7.05	7.05	7.05																6.14	6.14	6.14
Crop Growing Stage	(CG)	4.50	4.90	5.35	6.33	6.49	6.33	7.27	6.68	6.35	6.61	6.04				5.16	5.17	5.63	6.14	5.86	6.01	5.86	5.67	5.41	5.00	4.69	4.55	4.16									4.00
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00
Total	(FWR) Wet													4.48	8.66	11.19	8.37	7.41	8.08	7.86	8.01	7.86	7.67	7.41	6.61	4.24	1.96	0.17									
	Dry	7.46	6.72	7.29	8.33	8.49	8.33	9.27	8.55	5.98	3.16	0.48																							3.63	7.06	9.18	
10-day FWR		74.59	67.17	80.22	83.27	84.94	66.62	92.71	85.46	65.82	31.61	2.90		44.83	86.64	123.12	83.71	74.15	80.76	78.60	80.14	86.46	76.65	74.08	72.72	42.38	19.64	0.66							36.30	70.62	100.95	1,968
(G) Rainfall (2002)	mm/10day	0	276	0	29	68	16	15	71	8	0	0	62	94	0	47	25	38	21	32	96	67	42	122	15	33	222	0	65	9	163	388	56	13	72	53	124	2,342
Effective Rainfall	(ER)	0	55.2	0	20.3	47.6	0	0	49.7	0	0	0		44.8	0	32.9	17.5	26.6	14.7	22.4	67.2	46.9	29.4	48.8	0	23.1	19.6	0							36.3	37.1	49.6	690
(H) Irrigation Water Requirement	(IWR) mm/10day	74.6	12.0	80.2	63.0	37.3	66.6	92.7	35.8	65.8	31.6	2.9		0.0	86.6	90.2	66.2	47.5	66.1	56.2	12.9	39.6	47.3	25.3	72.7	19.3	0.0	0.7							0.0	33.5	51.3	1,278
(F)-(G)	mm/day	7.46	1.20	7.29	6.30	3.73	8.33	9.27	3.58	5.98	3.16	0.48		0.00	8.66	8.20	6.62	4.75	6.61	5.62	1.29	3.60	4.73	2.53	6.61	1.93	0.00	0.17							0.00	3.35	4.67	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	15.54	2.49	15.19	13.12	7.78	17.35	19.31	7.45	12.47	6.58	1.01		0.00	18.05	17.09	13.79	9.91	13.76	11.71	2.70	7.49	9.84	5.27	13.77	4.02	0.00	0.35							0.00	6.98	9.72	
(H)/(I)	lit/sec/ha	1.80	0.29	1.76	1.52	0.90	2.01	2.24	0.86	1.44	0.76	0.12		0.00	2.09	1.98	1.60	1.15	1.59	1.36	0.31	0.87	1.14	0.61	1.59	0.46	0.00	0.04							0.00	0.81	1.13	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

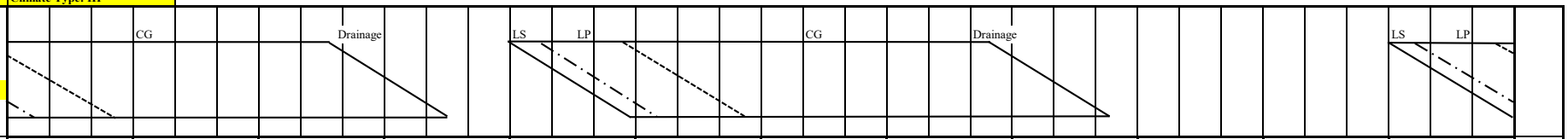
CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: V

Province: Masbate — **Climate Type: III**

(A) Cropping Pattern (30 days Staggered Period)

Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: Wet=110 days, Dry=100 days
(Drainage: 15 days)



			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
(B) Month																																							
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4										
		Dry	10	10	11	10	10	8	10	10	11	10	6																							10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.04			5.59			6.64			7.14			6.07			5.72			5.13			5.14			4.88			5.05			4.68			4.74			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.152	0.233	0.232	0.060																					
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																			
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027										
Land Soaking Stage	(Als)		0.060																																	0.152	0.233	0.232	
Land Preparation Stage	(Alp)	(Dry)	0.640	0.367	0.060																															0.015	0.267	0.592	
Crop Growing Stage	(Acg)		0.300	0.633	0.940	1.000	1.000	1.000	1.000	0.985	0.717	0.367	0.060																									0.024	
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85										
		Dry	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.01	0.96	0.93	0.85																							0.80	0.82	0.85	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150													28.77	28.77	28.77	28.46																					
(Dry)		120	23.58																																	23.31	23.31	23.31	
Land Preparation Stage	(LP)		6.44	6.44	6.44										7.34	7.34	7.34	7.03	7.03	7.03																6.17	6.17	6.17	
Crop Growing Stage	(CG)		4.54	4.94	5.39	6.37	6.54	6.37	7.30	6.71	6.37	6.64	6.07				5.16	5.15	5.61	6.12	5.85	6.00	5.85	5.65	5.40	4.99	4.68	4.54	4.15									4.03	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	
Total	(FWR)	Wet													4.48	8.66	11.19	8.35	7.40	8.06	7.85	8.00	7.85	7.65	7.40	6.60	4.23	1.96	0.17										
		Dry	7.49	6.75	7.34	8.37	8.54	8.37	9.30	8.58	6.00	3.17	0.48																							3.64	7.08	9.21	
10-day FWR			74.94	67.54	80.69	83.73	85.40	66.98	93.04	85.76	66.05	31.71	2.90		44.83	86.64	123.12	83.54	73.96	80.55	78.48	80.02	86.33	76.54	73.97	72.62	42.31	19.62	0.66							36.36	70.80	101.28	1,970
(G) Rainfall (1991)		mm/10day	32	4	38	8	2	46	0	90	0	0	18	25	22	75	43	16	84	60	119	48	71	129	32	50	51	39	18	50	75	64	62	84	40	53	65	0	1,613
Effective Rainfall	(ER)		22.4	0	26.6	0	0	32.2	0	63	0	0	0		15.4	52.5	30.1	0	58.8	42	47.6	33.6	49.7	51.6	22.4	35	35.7	19.6	0							36.4	45.5	0	720
(H) Irrigation Water Requirement	(IWR)	mm/10day	52.5	67.5	54.1	83.7	85.4	34.8	93.0	22.8	66.0	31.7	2.9		29.4	34.1	93.0	83.5	15.2	38.6	30.9	46.4	36.6	24.9	51.6	37.6	6.6	0.0	0.7							0.0	25.3	101.3	1,250
(F)-(G)		mm/day	5.25	6.75	4.92	8.37	8.54	4.35	9.30	2.28	6.00	3.17	0.48		2.94	3.41	8.46	8.35	1.52	3.86	3.09	4.64	3.33	2.49	5.16	3.42	0.66	0.00	0.17							0.00	2.53	9.21	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54	0.54		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	10.95	14.07	10.24	17.44	17.79	9.06	19.38	4.74	11.12	5.87	0.90		6.13	7.11	17.62	17.40	3.16	8.03	6.43	9.67	6.94	5.20	10.74	7.12	1.38	0.00	0.35							0.00	5.27	19.18	
(H)/(I)		lit/sec/ha	1.27	1.63	1.19	2.02	2.06	1.05	2.24	0.55	1.29	0.68	0.10		0.71	0.82	2.04	2.01	0.37	0.93	0.74	1.12	0.80	0.60	1.24	0.82	0.16	0.00	0.04							0.00	0.61	2.22	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: V

Province: Sorsogon — **Climate Type: II, IV**

(A) Cropping Pattern (30 days Staggered Period)

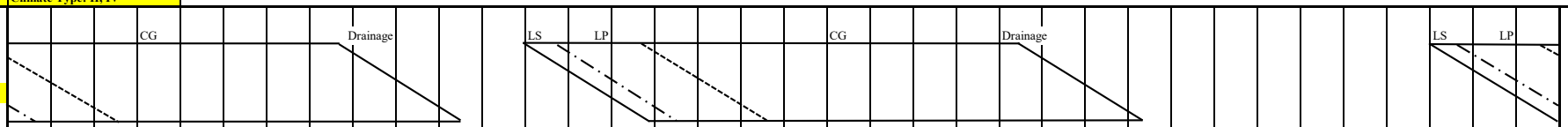
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: Wet=110 days, Dry=100 days

(Drainage: 15 days)



			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
(B) Month																																							
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4										
		Dry	10	10	11	10	10	8	10	10	11	10	6																							10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.00			5.55			6.62			7.12			6.06			5.71			5.11			5.12			4.87			5.03			4.65			4.70			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.152	0.233	0.232	0.060																					
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																			
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027										
Land Soaking Stage	(Als)		0.060																																	0.152	0.233	0.232	
Land Preparation Stage	(Alp)	(Dry)	0.640	0.367	0.060																															0.015	0.267	0.592	
Crop Growing Stage	(Acg)		0.300	0.633	0.940	1.000	1.000	1.000	1.000	0.985	0.717	0.367	0.060																									0.024	
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85										
		Dry	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.01	0.96	0.93	0.85																							0.80	0.82	0.85	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150													28.76	28.76	28.76	28.45																					
(Dry)		120	23.54																																	23.28	23.28	23.28	
Land Preparation Stage	(LP)		6.40	6.40	6.40										7.33	7.33	7.33	7.02	7.02	7.02																6.14	6.14	6.14	
Crop Growing Stage	(CG)		4.50	4.90	5.35	6.33	6.49	6.33	7.28	6.69	6.36	6.62	6.05				5.15	5.14	5.60	6.11	5.83	5.98	5.83	5.63	5.38	4.97	4.68	4.53	4.14									4.00	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	
Total	(FWR)	Wet													4.48	8.66	11.19	8.34	7.39	8.04	7.83	7.98	7.83	7.63	7.38	6.58	4.23	1.96	0.17										
		Dry	7.46	6.72	7.29	8.33	8.49	8.33	9.28	8.56	5.99	3.16	0.48																							3.63	7.06	9.18	
10-day FWR			74.59	67.17	80.22	83.27	84.94	66.62	92.82	85.56	65.90	31.64	2.90		44.82	86.59	123.04	83.45	73.86	80.45	78.25	79.79	86.08	76.32	73.76	72.42	42.25	19.59	0.66							36.30	70.62	100.95	1,965
(G) Rainfall (1991)		mm/10day	92	3	21	27	9	54	0	132	0	1	47	54	58	83	31	31	120	72	159	57	64	132	26	70	60	67	18	52	83	107	80	86	134	101	47	0	2,178
Effective Rainfall	(ER)		64.4	0	14.7	18.9	0	37.8	0	52.8	0	0	2.9		40.6	58.1	21.7	21.7	48	50.4	63.6	39.9	44.8	52.8	18.2	49	42	19.6	0							36.3	32.9	0	831
(H) Irrigation Water Requirement	(IWR)	mm/10day	10.2	67.2	65.5	64.4	84.9	28.8	92.8	32.8	65.9	31.6	0.0		4.2	28.5	101.3	61.7	25.9	30.0	14.7	39.9	41.3	23.5	55.6	23.4	0.3	0.0	0.7							0.0	37.7	100.9	1,134
(F)-(G)		mm/day	1.02	6.72	5.96	6.44	8.49	3.60	9.28	3.28	5.99	3.16	0.00		0.42	2.85	9.21	6.17	2.59	3.00	1.47	3.99	3.75	2.35	5.56	2.13	0.03	0.00	0.17							0.00	3.77	9.18	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	2.12	13.99	12.41	13.41	17.69	7.50	19.34	6.82	12.48	6.59	0.00		0.88	5.94	19.19	12.86	5.39	6.26	3.05	8.31	7.82	4.90	11.58	4.43	0.05	0.00	0.35							0.00	7.86	19.12	
(H)/(I)		lit/sec/ha	0.25	1.62	1.44	1.55	2.05	0.87	2.24	0.79	1.44	0.76	0.00		0.10	0.69	2.22	1.49	0.62	0.72	0.35	0.96	0.90	0.57	1.34	0.51	0.01	0.00	0.04							0.00	0.91	2.21	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

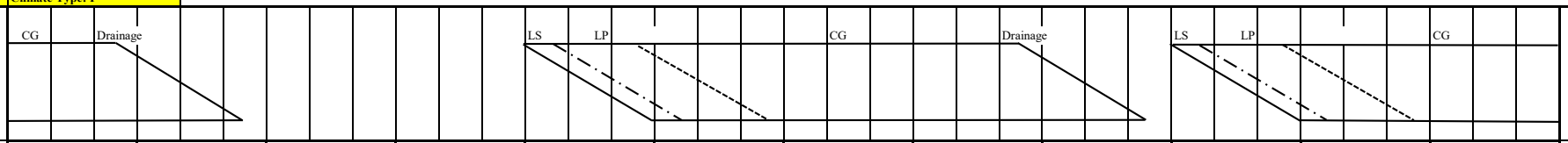
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: VI
Province: Aklan
Climate Type: I

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4										
		Dry	10	10	11	10	10	4																						10	10	11	10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.00			5.55			6.62			7.13			6.06			5.69			5.09			5.10			4.85			5.01			4.64			4.69			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.152	0.233	0.232	0.060																					
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																			
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027										
Land Soaking Stage	(Als)																													0.152	0.233	0.232	0.060						
Land Preparation Stage	(Alp)	(Dry)																												0.015	0.267	0.592	0.640	0.367	0.060				
Crop Growing Stage	(Acg)		1.000	1.000	0.940	0.633	0.300	0.033																								0.024	0.300	0.633	0.940	1.000	1.000	1.000	
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.07	1.14	1.10	1.05	0.97	0.96	0.93	0.85										
		Dry	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.07	1.14	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150													29.26	29.26	29.26	28.94																					
(Dry)		100																												21.19	21.19	21.19	20.87						
Land Preparation Stage	(LP)														7.83	7.83	7.83	7.51	7.51	7.51										6.91	6.91	6.91	6.58	6.58	6.58				
Crop Growing Stage	(CG)		5.50	5.25	4.85	5.33	5.16	4.72									5.15	5.12	5.58	6.09	5.80	5.45	5.80	5.61	5.36	4.95	4.66	4.51	4.12			4.26	4.18	4.55	4.96	5.35	5.02	5.35	
Percolation	(P)	2.50	2.50	2.50	2.50	2.50	2.50	2.50									2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50			2.50	2.50	2.50	2.50	2.50	2.50	2.50	
Total	(FWR)	Wet													4.57	8.91	11.61	8.83	7.87	8.52	8.30	7.95	8.30	8.11	7.86	7.04	4.53	2.10	0.18										
		Dry	8.00	7.75	6.91	4.96	2.30	0.24																						3.33	6.78	9.17	7.47	6.88	7.41	7.85	7.52	7.85	
10-day FWR			80.00	77.50	76.00	49.55	22.98	0.95							45.65	89.09	127.70	88.27	78.67	85.23	83.03	79.46	91.33	81.10	78.55	77.41	45.30	21.03	0.72	33.25	67.83	100.86	74.68	68.77	74.12	78.47	75.18	86.31	2,039
(G) Rainfall (2019)		mm/10day	11	6	17	17	1	2	4	5	16	20	13	1	33	13	66	52	40	90	104	79	126	137	44	255	36	46	13	101	59	211	81	119	56	111	4	135	2,124
Effective Rainfall	(ER)		0	0	0	0	0	0							23.1	0	46.2	36.4	28	63	41.6	55.3	50.4	54.8	30.8	51	25.2	21	0	33.3	41.3	42.2	56.7	47.6	39.2	44.4	0	54	886
(H) Irrigation Water Requirement	(IWR)	mm/10day	80.0	77.5	76.0	49.6	23.0	1.0							22.6	89.1	81.5	51.9	50.7	22.2	41.4	24.2	40.9	26.3	47.8	26.4	20.1	0.0	0.7	0.0	26.5	58.7	18.0	21.2	34.9	34.1	75.2	32.3	1,154
(F)-(G)		mm/day	8.00	7.75	6.91	4.96	2.30	0.24							2.26	8.91	7.41	5.19	5.07	2.22	4.14	2.42	3.72	2.63	4.78	2.40	2.01	0.00	0.18	0.00	2.65	5.33	1.80	2.12	3.49	3.41	7.52	2.94	
(I) Irrigation Efficiency	(IE)		0.54	0.54	0.54	0.54	0.54	0.54							0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54	0.54	0.54	0.54	0.54	
(J) Diversion Water Requirement	(DWR)	mm/day	14.81	14.35	12.79	9.18	4.26	0.44							4.70	18.56	15.44	10.81	10.56	4.63	8.63	5.03	7.75	5.48	9.95	5.00	4.19	0.00	0.37	0.00	5.53	11.11	3.33	3.92	6.47	6.31	13.92	5.44	
(H)/(I)		lit/sec/ha	1.71	1.66	1.48	1.06	0.49	0.05							0.54	2.15	1.79	1.25	1.22	0.54	1.00	0.58	0.90	0.63	1.15	0.58	0.48	0.00	0.04	0.00	0.64	1.29	0.39	0.45	0.75	0.73	1.61	0.63	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

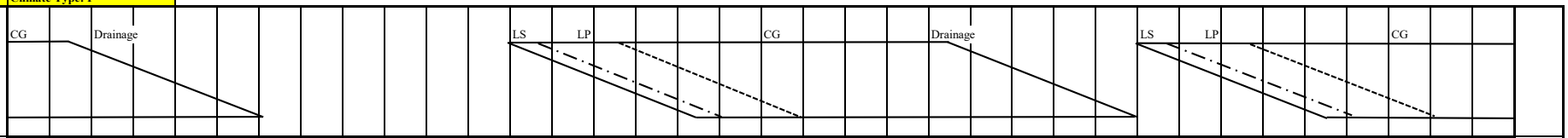
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: VI
Province: Antique
Climate Type: I

(A) Cropping Pattern (45 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 100 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	9									
		Dry	10	10	11	10	10	8	1																					10	10	11	10	10	10	10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.04			5.61			6.70			7.19			6.03			5.63			5.02			5.03			4.78			4.97			4.63			4.71		
(D) Area Factor																																						
Land Soaking Stage	(Als)														0.101	0.156	0.156	0.156	0.116	0.001																		
Land Preparation Stage	(Alp)	(Wet)													0.010	0.178	0.395	0.444	0.444	0.354	0.133	0.001																
Crop Growing Stage	(Acg)																0.016	0.200	0.422	0.644	0.867	0.999	1.000	1.000	0.975	0.756	0.533	0.311	0.090									
Land Soaking Stage	(Als)																													0.101	0.156	0.156	0.156	0.116	0.001			
Land Preparation Stage	(Alp)	(Dry)																												0.010	0.178	0.395	0.444	0.444	0.354	0.133	0.001	
Crop Growing Stage	(Acg)		1.000	0.972	0.767	0.533	0.311	0.111	0.001																							0.016	0.200	0.422	0.644	0.867	0.999	1.000
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.94	1.02	1.10	1.14	1.14	1.12	1.05	1.01	0.96	0.93	0.85									
		Dry	1.12	1.05	1.01	0.96	0.93	0.85	0.85																					0.80	0.82	0.85	0.90	0.94	1.02	1.10	1.14	1.14
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	150													28.63	28.63	28.63	28.28	28.28	28.28																		
(Dry)		100																												20.56	20.56	20.56	20.26	20.26	20.26			
Land Preparation Stage	(LP)														7.21	7.21	7.21	6.85	6.85	6.85	6.32	6.32								6.27	6.27	6.27	5.97	5.97	5.97	6.04	6.04	
Crop Growing Stage	(CG)		5.64	5.29	5.09	5.39	5.22	4.77	4.77								5.13	5.07	5.29	5.74	5.52	5.72	5.72	5.63	5.28	5.08	4.59	4.45	4.06			4.22	4.17	4.35	4.72	5.18	5.37	5.37
Percolation	(P)	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90								1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90			1.90	1.90	1.90	1.90	1.90	1.90	1.90
Total	(FWR)	Wet													2.96	5.75	7.43	8.85	9.36	7.38	7.28	7.62	7.62	7.53	7.00	5.28	3.46	1.97	0.54									
		Dry	7.54	6.99	5.36	3.88	2.21	0.74	0.01																					2.14	4.32	5.78	7.03	7.64	6.40	6.94	7.27	7.27
10-day FWR			75.45	69.91	58.98	38.83	22.13	5.92	0.01						29.64	57.50	81.69	88.49	93.59	73.77	72.75	76.21	83.85	75.34	70.02	58.05	34.59	19.73	4.83	21.39	43.24	63.62	70.27	76.41	64.00	69.43	72.68	79.96	1,752
(G) Rainfall (1991)		mm/10day	8	1	26	3	2	21	0	57	0	0	8	22	47	94	27	88	200	187	283	139	159	271	268	344	76	60	74	60	75	38	71	80	24	14	17	13	2,857
Effective Rainfall	(ER)		0	0	18.2	0	0	6	0						29.6	57.5	18.9	61.6	80	73.8	56.6	55.6	63.6	54.2	53.6	58.1	34.6	19.7	4.8	21.4	43.2	26.6	49.7	56	16.8	0	0	0	960
(H) Irrigation Water Requirement	(IWR)	mm/10day	75.4	69.9	40.8	38.8	22.1	0.0	0.0						0.0	0.0	62.8	26.9	13.6	0.0	16.2	20.6	20.3	21.1	16.4	0.0	0.0	0.0	0.0	0.0	0.0	37.0	20.6	20.4	47.2	69.4	72.7	80.0	792
(F)-(G)		mm/day	7.54	6.99	3.71	3.88	2.21	0.00	0.01						0.00	0.00	5.71	2.69	1.36	0.00	1.62	2.06	1.84	2.11	1.64	0.00	0.00	0.00	0.00	0.00	0.00	3.37	2.06	2.04	4.72	6.94	7.27	7.27	
(I) Irrigation Efficiency	(IE)		0.54	0.54	0.54	0.54	0.54	0.54	0.54						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54	0.54	0.54	0.54	0.54
(J) Diversion Water Requirement	(DWR)	mm/day	13.97	12.95	6.86	7.19	4.10	0.00	0.01						0.00	0.00	11.89	5.60	2.83	0.00	3.36	4.29	3.84	4.40	3.42	0.00	0.00	0.00	0.00	0.00	0.00	7.01	3.81	3.78	8.74	12.86	13.46	13.46	
(H)/(I)		lit/sec/ha	1.62	1.50	0.79	0.83	0.47	0.00	0.00						0.00	0.00	1.38	0.65	0.33	0.00	0.39	0.50	0.44	0.51	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.44	0.44	1.01	1.49	1.56	1.56	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: VI
Province: Capiz — **Climate Type: III**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)

CG, Drainage, LS, LP, CG, Drainage, LS, LP, CG

(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4										
		Dry	10	10	11	10	10	4																						10	10	11	10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.96			5.52			6.58			7.08			6.00			5.63			5.04			5.05			4.80			4.96			4.60			4.66			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.152	0.233	0.232	0.060																					
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																			
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027										
Land Soaking Stage	(Als)																													0.152	0.233	0.232	0.060						
Land Preparation Stage	(Alp)	(Dry)																												0.015	0.267	0.592	0.640	0.367	0.060				
Crop Growing Stage	(Acg)		1.000	1.000	0.940	0.633	0.300	0.033																								0.024	0.300	0.633	0.940	1.000	1.000	1.000	
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.07	1.14	1.10	1.05	0.97	0.96	0.93	0.85										
		Dry	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.07	1.14	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150													27.71	27.71	27.71	27.38																					
(Dry)		100																												19.65	19.65	19.65	19.33						
Land Preparation Stage	(LP)														6.28	6.28	6.28	5.95	5.95	5.95										5.36	5.36	5.36	5.05	5.05	5.05				
Crop Growing Stage	(CG)		5.46	5.21	4.81	5.30	5.13	4.69									5.10	5.07	5.52	6.02	5.75	5.39	5.75	5.56	5.30	4.90	4.61	4.46	4.08			4.22	4.14	4.51	4.92	5.31	4.99	5.31	
Percolation	(P)	1.00	1.00	1.00	1.00	1.00	1.00	1.00									1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Total	(FWR)	Wet													4.31	8.13	10.29	7.27	6.31	6.96	6.75	6.39	6.75	6.56	6.30	5.57	3.55	1.64	0.14										
		Dry	6.46	6.21	5.46	3.99	1.84	0.19																						3.07	6.01	7.86	5.93	5.34	5.87	6.31	5.99	6.31	
10-day FWR			64.56	62.08	60.09	39.87	18.40	0.75							43.06	81.33	113.22	72.74	63.11	69.60	67.46	63.93	74.20	65.55	63.03	61.31	35.50	16.39	0.55	30.67	60.11	86.46	59.33	53.39	58.70	63.12	59.86	69.44	1,678
(G) Rainfall (1982)		mm/10day	0	9	60	14	16	20	0	17	166	12	13	3	6	72	49	65	185	176	96	200	67	39	186	115	187	65	56	168	76	45	65	48	11	50	21	20	2,398
Effective Rainfall	(ER)		0	0	42	0	0	0.8							0	50.4	34.3	45.5	63.1	69.6	67.2	63.9	46.9	27.3	63	46	35.5	16.4	0.6	30.7	53.2	31.5	45.5	33.6	0	35	14.7	14	931
(H) Irrigation Water Requirement	(IWR)	mm/10day	64.6	62.1	18.1	39.9	18.4	0.0							43.1	30.9	78.9	27.2	0.0	0.0	0.3	0.0	27.3	38.3	0.0	15.3	0.0	0.0	0.0	0.0	6.9	55.0	13.8	19.8	58.7	28.1	45.2	55.4	747
(F)-(G)		mm/day	6.46	6.21	1.64	3.99	1.84	0.00							4.31	3.09	7.17	2.72	0.00	0.00	0.03	0.00	2.48	3.83	0.00	1.39	0.00	0.00	0.00	0.00	0.69	5.00	1.38	1.98	5.87	2.81	4.52	5.04	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	13.45	12.93	3.43	8.31	3.83	0.00							8.97	6.44	14.95	5.67	0.00	0.00	0.05	0.00	5.17	7.97	0.00	2.90	0.00	0.00	0.00	0.00	1.44	10.41	2.88	4.12	12.23	5.86	9.41	10.50	
(H)/(I)		lit/sec/ha	1.56	1.50	0.40	0.96	0.44	0.00							1.04	0.75	1.73	0.66	0.00	0.00	0.01	0.00	0.60	0.92	0.00	0.34	0.00	0.00	0.00	0.00	0.17	1.20	0.33	0.48	1.42	0.68	1.09	1.22	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

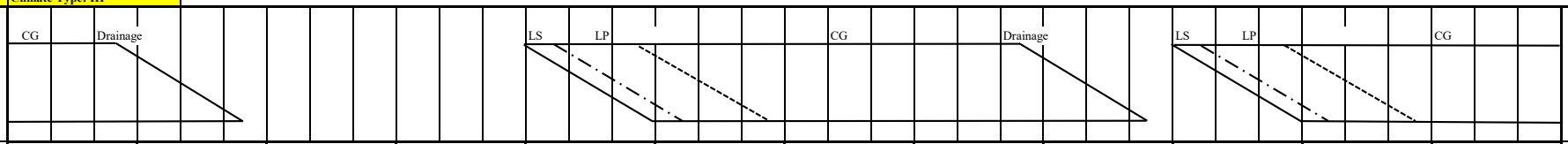
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: VI
Province: Guimaras — **Climate Type: III**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4										
		Dry	10	10	11	10	10	4																						10	10	11	10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.09			5.66			6.76			7.29			6.13			5.71			5.10			5.10			4.86			5.05			4.70			4.77			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.152	0.233	0.232	0.060																					
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																			
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027										
Land Soaking Stage	(Als)																													0.152	0.233	0.232	0.060						
Land Preparation Stage	(Alp)	(Dry)																												0.015	0.267	0.592	0.640	0.367	0.060				
Crop Growing Stage	(Acg)		1.000	1.000	0.940	0.633	0.300	0.033																								0.024	0.300	0.633	0.940	1.000	1.000	1.000	
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.07	1.14	1.10	1.05	0.97	0.96	0.93	0.85										
		Dry	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.07	1.14	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	142													27.68	27.68	27.68	27.31																					
(Dry)		85																												18.59	18.59	18.59	18.28						
Land Preparation Stage	(LP)														7.39	7.39	7.39	7.02	7.02	7.02										6.44	6.44	6.44	6.14	6.14	6.14				
Crop Growing Stage	(CG)		5.60	5.34	4.94	5.43	5.26	4.81									5.21	5.14	5.60	6.11	5.81	5.46	5.81	5.61	5.36	4.95	4.67	4.52	4.13			4.29	4.23	4.61	5.03	5.44	5.10	5.44	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00	2.00	2.00	2.00	
Total	(FWR)	Wet													4.32	8.42	10.97	8.28	7.39	8.04	7.81	7.46	7.81	7.61	7.36	6.56	4.22	1.96	0.17										
		Dry	7.60	7.34	6.52	4.71	2.18	0.22																						2.92	6.05	8.28	6.89	6.43	6.98	7.44	7.10	7.44	
10-day FWR			75.99	73.45	71.73	47.05	21.79	0.90							43.18	84.24	120.70	82.76	73.86	80.45	78.14	74.57	85.95	76.10	73.55	72.21	42.19	19.56	0.66	29.22	60.51	91.06	68.93	64.34	69.75	74.38	71.04	81.82	1,910
(G) Rainfall (1985)		mm/10day	10	37	15	5	17	24	4	7	24	5	24	56	44	71	36	50	106	163	99	84	148	105	59	38	140	84	87	75	163	32	44	49	100	18	56	4	2,083
Effective Rainfall	(ER)		0	25.9	0	0	0	0.9							30.8	49.7	25.2	35	42.4	65.2	69.3	58.8	59.2	42	41.3	26.6	42.2	19.6	0.7	29.2	60.5	22.4	30.8	34.3	69.8	0	39.2	0	921
(H) Irrigation Water Requirement	(IWR)	mm/10day	76.0	47.5	71.7	47.1	21.8	0.0							12.4	34.5	95.5	47.8	31.5	15.2	8.8	15.8	26.8	34.1	32.3	45.6	0.0	0.0	0.0	0.0	0.0	68.7	38.1	30.0	0.0	74.4	31.8	81.8	989
(F)-(G)		mm/day	7.60	4.75	6.52	4.71	2.18	0.00							1.24	3.45	8.68	4.78	3.15	1.52	0.88	1.58	2.43	3.41	3.23	4.15	0.00	0.00	0.00	0.00	0.00	6.24	3.81	3.00	0.00	7.44	3.18	7.44	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	15.83	9.91	13.59	9.80	4.54	0.00							2.58	7.20	18.09	9.95	6.55	3.18	1.84	3.29	5.07	7.10	6.72	8.64	0.00	0.00	0.00	0.00	0.00	13.00	7.94	6.26	0.00	15.50	6.63	15.50	
(H)/(I)		lit/sec/ha	1.83	1.15	1.57	1.13	0.53	0.00							0.30	0.83	2.09	1.15	0.76	0.37	0.21	0.38	0.59	0.82	0.78	1.00	0.00	0.00	0.00	0.00	0.00	1.51	0.92	0.72	0.00	1.79	0.77	1.79	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

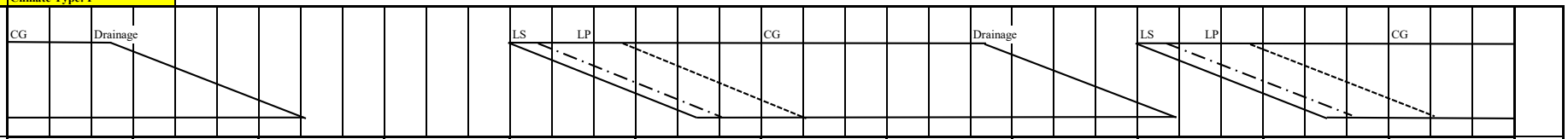
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: VI
Province: Iloilo
Climate Type: I

(A) Cropping Pattern (45 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	9								
		Dry	10	10	11	10	10	8	10	1																				10	10	11	10	10	10	10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.03			5.59			6.68			7.19			6.08			5.68			5.07			5.07			4.83			5.00			4.65			4.71		
(D) Area Factor																																						
Land Soaking Stage	(Als)														0.101	0.156	0.156	0.156	0.116	0.001																		
Land Preparation Stage	(Alp)	(Wet)													0.010	0.178	0.395	0.444	0.444	0.354	0.133	0.001																
Crop Growing Stage	(Acg)																0.016	0.200	0.422	0.644	0.867	0.999	1.000	1.000	1.000	0.964	0.756	0.533	0.311	0.090								
Land Soaking Stage	(Als)																													0.101	0.156	0.156	0.156	0.116	0.001			
Land Preparation Stage	(Alp)	(Dry)																												0.010	0.178	0.395	0.444	0.444	0.354	0.133	0.001	
Crop Growing Stage	(Acg)		1.000	1.000	0.964	0.756	0.533	0.333	0.133	0.001																						0.016	0.200	0.422	0.644	0.867	0.999	1.000
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.94	1.02	1.10	1.14	1.14	1.12	1.08	1.01	0.97	0.96	0.93	0.85								
		Dry	1.12	1.08	1.01	0.97	0.96	0.93	0.85	0.85																				0.80	0.82	0.85	0.90	0.94	1.02	1.10	1.14	1.14
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	142													26.70	26.70	26.70	26.34	26.34	26.34																		
(Dry)		85																												17.60	17.60	17.60	17.29	17.29	17.29			
Land Preparation Stage	(LP)														6.41	6.41	6.41	6.06	6.06	6.06	5.52	5.52								5.46	5.46	5.46	5.15	5.15	5.15	5.20	5.20	
Crop Growing Stage	(CG)		5.63	5.43	5.08	5.42	5.37	5.20	5.68	5.68							5.17	5.11	5.34	5.79	5.58	5.78	5.78	5.68	5.48	5.12	4.69	4.64	4.49	4.25		4.25	4.19	4.37	4.74	5.18	5.37	5.37
Percolation	(P)	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06							1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06		1.06	1.06	1.06	1.06	1.06	1.06	1.06
Total	(FWR)	Wet													2.76	5.31	6.80	8.03	8.45	6.58	6.49	6.84	6.84	6.74	6.54	5.96	4.34	3.04	1.73	0.48								
		Dry	6.69	6.49	5.92	4.90	3.43	2.08	0.90	0.01																				1.83	3.72	4.99	6.03	6.59	5.58	6.10	6.43	6.43
10-day FWR			66.94	64.92	65.11	49.01	34.25	16.67	8.96	0.01					27.60	53.06	74.76	80.34	84.46	65.85	64.89	68.38	75.24	67.38	65.36	65.54	43.43	30.36	17.27	22.63	37.18	54.86	60.34	65.86	55.78	61.03	64.28	70.72	1,682
(G) Rainfall (1982)		mm/10day	1	7	43	16	10	18	0	18	124	12	16	6	6	69	43	80	168	139	76	175	56	25	191	102	201	65	52	154	61	14	48	35	4	36	8	16	2,095
Effective Rainfall	(ER)		0	0	30.1	0	0	0	0	0					0	48.3	30.1	56	67.2	55.6	53.2	68.4	39.2	17.5	65.4	40.8	40.2	30.4	17.3	22.6	37.2	0	33.6	24.5	0	25.2	0	0	803
(H) Irrigation Water Requirement	(IWR)	mm/10day	66.9	64.9	35.0	49.0	34.3	16.7	9.0	0.0					27.6	4.8	44.7	24.3	17.3	10.2	11.7	0.0	36.0	49.9	0.0	24.7	3.2	0.0	0.0	0.0	0.0	54.9	26.7	41.4	55.8	35.8	64.3	70.7	880
(F)-(G)		mm/day	6.69	6.49	3.18	4.90	3.43	2.08	0.90	0.01					2.76	0.48	4.06	2.43	1.73	1.02	1.17	0.00	3.28	4.99	0.00	2.25	0.32	0.00	0.00	0.00	0.00	4.99	2.67	4.14	5.58	3.58	6.43	6.43	
(I) Irrigation Efficiency	(IE)		0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54					0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.54	0.54	0.54	0.54	0.54	0.54	
(J) Diversion Water Requirement	(DWR)	mm/day	12.40	12.02	5.89	9.08	6.34	3.86	1.66	0.01					5.75	0.99	8.46	5.07	3.60	2.13	2.43	0.00	6.83	10.39	0.00	4.69	0.67	0.00	0.00	0.00	0.00	10.39	4.95	7.66	10.33	6.64	11.90	11.91	
(H)/(I)		lit/sec/ha	1.43	1.39	0.68	1.05	0.73	0.45	0.19	0.00					0.67	0.11	0.98	0.59	0.42	0.25	0.28	0.00	0.79	1.20	0.00	0.54	0.08	0.00	0.00	0.00	0.00	1.20	0.57	0.89	1.20	0.77	1.38	1.38	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

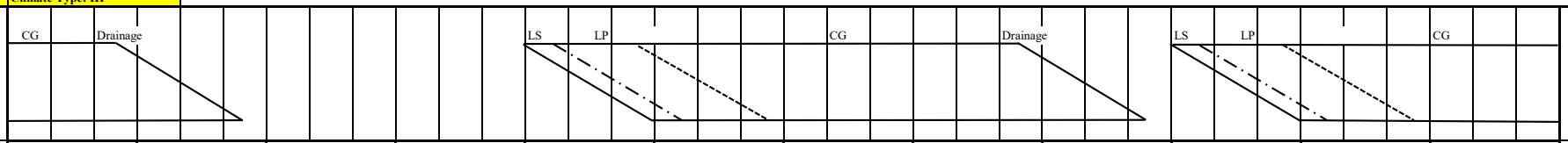
CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: VI

Province: Negros Occidental — **Climate Type: III**

(A) Cropping Pattern (30 days Staggered Period)

Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4										
	Dry	10	10	11	10	10	4																						10	10	11	10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	5.00			5.56			6.65			7.15			6.03			5.63			5.03			5.04			4.79			4.96			4.62			4.68			
(D) Area Factor																																						
Land Soaking Stage	(Als)													0.152	0.233	0.232	0.060																					
Land Preparation Stage	(Alp) (Wet)													0.015	0.267	0.592	0.640	0.367	0.060																			
Crop Growing Stage	(Acg)															0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027										
Land Soaking Stage	(Als)																												0.152	0.233	0.232	0.060						
Land Preparation Stage	(Alp) (Dry)																												0.015	0.267	0.592	0.640	0.367	0.060				
Crop Growing Stage	(Acg)	1.000	1.000	0.940	0.633	0.300	0.033																								0.024	0.300	0.633	0.940	1.000	1.000	1.000	
(E) Crop Coefficient	(Kc) Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.07	1.14	1.10	1.05	0.97	0.96	0.93	0.85										
	Dry	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.07	1.14	
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 118													26.16	26.16	26.16	25.81																					
(Dry)	95																												21.94	21.94	21.94	21.64						
Land Preparation Stage	(LP)													9.31	9.31	9.31	8.95	8.95	8.95										8.36	8.36	8.36	8.07	8.07	8.07				
Crop Growing Stage	(CG)	5.50	5.25	4.85	5.34	5.17	4.73									5.13	5.07	5.52	6.02	5.73	5.38	5.73	5.54	5.29	4.89	4.60	4.45	4.07			4.22	4.16	4.53	4.94	5.34	5.01	5.34	
Percolation	(P) 4.00	4.00	4.00	4.00	4.00	4.00	4.00									4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00			4.00	4.00	4.00	4.00	4.00	4.00	4.00	
Total	(FWR) Wet													4.12	8.58	11.80	10.00	9.31	9.96	9.73	9.38	9.73	9.54	9.29	8.40	5.44	2.54	0.22										
	Dry	9.50	9.25	8.32	5.91	2.75	0.29																						3.46	7.34	10.24	8.91	8.36	8.89	9.34	9.01	9.34	
10-day FWR		95.00	92.50	91.51	59.11	27.51	1.15							41.16	85.81	129.78	100.00	93.11	99.60	97.34	93.82	107.08	95.44	92.92	92.40	54.43	25.36	0.87	34.60	73.45	112.62	89.08	83.58	88.91	93.35	90.08	102.69	2,344
(G) Rainfall (2002)	mm/10day	35	0	1	3	30	8	2	8	50	2	1	39	41	19	66	51	169	57	156	127	69	51	155	137	77	132	38	32	59	175	95	19	12	4	0	59	1,979
Effective Rainfall	(ER)	24.5	0	0	0	21	0							28.7	0	46.2	35.7	67.6	39.9	62.4	50.8	48.3	35.7	62	54.8	53.9	25.4	0.9	22.4	41.3	70	66.5	0	0	0	0	41.3	899
(H) Irrigation Water Requirement	(IWR) mm/10day	70.5	92.5	91.5	59.1	6.5	1.2							12.5	85.8	83.6	64.3	25.5	59.7	34.9	43.0	58.8	59.7	30.9	37.6	0.5	0.0	0.0	12.2	32.1	42.6	22.6	83.6	88.9	93.4	90.1	61.4	1,445
(F)-(G)	mm/day	7.05	9.25	8.32	5.91	0.65	0.29							1.25	8.58	7.60	6.43	2.55	5.97	3.49	4.30	5.34	5.97	3.09	3.42	0.05	0.00	0.00	1.22	3.21	3.87	2.26	8.36	8.89	9.34	9.01	5.58	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	14.69	19.27	17.33	12.31	1.36	0.60							2.60	17.88	15.83	13.40	5.31	12.44	7.28	8.96	11.13	12.45	6.44	7.12	0.11	0.00	0.00	2.54	6.70	8.07	4.70	17.41	18.52	19.45	18.77	11.63	
(H)/(I)	lit/sec/ha	1.70	2.23	2.01	1.43	0.16	0.07							0.30	2.07	1.83	1.55	0.62	1.44	0.84	1.04	1.29	1.44	0.75	0.82	0.01	0.00	0.00	0.29	0.78	0.93	0.54	2.02	2.14	2.25	2.17	1.35	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

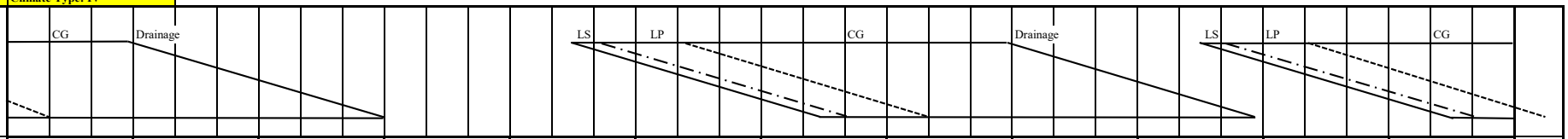
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: VII
Province: Bohol
Climate Type: IV

(A) Cropping Pattern (60 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 100 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	9								
		Dry	10	10	11	10	10	8	10	10	11																			5	11	10	10	10	10	10	11		
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.07			5.63			6.70			7.20			6.11			5.73			5.13			5.15			4.89			5.05			4.68			4.75			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.021	0.114	0.117	0.117	0.117	0.117	0.087	0.001																	
Land Preparation Stage	(Alp)	(Wet)														0.061	0.233	0.333	0.333	0.333	0.333	0.258	0.083																
Crop Growing Stage	(Acg)																	0.068	0.233	0.400	0.567	0.742	0.917	1.000	0.999	0.900	0.733	0.567	0.400	0.233	0.061								
Land Soaking Stage	(Als)																													0.021	0.114	0.117	0.117	0.117	0.117	0.087	0.001		
Land Preparation Stage	(Alp)	(Dry)	0.083																												0.061	0.233	0.333	0.333	0.333	0.333	0.258		
Crop Growing Stage	(Acg)		0.917	1.000	0.999	0.900	0.733	0.583	0.433	0.267	0.092																						0.068	0.233	0.400	0.567	0.742		
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.08	1.07	1.05	1.01	0.96	0.93	0.85								
		Dry	1.09	1.11	1.08	1.07	1.05	1.01	0.96	0.93	0.85																			0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150													29.16	29.16	28.82	28.82	28.82	28.29	28.29	28.29																	
(Dry)		120																												23.94	23.94	23.61	23.61	23.61	23.67	23.67	23.67		
Land Preparation Stage	(LP)		6.81														7.39	7.39	7.39	6.86	6.86	6.86	6.88								6.79	6.47	6.47	6.47	6.53	6.53	6.53		
Crop Growing Stage	(CG)		5.53	5.63	5.48	6.02	5.91	5.69	6.43	6.23	5.70							5.16	5.39	5.08	5.23	5.49	5.61	5.72	5.56	5.23	5.13	4.94	4.85	4.70	4.29		4.21	4.40	4.70	4.85	5.08		
Percolation	(P)	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35							2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35		2.35	2.35	2.35	2.35	2.35		
Total	(FWR)	Wet													0.61	3.32	5.09	6.34	7.64	8.57	9.05	7.62	7.87	8.07	7.90	6.82	5.49	4.13	2.88	1.64	0.41								
		Dry	7.79	7.98	7.82	7.54	6.06	4.69	3.80	2.29	0.74																			0.50	3.14	4.27	5.36	6.49	7.77	8.31	7.22		
10-day FWR			77.88	79.78	86.00	75.37	60.56	37.48	38.03	22.91	8.14				6.12	36.56	50.94	63.44	76.36	85.68	90.47	83.78	78.74	80.67	86.94	68.24	54.86	41.33	28.79	18.93	38.22	42.70	53.63	64.89	77.65	83.14	79.46		1,878
(G) Rainfall (1982)		mm/10day	21	31	77	58	27	24	1	83	152	10	9	3	5	46	24	81	93	27	50	81	29	22	144	46	63	61	14	75	35	18	19	18	16	41	7	5		1,516
Effective Rainfall	(ER)		14.7	21.7	53.9	40.6	18.9	16.8	0	22.9	8.1				6.1	16.8	50.9	63.4	18.9	35	56.7	20.3	15.4	57.6	32.2	44.1	42.7	0	28.8	18.9	0	0	0	0	28.7	0	0		734
(H) Irrigation Water Requirement	(IWR)	mm/10day	63.2	58.1	32.1	34.8	41.7	20.7	38.0	0.0	0.0				0.0	19.8	0.0	0.0	57.5	50.7	33.8	63.5	63.3	23.1	54.7	24.1	12.2	41.3	0.0	0.0	38.2	42.7	53.6	64.9	49.0	83.1	79.5		1,143
(F)-(G)		mm/day	6.32	5.81	2.92	3.48	4.17	2.59	3.80	0.00	0.00				0.00	1.80	0.00	0.00	5.75	5.07	3.38	5.77	6.33	2.31	4.98	2.41	1.22	4.13	0.00	0.00	4.25	4.27	5.36	6.49	4.90	8.31	7.22		
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48				0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		
(J) Diversion Water Requirement	(DWR)	mm/day	13.16	12.10	6.08	7.24	8.68	5.39	7.92	0.00	0.00				0.00	3.74	0.00	0.00	11.97	10.56	7.03	12.02	13.20	4.81	10.37	5.03	2.53	8.61	0.00	0.00	8.85	8.90	11.17	13.52	10.20	17.32	15.05		
(H)/(I)		lit/sec/ha	1.52	1.40	0.70	0.84	1.00	0.62	0.92	0.00	0.00				0.00	0.43	0.00	0.00	1.39	1.22	0.81	1.39	1.53	0.56	1.20	0.58	0.29	1.00	0.00	0.00	1.02	1.03	1.29	1.56	1.18	2.00	1.74		

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

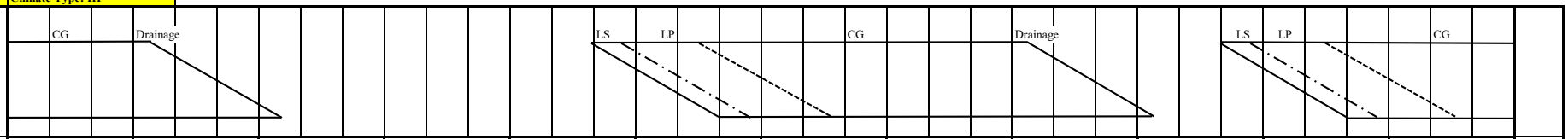
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: VII
Province: Cebu
Climate Type: III

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 100 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	4								
		Dry	10	10	11	10	10	8	6																							11	10	10	10	10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.05			5.60			6.66			7.14			6.07			5.71			5.12			5.14			4.88			5.05			4.68			4.74		
(D) Area Factor																																						
Land Soaking Stage	(Als)																0.159	0.233	0.232	0.060																		
Land Preparation Stage	(Alp)	(Wet)															0.024	0.300	0.607	0.640	0.367	0.060																
Crop Growing Stage	(Acg)																		0.027	0.300	0.633	0.940	1.000	1.000	1.000	1.000	0.940	0.633	0.300	0.027								
Land Soaking Stage	(Als)																															0.159	0.233	0.232	0.060			
Land Preparation Stage	(Alp)	(Dry)																														0.024	0.300	0.607	0.640	0.367	0.060	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	0.940	0.633	0.333	0.060																									0.027	0.300	0.633	0.940	1.000
(E) Crop Coefficient	(Kc)	Wet															0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.01	0.96	0.93	0.85								
		Dry	1.17	1.14	1.10	1.01	0.96	0.93	0.85																							0.80	0.82	0.85	0.90	0.98	1.07	1.14
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	150															29.12	28.80	28.80	28.80																		
(Dry)		120																														23.94	23.61	23.61	23.61			
Land Preparation Stage	(LP)																7.69	7.37	7.37	7.37	6.86	6.86										6.79	6.47	6.47	6.47	6.52	6.52	
Crop Growing Stage	(CG)		5.91	5.76	5.56	5.66	5.38	5.21	5.66										4.85	5.14	5.02	5.48	5.84	6.01	5.86	5.65	4.93	4.68	4.54	4.29				3.98	4.21	4.65	5.07	5.40
Percolation	(P)	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35										2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35				2.35	2.35	2.35	2.35	2.35
Total	(FWR)	Wet															4.81	8.92	11.35	8.69	7.18	7.77	8.19	8.36	8.21	8.00	6.84	4.45	2.07	0.18								
		Dry	8.26	8.11	7.91	7.53	4.89	2.52	0.48																							3.97	7.44	9.57	7.53	6.82	7.37	7.75
10-day FWR			82.59	81.07	86.96	75.26	48.91	20.13	2.88								52.96	89.24	113.53	86.95	71.80	77.70	90.05	83.64	82.10	88.04	68.42	44.53	20.67	0.72		43.66	74.42	95.75	75.25	68.21	73.68	85.29	1,884
(G) Rainfall (2004)		mm/10day	3	1	56	25	22	33	48	28	10	1	8	16	42	91	30	88	52	34	15	83	77	77	31	22	16	66	30	96	18	24	5	37	40	52	0	26	1,303
Effective Rainfall	(ER)		0	0	39.2	17.5	15.4	20.1	2.9								21	61.6	36.4	23.8	0	58.1	53.9	53.9	21.7	15.4	0	44.5	20.7	0.7		16.8	0	25.9	28	36.4	0	18.2	632
(H) Irrigation Water Requirement	(IWR)	mm/10day	82.6	81.1	47.8	57.8	33.5	0.0	0.0								32.0	27.6	77.1	63.1	71.8	19.6	36.2	29.7	60.4	72.6	68.4	0.0	0.0	0.0		26.9	74.4	69.8	47.3	31.8	73.7	67.1	1,252
(F)-(G)		mm/day	8.26	8.11	4.34	5.78	3.35	0.00	0.00								2.91	2.76	7.71	6.31	7.18	1.96	3.29	2.97	6.04	6.60	6.84	0.00	0.00	0.00		2.44	7.44	6.98	4.73	3.18	7.37	6.10	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48								0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	17.21	16.89	9.04	12.03	6.98	0.00	0.00								6.05	5.76	16.07	13.16	14.96	4.08	6.85	6.20	12.58	13.76	14.25	0.00	0.00	0.00		5.09	15.50	14.55	9.84	6.63	15.35	12.71	
(H)/(I)		lit/sec/ha	1.99	1.95	1.05	1.39	0.81	0.00	0.00								0.70	0.67	1.86	1.52	1.73	0.47	0.79	0.72	1.46	1.59	1.65	0.00	0.00	0.00		0.59	1.79	1.68	1.14	0.77	1.78	1.47	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

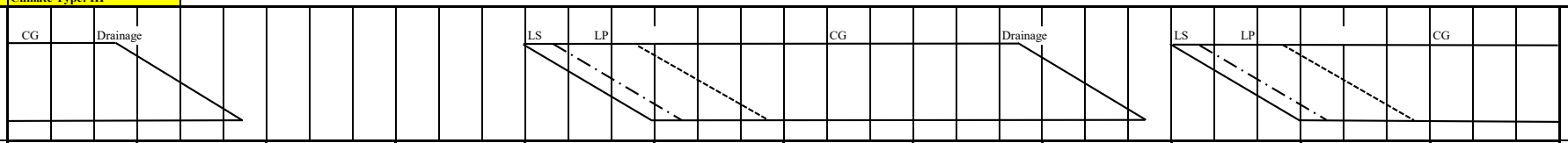
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: VII
Province: Negros Oriental — **Climate Type: III**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	4										
		Dry	10	10	11	10	10	4																						10	10	11	10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.01			5.58			6.67			7.17			6.03			5.62			5.02			5.03			4.78			4.96			4.62			4.69			
(D) Area Factor																																							
Land Soaking Stage	(Als)														0.152	0.233	0.232	0.060																					
Land Preparation Stage	(Alp)	(Wet)													0.015	0.267	0.592	0.640	0.367	0.060																			
Crop Growing Stage	(Acg)																0.024	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.945	0.633	0.300	0.027										
Land Soaking Stage	(Als)																													0.152	0.233	0.232	0.060						
Land Preparation Stage	(Alp)	(Dry)																												0.015	0.267	0.592	0.640	0.367	0.060				
Crop Growing Stage	(Acg)		1.000	1.000	0.940	0.633	0.300	0.033																								0.024	0.300	0.633	0.940	1.000	1.000	1.000	
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.07	1.14	1.10	1.05	0.97	0.96	0.93	0.85										
		Dry	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.07	1.14	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150													30.73	30.73	30.73	30.37																					
(Dry)		120																												25.51	25.51	25.51	25.21						
Land Preparation Stage	(LP)														9.31	9.31	9.31	8.95	8.95	8.95										8.36	8.36	8.36	8.07	8.07	8.07				
Crop Growing Stage	(CG)		5.51	5.26	4.86	5.36	5.19	4.74									5.13	5.06	5.51	6.01	5.72	5.37	5.72	5.53	5.28	4.88	4.59	4.45	4.06			4.22	4.16	4.53	4.94	5.35	5.02	5.35	
Percolation	(P)	4.00	4.00	4.00	4.00	4.00	4.00	4.00									4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00			4.00	4.00	4.00	4.00	4.00	4.00	4.00	
Total	(FWR)	Wet													4.81	9.65	12.86	10.27	9.30	9.95	9.72	9.37	9.72	9.53	9.28	8.39	5.44	2.53	0.22										
		Dry	9.51	9.26	8.33	5.92	2.76	0.29																						4.00	8.18	11.07	9.12	8.36	8.89	9.35	9.02	9.35	
10-day FWR			95.11	92.61	91.61	59.23	27.57	1.15							48.11	96.46	141.45	102.65	93.01	99.49	97.23	93.71	106.95	95.33	92.82	92.30	54.37	25.34	0.87	40.03	81.77	121.74	91.22	83.58	88.91	93.47	90.18	102.81	2,401
(G) Rainfall (2005)		mm/10day	24	12	1	16	2	0	10	30	3	14	4	10	15	41	18	17	59	73	112	37	134	124	38	68	71	88	22	47	57	101	17	65	23	66	142	72	1,633
Effective Rainfall	(ER)		16.8	0	0	0	0	0							0	28.7	0	0	41.3	51.1	44.8	25.9	53.6	49.6	26.6	47.6	49.7	25.3	0.9	32.9	39.9	40.4	0	45.5	16.1	46.2	56.8	50.4	790
(H) Irrigation Water Requirement	(IWR)	mm/10day	78.3	92.6	91.6	59.2	27.6	1.2							48.1	67.8	141.4	102.7	51.7	48.4	52.4	67.8	53.4	45.7	66.2	44.7	4.7	0.0	0.0	7.1	41.9	81.3	91.2	38.1	72.8	47.3	33.4	52.4	1,611
(F)-(G)		mm/day	7.83	9.26	8.33	5.92	2.76	0.29							4.81	6.78	12.86	10.27	5.17	4.84	5.24	6.78	4.85	4.57	6.62	4.06	0.47	0.00	0.00	0.71	4.19	7.39	9.12	3.81	7.28	4.73	3.34	4.76	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	16.31	19.29	17.35	12.34	5.74	0.60							10.02	14.12	26.79	21.39	10.77	10.08	10.92	14.13	10.10	9.53	13.79	8.47	0.97	0.00	0.00	1.48	8.72	15.40	19.00	7.93	15.17	9.85	6.95	9.93	
(H)/(I)		lit/sec/ha	1.89	2.23	2.01	1.43	0.66	0.07							1.16	1.63	3.10	2.48	1.25	1.17	1.26	1.64	1.17	1.10	1.60	0.98	0.11	0.00	0.00	0.17	1.01	1.78	2.20	0.92	1.76	1.14	0.80	1.15	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

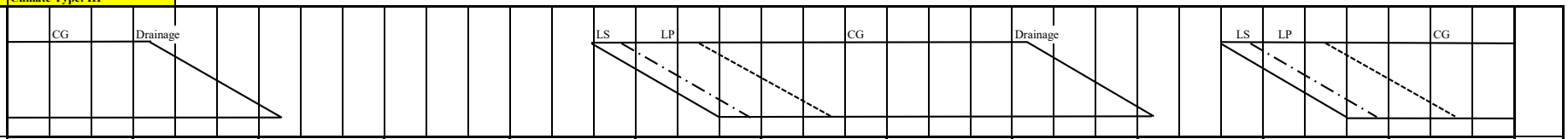
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: VII
Province: Siquijor — **Climate Type: III**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 100 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	4								
		Dry	10	10	11	10	10	8	6																							11	10	10	10	10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.03			5.56			6.58			7.04			5.98			5.65			5.07			5.09			4.84			5.00			4.65			4.72		
(D) Area Factor																																						
Land Soaking Stage	(Als)																0.159	0.233	0.232	0.060																		
Land Preparation Stage	(Alp)	(Wet)															0.024	0.300	0.607	0.640	0.367	0.060																
Crop Growing Stage	(Acg)																		0.027	0.300	0.633	0.940	1.000	1.000	1.000	1.000	0.940	0.633	0.300	0.027								
Land Soaking Stage	(Als)																															0.159	0.233	0.232	0.060			
Land Preparation Stage	(Alp)	(Dry)																														0.024	0.300	0.607	0.640	0.367	0.060	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	0.940	0.633	0.333	0.060																									0.027	0.300	0.633	0.940	1.000
(E) Crop Coefficient	(Kc)	Wet															0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.01	0.96	0.93	0.85								
		Dry	1.17	1.14	1.10	1.01	0.96	0.93	0.85																							0.80	0.82	0.85	0.90	0.98	1.07	1.14
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	150															28.69	28.40	28.40	28.40																		
(Dry)		120																														23.54	23.23	23.23	23.23			
Land Preparation Stage	(LP)																7.26	6.97	6.97	6.97	6.46	6.46										6.40	6.09	6.09	6.09	6.15	6.15	
Crop Growing Stage	(CG)		5.89	5.73	5.53	5.62	5.34	5.17	5.59										4.80	5.09	4.97	5.42	5.78	5.96	5.80	5.60	4.89	4.65	4.50	4.25				3.95	4.19	4.63	5.05	5.38
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00										2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	2.00
Total	(FWR)	Wet															4.74	8.71	11.00	8.29	6.78	7.37	7.78	7.96	7.80	7.60	6.48	4.21	1.95	0.17								
		Dry	7.89	7.73	7.53	7.16	4.64	2.39	0.46																							3.90	7.24	9.25	7.15	6.45	7.00	7.38
10-day FWR			78.85	77.34	82.86	71.59	46.45	19.10	2.73								52.10	87.09	110.05	82.92	67.83	73.67	85.58	79.55	78.03	83.59	64.75	42.07	19.50	0.68		42.87	72.41	92.49	71.48	64.52	69.97	81.19	1,801
(G) Rainfall (1981)		mm/10day	31	40	35	29	0	0	1	0	19	5	1	6	12	15	10	16	68	83	57	33	30	12	46	2	17	31	25	26	36	15	35	47	52	81	0	10	926
Effective Rainfall	(ER)		21.7	28	24.5	20.3	0	0	0								0	0	47.6	58.1	39.9	23.1	21	0	32.2	0	0	21.7	17.5	0.7		0	24.5	32.9	36.4	56.7	0	0	507
(H) Irrigation Water Requirement	(IWR)	mm/10day	57.2	49.3	58.4	51.3	46.4	19.1	2.7								52.1	87.1	62.4	24.8	27.9	50.6	64.6	79.6	45.8	83.6	64.8	20.4	2.0	0.0		42.9	47.9	59.6	35.1	7.8	70.0	81.2	1,294
(F)-(G)		mm/day	5.72	4.93	5.31	5.13	4.64	2.39	0.46								4.74	8.71	6.24	2.48	2.79	5.06	5.87	7.96	4.58	7.60	6.48	2.04	0.20	0.00		3.90	4.79	5.96	3.51	0.78	7.00	7.38	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48								0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	11.91	10.28	11.05	10.68	9.68	4.97	0.95								9.87	18.14	13.01	5.17	5.82	10.54	12.23	16.57	9.55	15.83	13.49	4.24	0.42	0.00		8.12	9.98	12.41	7.31	1.63	14.58	15.38	
(H)/(I)		lit/sec/ha	1.38	1.19	1.28	1.24	1.12	0.58	0.11								1.14	2.10	1.51	0.60	0.67	1.22	1.42	1.92	1.10	1.83	1.56	0.49	0.05	0.00		0.94	1.16	1.44	0.85	0.19	1.69	1.78	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

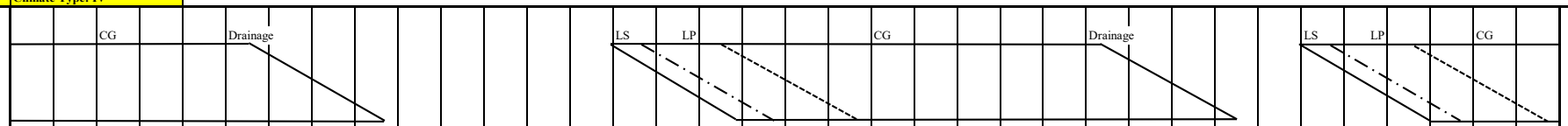
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: VIII
Province: Biliran — **Climate Type: IV**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	4								
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	5.04			5.58			6.63			7.10			6.04			5.70			5.11			5.13			4.87			5.03			4.67			4.74			
(D) Area Factor																																						
Land Soaking Stage	(Als)															0.159	0.233	0.232	0.060																			
Land Preparation Stage	(Alp) (Wet)															0.024	0.300	0.607	0.640	0.367	0.060																	
Crop Growing Stage	(Acg)																	0.027	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.940	0.633	0.300	0.270								
Land Soaking Stage	(Als)																															0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp) (Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc) Wet															0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85								
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 150															28.74	28.44	28.44	28.44																			
(Dry)	120																															23.25	23.25	23.25	23.31			
Land Preparation Stage	(LP)															7.32	7.02	7.02	7.02	6.50	6.50	6.497										6.11	6.11	6.11	6.17	6.17	6.17	
Crop Growing Stage	(CG)	5.75	5.90	5.75	6.14	5.86	5.41	6.36	6.17	5.64								4.85	5.13	5.01	5.47	5.83	6.00	5.85	5.64	5.11	4.72	4.68	4.68	4.28				3.97	4.27	4.65	5.07	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR) Wet															4.75	8.73	11.04	8.34	6.82	7.41	7.83	8.00	7.85	7.64	7.11	6.32	4.23	2.00	1.69								
	Dry	7.75	7.90	7.75	8.14	7.86	7.27	6.13	3.27	0.57																						3.63	7.05	9.08	7.61	6.46	7.01	
10-day FWR		77.46	78.97	85.20	81.38	78.59	58.17	61.31	32.66	3.96						52.20	87.32	110.43	83.36	68.20	74.09	86.08	80.02	78.48	84.07	71.14	63.20	42.25	20.03	6.78		36.26	70.49	90.81	76.08	64.56	77.06	1,981
(G) Rainfall (2002)	mm/10day	123	57	0	12	37	13	5	27	60	0	32	45	10	2	58	34	86	31	29	159	52	111	111	112	28	77	48	57	58	93	115	31	4	0	0	192	1,909
Effective Rainfall	(ER)	49.2	39.9	0	0	25.9	0	0	18.9	4						40.6	23.8	60.2	21.7	20.3	0	36.4	44.4	44.4	44.8	19.6	53.9	33.6	20	6.8		36.3	21.7	0	0	0	76.8	743
(H) Irrigation Water Requirement	(IWR) mm/10day	28.3	39.1	85.2	81.4	52.7	58.2	61.3	13.8	0.0						11.6	63.5	50.2	61.7	47.9	74.1	49.7	35.6	34.1	39.3	51.5	9.3	8.7	0.0	0.0		0.0	48.8	90.8	76.1	64.6	0.3	1,238
(F)-(G)	mm/day	2.83	3.91	7.75	8.14	5.27	7.27	6.13	1.38	0.00						1.05	6.35	5.02	6.17	4.79	7.41	4.52	3.56	3.41	3.57	5.15	0.93	0.87	0.00	0.00		0.00	4.88	9.08	7.61	6.46	0.02	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	5.89	8.14	16.14	16.95	10.98	15.15	12.77	2.87	0.00						2.20	13.23	10.46	12.85	9.98	15.44	9.41	7.42	7.10	7.44	10.74	1.94	1.80	0.00	0.00		0.00	10.16	18.92	15.85	13.45	0.05	
(H)/(I)	lit/sec/ha	0.68	0.94	1.87	1.96	1.27	1.75	1.48	0.33	0.00						0.25	1.53	1.21	1.49	1.16	1.79	1.09	0.86	0.82	0.86	1.24	0.22	0.21	0.00	0.00		0.00	1.18	2.19	1.83	1.56	0.01	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

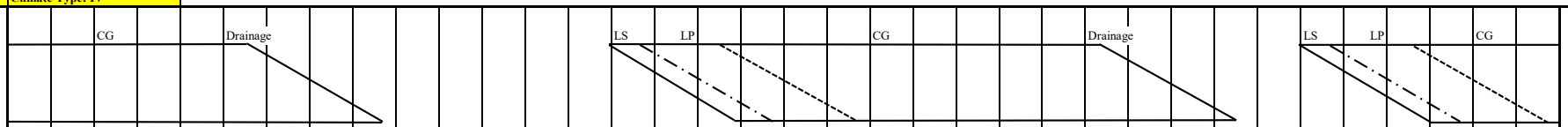
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: VIII
Province: Northern Leyte — **Climate Type: IV**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	4								
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.02			5.57			6.63			7.11			6.05			5.69			5.10			5.12			4.86			5.02			4.64			4.71			
(D) Area Factor																																							
Land Soaking Stage	(Als)																0.159	0.233	0.232	0.060																			
Land Preparation Stage	(Alp)	(Wet)															0.024	0.300	0.607	0.640	0.367	0.060																	
Crop Growing Stage	(Acg)																		0.027	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.940	0.633	0.300	0.270								
Land Soaking Stage	(Als)																																0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet															0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85								
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150															28.75	28.44	28.44	28.44																			
(Dry)		120																															23.23	23.23	23.23	23.29			
Land Preparation Stage	(LP)																7.32	7.01	7.01	7.01	6.49	6.49	6.488										6.08	6.08	6.08	6.14	6.14	6.14	
Crop Growing Stage	(CG)		5.72	5.87	5.72	6.13	5.85	5.40	6.36	6.17	5.64								4.84	5.12	5.00	5.46	5.81	5.99	5.84	5.63	5.10	4.71	4.67	4.67	4.27				3.94	4.24	4.62	5.04	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR)	Wet															4.75	8.73	11.04	8.33	6.81	7.40	7.81	7.99	7.84	7.63	7.10	6.31	4.22	2.00	1.69								
		Dry	7.72	7.87	7.72	8.13	7.85	7.26	6.13	3.27	0.57																						3.62	7.04	9.06	7.58	6.43	6.97	
10-day FWR			77.23	78.73	84.95	81.27	78.49	58.10	61.31	32.66	3.96						52.22	87.28	110.35	83.27	68.11	73.99	85.95	79.90	78.37	83.95	71.03	63.11	42.19	20.01	6.77		36.22	70.36	90.60	75.82	64.27	76.71	1,977
(G) Rainfall (2004)		mm/10day	11	0	242	54	91	109	94	100	24	6	10	52	62	151	42	97	43	32	11	84	95	69	27	24	15	89	25	108	22	81	18	85	82	131	6	66	2,258
Effective Rainfall	(ER)		0	0	48.4	37.8	63.7	43.6	61.3	32.7	4						29.4	67.9	30.1	22.4	0	58.8	66.5	48.3	18.9	16.8	0	62.3	17.5	20	6.8		0	59.5	57.4	52.4	0	46.2	973
(H) Irrigation Water Requirement	(IWR)	mm/10day	77.2	78.7	36.6	43.5	14.8	14.5	0.0	0.0	0.0						22.8	19.4	80.3	60.9	68.1	15.2	19.5	31.6	59.5	67.2	71.0	0.8	24.7	0.0	0.0		36.2	10.9	33.2	23.4	64.3	30.5	1,005
(F)-(G)		mm/day	7.72	7.87	3.32	4.35	1.48	1.81	0.00	0.00	0.00						2.07	1.94	8.03	6.09	6.81	1.52	1.77	3.16	5.95	6.10	7.10	0.08	2.47	0.00	0.00		3.62	1.09	3.32	2.34	6.43	2.77	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	16.09	16.40	6.92	9.06	3.08	3.78	0.00	0.00	0.00						4.32	4.04	16.72	12.68	14.19	3.16	3.68	6.58	12.39	12.72	14.80	0.17	5.14	0.00	0.00		7.55	2.26	6.92	4.88	13.39	5.78	
(H)/(I)		lit/sec/ha	1.86	1.90	0.80	1.05	0.36	0.44	0.00	0.00	0.00						0.50	0.47	1.94	1.47	1.64	0.37	0.43	0.76	1.43	1.47	1.71	0.02	0.60	0.00	0.00		0.87	0.26	0.80	0.56	1.55	0.67	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

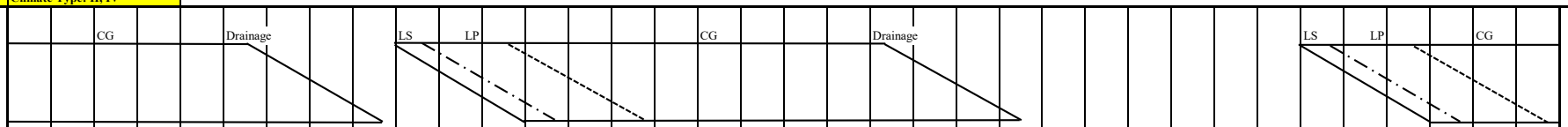
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: VIII
Province: Southern Leyte — **Climate Type: II, IV**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet										10	10	10	10	10	11	10	10	10	10	10	11	10	10	5													
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.03			5.58			6.63			7.10			6.05			5.70			5.11			5.14			4.88			5.03			4.65			4.72			
(D) Area Factor																																							
Land Soaking Stage	(Als)											0.152	0.233	0.233	0.082																								
Land Preparation Stage	(Alp)	(Wet)										0.015	0.267	0.585	0.652	0.400	0.074																						
Crop Growing Stage	(Acg)													0.015	0.267	0.600	0.926	1.000	1.000	1.000	1.000	1.000	0.962	0.667	0.333	0.038													
Land Soaking Stage	(Als)																																0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet										0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85													
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150										29.68	29.68	29.68	28.75																								
(Dry)		120																															23.23	23.23	23.23	23.30			
Land Preparation Stage	(LP)											8.25	8.25	8.25	7.32	7.32	7.32																6.09	6.09	6.09	6.15	6.15	6.15	
Crop Growing Stage	(CG)		5.73	5.89	5.73	6.14	5.86	5.41	6.36	6.17	5.64			6.04	5.45	5.93	6.47	6.50	6.67	6.50	5.62	5.37	4.96	4.93	4.78	4.37									3.95	4.25	4.63	5.05	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	2.00	2.00	2.00	
Total	(FWR)	Wet										4.63	9.12	11.86	9.12	7.69	8.39	8.50	8.67	8.50	7.62	7.37	6.69	4.63	2.26	0.24													
		Dry	7.73	7.89	7.73	8.14	7.86	7.27	6.13	3.27	0.57																						3.62	7.04	9.07	7.59	6.44	6.98	
10-day FWR			77.34	78.85	85.08	81.38	78.59	58.17	61.31	32.66	3.96	46.35	91.17	118.60	91.21	76.87	92.27	84.98	86.69	84.98	76.21	73.66	73.62	46.25	22.58	1.21							36.23	70.40	90.67	75.91	64.37	76.82	2,038
(G) Rainfall (2004)		mm/10day	17	0	238	66	102	98	98	107	17	11	7	70	42	104	33	94	36	16	3	60	79	60	31	28	2	89	12	85	30	80	0	50	72	149	10	57	2,053
Effective Rainfall	(ER)		0	0	47.6	46.2	40.8	58.2	61.3	32.7	0	0	0	49	29.4	41.6	23.1	65.8	25.2	0	0	42	55.3	42	21.7	1.2							0	35	50.4	59.6	0	39.9	868
(H) Irrigation Water Requirement	(IWR)	mm/10day	77.3	78.9	37.5	35.2	37.8	0.0	0.0	0.0	4.0	46.3	91.2	69.6	61.8	35.3	69.2	19.2	61.5	85.0	76.2	31.7	18.3	4.3	0.9	0.0							36.2	35.4	40.3	16.3	64.4	36.9	1,170
(F)-(G)		mm/day	7.73	7.89	3.41	3.52	3.78	0.00	0.00	0.00	0.57	4.63	9.12	6.96	6.18	3.53	6.29	1.92	6.15	8.50	7.62	3.17	1.67	0.43	0.09	0.00							3.62	3.54	4.03	1.63	6.44	3.36	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	16.11	16.43	7.10	7.33	7.87	0.00	0.00	0.00	1.18	9.66	18.99	14.50	12.88	7.35	13.10	4.00	12.81	17.70	15.88	6.59	3.47	0.89	0.18	0.00							7.55	7.38	8.39	3.40	13.41	6.99	
(H)/(I)		lit/sec/ha	1.86	1.90	0.82	0.85	0.91	0.00	0.00	0.00	0.14	1.12	2.20	1.68	1.49	0.85	1.52	0.46	1.48	2.05	1.84	0.76	0.40	0.10	0.02	0.00							0.87	0.85	0.97	0.39	1.55	0.81	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: VIII
Province: Northern Samar — **Climate Type: II**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)

			CG			Drainage				LS	LP						CG				Drainage										LS	LP			CG		

(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet										10	10	10	10	10	11	10	10	10	10	10	11	10	10	5													
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	5.04			5.59			6.65			7.15			6.09			5.74			5.14			5.16			4.90			5.05			4.67			4.73			
(D) Area Factor																																						
Land Soaking Stage	(Als)										0.152	0.233	0.233	0.082																								
Land Preparation Stage	(Alp) (Wet)										0.015	0.267	0.585	0.652	0.400	0.074																						
Crop Growing Stage	(Acg)												0.015	0.267	0.600	0.926	1.000	1.000	1.000	1.000	1.000	0.962	0.667	0.333	0.038													
Land Soaking Stage	(Als)																															0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp) (Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient (Kc)	Wet										0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85													
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement (FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS) 150										29.72	29.72	29.72	28.79																								
(Dry)	120																															23.25	23.25	23.25	23.31			
Land Preparation Stage	(LP)										8.29	8.29	8.29	7.36	7.36	7.36																6.11	6.11	6.11	6.16	6.16	6.16	
Crop Growing Stage	(CG)	5.75	5.90	5.75	6.15	5.87	5.42	6.38	6.18	5.65			6.08	5.48	5.97	6.52	6.54	6.72	6.54	5.65	5.40	4.99	4.95	4.80	4.39									3.97	4.26	4.64	5.06	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	2.00	2.00	2.00	
Total	(FWR) Wet										4.64	9.14	11.90	9.16	7.72	8.43	8.54	8.72	8.54	7.65	7.40	6.72	4.64	2.26	0.24													
	Dry	7.75	7.90	7.75	8.15	7.87	7.28	6.15	3.27	0.57																						3.63	7.05	9.08	7.60	6.45	6.99	
10-day FWR		77.46	78.97	85.20	81.49	78.70	58.25	61.45	32.74	3.96	46.42	91.39	118.97	91.56	77.25	92.74	85.44	87.16	85.44	76.54	73.97	73.92	46.38	22.64	1.21							36.26	70.49	90.81	76.00	64.46	76.94	2,044
(G) Rainfall (1983)	mm/10day	48	36	57	7	11	5	26	8	17	2	11	15	1	3	25	12	21	104	116	179	100	62	32	22	29	72	88	87	139	73	53	223	180	219	185	209	2,477
Effective Rainfall	(ER)	33.6	25.2	39.9	0	0	0	18.2	0	0	0	0	0	0	0	17.5	0	14.7	41.6	46.4	71.6	70	43.4	22.4	1.2							36.3	44.6	72	43.8	64.5	41.8	749
(H) Irrigation Water Requirement	(IWR) mm/10day	43.9	53.8	45.3	81.5	78.7	58.3	43.3	32.7	4.0	46.4	91.4	119.0	91.6	77.2	75.2	85.4	72.5	43.8	30.1	2.4	3.9	3.0	0.2	0.0							0.0	25.9	18.8	32.2	0.0	35.1	1,296
(F)-(G)	mm/day	4.39	5.38	4.12	8.15	7.87	7.28	4.33	3.27	0.57	4.64	9.14	11.90	9.16	7.72	6.84	8.54	7.25	4.38	3.01	0.24	0.36	0.30	0.02	0.00							0.00	2.59	1.88	3.22	0.00	3.19	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	9.14	11.20	8.58	16.98	16.39	15.17	9.01	6.82	1.18	9.67	19.04	24.79	19.08	16.09	14.25	17.80	15.10	9.13	6.28	0.49	0.74	0.62	0.05	0.00							0.00	5.39	3.92	6.71	0.00	6.66	
(H)/(I)	lit/sec/ha	1.06	1.30	0.99	1.96	1.90	1.76	1.04	0.79	0.14	1.12	2.20	2.87	2.21	1.86	1.65	2.06	1.75	1.06	0.73	0.06	0.09	0.07	0.01	0.00							0.00	0.62	0.45	0.78	0.00	0.77	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: VIII

Province: Western Samar — **Climate Type: II, IV**

(A) Cropping Pattern (30 days Staggered Period)

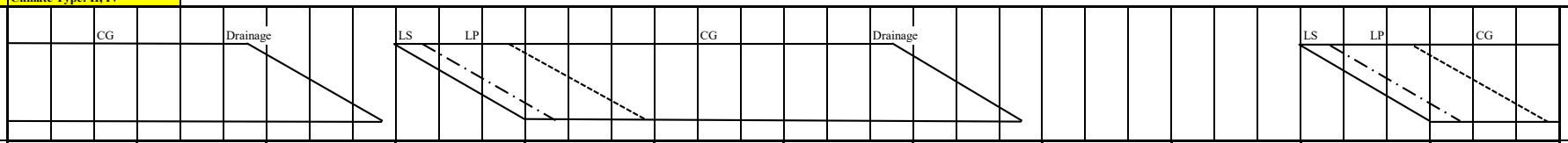
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 110 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet										10	10	10	10	10	11	10	10	10	10	10	11	10	10	5													
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.01			5.56			6.62			7.12			6.05			5.68			5.09			5.10			4.85			5.00			4.64			4.70			
(D) Area Factor																																							
Land Soaking Stage	(Als)											0.152	0.233	0.233	0.082																								
Land Preparation Stage	(Alp)	(Wet)										0.015	0.267	0.585	0.652	0.400	0.074																						
Crop Growing Stage	(Acg)													0.015	0.267	0.600	0.926	1.000	1.000	1.000	1.000	1.000	0.962	0.667	0.333	0.038													
Land Soaking Stage	(Als)																															0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																														0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																							0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet										0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85													
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150										29.69	29.69	29.69	28.75																								
(Dry)		120																															23.23	23.23	23.23	23.28			
Land Preparation Stage	(LP)											8.27	8.27	8.27	7.32	7.32	7.32																6.08	6.08	6.08	6.14	6.14	6.14	
Crop Growing Stage	(CG)		5.71	5.86	5.71	6.12	5.84	5.39	6.36	6.16	5.63			6.05	5.45	5.93	6.47	6.48	6.65	6.48	5.60	5.34	4.94	4.90	4.74	4.34									3.94	4.23	4.61	5.03	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	2.00	2.00	2.00	
Total	(FWR)	Wet										4.64	9.13	11.87	9.12	7.69	8.39	8.48	8.65	8.48	7.60	7.34	6.67	4.60	2.25	0.24													
		Dry	7.71	7.86	7.71	8.12	7.84	7.25	6.12	3.26	0.56																						3.62	7.04	9.06	7.57	6.42	6.96	
10-day FWR			77.11	78.62	84.83	81.16	78.38	58.02	61.24	32.63	3.95	46.37	91.26	118.75	91.21	76.87	92.27	84.75	86.46	84.75	75.99	73.45	73.41	46.00	22.45	1.20							36.22	70.36	90.60	75.73	64.18	76.59	2,035
(G) Rainfall (1990)		mm/10day	187	0	76	12	18	8	39	21	0	9	15	28	18	170	107	57	168	117	79	121	45	75	83	33	24	90	105	144	148	126	127	233	40	84	32	110	2,749
Effective Rainfall	(ER)		74.8	0	53.2	0	0	0	27.3	14.7	0	0	0	19.6	0	68	42.8	39.9	67.2	46.8	55.3	48.4	31.5	46	22.5	1.2							36.2	46.6	28	58.8	22.4	44	895
(H) Irrigation Water Requirement	(IWR)	mm/10day	2.3	78.6	31.6	81.2	78.4	58.0	33.9	17.9	4.0	46.4	91.3	99.1	91.2	8.9	49.5	44.9	19.3	38.0	20.7	25.0	41.9	0.0	0.0	0.0							0.0	23.8	62.6	16.9	41.8	32.6	1,140
(F)-(G)		mm/day	0.23	7.86	2.88	8.12	7.84	7.25	3.39	1.79	0.56	4.64	9.13	9.91	9.12	0.89	4.50	4.49	1.93	3.80	2.07	2.50	3.81	0.00	0.00	0.00							0.00	2.38	6.26	1.69	4.18	2.96	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	0.48	16.38	5.99	16.91	16.33	15.11	7.07	3.73	1.18	9.66	19.01	20.66	19.00	1.85	9.37	9.34	4.01	7.91	4.31	5.22	7.94	0.00	0.00	0.00							0.00	4.95	13.04	3.53	8.70	6.17	
(H)/(I)		lit/sec/ha	0.06	1.90	0.69	1.96	1.89	1.75	0.82	0.43	0.14	1.12	2.20	2.39	2.20	0.21	1.08	1.08	0.46	0.92	0.50	0.60	0.92	0.00	0.00	0.00							0.00	0.57	1.51	0.41	1.01	0.71	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: VIII
Province: Eastern Samar — **Climate Type: II**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)

				CG			Drainage			LS		LP						CG				Drainage									LS		LP			CG		

(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet										10	10	10	10	10	11	10	10	10	10	10	11	10	10	5												
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.02			5.56			6.59			7.06			6.02			5.69			5.11			5.14			4.88			5.02			4.64			4.70		
(D) Area Factor																																						
Land Soaking Stage	(Als)											0.152	0.233	0.233	0.082																							
Land Preparation Stage	(Alp)	(Wet)										0.015	0.267	0.585	0.652	0.400	0.074																					
Crop Growing Stage	(Acg)													0.015	0.267	0.600	0.926	1.000	1.000	1.000	1.000	1.000	0.962	0.667	0.333	0.038													
Land Soaking Stage	(Als)																																0.152	0.233	0.233	0.082		
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.267	0.585	0.652	0.400	0.074
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926
(E) Crop Coefficient	(Kc)	Wet										0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85												
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	150										29.64	29.64	29.64	28.73																							
(Dry)		120																															23.23	23.23	23.23	23.28		
Land Preparation Stage	(LP)											8.21	8.21	8.21	7.30	7.30	7.30																6.08	6.08	6.08	6.14	6.14	6.14
Crop Growing Stage	(CG)		5.72	5.87	5.72	6.12	5.84	5.39	6.33	6.13	5.60			6.00	5.42	5.90	6.44	6.49	6.66	6.49	5.62	5.37	4.96	4.93	4.78	4.37									3.94	4.23	4.61	5.03
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00									2.00	2.00	2.00	2.00
Total	(FWR)	Wet										4.63	9.10	11.83	9.09	7.66	8.36	8.49	8.66	8.49	7.62	7.37	6.69	4.63	2.26	0.24												
		Dry	7.72	7.87	7.72	8.12	7.84	7.25	6.10	3.25	0.56																						3.62	7.04	9.06	7.57	6.42	6.96	
10-day FWR			77.23	78.73	84.95	81.16	78.38	58.02	61.03	32.51	3.94	46.29	90.99	118.31	90.94	76.59	91.92	84.87	86.57	84.87	76.21	73.66	73.62	46.25	22.58	1.21							36.22	70.36	90.60	75.73	64.18	76.59	2,035
(G) Rainfall (1990)		mm/10day	220	0	51	13	30	7	48	21	1	5	4	52	26	200	106	39	149	101	61	103	54	48	64	32	23	93	83	143	117	137	121	260	50	154	44	107	2,767
Effective Rainfall	(ER)		44	0	35.7	0	21	0	33.6	14.7	0	0	0	36.4	18.2	40	42.4	27.3	59.6	40.4	42.7	41.2	37.8	33.6	22.6	1.2							36.2	52	35	61.6	30.8	42.8	851
(H) Irrigation Water Requirement	(IWR)	mm/10day	33.2	78.7	49.3	81.2	57.4	58.0	27.4	17.8	3.9	46.3	91.0	81.9	72.7	36.6	49.5	57.6	27.0	44.5	33.5	32.5	35.8	12.7	0.0	0.0							0.0	18.4	55.6	14.1	33.4	33.8	1,184
(F)-(G)		mm/day	3.32	7.87	4.48	8.12	5.74	7.25	2.74	1.78	0.56	4.63	9.10	8.19	7.27	3.66	4.50	5.76	2.70	4.45	3.35	3.25	3.26	1.27	0.00	0.00							0.00	1.84	5.56	1.41	3.34	3.07	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48							0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	6.92	16.40	9.33	16.91	11.95	15.11	5.72	3.71	1.17	9.64	18.96	17.06	15.15	7.62	9.38	11.99	5.62	9.26	6.98	6.76	6.78	2.64	0.00	0.00							0.00	3.82	11.58	2.94	6.95	6.40	
(H)/(I)		lit/sec/ha	0.80	1.90	1.08	1.96	1.38	1.75	0.66	0.43	0.14	1.12	2.19	1.98	1.75	0.88	1.09	1.39	0.65	1.07	0.81	0.78	0.79	0.31	0.00	0.00							0.00	0.44	1.34	0.34	0.80	0.74	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

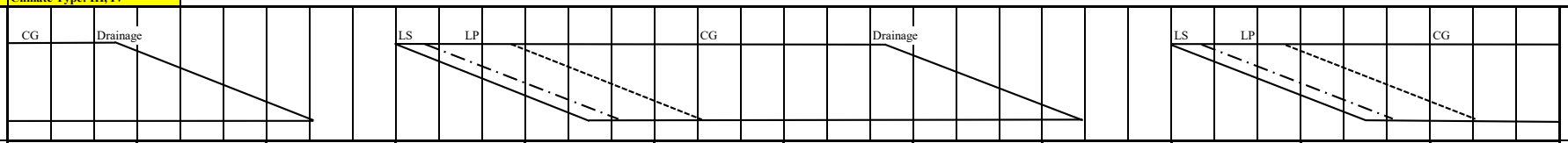
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: IX
Province: Zamboanga del Norte — **Climate Type: III, IV**

(A) Cropping Pattern (45 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet										10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	9												
		Dry	10	10	11	10	10	8	10	1																				10	10	11	10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.00			5.55			6.61			7.06			5.94			5.57			4.99			5.01			4.76			4.93			4.60			4.68			
(D) Area Factor																																							
Land Soaking Stage	(Als)											0.101	0.156	0.156	0.156	0.128	0.004																						
Land Preparation Stage	(Alp)	(Wet)										0.010	0.178	0.390	0.444	0.444	0.363	0.133	0.001																				
Crop Growing Stage	(Acg)													0.010	0.178	0.400	0.633	0.867	0.999	1.000	1.000	1.000	0.975	0.778	0.556	0.333	0.090												
Land Soaking Stage	(Als)																													0.101	0.156	0.156	0.156	0.116	0.001				
Land Preparation Stage	(Alp)	(Dry)																												0.010	0.178	0.395	0.444	0.444	0.354	0.133	0.001		
Crop Growing Stage	(Acg)		1.000	1.000	0.964	0.756	0.533	0.333	0.133	0.001																						0.016	0.200	0.422	0.644	0.867	0.999	1.000	
(E) Crop Coefficient	(Kc)	Wet										0.80	0.82	0.85	0.90	0.94	1.02	1.10	1.14	1.14	1.12	1.08	1.01	0.97	0.96	0.93	0.85												
		Dry	1.12	1.08	1.01	0.97	0.96	0.93	0.85	0.85																				0.80	0.82	0.85	0.90	0.94	1.02	1.10	1.14	1.14	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150										29.64	29.64	29.64	28.66	28.66	28.66	28.33	28.33	28.33	27.82	27.82																	
(Dry)		120																												23.48	23.48	23.48	23.19	23.19	23.19	23.26	23.26	23.26	
Land Preparation Stage	(LP)											8.21	8.21	8.21	7.23	7.23	7.23	6.90	6.90	6.90	6.39	6.39	6.39							6.34	6.34	6.34	6.05	6.05	6.05	6.12	6.12	6.12	
Crop Growing Stage	(CG)		5.60	5.40	5.05	5.38	5.33	5.16	5.62	5.62				6.00	5.35	5.58	6.06	6.13	6.35	6.35	5.59	5.39	5.04	4.86	4.81	4.66	4.05					4.19	4.14	4.32	4.69	5.15	5.34	5.34	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00					2.00	2.00	2.00	2.00	2.00	2.00	2.00	
Total	(FWR)	Wet										3.08	6.09	7.91	8.99	9.91	7.84	7.96	8.35	8.35	7.59	7.39	6.86	5.34	3.79	2.22	0.54												
		Dry	7.60	7.40	6.80	5.58	3.91	2.38	1.01	0.01																				2.43	4.79	6.27	7.53	8.04	6.47	7.01	7.33	7.34	
10-day FWR			76.00	74.00	74.76	55.82	39.06	19.08	10.13	0.01		30.76	60.86	79.07	89.87	99.10	86.23	79.64	83.48	83.50	75.89	73.89	75.50	53.37	37.86	24.39	4.90			24.35	47.91	68.92	75.31	80.44	64.74	70.11	73.34	80.69	1,973
(G) Rainfall (1981)		mm/10day	37	38	39	23	11	1	2	4	46	3	30	54	61	38	66	49	119	106	66	53	114	39	77	56	80	97	51	42	88	68	142	109	91	88	3	57	2,048
Effective Rainfall	(ER)		25.9	0	27.3	16.1	0	0	0	0		0	21	37.8	42.7	26.6	46.2	34.3	47.6	42.4	46.2	37.1	45.6	27.3	37.9	24.4	4.9			24.4	47.9	47.6	56.8	43.6	63.7	61.6	0	39.9	977
(H) Irrigation Water Requirement	(IWR)	mm/10day	50.1	74.0	47.5	39.7	39.1	19.1	10.1	0.0		30.8	39.9	41.3	47.2	72.5	40.0	45.3	35.9	41.1	29.7	36.8	29.9	26.1	0.0	0.0	0.0			0.0	0.0	21.3	18.5	36.8	1.0	8.5	73.3	40.8	996
(F)-(G)		mm/day	5.01	7.40	4.31	3.97	3.91	2.38	1.01	0.01		3.08	3.99	4.13	4.72	7.25	3.64	4.53	3.59	4.11	2.97	3.68	2.72	2.61	0.00	0.00	0.00			0.00	0.00	1.94	1.85	3.68	0.10	0.85	7.33	3.71	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48			0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	10.44	15.42	8.99	8.27	8.14	4.97	2.11	0.02		6.41	8.30	8.60	9.83	15.10	7.58	9.45	7.48	8.56	6.19	7.67	5.66	5.43	0.00	0.00	0.00			0.00	0.00	4.04	3.86	7.68	0.22	1.77	15.28	7.72	
(H)/(I)		lit/sec/ha	1.21	1.78	1.04	0.96	0.94	0.58	0.24	0.00		0.74	0.96	1.00	1.14	1.75	0.88	1.09	0.87	0.99	0.72	0.89	0.66	0.63	0.00	0.00	0.00			0.00	0.00	0.47	0.45	0.89	0.03	0.21	1.77	0.89	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

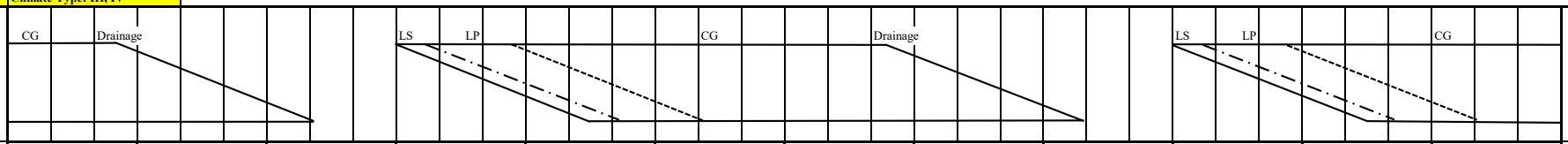
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: IX
Province: Zamboanga del Sur — **Climate Type: III, IV**

(A) Cropping Pattern (45 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet										10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	9												
		Dry	10	10	11	10	10	8	10	1																				10	10	11	10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.06			5.62			6.67			7.09			5.94			5.57			4.99			5.00			4.77			4.95			4.62			4.72			
(D) Area Factor																																							
Land Soaking Stage	(Als)											0.101	0.156	0.156	0.156	0.128	0.004																						
Land Preparation Stage	(Alp)	(Wet)										0.010	0.178	0.390	0.444	0.444	0.363	0.133	0.001																				
Crop Growing Stage	(Acg)													0.010	0.178	0.400	0.633	0.867	0.999	1.000	1.000	1.000	0.975	0.778	0.556	0.333	0.090												
Land Soaking Stage	(Als)																													0.101	0.156	0.156	0.156	0.116	0.001				
Land Preparation Stage	(Alp)	(Dry)																												0.010	0.178	0.395	0.444	0.444	0.354	0.133	0.001		
Crop Growing Stage	(Acg)		1.000	1.000	0.964	0.756	0.533	0.333	0.133	0.001																						0.016	0.200	0.422	0.644	0.867	0.999	1.000	
(E) Crop Coefficient	(Kc)	Wet										0.80	0.82	0.85	0.90	0.94	1.02	1.10	1.14	1.14	1.12	1.08	1.01	0.97	0.96	0.93	0.85												
		Dry	1.12	1.08	1.01	0.97	0.96	0.93	0.85	0.85																				0.80	0.82	0.85	0.90	0.94	1.02	1.10	1.14	1.14	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150										29.67	29.67	29.67	28.66	28.66	28.66	28.33	28.33	28.33	27.82	27.82																	
(Dry)		120																												23.50	23.50	23.50	23.21	23.21	23.21	23.30	23.30	23.30	
Land Preparation Stage	(LP)											8.24	8.24	8.24	7.23	7.23	7.23	6.90	6.90	6.90	6.39	6.39	6.39							6.36	6.36	6.36	6.07	6.07	6.07	6.15	6.15	6.15	
Crop Growing Stage	(CG)		5.67	5.46	5.11	5.45	5.40	5.23	5.67	5.67				6.03	5.35	5.58	6.06	6.13	6.35	6.35	5.59	5.39	5.04	4.85	4.80	4.65	4.05					4.21	4.16	4.34	4.71	5.19	5.38	5.38	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00					2.00	2.00	2.00	2.00	2.00	2.00	2.00	
Total	(FWR)	Wet										3.08	6.09	7.92	8.99	9.91	7.84	7.96	8.35	8.35	7.59	7.39	6.86	5.33	3.78	2.21	0.54												
		Dry	7.67	7.46	6.85	5.63	3.94	2.41	1.02	0.01																				2.44	4.80	6.28	7.55	8.06	6.49	7.05	7.38	7.38	
10-day FWR			76.67	74.65	75.40	56.33	39.42	19.25	10.20	0.01		30.79	60.95	79.22	89.87	99.10	86.23	79.64	83.48	83.50	75.89	73.89	75.50	53.29	37.81	24.36	4.90			24.37	47.97	69.03	75.45	80.62	64.93	70.54	73.80	81.19	1,978
(G) Rainfall (1998)		mm/10day	4	11	11	3	8	13	11	1	5	1	3	21	20	36	70	68	76	150	60	94	112	68	90	83	44	50	87	158	119	114	148	102	114	66	63	67	2,151
Effective Rainfall	(ER)		0	0	0	0	0	0	0	0		0	0	14.7	14	25.2	49	47.6	53.2	60	42	65.8	44.8	47.6	37.8	24.4	4.9			24.4	47.6	45.6	59.2	40.8	45.6	46.2	44.1	46.9	931
(H) Irrigation Water Requirement	(IWR)	mm/10day	76.7	74.6	75.4	56.3	39.4	19.3	10.2	0.0		30.8	60.9	64.5	75.9	73.9	37.2	32.0	30.3	23.5	33.9	8.1	30.7	5.7	0.0	0.0	0.0			0.0	0.4	23.4	16.3	39.8	19.3	24.3	29.7	34.3	1,047
(F)-(G)		mm/day	7.67	7.46	6.85	5.63	3.94	2.41	1.02	0.01		3.08	6.09	6.45	7.59	7.39	3.38	3.20	3.03	2.35	3.39	0.81	2.79	0.57	0.00	0.00	0.00			0.00	0.04	2.13	1.63	3.98	1.93	2.43	2.97	3.12	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48			0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	15.97	15.55	14.28	11.74	8.21	5.01	2.13	0.02		6.41	12.70	13.44	15.81	15.40	7.05	6.68	6.31	4.90	7.06	1.69	5.81	1.19	0.00	0.00	0.00			0.00	0.08	4.44	3.39	8.30	4.03	5.07	6.19	6.49	
(H)/(I)		lit/sec/ha	1.85	1.80	1.65	1.36	0.95	0.58	0.25	0.00		0.74	1.47	1.56	1.83	1.78	0.82	0.77	0.73	0.57	0.82	0.20	0.67	0.14	0.00	0.00	0.00			0.00	0.01	0.51	0.39	0.96	0.47	0.59	0.72	0.75	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

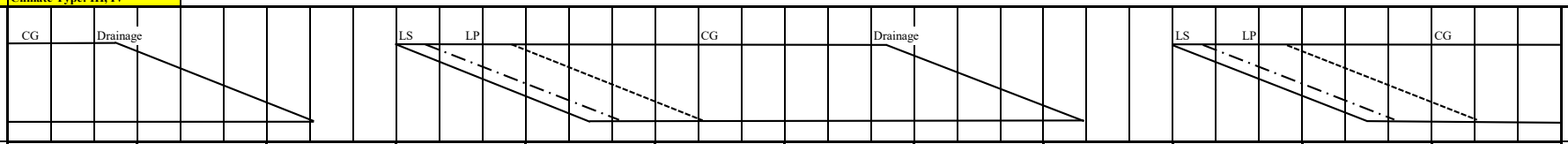
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: IX
Province: Zamboanga Sibugay — **Climate Type: III, IV**

(A) Cropping Pattern (45 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet										10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	9												
		Dry	10	10	11	10	10	8	10	1																				10	10	11	10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.13			5.69			6.74			7.14			6.00			5.63			5.05			5.06			4.82			5.01			4.68			4.78			
(D) Area Factor																																							
Land Soaking Stage	(Als)											0.101	0.156	0.156	0.156	0.128	0.004																						
Land Preparation Stage	(Alp)	(Wet)										0.010	0.178	0.390	0.444	0.444	0.363	0.133	0.001																				
Crop Growing Stage	(Acg)													0.010	0.178	0.400	0.633	0.867	0.999	1.000	1.000	1.000	0.975	0.778	0.556	0.333	0.090												
Land Soaking Stage	(Als)																													0.101	0.156	0.156	0.156	0.116	0.001				
Land Preparation Stage	(Alp)	(Dry)																												0.010	0.178	0.395	0.444	0.444	0.354	0.133	0.001		
Crop Growing Stage	(Acg)		1.000	1.000	0.964	0.756	0.533	0.333	0.133	0.001																						0.016	0.200	0.422	0.644	0.867	0.999	1.000	
(E) Crop Coefficient	(Kc)	Wet										0.80	0.82	0.85	0.90	0.94	1.02	1.10	1.14	1.14	1.12	1.08	1.01	0.97	0.96	0.93	0.85												
		Dry	1.12	1.08	1.01	0.97	0.96	0.93	0.85	0.85																				0.80	0.82	0.85	0.90	0.94	1.02	1.10	1.14	1.14	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150										29.71	29.71	29.71	28.71	28.71	28.71	28.38	28.38	28.38	27.87	27.87																	
(Dry)		120																												23.55	23.55	23.55	23.26	23.26	23.26	23.35	23.35	23.35	
Land Preparation Stage	(LP)											8.28	8.28	8.28	7.28	7.28	7.28	6.95	6.95	6.95	6.44	6.44	6.44							6.41	6.41	6.41	6.12	6.12	6.12	6.21	6.21	6.21	
Crop Growing Stage	(CG)		5.75	5.54	5.18	5.52	5.46	5.29	5.73	5.73				6.07	5.40	5.64	6.12	6.19	6.42	6.42	5.66	5.45	5.10	4.91	4.86	4.71	4.10					4.26	4.21	4.40	4.77	5.26	5.45	5.45	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00					2.00	2.00	2.00	2.00	2.00	2.00	2.00	
Total	(FWR)	Wet										3.08	6.11	7.95	9.03	9.96	7.90	8.03	8.42	8.42	7.66	7.45	6.92	5.37	3.81	2.23	0.55												
		Dry	7.75	7.54	6.92	5.68	3.98	2.43	1.03	0.01																				2.44	4.81	6.31	7.59	8.12	6.55	7.12	7.45	7.45	
10-day FWR			77.46	75.40	76.15	56.85	39.77	19.43	10.28	0.01		30.84	61.09	79.46	90.28	99.63	86.87	80.28	84.17	84.18	76.56	74.54	76.15	53.75	38.13	24.56	4.94			24.43	48.15	69.36	75.88	81.15	65.51	71.18	74.48	81.94	1,993
(G) Rainfall (1981)		mm/10day	42	26	42	18	16	0	2	11	83	14	51	78	91	72	107	50	132	115	80	61	126	35	71	78	103	106	57	34	90	65	112	102	86	72	2	48	2,278
Effective Rainfall	(ER)		29.4	18.2	29.4	0	0	0	0	0		0	35.7	54.6	63.7	50.4	42.8	35	52.8	46	56	42.7	50.4	24.5	38.1	24.6	4.9			23.8	48.2	45.5	44.8	40.8	60.2	50.4	0	33.6	1,047
(H) Irrigation Water Requirement	(IWR)	mm/10day	48.1	57.2	46.8	56.8	39.8	19.4	10.3	0.0		30.8	25.4	24.9	26.6	49.2	44.1	45.3	31.4	38.2	20.6	31.8	25.8	29.2	0.0	0.0	0.0			0.6	0.0	23.9	31.1	40.4	5.3	20.8	74.5	48.3	946
(F)-(G)		mm/day	4.81	5.72	4.25	5.68	3.98	2.43	1.03	0.01		3.08	2.54	2.49	2.66	4.92	4.01	4.53	3.14	3.82	2.06	3.18	2.34	2.92	0.00	0.00	0.00			0.06	0.00	2.17	3.11	4.04	0.53	2.08	7.45	4.39	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48			0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	10.01	11.92	8.85	11.84	8.29	5.06	2.14	0.02		6.42	5.29	5.18	5.54	10.26	8.35	9.43	6.53	7.95	4.28	6.63	4.88	6.09	0.00	0.00	0.00			0.13	0.00	4.52	6.47	8.41	1.11	4.33	15.52	9.16	
(H)/(I)		lit/sec/ha	1.16	1.38	1.02	1.37	0.96	0.59	0.25	0.00		0.74	0.61	0.60	0.64	1.19	0.97	1.09	0.76	0.92	0.50	0.77	0.56	0.71	0.00	0.00	0.00			0.02	0.00	0.52	0.75	0.97	0.13	0.50	1.80	1.06	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

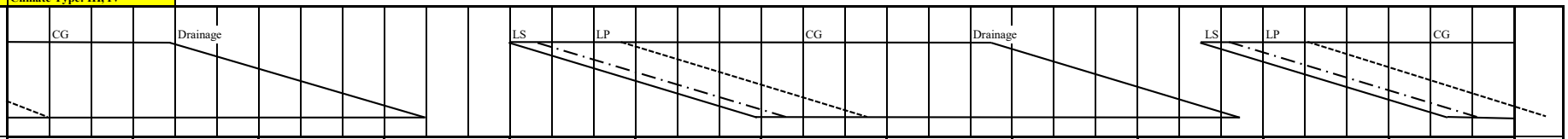
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: X
Province: Bukidnon — **Climate Type: III, IV**

(A) Cropping Pattern (60 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet													10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	4						
		Dry	10	10	11	10	10	8	10	10	11	10																			5	11	10	10	10	10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.72			5.25			6.26			6.72			5.66			5.29			4.74			4.75			4.52			4.68			4.35			4.43		
(D) Area Factor																																						
Land Soaking Stage	(Als)														0.076	0.117	0.117	0.117	0.117	0.116	0.030																	
Land Preparation Stage	(Alp)	(Wet)													0.008	0.133	0.296	0.333	0.333	0.333	0.320	0.183	0.027															
Crop Growing Stage	(Acg)																0.012	0.150	0.317	0.483	0.650	0.817	0.973	1.000	1.000	0.973	0.817	0.650	0.483	0.317	0.150	0.012						
Land Soaking Stage	(Als)																														0.021	0.114	0.117	0.117	0.117	0.117	0.087	0.001
Land Preparation Stage	(Alp)	(Dry)	0.083																													0.061	0.233	0.333	0.333	0.333	0.333	0.258
Crop Growing Stage	(Acg)		0.917	1.000	1.000	0.999	0.900	0.750	0.600	0.433	0.258	0.083																						0.068	0.233	0.400	0.567	0.742
(E) Crop Coefficient	(Kc)	Wet													0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.10	1.06	1.04	1.01	0.97	0.96	0.93	0.85						
		Dry	1.09	1.11	1.10	1.06	1.04	1.01	0.97	0.96	0.93	0.85																			0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	150													28.31	28.31	28.31	27.98	27.98	27.98	27.50																	
(Dry)		120																													23.16	23.16	22.87	22.87	22.87	22.94	22.94	22.94
Land Preparation Stage	(LP)		6.05												6.88	6.88	6.88	6.56	6.56	6.56	6.07	6.07	6.07								6.02	6.02	5.73	5.73	5.73	5.80	5.80	5.80
Crop Growing Stage	(CG)		5.14	5.24	5.19	5.57	5.46	5.30	6.07	6.01	5.82	5.71					4.81	4.76	4.97	5.24	4.83	5.07	5.17	5.27	5.23	5.04	4.70	4.57	4.38	4.49	4.35	3.98		3.92	4.09	4.39	4.52	4.74
Percolation	(P)	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90					1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90		1.90	1.90	1.90	1.90	1.90
Total	(FWR)	Wet													2.21	4.23	5.43	6.46	7.64	8.88	7.15	6.81	7.04	7.17	7.13	6.75	5.39	4.20	3.04	2.03	0.94	0.07						
		Dry	6.96	7.14	7.09	7.46	6.62	5.40	4.78	3.42	1.99	0.63																			0.49	3.01	4.01	4.98	5.98	7.13	7.57	6.45
10-day FWR			69.63	71.39	78.01	74.58	66.24	43.22	47.83	34.25	21.91	6.32			22.07	42.27	59.72	64.56	76.36	88.76	71.45	68.07	77.44	71.73	71.25	74.23	53.93	42.02	30.35	20.27	11.81	33.36	40.11	49.79	59.79	71.29	75.66	70.90	1,861
(G) Rainfall (1979)		mm/10day	13	13	37	29	11	25	106	34	25	10	39	54	35	146	132	102	167	193	97	125	91	61	40	116	47	137	111	109	78	100	107	48	62	62	28	74	2,664
Effective Rainfall	(ER)		0	0	25.9	20.3	0	17.5	42.4	23.8	17.5	0			22.1	42.3	52.8	40.8	66.8	77.2	67.9	50	63.7	42.7	28	46.4	32.9	42	30.4	20.3	11.8	33.4	40.1	33.6	43.4	43.4	19.6	51.8	1,151
(H) Irrigation Water Requirement	(IWR)	mm/10day	69.6	71.4	52.1	54.3	66.2	25.7	5.4	10.4	4.4	6.3			0.0	0.0	6.9	23.8	9.6	11.6	3.6	18.1	13.7	29.0	43.3	27.8	21.0	0.0	0.0	0.0	0.0	0.0	0.0	16.2	16.4	27.9	56.1	19.1	710
(F)-(G)		mm/day	6.96	7.14	4.74	5.43	6.62	3.21	0.54	1.04	0.40	0.63			0.00	0.00	0.63	2.38	0.96	1.16	0.36	1.81	1.25	2.90	4.33	2.53	2.10	0.00	0.00	0.00	0.00	0.00	0.00	1.62	1.64	2.79	5.61	1.74	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48			0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48
(J) Diversion Water Requirement	(DWR)	mm/day	14.51	14.87	9.87	11.31	13.80	6.70	1.13	2.18	0.84	1.32			0.00	0.00	1.31	4.95	1.99	2.41	0.74	3.76	2.60	6.05	9.01	5.27	4.38	0.00	0.00	0.00	0.00	0.00	0.00	3.37	3.41	5.81	11.68	3.62	
(H)/(I)		lit/sec/ha	1.68	1.72	1.14	1.31	1.60	0.78	0.13	0.25	0.10	0.15			0.00	0.00	0.15	0.57	0.23	0.28	0.09	0.44	0.30	0.70	1.04	0.61	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.40	0.67	1.35	0.42	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

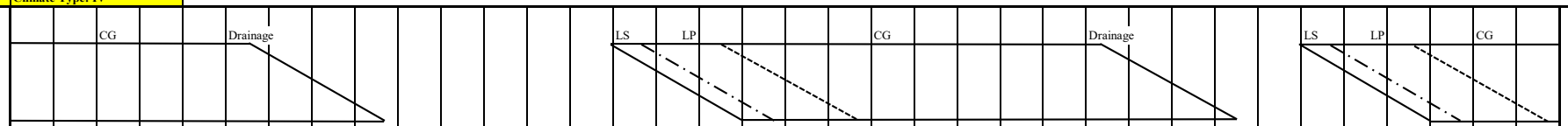
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: X
Province: Camiguin — **Climate Type: IV**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	5								
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.01			5.54			6.57			7.04			5.99			5.67			5.09			5.11			4.85			5.01			4.65			4.71			
(D) Area Factor																																							
Land Soaking Stage	(Als)																0.154	0.226	0.226	0.079																			
Land Preparation Stage	(Alp)	(Wet)															0.023	0.290	0.587	0.631	0.387	0.079																	
Crop Growing Stage	(Acg)																		0.026	0.090	0.613	0.921	1.000	1.000	1.000	1.000	1.000	0.942	0.645	0.323	0.040								
Land Soaking Stage	(Als)																																0.152	0.226	0.226	0.079			
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.258	0.566	0.663	0.419	0.072	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet															0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85								
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150															28.70	28.42	28.42	28.42																			
(Dry)		120																															23.23	23.23	23.23	23.29			
Land Preparation Stage	(LP)																7.27	6.99	6.99	6.99	6.48	6.48	6.479										6.09	6.09	6.09	6.14	6.14	6.14	
Crop Growing Stage	(CG)		5.71	5.86	5.71	6.09	5.82	5.37	6.31	6.11	5.58								4.82	5.10	4.99	5.45	5.80	5.98	5.83	5.62	5.09	4.70	4.66	4.66	4.26				3.95	4.24	4.62	5.04	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR)	Wet															4.59	8.45	10.70	7.29	6.79	7.37	7.80	7.98	7.83	7.62	7.09	6.32	4.29	2.15	0.25								
		Dry	7.71	7.86	7.71	8.09	7.82	7.23	6.09	3.24	0.56																						3.62	6.82	8.79	7.58	6.54	6.96	
10-day FWR			77.11	78.62	84.83	80.94	78.17	57.87	60.89	32.44	3.93						50.46	84.49	107.03	72.95	67.91	73.70	85.83	79.79	78.25	83.83	70.93	63.16	42.93	21.51	1.25		36.23	68.23	87.88	75.80	65.44	76.57	1,949
(G) Rainfall (2015)		mm/10day	225	113	134	67	0	5	10	8	15	0	17	0	18	0	1	37	65	64	41	0	60	39	36	24	21	24	14	41	50	0	57	2	61	15	217	0	1,481
Effective Rainfall	(ER)		45	45.2	53.6	46.9	0	0	0	0	0						0	25.9	45.5	44.8	28.7	0	42	27.3	25.2	16.8	14.7	16.8	0	21.5	1.3		36.2	0	42.7	0	43.4	0	624
(H) Irrigation Water Requirement	(IWR)	mm/10day	32.1	33.4	31.2	34.0	78.2	57.9	60.9	32.4	3.9						50.5	58.6	61.5	28.1	39.2	73.7	43.8	52.5	53.1	67.0	56.2	46.4	42.9	0.0	0.0		0.0	68.2	45.2	75.8	22.0	76.6	1,325
(F)-(G)		mm/day	3.21	3.34	2.84	3.40	7.82	7.23	6.09	3.24	0.56						4.59	5.86	6.15	2.81	3.92	7.37	3.98	5.25	5.31	6.09	5.62	4.64	4.29	0.00	0.00		0.00	6.82	4.52	7.58	2.20	6.96	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	6.69	6.96	5.91	7.09	16.29	15.07	12.69	6.76	1.17						9.56	12.21	12.82	5.86	8.17	15.35	8.30	10.93	11.05	12.70	11.71	9.66	8.94	0.00	0.00		0.00	14.21	9.41	15.79	4.59	14.50	
(H)/(I)		lit/sec/ha	0.77	0.81	0.68	0.82	1.88	1.74	1.47	0.78	0.14						1.11	1.41	1.48	0.68	0.95	1.78	0.96	1.27	1.28	1.47	1.36	1.12	1.04	0.00	0.00		0.00	1.65	1.09	1.83	0.53	1.68	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

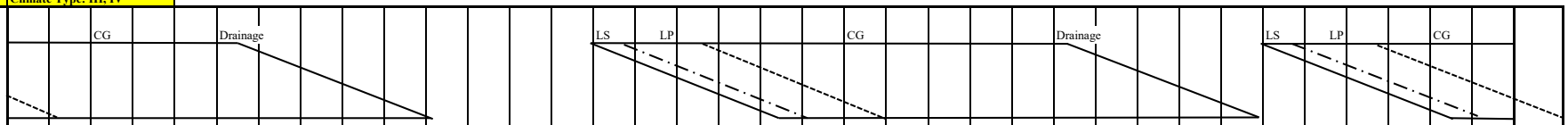
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: X
Province: Lanao del Norte — **Climate Type: III, IV**

(A) Cropping Pattern (45 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
(B) Month																																							
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	9							
		Dry	10	10	11	10	10	8	10	10	11	10	1																				10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.99			5.53			6.58			7.04			5.93			5.56			4.98			4.99			4.76			4.93			4.59			4.67			
(D) Area Factor																																							
Land Soaking Stage	(Als)																0.106	0.156	0.156	0.156	0.116	0.001																	
Land Preparation Stage	(Alp)	(Wet)															0.016	0.200	0.404	0.444	0.444	0.354	0.122																
Crop Growing Stage	(Acg)																		0.018	0.200	0.422	0.644	0.878	1.000	1.000	1.000	1.000	0.960	0.756	0.533	0.311	0.082							
Land Soaking Stage	(Als)																																0.101	0.156	0.156	0.156	0.115	0.004	
Land Preparation Stage	(Alp)	(Dry)	0.133	0.001																													0.010	0.178	0.390	0.444	0.444	0.299	
Crop Growing Stage	(Acg)		0.867	0.999	1.000	1.000	1.000	0.988	0.822	0.600	0.303	0.133	0.001																						0.010	0.178	0.400	0.697	
(E) Crop Coefficient	(Kc)	Wet															0.80	0.82	0.85	0.90	0.94	1.02	1.10	1.14	1.14	1.12	1.08	1.01	0.97	0.96	0.93	0.85							
		Dry	1.10	1.14	1.14	1.12	1.08	1.01	0.97	0.96	0.93	0.90	0.85																				0.80	0.82	0.85	0.90	0.94	1.02	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150															28.65	28.32	28.32	28.32	27.81	27.81																	
(Dry)		120																															23.18	23.18	23.18	23.25	23.25	23.25	
Land Preparation Stage	(LP)		6.39	6.39													7.22	6.89	6.89	6.89	6.38	6.38	6.38										6.04	6.04	6.04	6.11	6.11	6.11	
Crop Growing Stage	(CG)		5.49	5.69	5.69	6.19	5.97	5.59	6.38	6.32	6.12	6.34	5.98						4.73	5.00	4.68	5.08	5.48	5.69	5.69	5.59	5.14	4.81	4.62	4.73	4.58	4.19			3.90	4.20	4.39	4.76	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00						2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00			2.00	2.00	2.00	2.00	
Total	(FWR)	Wet															3.15	5.80	7.32	8.88	8.88	6.85	7.34	7.69	7.69	7.59	7.14	6.54	5.00	3.59	2.05	0.51							
		Dry	7.34	7.69	7.69	8.19	7.97	7.49	6.89	4.99	2.46	1.11	0.01																				2.40	4.69	6.03	7.44	7.94	6.63	
10-day FWR			73.43	76.87	84.57	81.94	79.72	59.95	68.90	49.90	27.06	11.09	0.01				34.67	57.97	73.24	88.79	88.79	68.46	80.79	76.89	76.89	83.48	71.41	65.35	50.03	35.89	20.48	4.57	24.02	46.91	60.31	74.44	79.43	72.97	1,949
(G) Rainfall (1997)		mm/10day	31	56	66	57	76	34	178	1	13	41	16	3	49	30	27	59	88	57	172	133	114	29	57	58	162	139	154	80	54	119	25	135	19	26	25	55	2,438
Effective Rainfall	(ER)		21.7	39.2	46.2	39.9	53.2	23.8	68.9	0	0	11.1	0				18.9	41.3	61.6	39.9	68.8	53.2	45.6	20.3	39.9	40.6	64.8	55.6	50	35.9	20.5	4.6	17.5	46.9	0	18.2	17.5	38.5	1,104
(H) Irrigation Water Requirement	(IWR)	mm/10day	51.7	37.7	38.4	42.0	26.5	36.2	0.0	49.9	27.1	0.0	0.0				15.8	16.7	11.6	48.9	20.0	15.3	35.2	56.6	37.0	42.9	6.6	9.8	0.0	0.0	0.0	0.0	6.5	0.0	60.3	56.2	61.9	34.5	845
(F)-(G)		mm/day	5.17	3.77	3.49	4.20	2.65	4.52	0.00	4.99	2.46	0.00	0.01				1.43	1.67	1.16	4.89	2.00	1.53	3.20	5.66	3.70	3.90	0.66	0.98	0.00	0.00	0.00	0.00	0.65	0.00	6.03	5.62	6.19	3.13	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48				0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	10.78	7.85	7.27	8.76	5.53	9.42	0.00	10.40	5.13	0.00	0.02				2.99	3.47	2.42	10.19	4.17	3.18	6.66	11.79	7.71	8.12	1.38	2.03	0.00	0.00	0.00	0.00	1.36	0.00	12.56	11.72	12.90	6.53	
(H)/(I)		lit/sec/ha	1.25	0.91	0.84	1.01	0.64	1.09	0.00	1.20	0.59	0.00	0.00				0.35	0.40	0.28	1.18	0.48	0.37	0.77	1.36	0.89	0.94	0.16	0.24	0.00	0.00	0.00	0.00	0.16	0.00	1.45	1.36	1.49	0.76	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

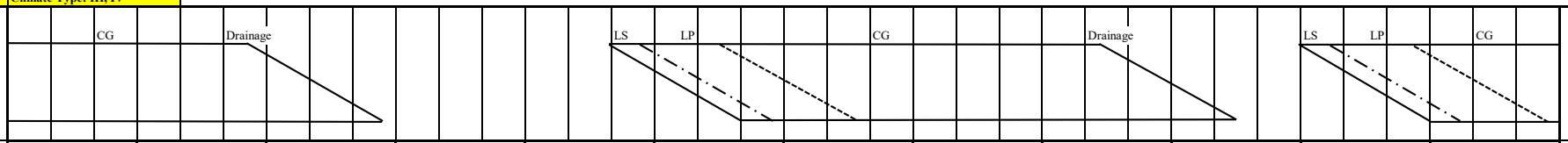
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: X
Province: Misamis Occidental — **Climate Type: III, IV**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	5								
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.96			5.49			6.53			7.00			5.95			5.59			5.01			5.02			4.79			4.95			4.59			4.66			
(D) Area Factor																																							
Land Soaking Stage	(Als)																0.154	0.226	0.226	0.079																			
Land Preparation Stage	(Alp)	(Wet)															0.023	0.290	0.587	0.631	0.387	0.079																	
Crop Growing Stage	(Acg)																		0.026	0.090	0.613	0.921	1.000	1.000	1.000	1.000	1.000	0.942	0.645	0.323	0.040								
Land Soaking Stage	(Als)																																0.152	0.226	0.226	0.079			
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.258	0.566	0.663	0.419	0.072	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet															0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85								
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150															28.66	28.35	28.35	28.35																			
(Dry)		120																															23.18	23.18	23.18	23.24			
Land Preparation Stage	(LP)																7.24	6.92	6.92	6.92	6.41	6.41	6.409										6.04	6.04	6.04	6.10	6.10	6.10	
Crop Growing Stage	(CG)		5.65	5.80	5.65	6.04	5.76	5.33	6.27	6.07	5.55								4.75	5.03	4.91	5.36	5.71	5.87	5.72	5.52	5.03	4.65	4.60	4.60	4.21				3.90	4.19	4.57	4.99	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR)	Wet															4.58	8.41	10.64	7.24	6.72	7.29	7.71	7.87	7.72	7.52	7.03	6.26	4.26	2.13	0.25								
		Dry	7.65	7.80	7.65	8.04	7.76	7.19	6.06	3.23	0.56																						3.61	6.80	8.75	7.53	6.50	6.91	
10-day FWR			76.54	78.03	84.20	80.39	77.65	57.49	60.61	32.29	3.91						50.39	84.13	106.44	72.38	67.16	72.85	84.83	78.73	77.23	82.74	70.30	62.61	42.56	21.33	1.24		36.14	67.97	87.46	75.35	64.96	75.99	1,934
(G) Rainfall (1998)		mm/10day	7	19	16	7	4	20	12	1	5	0	0	16	9	11	46	49	68	115	57	72	97	65	81	47	42	34	68	123	80	108	183	89	114	86	87	98	1,936
Effective Rainfall	(ER)		0	0	0	0	0	14	0	0	0						32.2	34.3	47.6	46	39.9	50.4	67.9	45.5	56.7	32.9	29.4	23.8	42.6	21.3	1.2		36.1	62.3	45.6	60.2	60.9	68.6	919
(H) Irrigation Water Requirement	(IWR)	mm/10day	76.5	78.0	84.2	80.4	77.6	43.5	60.6	32.3	3.9						18.2	49.8	58.8	26.4	27.3	22.5	16.9	33.2	20.5	49.8	40.9	38.8	0.0	0.0	0.0		0.0	5.7	41.9	15.1	4.1	7.4	1,014
(F)-(G)		mm/day	7.65	7.80	7.65	8.04	7.76	5.44	6.06	3.23	0.56						1.65	4.98	5.88	2.64	2.73	2.25	1.54	3.32	2.05	4.53	4.09	3.88	0.00	0.00	0.00		0.00	0.57	4.19	1.51	0.41	0.67	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	15.95	16.26	15.95	16.75	16.18	11.33	12.63	6.73	1.16						3.44	10.38	12.26	5.50	5.68	4.68	3.21	6.92	4.28	9.44	8.52	8.09	0.00	0.00	0.00		0.00	1.18	8.72	3.16	0.85	1.40	
(H)/(I)		lit/sec/ha	1.85	1.88	1.85	1.94	1.87	1.31	1.46	0.78	0.13						0.40	1.20	1.42	0.64	0.66	0.54	0.37	0.80	0.49	1.09	0.99	0.94	0.00	0.00	0.00		0.00	0.14	1.01	0.37	0.10	0.16	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

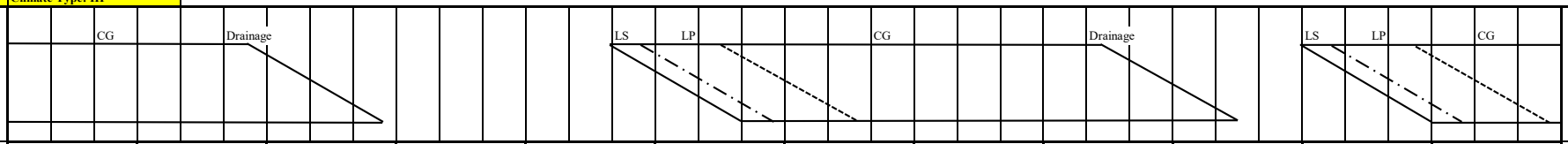
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: X
Province: Misamis Oriental — **Climate Type: III**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	5								
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	4.96			5.50			6.54			7.00			5.93			5.58			5.01			5.03			4.78			4.93			4.58			4.66			
(D) Area Factor																																						
Land Soaking Stage	(Als)															0.154	0.226	0.226	0.079																			
Land Preparation Stage	(Alp) (Wet)															0.023	0.290	0.587	0.631	0.387	0.079																	
Crop Growing Stage	(Acg)																	0.026	0.090	0.613	0.921	1.000	1.000	1.000	1.000	1.000	0.942	0.645	0.323	0.040								
Land Soaking Stage	(Als)																															0.152	0.226	0.226	0.079			
Land Preparation Stage	(Alp) (Dry)																															0.015	0.258	0.566	0.663	0.419	0.072	
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc) Wet																	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85				0.85	0.90	0.98	1.07	
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																								0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 150															28.65	28.34	28.34	28.34																			
(Dry)	120																															23.17	23.17	23.17	23.24			
Land Preparation Stage	(LP)															7.22	6.91	6.91	6.91	6.41	6.41	6.409										6.03	6.03	6.03	6.10	6.10	6.10	
Crop Growing Stage	(CG)	5.65	5.80	5.65	6.05	5.78	5.34	6.28	6.08	5.56								4.74	5.02	4.91	5.36	5.71	5.89	5.73	5.53	5.02	4.64	4.59	4.58	4.19				3.89	4.19	4.57	4.99	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR) Wet															4.58	8.41	10.64	7.23	6.72	7.29	7.71	7.89	7.73	7.53	7.02	6.25	4.25	2.13	0.25								
	Dry	7.65	7.80	7.65	8.05	7.78	7.20	6.07	3.23	0.56																						3.61	6.79	8.74	7.53	6.50	6.91	
10-day FWR		76.54	78.03	84.20	80.50	77.75	57.57	60.68	32.33	3.92						50.35	84.09	106.36	72.31	67.16	72.85	84.83	78.85	77.34	82.86	70.19	62.52	42.50	21.27	1.24		36.13	67.93	87.39	75.35	64.96	75.99	1,934
(G) Rainfall (1982)	mm/10day	21	56	103	130	50	32	1	57	185	39	14	10	13	35	45	90	111	40	45	62	35	44	150	44	55	42	20	40	56	35	22	22	20	54	36	9	1,823
Effective Rainfall	(ER)	14.7	39.2	41.2	52	35	22.4	0	32.3	3.9						31.5	63	44.4	28	31.5	43.4	24.5	30.8	60	30.8	38.5	29.4	14	21.3	1.2		15.4	15.4	14	37.8	25.2	0	841
(H) Irrigation Water Requirement	(IWR) mm/10day	61.8	38.8	43.0	28.5	42.8	35.2	60.7	0.0	0.0						18.9	21.1	62.0	44.3	35.7	29.5	60.3	48.1	17.3	52.1	31.7	33.1	28.5	0.0	0.0		20.7	52.5	73.4	37.5	39.8	76.0	1,093
(F)-(G)	mm/day	6.18	3.88	3.91	2.85	4.28	4.40	6.07	0.00	0.00						1.71	2.11	6.20	4.43	3.57	2.95	5.48	4.81	1.73	4.73	3.17	3.31	2.85	0.00	0.00		2.07	5.25	7.34	3.75	3.98	6.91	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	12.88	8.09	8.14	5.94	8.91	9.16	12.64	0.00	0.00						3.57	4.39	12.91	9.23	7.43	6.14	11.43	10.01	3.61	9.86	6.60	6.90	5.94	0.00	0.00		4.32	10.94	15.29	7.82	8.28	14.39	
(H)/(I)	lit/sec/ha	1.49	0.94	0.94	0.69	1.03	1.06	1.46	0.00	0.00						0.41	0.51	1.49	1.07	0.86	0.71	1.32	1.16	0.42	1.14	0.76	0.80	0.69	0.00	0.00		0.50	1.27	1.77	0.91	0.96	1.67	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

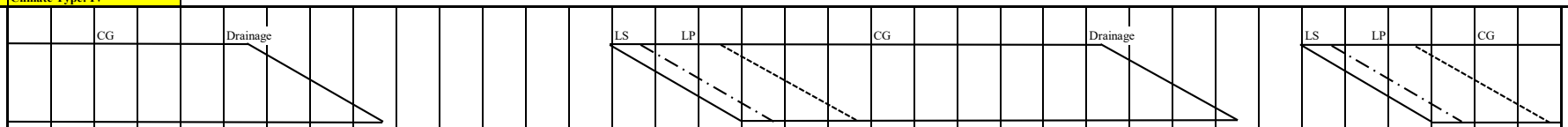
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: XI
Province: Compostela Valley — **Climate Type: IV**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
(B) Month																																							
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	4								
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.78			5.30			6.30			6.75			5.73			5.39			4.85			4.88			4.65			4.81			4.44			4.51			
(D) Area Factor																																							
Land Soaking Stage	(Als)																0.159	0.233	0.232	0.060																			
Land Preparation Stage	(Alp)	(Wet)															0.024	0.300	0.607	0.640	0.367	0.060																	
Crop Growing Stage	(Acg)																		0.027	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.940	0.633	0.300	0.027								
Land Soaking Stage	(Als)																																0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet															0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85								
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150															28.47	28.17	28.17	28.17																			
(Dry)		120																															23.05	23.05	23.05	23.11			
Land Preparation Stage	(LP)																7.04	6.74	6.74	6.74	6.27	6.27	6.268										5.91	5.91	5.91	5.97	5.97	5.97	
Crop Growing Stage	(CG)		5.45	5.59	5.45	5.83	5.57	5.14	6.05	5.86	5.36								4.58	4.85	4.75	5.19	5.53	5.71	5.56	5.37	4.88	4.51	4.46	4.47	4.09				3.77	4.06	4.42	4.83	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR)	Wet															4.70	8.59	10.81	8.06	6.58	7.13	7.53	7.71	7.56	7.37	6.88	6.12	4.09	1.94	0.16								
		Dry	7.45	7.59	7.45	7.83	7.57	7.01	5.90	3.14	0.54																						3.59	6.95	8.91	7.40	6.24	6.76	
10-Fay FWR			74.49	75.93	81.94	78.30	75.65	56.04	58.99	31.44	3.81						51.65	85.87	108.07	80.61	65.75	71.34	82.82	77.10	75.63	81.05	68.83	61.20	40.92	19.42	0.66		35.92	69.48	89.13	74.05	62.39	74.39	1,913
(G) Rainfall (1987)		mm/10day	60	224	18	196	16	69	58	75	35	2	1	53	17	47	72	116	41	62	101	54	91	57	111	49	36	37	30	103	141	78	66	80	66	17	109	131	2,519
Effective Rainfall	(ER)		42	44.8	0	78.3	0	48.3	40.6	31.4	3.8						50.4	46.4	28.7	43.4	40.4	37.8	63.7	39.9	44.4	34.3	25.2	25.9	21	19.4	0.7		35.9	56	46.2	0	43.6	52.4	1,045
(H) Irrigation Water Requirement	(IWR)	mm/10day	32.5	31.1	81.9	0.0	75.7	7.7	18.4	0.0	0.0						1.3	39.5	79.4	37.2	25.4	33.5	19.1	37.2	31.2	46.7	43.6	35.3	19.9	0.0	0.0		0.0	13.5	42.9	74.0	18.8	22.0	868
(F)-(G)		mm/day	3.25	3.11	7.45	0.00	7.57	0.97	1.84	0.00	0.00						0.11	3.95	7.94	3.72	2.54	3.35	1.74	3.72	3.12	4.25	4.36	3.53	1.99	0.00	0.00		0.00	1.35	4.29	7.40	1.88	2.00	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	6.77	6.48	15.52	0.00	15.76	2.02	3.83	0.00	0.00						0.24	8.22	16.53	7.75	5.28	6.99	3.62	7.75	6.51	8.85	9.09	7.35	4.15	0.00	0.00		0.00	2.81	8.94	15.43	3.92	4.16	
(H)/(I)		lit/sec/ha	0.78	0.75	1.80	0.00	1.82	0.23	0.44	0.00	0.00						0.03	0.95	1.91	0.90	0.61	0.81	0.42	0.90	0.75	1.02	1.05	0.85	0.48	0.00	0.00		0.00	0.33	1.04	1.79	0.45	0.48	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

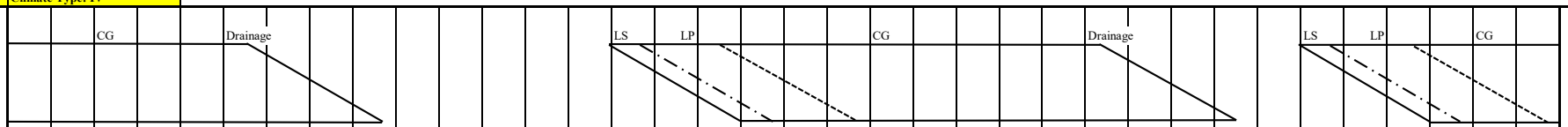
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: XI
Province: Davao del Norte — **Climate Type: IV**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	4								
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.99			5.53			6.58			7.06			5.98			5.62			5.05			5.07			4.84			5.01			4.63			4.70			
(D) Area Factor																																							
Land Soaking Stage	(Als)																0.159	0.233	0.232	0.060																			
Land Preparation Stage	(Alp)	(Wet)															0.024	0.300	0.607	0.640	0.367	0.060																	
Crop Growing Stage	(Acg)																		0.027	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.940	0.633	0.300	0.027								
Land Soaking Stage	(Als)																																0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet															0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85								
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	95															20.83	20.52	20.52	20.52																			
(Dry)		66																															15.50	15.50	15.50	15.56			
Land Preparation Stage	(LP)																7.26	6.95	6.95	6.95	6.44	6.44	6.444										6.07	6.07	6.07	6.14	6.14	6.14	
Crop Growing Stage	(CG)		5.69	5.84	5.69	6.08	5.81	5.36	6.32	6.12	5.59								4.78	5.06	4.95	5.40	5.76	5.93	5.78	5.58	5.08	4.69	4.65	4.66	4.26				3.94	4.23	4.61	5.03	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR)	Wet															3.49	6.86	9.16	7.79	6.76	7.35	7.76	7.93	7.78	7.58	7.08	6.29	4.21	2.00	0.17								
		Dry	7.69	7.84	7.69	8.08	7.81	7.22	6.10	3.25	0.56																						2.45	5.23	7.25	6.94	6.42	6.96	
10-Fay FWR			76.89	78.38	84.57	80.83	78.07	57.79	60.96	32.48	3.93						38.36	68.64	91.59	77.94	67.64	73.46	85.33	79.32	77.80	83.35	70.82	62.93	42.07	19.98	0.68		24.48	52.34	72.55	69.40	64.18	76.59	1,853
(G) Rainfall(1981)		mm/10day	81	77	74	66	27	11	3	3	145	6	72	40	111	56	56	72	79	82	60	51	56	54	30	61	50	81	159	62	80	51	85	50	60	159	26	26	2,262
Effective Rainfall	(ER)		56.7	53.9	51.8	46.2	18.9	0	0	0	3.9						38.4	50.4	55.3	57.4	42	35.7	39.2	37.8	21	42.7	35	56.7	42.1	20	0.7		24.5	35	42	63.6	18.2	18.2	1,007
(H) Irrigation Water Requirement	(IWR)	mm/10day	20.2	24.5	32.8	34.6	59.2	57.8	61.0	32.5	0.0						0.0	18.2	36.3	20.5	25.6	37.8	46.1	41.5	56.8	40.6	35.8	6.2	0.0	0.0	0.0		0.0	17.3	30.5	5.8	46.0	58.4	846
(F)-(G)		mm/day	2.02	2.45	2.98	3.46	5.92	7.22	6.10	3.25	0.00						0.00	1.82	3.63	2.05	2.56	3.78	4.19	4.15	5.68	3.70	3.58	0.62	0.00	0.00	0.00		0.00	1.73	3.05	0.58	4.60	5.31	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	4.21	5.10	6.21	7.21	12.33	15.05	12.70	6.77	0.00						0.00	3.80	7.56	4.28	5.34	7.87	8.74	8.65	11.83	7.70	7.46	1.30	0.00	0.00	0.00		0.00	3.61	6.36	1.21	9.58	11.06	
(H)/(I)		lit/sec/ha	0.49	0.59	0.72	0.84	1.43	1.74	1.47	0.78	0.00						0.00	0.44	0.88	0.50	0.62	0.91	1.01	1.00	1.37	0.89	0.86	0.15	0.00	0.00	0.00		0.00	0.42	0.74	0.14	1.11	1.28	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

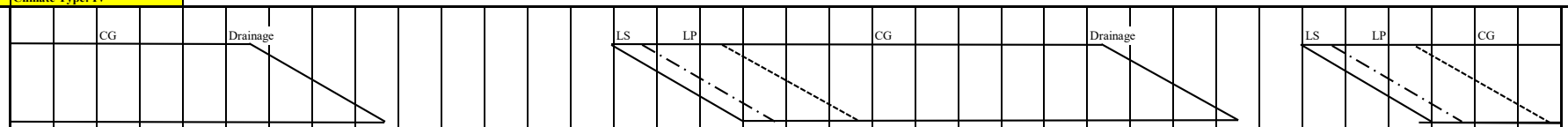
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: XI
Province: Davao del Sur — **Climate Type: IV**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	4								
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.96			5.50			6.53			6.98			5.88			5.52			4.96			4.97			4.74			4.91			4.56			4.65			
(D) Area Factor																																							
Land Soaking Stage	(Als)																0.159	0.233	0.232	0.060																			
Land Preparation Stage	(Alp)	(Wet)															0.024	0.300	0.607	0.640	0.367	0.060																	
Crop Growing Stage	(Acg)																		0.027	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.940	0.633	0.300	0.027								
Land Soaking Stage	(Als)																																0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet															0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85								
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150															28.60	28.29	28.29	28.29																			
(Dry)		120																															23.16	23.16	23.16	23.23			
Land Preparation Stage	(LP)																7.17	6.86	6.86	6.86	6.36	6.36	6.365										6.01	6.01	6.01	6.09	6.09	6.09	
Crop Growing Stage	(CG)		5.65	5.80	5.65	6.05	5.78	5.34	6.27	6.07	5.55								4.69	4.97	4.86	5.31	5.65	5.81	5.67	5.47	4.98	4.60	4.55	4.57	4.17				3.88	4.19	4.56	4.98	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR)	Wet															4.72	8.65	10.91	8.18	6.68	7.25	7.65	7.81	7.67	7.47	6.98	6.20	4.15	1.97	0.17								
		Dry	7.65	7.80	7.65	8.05	7.78	7.20	6.06	3.23	0.56																						3.61	7.00	9.00	7.53	6.37	6.91	
10-Fay FWR			76.54	78.03	84.20	80.50	77.75	57.57	60.61	32.29	3.91						51.92	86.48	109.06	81.76	66.79	72.51	84.20	78.15	76.66	82.14	69.77	62.02	41.46	19.70	0.67		36.10	70.01	90.01	75.29	63.71	76.01	1,946
(G) Rainfall (2002)		mm/10day	117	12	2	22	74	7	36	23	24	2	15	30	78	65	49	57	136	101	20	49	21	80	19	67	84	50	64	33	54	50	42	42	27	3	2	55	1,612
Effective Rainfall	(ER)		46.8	0	0	15.4	51.8	0	25.2	16.1	3.9						34.3	39.9	54.4	40.4	14	34.3	14.7	56	0	46.9	58.8	35	41.5	19.7	0.7		29.4	29.4	18.9	0	0	38.5	766
(H) Irrigation Water Requirement	(IWR)	mm/10day	29.7	78.0	84.2	65.1	26.0	57.6	35.4	16.2	0.0						17.6	46.6	54.7	41.4	52.8	38.2	69.5	22.1	76.7	35.2	11.0	27.0	0.0	0.0	0.0		6.7	40.6	71.1	75.3	63.7	37.5	1,180
(F)-(G)		mm/day	2.97	7.80	7.65	6.51	2.60	7.20	3.54	1.62	0.00						1.60	4.66	5.47	4.14	5.28	3.82	6.32	2.21	7.67	3.20	1.10	2.70	0.00	0.00	0.00		0.67	4.06	7.11	7.53	6.37	3.41	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	6.20	16.26	15.95	13.56	5.41	14.99	7.38	3.37	0.00						3.34	9.70	11.39	8.62	11.00	7.96	13.16	4.61	15.97	6.67	2.29	5.63	0.00	0.00	0.00		1.40	8.46	14.81	15.68	13.27	7.10	
(H)/(I)		lit/sec/ha	0.72	1.88	1.85	1.57	0.63	1.74	0.85	0.39	0.00						0.39	1.12	1.32	1.00	1.27	0.92	1.52	0.53	1.85	0.77	0.26	0.65	0.00	0.00	0.00		0.16	0.98	1.71	1.82	1.54	0.82	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

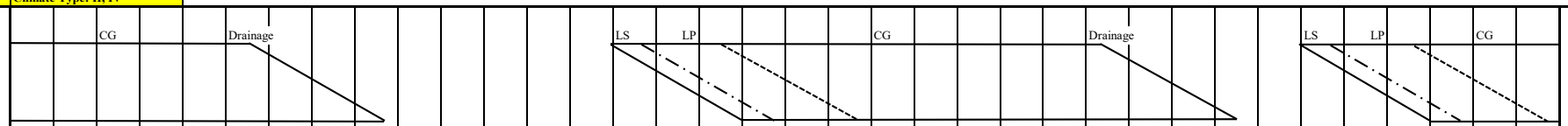
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: XI
Province: Davao Oriental — **Climate Type: II, IV**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
(B) Month																																							
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	4								
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.94			5.47			6.47			6.92			5.87			5.54			4.98			5.00			4.77			4.93			4.57			4.64			
(D) Area Factor																																							
Land Soaking Stage	(Als)																0.159	0.233	0.232	0.060																			
Land Preparation Stage	(Alp)	(Wet)															0.024	0.300	0.607	0.640	0.367	0.060																	
Crop Growing Stage	(Acg)																		0.027	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.940	0.633	0.300	0.027								
Land Soaking Stage	(Als)																																0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet															0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85								
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150															28.59	28.30	28.30	28.30																			
(Dry)		120																															23.16	23.16	23.16	23.23			
Land Preparation Stage	(LP)																7.17	6.88	6.88	6.88	6.38	6.38	6.382										6.02	6.02	6.02	6.08	6.08	6.08	
Crop Growing Stage	(CG)		5.63	5.78	5.63	6.02	5.74	5.31	6.21	6.02	5.50								4.71	4.99	4.88	5.33	5.68	5.85	5.70	5.50	5.01	4.63	4.58	4.58	4.19				3.88	4.18	4.55	4.96	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR)	Wet															4.72	8.66	10.92	8.19	6.70	7.27	7.68	7.85	7.70	7.50	7.01	6.23	4.16	1.98	0.17								
		Dry	7.63	7.78	7.63	8.02	7.74	7.17	6.02	3.21	0.55																						3.61	7.01	9.01	7.52	6.36	6.90	
10-Fay FWR			76.32	77.80	83.95	80.17	77.44	57.34	60.19	32.07	3.88						51.90	86.57	109.21	81.94	66.98	72.72	84.45	78.50	77.00	82.50	70.09	62.29	41.65	19.75	0.67		36.11	70.05	90.08	75.20	63.62	75.90	1,946
(G) Rainfall (2016)		mm/10day	11	0	3	1	38	6	13	47	9	7	15	9	36	91	46	44	84	122	103	46	58	54	36	31	77	82	60	136	123	146	135	65	89	95	104	103	2,125
Effective Rainfall	(ER)		0	0	0	0	26.6	0	0	32.1	0						32.2	30.8	58.8	48.8	41.2	32.2	40.6	37.8	25.2	21.7	53.9	57.4	41.7	19.8	0.7		36.1	45.5	62.3	66.5	41.6	41.2	895
(H) Irrigation Water Requirement	(IWR)	mm/10day	76.3	77.8	83.9	80.2	50.8	57.3	60.2	0.0	3.9						19.7	55.8	50.4	33.1	25.8	40.5	43.8	40.7	51.8	60.8	16.2	4.9	0.0	0.0	0.0		0.0	24.6	27.8	8.7	22.0	34.7	1,052
(F)-(G)		mm/day	7.63	7.78	7.63	8.02	5.08	7.17	6.02	0.00	0.55						1.79	5.58	5.04	3.31	2.58	4.05	3.99	4.07	5.18	5.53	1.62	0.49	0.00	0.00	0.00		0.00	2.46	2.78	0.87	2.20	3.15	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	15.90	16.21	15.90	16.70	10.59	14.93	12.54	0.00	1.16						3.73	11.62	10.50	6.90	5.37	8.44	8.30	8.48	10.79	11.52	3.37	1.02	0.00	0.00	0.00		0.00	5.11	5.79	1.81	4.59	6.57	
(H)/(I)		lit/sec/ha	1.84	1.88	1.84	1.93	1.23	1.73	1.45	0.00	0.13						0.43	1.34	1.22	0.80	0.62	0.98	0.96	0.98	1.25	1.33	0.39	0.12	0.00	0.00	0.00		0.00	0.59	0.67	0.21	0.53	0.76	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

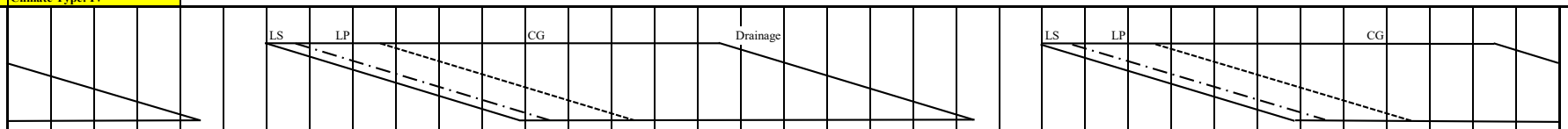
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: XII
Province: Sarangani — **Climate Type: IV**

(A) Cropping Pattern (60 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 100 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet							10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	4														
		Dry	10	10	11	10	4																				10	10	10	10	10	11	10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.94			5.48			6.50			6.92			5.83			5.47			4.90			4.91			4.69			4.87			4.53			4.62			
(D) Area Factor																																								
Land Soaking Stage	(Als)								0.076	0.117	0.117	0.117	0.117	0.116	0.030																								
Land Preparation Stage	(Alp)	(Wet)							0.008	0.133	0.296	0.333	0.333	0.333	0.320	0.183	0.027																						
Crop Growing Stage	(Acg)										0.012	0.150	0.317	0.483	0.650	0.817	0.973	1.000	0.979	0.833	0.667	0.500	0.325	0.150	0.013														
Land Soaking Stage	(Als)																										0.076	0.117	0.117	0.117	0.117	0.116	0.030						
Land Preparation Stage	(Alp)	(Dry)																									0.008	0.133	0.293	0.333	0.333	0.333	0.320	0.183	0.030				
Crop Growing Stage	(Acg)		0.667	0.500	0.325	0.150	0.013																						0.008	0.133	0.300	0.475	0.650	0.817	0.970	1.000	0.987	0.842	
(E) Crop Coefficient	(Kc)	Wet							0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.08	1.07	1.05	1.01	0.96	0.93	0.85														
		Dry	1.05	1.01	0.96	0.93	0.85																				0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.08	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																						
Land Soaking Stage (Wet)	(LS)	150							29.15	29.15	29.15	29.52	29.52	29.52	28.56																								
(Dry)		120																									23.27	23.43	23.27	23.27	23.27	23.27	23.13						
Land Preparation Stage	(LP)								7.72	7.72	7.72	8.09	8.09	8.09	7.13	7.13	7.13										6.13	6.13	6.13	6.29	6.29	6.29	5.99	5.99	5.99				
Crop Growing Stage	(CG)		5.19	4.99	4.74	5.10	4.66		5.20	5.33	5.53	6.23	6.50	6.85	5.95	6.24	6.35	6.07	5.91	5.85	5.15	4.95	4.70	4.57	4.17		3.75	3.85	3.99	4.38	4.58	4.82	4.62	4.85	4.94	5.13	4.99	4.94	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
Total	(FWR)	Wet							2.28	4.44	5.79	7.38	8.84	10.39	8.30	8.04	8.32	8.07	7.74	6.54	4.77	3.47	2.18	0.98	0.08														
		Dry	4.79	3.49	2.19	1.06	0.09																				1.82	3.56	4.57	5.66	6.79	8.03	6.91	6.69	6.91	7.13	6.90	5.85	
10-day FWR			47.94	34.95	24.10	10.64	0.35		22.77	44.37	63.64	73.82	88.43	103.93	83.04	80.35	91.54	80.72	77.42	65.41	47.66	34.75	23.97	9.85	0.32		18.18	35.56	45.66	56.65	67.89	88.36	69.13	66.90	69.09	71.28	68.99	64.31	1,832
(G) Rainfall (1997)		mm/10day	4	71	26	58	87	46	90	3	0	55	28	1	36	57	13	16	42	60	69	82	27	18	32	22	31	40	27	40	19	60	34	38	52	21	34	77	1,416
Effective Rainfall	(ER)		0	35	18.2	10.6	0.4		22.8	0	0	38.5	19.6	0	25.2	39.9	0	0	29.4	42	47.7	34.8	18.9	0	0.3		18.2	28	18.9	28	0	42	23.8	26.6	36.4	14.7	23.8	53.9	698
(H) Irrigation Water Requirement	(IWR)	mm/10day	47.9	0.0	5.9	0.0	0.0		0.0	44.4	63.6	35.3	68.8	103.9	57.8	40.5	91.5	80.7	48.0	23.4	0.0	0.0	5.1	9.8	0.0		0.0	7.6	26.8	28.6	67.9	46.4	45.3	40.3	32.7	56.6	45.2	10.4	1,135
(F)-(G)		mm/day	4.79	0.00	0.54	0.00	0.00		0.00	4.44	5.79	3.53	6.88	10.39	5.78	4.05	8.32	8.07	4.80	2.34	0.00	0.00	0.46	0.98	0.00		0.00	0.76	2.68	2.86	6.79	4.21	4.53	4.03	3.27	5.66	4.52	0.95	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	9.99	0.00	1.12	0.00	0.00		0.00	9.24	12.05	7.36	14.34	21.65	12.05	8.43	17.34	16.82	10.00	4.88	0.00	0.00	0.96	2.05	0.00		0.00	1.58	5.57	5.97	14.14	8.78	9.44	8.39	6.81	11.79	9.41	1.97	
(H)/(I)		lit/sec/ha	1.16	0.00	0.13	0.00	0.00		0.00	1.07	1.40	0.85	1.66	2.51	1.39	0.98	2.01	1.95	1.16	0.56	0.00	0.00	0.11	0.24	0.00		0.00	0.18	0.65	0.69	1.64	1.02	1.09	0.97	0.79	1.36	1.09	0.23	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

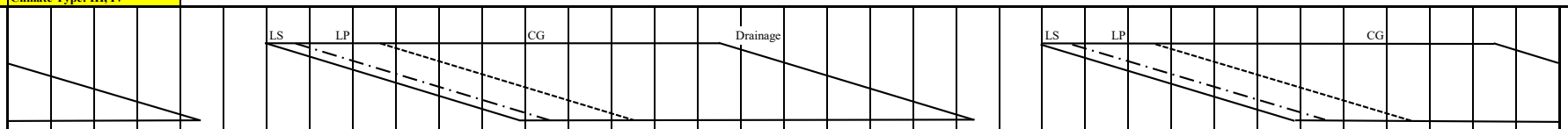
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: XII
Province: South Cotabato — **Climate Type: III, IV**

(A) Cropping Pattern (60 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 100 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)		Wet							10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	4													
		Dry	10	10	11	10	4																				10	10	10	10	10	11	10	10	10	10	10	11
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.92			5.48			6.52			6.97			5.84			5.46			4.89			4.90			4.67			4.84			4.51			4.60		
(D) Area Factor																																						
Land Soaking Stage	(Als)								0.076	0.117	0.117	0.117	0.117	0.116	0.030																							
Land Preparation Stage	(Alp)	(Wet)							0.008	0.133	0.296	0.333	0.333	0.333	0.320	0.183	0.027																					
Crop Growing Stage	(Acg)										0.012	0.150	0.317	0.483	0.650	0.817	0.973	1.000	0.979	0.833	0.667	0.500	0.325	0.150	0.013													
Land Soaking Stage	(Als)																										0.076	0.117	0.117	0.117	0.117	0.116	0.030					
Land Preparation Stage	(Alp)	(Dry)																									0.008	0.133	0.293	0.333	0.333	0.333	0.320	0.183	0.030			
Crop Growing Stage	(Acg)		0.667	0.500	0.325	0.150	0.013																						0.008	0.133	0.300	0.475	0.650	0.817	0.970	1.000	0.987	0.842
(E) Crop Coefficient	(Kc)	Wet							0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.08	1.07	1.05	1.01	0.96	0.93	0.85													
		Dry	1.05	1.01	0.96	0.93	0.85																				0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.08	1.07
(F) Farm Water Requirement	(FWR)	mm/day																																				
Land Soaking Stage (Wet)	(LS)	150							29.07	29.07	29.07	29.46	29.46	29.46	28.47																							
(Dry)		150																									27.44	27.59	27.44	27.44	27.44	27.44	27.30					
Land Preparation Stage	(LP)								7.64	7.64	7.64	8.03	8.03	8.03	7.04	7.04	7.04										6.01	6.01	6.01	6.16	6.16	6.16	5.87	5.87	5.87			
Crop Growing Stage	(CG)		5.17	4.97	4.72	5.10	4.66		5.22	5.35	5.54	6.27	6.55	6.90	5.96	6.25	6.37	6.06	5.90	5.84	5.13	4.94	4.69	4.56	4.17		3.74	3.83	3.97	4.36	4.55	4.79	4.60	4.83	4.92	5.11	4.97	4.92
Percolation	(P)	1.90	1.90	1.90	1.90	1.90	1.90		1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90		1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90
Total	(FWR)	Wet							2.27	4.42	5.75	7.35	8.80	10.34	8.21	7.95	8.23	7.96	7.63	6.45	4.69	3.42	2.14	0.97	0.08													
		Dry	4.71	3.43	2.15	1.05	0.09																				2.13	4.03	5.02	6.09	7.20	8.41	6.92	6.57	6.79	7.01	6.78	5.74
10-day FWR			47.13	34.35	23.68	10.49	0.34		22.70	44.17	63.26	73.48	88.01	103.43	82.13	79.46	90.56	79.61	76.33	64.49	46.92	34.19	23.57	9.69	0.32		21.33	40.27	50.18	60.93	71.96	92.54	69.22	65.69	67.87	70.06	67.79	63.19	1,839
(G) Rainfall (2019)		mm/10day	5	13	48	12	2	0	7	50	13	55	3	8	24	34	69	121	55	104	83	65	100	20	38	115	49	30	16	68	50	73	20	33	34	30	39	11	1,497
Effective Rainfall	(ER)		0	0	23.7	0	0		0	35	0	38.5	0	0	16.8	23.8	48.3	48.4	38.5	41.6	46.9	34.2	23.6	9.7	0.3		21.3	21	0	47.6	35	51.1	14	23.1	23.8	21	27.3	0	715
(H) Irrigation Water Requirement	(IWR)	mm/10day	47.1	34.3	0.0	10.5	0.3		22.7	9.2	63.3	35.0	88.0	103.4	65.3	55.7	42.3	31.2	37.8	22.9	0.0	0.0	0.0	0.0	0.0		0.0	19.3	50.2	13.3	37.0	41.4	55.2	42.6	44.1	49.1	40.5	63.2	1,125
(F)-(G)		mm/day	4.71	3.43	0.00	1.05	0.09		2.27	0.92	5.75	3.50	8.80	10.34	6.53	5.57	3.84	3.12	3.78	2.29	0.00	0.00	0.00	0.00	0.00		0.00	1.93	5.02	1.33	3.70	3.77	5.52	4.26	4.41	4.91	4.05	5.74	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	9.82	7.16	0.00	2.19	0.18		4.73	1.91	11.98	7.29	18.34	21.55	13.61	11.60	8.00	6.50	7.88	4.77	0.00	0.00	0.00	0.00	0.00		0.00	4.01	10.45	2.78	7.70	7.85	11.50	8.87	9.18	10.22	8.43	11.97	
(H)/(I)		lit/sec/ha	1.14	0.83	0.00	0.25	0.02		0.55	0.22	1.39	0.84	2.12	2.49	1.58	1.34	0.93	0.75	0.91	0.55	0.00	0.00	0.00	0.00	0.00		0.00	0.46	1.21	0.32	0.89	0.91	1.33	1.03	1.06	1.18	0.98	1.39	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

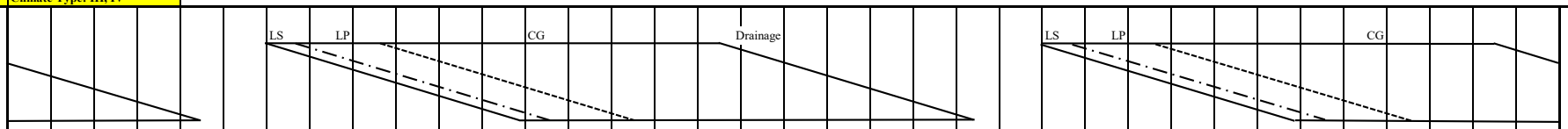
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: XII
Province: North Cotabato — **Climate Type: III, IV**

(A) Cropping Pattern (60 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 100 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet							10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	4														
		Dry	10	10	11	10	4																				10	10	10	10	10	11	10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.06			5.63			6.71			7.18			6.00			5.59			4.99			5.00			4.77			4.95			4.63			4.73			
(D) Area Factor																																							
Land Soaking Stage	(Als)								0.076	0.117	0.117	0.117	0.117	0.116	0.030																								
Land Preparation Stage	(Alp)	(Wet)							0.008	0.133	0.296	0.333	0.333	0.333	0.320	0.183	0.027																						
Crop Growing Stage	(Acg)										0.012	0.150	0.317	0.483	0.650	0.817	0.973	1.000	0.979	0.833	0.667	0.500	0.325	0.150	0.013														
Land Soaking Stage	(Als)																										0.076	0.117	0.117	0.117	0.117	0.116	0.030						
Land Preparation Stage	(Alp)	(Dry)																									0.008	0.133	0.293	0.333	0.333	0.333	0.320	0.183	0.030				
Crop Growing Stage	(Acg)		0.667	0.500	0.325	0.150	0.013																						0.008	0.133	0.300	0.475	0.650	0.817	0.970	1.000	0.987	0.842	
(E) Crop Coefficient	(Kc)	Wet							0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.08	1.07	1.05	1.01	0.96	0.93	0.85														
		Dry	1.05	1.01	0.96	0.93	0.85																				0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.08	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	165							32.44	32.44	32.44	32.85	32.85	32.85	31.81																								
(Dry)		145																									27.87	28.03	27.87	27.87	27.87	27.87	27.75						
Land Preparation Stage	(LP)								8.86	8.86	8.86	9.28	9.28	9.28	8.24	8.24	8.24										7.16	7.16	7.16	7.32	7.32	7.32	7.03	7.03	7.03				
Crop Growing Stage	(CG)		5.31	5.11	4.86	5.24	4.79		5.37	5.50	5.70	6.46	6.75	7.11	6.12	6.42	6.54	6.20	6.04	5.98	5.24	5.04	4.79	4.65	4.25		3.82	3.91	4.05	4.46	4.65	4.90	4.72	4.95	5.05	5.25	5.11	5.06	
Percolation	(P)	2.96	2.96	2.96	2.96	2.96	2.96		2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96		2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	
Total	(FWR)	Wet							2.54	4.97	6.52	8.35	10.01	11.76	9.49	9.17	9.47	9.16	8.81	7.45	5.47	4.00	2.52	1.14	0.09														
		Dry	5.52	4.04	2.54	1.23	0.10																				2.18	4.23	5.41	6.68	7.98	9.40	8.08	7.75	7.98	8.21	7.96	6.75	
10-day FWR			55.18	40.35	27.95	12.29	0.40		25.36	49.74	71.75	83.46	100.11	117.63	94.93	91.71	104.13	91.65	88.08	74.48	54.69	40.00	27.71	11.42	0.37		21.76	42.32	54.14	66.83	79.81	103.43	80.77	77.53	79.78	82.10	79.64	74.29	2,106
(G) Rainfall (1982)		mm/10day	9	36	68	88	45	11	5	35	100	64	33	49	49	68	70	173	93	33	58	76	39	133	245	73	50	36	29	81	44	77	42	52	40	69	40	12	2,225
Effective Rainfall	(ER)		0	25.2	28	12.3	0.4		0	24.5	33.3	11.3	0	34.3	34.3	47.6	49	69.2	65.1	23.1	40.6	40	27.3	11.4	0.4		21.8	25.2	20.3	56.7	30.8	53.9	29.4	36.4	28	48.3	28	0	956
(H) Irrigation Water Requirement	(IWR)	mm/10day	55.2	15.2	0.0	0.0	0.0		25.4	25.2	38.5	72.2	100.1	83.3	60.6	44.1	55.1	22.4	23.0	51.4	14.1	0.0	0.4	0.0	0.0		0.0	17.1	33.8	10.1	49.0	49.5	51.4	41.1	51.8	33.8	51.6	74.3	1,150
(F)-(G)		mm/day	5.52	1.52	0.00	0.00	0.00		2.54	2.52	3.50	7.22	10.01	8.33	6.06	4.41	5.01	2.24	2.30	5.14	1.41	0.00	0.04	0.00	0.00		0.00	1.71	3.38	1.01	4.90	4.50	5.14	4.11	5.18	3.38	5.16	6.75	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	11.50	3.16	0.00	0.00	0.00		5.28	5.26	7.28	15.03	20.86	17.36	12.63	9.19	10.44	4.68	4.79	10.70	2.94	0.00	0.08	0.00	0.00		0.00	3.57	7.05	2.11	10.21	9.38	10.70	8.57	10.79	7.04	10.76	14.07	
(H)/(I)		lit/sec/ha	1.33	0.37	0.00	0.00	0.00		0.61	0.61	0.84	1.74	2.41	2.01	1.46	1.06	1.21	0.54	0.55	1.24	0.34	0.00	0.01	0.00	0.00		0.00	0.41	0.82	0.24	1.18	1.09	1.24	0.99	1.25	0.82	1.25	1.63	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(I) Irrigation Efficiency

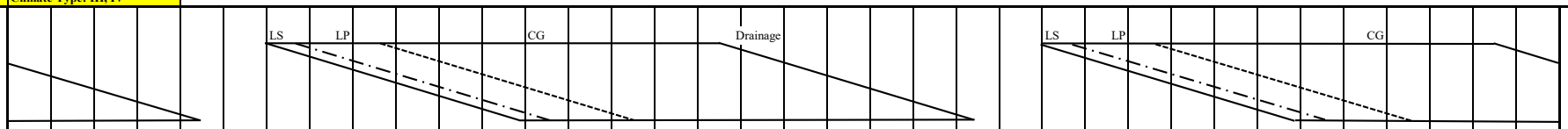
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: XII
Province: Sultan Kudarat — **Climate Type: III, IV**

(A) Cropping Pattern (60 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 100 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet							10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	4														
		Dry	10	10	11	10	4																				10	10	10	10	10	11	10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.00			5.55			6.59			7.02			5.90			5.53			4.95			4.97			4.73			4.91			4.57			4.67			
(D) Area Factor																																							
Land Soaking Stage	(Als)								0.076	0.117	0.117	0.117	0.117	0.116	0.030																								
Land Preparation Stage	(Alp)	(Wet)							0.008	0.133	0.296	0.333	0.333	0.333	0.320	0.183	0.027																						
Crop Growing Stage	(Acg)										0.012	0.150	0.317	0.483	0.650	0.817	0.973	1.000	0.979	0.833	0.667	0.500	0.325	0.150	0.013														
Land Soaking Stage	(Als)																										0.076	0.117	0.117	0.117	0.117	0.116	0.030						
Land Preparation Stage	(Alp)	(Dry)																									0.008	0.133	0.293	0.333	0.333	0.333	0.320	0.183	0.030				
Crop Growing Stage	(Acg)		0.667	0.500	0.325	0.150	0.013																						0.008	0.133	0.300	0.475	0.650	0.817	0.970	1.000	0.987	0.842	
(E) Crop Coefficient	(Kc)	Wet							0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.08	1.07	1.05	1.01	0.96	0.93	0.85														
		Dry	1.05	1.01	0.96	0.93	0.85																				0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.08	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150							29.23	29.23	29.23	29.61	29.61	29.61	28.62																								
(Dry)		120																									23.31	23.46	23.31	23.31	23.31	23.31	23.16						
Land Preparation Stage	(LP)								7.80	7.80	7.80	8.18	8.18	8.18	7.19	7.19	7.19										6.16	6.16	6.16	6.32	6.32	6.32	6.02	6.02	6.02				
Crop Growing Stage	(CG)		5.25	5.05	4.80	5.16	4.72		5.27	5.40	5.60	6.32	6.60	6.95	6.02	6.31	6.43	6.14	5.97	5.92	5.20	5.00	4.75	4.62	4.22		3.78	3.88	4.02	4.42	4.62	4.86	4.66	4.89	4.98	5.18	5.04	5.00	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
Total	(FWR)	Wet							2.28	4.46	5.82	7.43	8.91	10.48	8.37	8.11	8.40	8.14	7.80	6.59	4.80	3.50	2.19	0.99	0.08														
		Dry	4.84	3.53	2.21	1.07	0.09																				1.82	3.56	4.58	5.69	6.82	8.07	6.95	6.73	6.95	7.18	6.95	5.89	
10-day FWR			48.36	35.25	24.31	10.74	0.35		22.84	44.57	64.01	74.35	89.13	104.80	83.72	81.08	92.37	81.38	78.05	65.95	48.01	35.00	24.14	9.93	0.32		18.20	35.65	45.80	56.85	68.16	88.74	69.52	67.31	69.53	71.84	69.52	64.81	1,845
(G) Rainfall (1997)		mm/10day	8	43	43	45	75	51	153	8	7	80	32	11	44	82	17	38	73	91	140	91	45	14	63	29	78	51	51	51	22	83	52	74	14	20	16	72	1,867
Effective Rainfall	(ER)		0	30.1	24.3	10.7	0.4		22.8	0	0	56	22.4	0	30.8	57.4	0	26.6	51.1	63.7	48	35	24.1	0	0.3		18.2	35.7	35.7	35.7	15.4	58.1	36.4	51.8	0	14	0	50.4	855
(H) Irrigation Water Requirement	(IWR)	mm/10day	48.4	5.2	0.0	0.0	0.0		0.0	44.6	64.0	18.3	66.7	104.8	52.9	23.7	92.4	54.8	26.9	2.2	0.0	0.0	0.0	9.9	0.0		0.0	0.0	10.1	21.2	52.8	30.6	33.1	15.5	69.5	57.8	69.5	14.4	989
(F)-(G)		mm/day	4.84	0.52	0.00	0.00	0.00		0.00	4.46	5.82	1.83	6.67	10.48	5.29	2.37	8.40	5.48	2.69	0.22	0.00	0.00	0.00	0.99	0.00		0.00	0.00	1.01	2.12	5.28	2.79	3.31	1.55	6.95	5.78	6.95	1.31	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	10.07	1.07	0.00	0.00	0.00		0.00	9.29	12.12	3.82	13.90	21.83	11.02	4.93	17.49	11.41	5.61	0.47	0.00	0.00	0.00	2.07	0.00		0.00	0.00	2.11	4.41	10.99	5.80	6.90	3.23	14.48	12.05	14.48	2.73	
(H)/(I)		lit/sec/ha	1.17	0.12	0.00	0.00	0.00		0.00	1.07	1.40	0.44	1.61	2.53	1.28	0.57	2.02	1.32	0.65	0.05	0.00	0.00	0.00	0.24	0.00		0.00	0.00	0.24	0.51	1.27	0.67	0.80	0.37	1.68	1.39	1.68	0.32	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

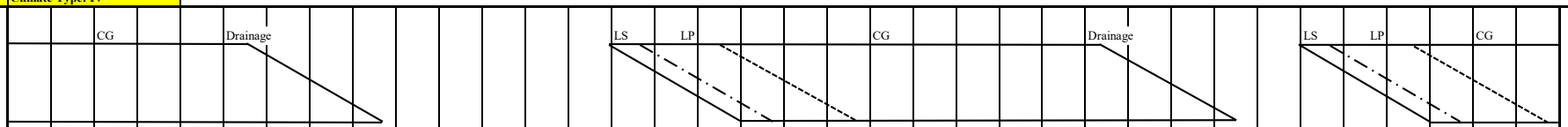
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: CARAGA
Province: Agusan del Norte — **Climate Type: IV**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	4								
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	4.94			5.48			6.51			6.99			5.95			5.60			5.03			5.06			4.80			4.95			4.58			4.65			
(D) Area Factor																																						
Land Soaking Stage	(Als)															0.159	0.233	0.232	0.060																			
Land Preparation Stage	(Alp) (Wet)															0.024	0.300	0.607	0.640	0.367	0.060																	
Crop Growing Stage	(Acg)																	0.027	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.940	0.633	0.300	0.027								
Land Soaking Stage	(Als)																															0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp) (Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc) Wet															0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85								
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 150															28.66	28.36	28.36	28.36																			
(Dry)	120																															23.17	23.17	23.17	23.23			
Land Preparation Stage	(LP)															7.24	6.93	6.93	6.93	6.43	6.43											6.03	6.03	6.03	6.09	6.09	6.09	
Crop Growing Stage	(CG)	5.63	5.78	5.63	6.03	5.75	5.32	6.25	6.05	5.53								4.76	5.04	4.93	5.38	5.73	5.92	5.77	5.57	5.04	4.66	4.61	4.60	4.21				3.89	4.19	4.56	4.98	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR) Wet															4.73	8.69	10.97	8.25	6.74	7.32	7.73	7.92	7.77	7.57	7.04	6.26	4.18	1.98	0.17								
	Dry	7.63	7.78	7.63	8.03	7.75	7.18	6.05	3.22	0.56																						3.61	7.01	9.02	7.53	6.37	6.91	
10-day FWR		76.32	77.80	83.95	80.28	77.54	57.41	60.47	32.22	3.90						52.04	86.85	109.67	82.47	67.45	73.25	85.08	79.20	77.68	83.23	70.40	62.57	41.83	19.81	0.67		36.13	70.09	90.16	75.29	63.71	76.01	1,953
(G) Rainfall (1983)	mm/10day	39	25	18	14	16	15	29	15	12	1	15	13	4	5	55	37	25	136	121	126	194	53	81	56	40	70	82	68	60	74	86	146	89	161	284	289	2,554
Effective Rainfall	(ER)	27.3	10	0	0	0	0	20.3	0	0						38.5	25.9	17.5	54.4	48.4	50.4	77.6	37.1	56.7	39.2	28	49	41.8	19.8	0.7		36.1	58.4	62.3	64.4	56.8	57.8	978
(H) Irrigation Water Requirement	(IWR) mm/10day	49.0	67.8	83.9	80.3	77.5	57.4	40.2	32.2	3.9						13.5	61.0	92.2	28.1	19.0	22.8	7.5	42.1	21.0	44.0	42.4	13.6	0.0	0.0	0.0		0.0	11.7	27.9	10.9	6.9	18.2	975
(F)-(G)	mm/day	4.90	6.78	7.63	8.03	7.75	7.18	4.02	3.22	0.56						1.23	6.10	9.22	2.81	1.90	2.28	0.68	4.21	2.10	4.00	4.24	1.36	0.00	0.00	0.00		0.00	1.17	2.79	1.09	0.69	1.66	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	10.21	14.12	15.90	16.73	16.15	14.95	8.37	6.71	1.16						2.57	12.70	19.20	5.85	3.97	4.76	1.42	8.77	4.37	8.34	8.83	2.83	0.00	0.00	0.00		0.00	2.44	5.80	2.27	1.44	3.45	
(H)/(I)	lit/sec/ha	1.18	1.63	1.84	1.94	1.87	1.73	0.97	0.78	0.13						0.30	1.47	2.22	0.68	0.46	0.55	0.16	1.02	0.51	0.97	1.02	0.33	0.00	0.00	0.00		0.00	0.28	0.67	0.26	0.17	0.40	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

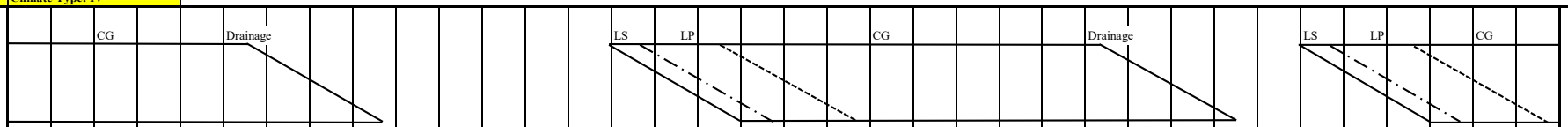
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: CARAGA
Province: Agusan del Sur — **Climate Type: IV**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	4								
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	4.95			5.49			6.52			6.99			5.95			5.60			5.03			5.06			4.81			4.97			4.59			4.65			
(D) Area Factor																																						
Land Soaking Stage	(Als)															0.159	0.233	0.232	0.060																			
Land Preparation Stage	(Alp) (Wet)															0.024	0.300	0.607	0.640	0.367	0.060																	
Crop Growing Stage	(Acg)																	0.027	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.940	0.633	0.300	0.027								
Land Soaking Stage	(Als)																															0.152	0.233	0.233	0.082			
Land Preparation Stage	(Alp) (Dry)																															0.015	0.267	0.585	0.652	0.400	0.074	
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc) Wet															0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85								
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 150															28.66	28.36	28.36	28.36																			
(Dry)	120																															23.18	23.18	23.18	23.23			
Land Preparation Stage	(LP)															7.24	6.93	6.93	6.93	6.43	6.43											6.04	6.04	6.04	6.09	6.09	6.09	
Crop Growing Stage	(CG)	5.64	5.79	5.64	6.04	5.76	5.33	6.26	6.06	5.54								4.76	5.04	4.93	5.38	5.73	5.92	5.77	5.57	5.05	4.67	4.62	4.62	4.22				3.90	4.19	4.56	4.98	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR) Wet															4.73	8.69	10.97	8.25	6.74	7.32	7.73	7.92	7.77	7.57	7.05	6.27	4.19	1.99	0.17								
	Dry	7.64	7.79	7.64	8.04	7.76	7.19	6.05	3.23	0.56																						3.61	7.01	9.02	7.53	6.37	6.91	
10-day FWR		76.43	77.92	84.07	80.39	77.65	57.49	60.54	32.25	3.91						52.04	86.85	109.67	82.47	67.45	73.25	85.08	79.20	77.68	83.23	70.51	62.66	41.89	19.87	0.67		36.14	70.14	90.23	75.29	63.71	76.01	1,955
(G) Rainfall (1983)	mm/10day	18	8	3	11	14	14	19	15	70	0	10	14	12	6	96	68	76	234	173	125	238	80	104	76	66	125	135	74	62	69	100	146	66	126	265	314	3,032
Effective Rainfall	(ER)	0	0	0	0	0	0	0	0	3.9						52	47.6	53.2	46.8	67.5	50	47.6	56	41.6	53.2	46.2	50	41.9	19.9	0.7		36.1	58.4	46.2	50.4	53	62.8	985
(H) Irrigation Water Requirement	(IWR) mm/10day	76.4	77.9	84.1	80.4	77.6	57.5	60.5	32.3	0.0						0.0	39.3	56.5	35.7	0.0	23.2	37.5	23.2	36.1	30.0	24.3	12.7	0.0	0.0	0.0		0.0	11.7	44.0	24.9	10.7	13.2	970
(F)-(G)	mm/day	7.64	7.79	7.64	8.04	7.76	7.19	6.05	3.23	0.00						0.00	3.93	5.65	3.57	0.00	2.32	3.41	2.32	3.61	2.73	2.43	1.27	0.00	0.00	0.00		0.00	1.17	4.40	2.49	1.07	1.20	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	15.92	16.23	15.92	16.75	16.18	14.97	12.61	6.72	0.00						0.00	8.18	11.76	7.43	0.00	4.84	7.10	4.83	7.52	5.69	5.06	2.64	0.00	0.00	0.00		0.00	2.45	9.17	5.18	2.23	2.50	
(H)/(I)	lit/sec/ha	1.84	1.88	1.84	1.94	1.87	1.73	1.46	0.78	0.00						0.00	0.95	1.36	0.86	0.00	0.56	0.82	0.56	0.87	0.66	0.59	0.31	0.00	0.00	0.00		0.00	0.28	1.06	0.60	0.26	0.29	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

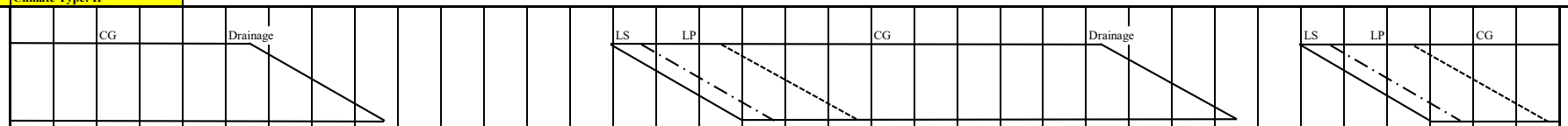
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: CARAGA
Province: Dinagat Islands — **Climate Type: II**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)	Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	4							
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	5.04			5.57			6.59			7.03			6.00			5.68			5.12			5.14			4.88			5.02			4.64			4.72		
(D) Area Factor																																					
Land Soaking Stage	(Als)															0.159	0.233	0.232	0.060																		
Land Preparation Stage	(Alp) (Wet)															0.024	0.300	0.607	0.640	0.367	0.060																
Crop Growing Stage	(Acg)																	0.027	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.940	0.633	0.300	0.027							
Land Soaking Stage	(Als)																															0.152	0.233	0.233	0.082		
Land Preparation Stage	(Alp) (Dry)																															0.015	0.267	0.585	0.652	0.400	0.074
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926
(E) Crop Coefficient	(Kc) Wet															0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85							
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07
(F) Farm Water Requirement	(FWR) mm/day																																				
Land Soaking Stage (Wet)	(LS) 150															28.71	28.43	28.43	28.43																		
(Dry)	120																															23.23	23.23	23.23	23.30		
Land Preparation Stage	(LP)															7.28	7.00	7.00	7.00	6.51	6.51											6.08	6.08	6.08	6.15	6.15	6.15
Crop Growing Stage	(CG)	5.75	5.90	5.75	6.13	5.85	5.40	6.33	6.13	5.60								4.83	5.11	5.02	5.48	5.84	6.01	5.86	5.65	5.12	4.73	4.68	4.67	4.27				3.94	4.25	4.63	5.05
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00
Total	(FWR) Wet															4.74	8.72	11.03	8.32	6.83	7.42	7.84	8.01	7.86	7.65	7.12	6.33	4.23	2.00	0.17							
	Dry	7.75	7.90	7.75	8.13	7.85	7.26	6.10	3.25	0.56																						3.62	7.04	9.06	7.59	6.44	6.98
10-day FWR		77.46	78.97	85.20	81.27	78.49	58.10	61.03	32.51	3.94						52.13	87.23	110.27	83.18	68.30	74.20	86.20	80.14	78.60	84.19	71.24	63.30	42.31	20.01	0.68		36.22	70.36	90.60	75.91	64.37	76.82	1,973
(G) Rainfall (1990)	mm/10day	215	10	55	8	39	2	52	10	2	1	0	117	8	132	25	27	89	55	27	96	18	42	37	17	16	77	50	82	74	106	64	158	83	56	5	96	1,951
Effective Rainfall	(ER)	43	0	38.5	0	27.3	0	36.4	0	0						17.5	18.9	62.3	38.5	18.9	67.2	0	29.4	25.9	0	0	53.9	35	20	0.7		36.2	63.2	58.1	39.2	0	67.2	797
(H) Irrigation Water Requirement	(IWR) mm/10day	34.5	79.0	46.7	81.3	51.2	58.1	24.6	32.5	3.9						34.6	68.3	48.0	44.7	49.4	7.0	86.2	50.7	52.7	84.2	71.2	9.4	7.3	0.0	0.0		0.0	7.2	32.5	36.7	64.4	9.6	1,176
(F)-(G)	mm/day	3.45	7.90	4.25	8.13	5.12	7.26	2.46	3.25	0.56						3.15	6.83	4.80	4.47	4.94	0.70	7.84	5.07	5.27	7.65	7.12	0.94	0.73	0.00	0.00		0.00	0.72	3.25	3.67	6.44	0.87	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	7.18	16.45	8.85	16.93	10.66	15.13	5.13	6.77	1.17						6.56	14.24	9.99	9.31	10.29	1.46	16.33	10.57	10.98	15.95	14.84	1.96	1.52	0.00	0.00		0.00	1.49	6.77	7.65	13.41	1.82	
(H)/(I)	lit/sec/ha	0.83	1.90	1.02	1.96	1.23	1.75	0.59	0.78	0.14						0.76	1.65	1.16	1.08	1.19	0.17	1.89	1.22	1.27	1.85	1.72	0.23	0.18	0.00	0.00		0.00	0.17	0.78	0.89	1.55	0.21	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

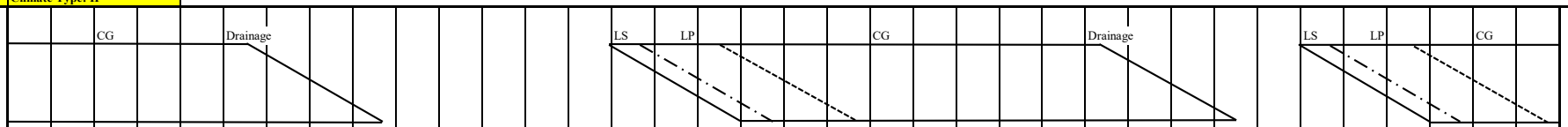
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: CARAGA
Province: Surigao del Norte — **Climate Type: II**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)	Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	4							
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	5.01			5.55			6.58			7.05			6.01			5.68			5.11			5.14			4.88			5.02			4.64			4.70		
(D) Area Factor																																					
Land Soaking Stage	(Als)															0.159	0.233	0.232	0.060																		
Land Preparation Stage	(Alp) (Wet)															0.024	0.300	0.607	0.640	0.367	0.060																
Crop Growing Stage	(Acg)																	0.027	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.940	0.633	0.300	0.027							
Land Soaking Stage	(Als)																															0.152	0.233	0.233	0.082		
Land Preparation Stage	(Alp) (Dry)																															0.015	0.267	0.585	0.652	0.400	0.074
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926
(E) Crop Coefficient	(Kc) Wet															0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85							
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07
(F) Farm Water Requirement	(FWR) mm/day																																				
Land Soaking Stage (Wet)	(LS) 150															28.72	28.43	28.43	28.43																		
(Dry)	120																															23.23	23.23	23.23	23.28		
Land Preparation Stage	(LP)															7.29	7.00	7.00	7.00	6.50	6.50											6.08	6.08	6.08	6.14	6.14	6.14
Crop Growing Stage	(CG)	5.71	5.86	5.71	6.11	5.83	5.38	6.32	6.12	5.59								4.83	5.11	5.01	5.47	5.83	6.01	5.86	5.65	5.12	4.73	4.68	4.67	4.27				3.94	4.23	4.61	5.03
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00
Total	(FWR) Wet															4.74	8.72	11.03	8.32	6.82	7.41	7.83	8.01	7.86	7.65	7.12	6.33	4.23	2.00	0.17							
	Dry	7.71	7.86	7.71	8.11	7.83	7.24	6.10	3.25	0.56																						3.62	7.04	9.06	7.57	6.42	6.96
10-day FWR		77.11	78.62	84.83	81.05	78.28	57.95	60.96	32.48	3.93						52.15	87.23	110.27	83.18	68.20	74.09	86.08	80.14	78.60	84.19	71.24	63.30	42.31	20.01	0.68		36.22	70.36	90.60	75.73	64.18	76.59	1,971
(G) Rainfall (1990)	mm/10day	219	11	63	27	46	10	30	33	45	25	0	171	21	161	34	28	99	67	19	95	28	32	39	19	23	83	53	129	51	70	100	184	109	73	39	101	2,337
Effective Rainfall	(ER)	43.8	0	44.1	18.9	32.2	0	21	23.1	3.9						23.8	19.6	69.3	46.9	0	66.5	19.6	22.4	27.3	0	16.1	58.1	37.1	20	0.7		36.2	70.4	43.6	51.1	27.3	40.4	883
(H) Irrigation Water Requirement	(IWR) mm/10day	33.3	78.6	40.7	62.2	46.1	57.9	40.0	9.4	0.0						28.4	67.6	41.0	36.3	68.2	7.6	66.5	57.7	51.3	84.2	55.1	5.2	5.2	0.0	0.0		0.0	0.0	47.0	24.6	36.9	36.2	1,087
(F)-(G)	mm/day	3.33	7.86	3.70	6.22	4.61	7.24	4.00	0.94	0.00						2.58	6.76	4.10	3.63	6.82	0.76	6.04	5.77	5.13	7.65	5.51	0.52	0.52	0.00	0.00		0.00	0.00	4.70	2.46	3.69	3.29	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	6.94	16.38	7.71	12.95	9.60	15.09	8.33	1.95	0.00						5.37	14.09	8.54	7.56	14.21	1.58	12.59	12.03	10.69	15.95	11.49	1.08	1.09	0.00	0.00		0.00	0.00	9.79	5.13	7.68	6.85	
(H)/(I)	lit/sec/ha	0.80	1.90	0.89	1.50	1.11	1.75	0.96	0.23	0.00						0.62	1.63	0.99	0.87	1.64	0.18	1.46	1.39	1.24	1.85	1.33	0.13	0.13	0.00	0.00		0.00	0.00	1.13	0.59	0.89	0.79	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

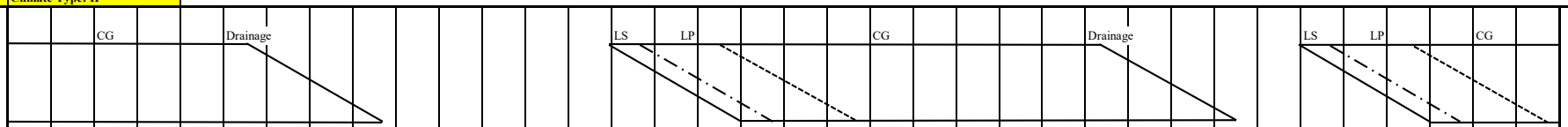
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: CARAGA
Province: Surigao del Sur — **Climate Type: II**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11
(Based on Cropping Pattern)	Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	4							
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	4.96			5.49			6.51			6.97			5.95			5.62			5.06			5.08			4.83			4.99			4.59			4.66		
(D) Area Factor																																					
Land Soaking Stage	(Als)															0.159	0.233	0.232	0.060																		
Land Preparation Stage	(Alp) (Wet)															0.024	0.300	0.607	0.640	0.367	0.060																
Crop Growing Stage	(Acg)																	0.027	0.300	0.633	0.940	1.000	1.000	1.000	1.000	1.000	0.940	0.633	0.300	0.027							
Land Soaking Stage	(Als)																															0.152	0.233	0.233	0.082		
Land Preparation Stage	(Alp) (Dry)																															0.015	0.267	0.585	0.652	0.400	0.074
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926
(E) Crop Coefficient	(Kc) Wet															0.80	0.82	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85							
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																						0.80	0.82	0.85	0.90	0.98	1.07
(F) Farm Water Requirement	(FWR) mm/day																																				
Land Soaking Stage (Wet)	(LS) 150															28.66	28.37	28.37	28.37																		
(Dry)	120																															23.18	23.18	23.18	23.24		
Land Preparation Stage	(LP)															7.24	6.95	6.95	6.95	6.45	6.45											6.04	6.04	6.04	6.10	6.10	6.10
Crop Growing Stage	(CG)	5.65	5.80	5.65	6.04	5.76	5.33	6.25	6.05	5.53								4.78	5.06	4.96	5.41	5.77	5.94	5.79	5.59	5.07	4.69	4.64	4.64	4.24				3.90	4.19	4.57	4.99
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00
Total	(FWR) Wet															4.73	8.69	10.98	8.27	6.77	7.36	7.77	7.94	7.79	7.59	7.07	6.28	4.20	1.99	0.17							
	Dry	7.65	7.80	7.65	8.04	7.76	7.19	6.05	3.22	0.56																						3.61	7.01	9.02	7.54	6.38	6.92
10-day FWR		76.54	78.03	84.20	80.39	77.65	57.49	60.47	32.22	3.90						52.04	86.95	109.82	82.65	67.73	73.57	85.45	79.44	77.91	83.47	70.72	62.84	42.01	19.92	0.67		36.14	70.14	90.23	75.37	63.80	76.13	1,958
(G) Rainfall (1991)	mm/10day	110	135	76	175	20	86	20	217	26	22	53	112	24	71	182	69	59	90	129	101	54	117	18	97	52	20	24	55	42	36	17	32	100	80	121	7	2,649
Effective Rainfall	(ER)	44	54	53.2	70	14	57.5	14	32.2	3.9						52	48.3	41.3	63	51.6	40.4	37.8	46.8	0	67.9	36.4	14	16.8	19.9	0.7		0	22.4	40	56	48.4	0	1,047
(H) Irrigation Water Requirement	(IWR) mm/10day	32.5	24.0	31.0	10.4	63.6	0.0	46.5	0.0	0.0						0.0	38.6	68.5	19.7	16.1	33.2	47.7	32.6	77.9	15.6	34.3	48.8	25.2	0.0	0.0		36.1	47.7	50.2	19.4	15.4	76.1	911
(F)-(G)	mm/day	3.25	2.40	2.82	1.04	6.36	0.00	4.65	0.00	0.00						0.00	3.86	6.85	1.97	1.61	3.32	4.33	3.26	7.79	1.42	3.43	4.88	2.52	0.00	0.00		3.61	4.77	5.02	1.94	1.54	6.92	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	6.78	5.01	5.87	2.16	13.26	0.00	9.68	0.00	0.00						0.00	8.05	14.27	4.09	3.36	6.91	9.03	6.80	16.23	2.95	7.15	10.17	5.25	0.00	0.00		7.53	9.95	10.46	4.04	3.21	14.42	
(H)/(I)	lit/sec/ha	0.78	0.58	0.68	0.25	1.53	0.00	1.12	0.00	0.00						0.00	0.93	1.65	0.47	0.39	0.80	1.04	0.79	1.88	0.34	0.83	1.18	0.61	0.00	0.00		0.87	1.15	1.21	0.47	0.37	1.67	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

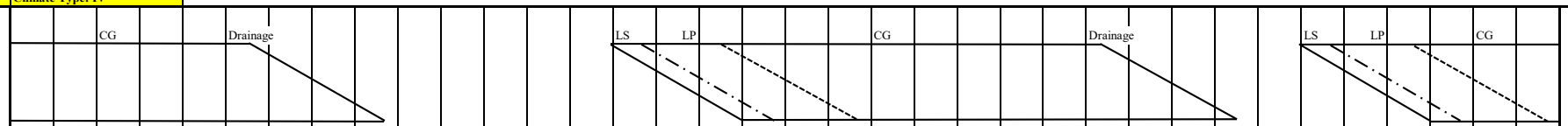
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: ARMM
Province: Basilan — **Climate Type: IV**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days	Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)	Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	5								
	Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation	mm/day	5.09			5.65			6.68			7.09			5.97			5.61			5.03			5.04			4.80			4.98			4.64			4.75			
(D) Area Factor																																						
Land Soaking Stage	(Als)															0.154	0.226	0.226	0.079																			
Land Preparation Stage	(Alp) (Wet)															0.023	0.290	0.587	0.631	0.387	0.079																	
Crop Growing Stage	(Acg)																	0.026	0.090	0.613	0.921	1.000	1.000	1.000	1.000	1.000	0.942	0.645	0.323	0.040								
Land Soaking Stage	(Als)																															0.152	0.226	0.226	0.079			
Land Preparation Stage	(Alp) (Dry)																															0.015	0.258	0.566	0.663	0.419	0.072	
Crop Growing Stage	(Acg)	1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc) Wet																	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85				0.85	0.90	0.98	1.07	
	Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																												
(F) Farm Water Requirement	(FWR) mm/day																																					
Land Soaking Stage (Wet)	(LS) 150															28.68	28.37	28.37	28.37																			
(Dry)	120																															23.23	23.23	23.23	23.32			
Land Preparation Stage	(LP)															7.25	6.94	6.94	6.94	6.43	6.43	6.426										6.08	6.08	6.08	6.18	6.18	6.18	
Crop Growing Stage	(CG)	5.80	5.96	5.80	6.22	5.93	5.48	6.41	6.21	5.68								4.77	5.05	4.93	5.38	5.73	5.90	5.75	5.54	5.04	4.66	4.61	4.63	4.23				3.94	4.28	4.66	5.08	
Percolation	(P) 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR) Wet															4.58	8.42	10.66	7.25	6.73	7.31	7.73	7.90	7.75	7.54	7.04	6.27	4.26	2.14	0.25								
	Dry	7.80	7.96	7.80	8.22	7.93	7.34	6.17	3.28	0.57																						3.62	6.82	8.78	7.62	6.58	7.00	
10-day FWR		78.03	79.55	85.83	82.15	79.33	58.71	61.67	32.85	3.98						50.42	84.22	106.58	72.52	67.35	73.07	85.08	78.97	77.46	82.98	70.40	62.70	42.62	21.42	1.25		36.22	68.19	87.81	76.15	65.82	77.04	1,950
(G) Rainfall (1983)	mm/10day	10	0	11	6	5	0	3	4	5	8	0	13	37	8	39	19	28	51	44	111	132	37	21	50	57	87	103	35	62	20	32	47	81	32	26	86	1,310
Effective Rainfall	(ER)	0	0	0	0	0	0	0	0	0						27.3	0	19.6	35.7	30.8	44.4	52.8	25.9	14.7	35	39.9	60.9	41.2	21.4	1.3		22.4	32.9	56.7	22.4	18.2	60.2	664
(H) Irrigation Water Requirement	(IWR) mm/10day	78.0	79.6	85.8	82.2	79.3	58.7	61.7	32.8	4.0						23.1	84.2	87.0	36.8	36.5	28.7	32.3	53.1	62.8	48.0	30.5	1.8	1.4	0.0	0.0		13.8	35.3	31.1	53.8	47.6	16.8	1,287
(F)-(G)	mm/day	7.80	7.96	7.80	8.22	7.93	7.34	6.17	3.28	0.57						2.10	8.42	8.70	3.68	3.65	2.87	2.93	5.31	6.28	4.36	3.05	0.18	0.14	0.00	0.00		1.38	3.53	3.11	5.38	4.76	1.53	
(I) Irrigation Efficiency	(IE)	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR) mm/day	16.26	16.57	16.26	17.11	16.53	15.29	12.85	6.84	1.18						4.38	17.55	18.12	7.67	7.61	5.97	6.11	11.06	13.07	9.09	6.35	0.37	0.30	0.00	0.00		2.88	7.35	6.48	11.20	9.92	3.19	
(H)/(I)	lit/sec/ha	1.88	1.92	1.88	1.98	1.91	1.77	1.49	0.79	0.14						0.51	2.03	2.10	0.89	0.88	0.69	0.71	1.28	1.51	1.05	0.74	0.04	0.03	0.00	0.00		0.33	0.85	0.75	1.30	1.15	0.37	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

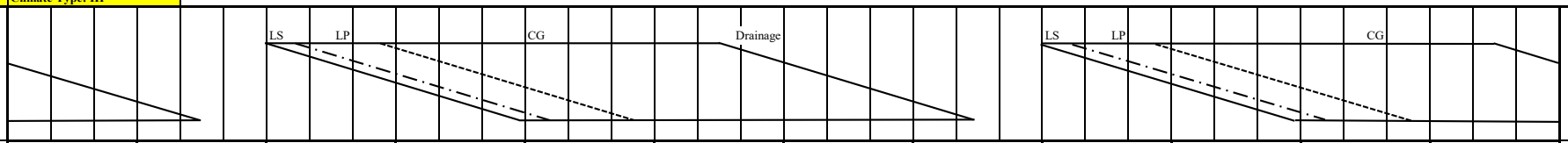
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: ARMM
Province: Lanao del Sur — **Climate Type: III**

(A) Cropping Pattern (60 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 100 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet							10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	4														
		Dry	10	10	11	10	4																				10	10	10	10	10	11	10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	4.76			5.29			6.28			6.70			5.65			5.30			4.74			4.75			4.53			4.69			4.37			4.47			
(D) Area Factor																																								
Land Soaking Stage	(Als)								0.076	0.117	0.117	0.117	0.117	0.116	0.030																								
Land Preparation Stage	(Alp)	(Wet)							0.008	0.133	0.296	0.333	0.333	0.333	0.320	0.183	0.027																						
Crop Growing Stage	(Acg)										0.012	0.150	0.317	0.483	0.650	0.817	0.973	1.000	0.979	0.833	0.667	0.500	0.325	0.150	0.013														
Land Soaking Stage	(Als)																										0.076	0.117	0.117	0.117	0.117	0.116	0.030						
Land Preparation Stage	(Alp)	(Dry)																									0.008	0.133	0.293	0.333	0.333	0.333	0.320	0.183	0.030				
Crop Growing Stage	(Acg)		0.667	0.500	0.325	0.150	0.013																						0.008	0.133	0.300	0.475	0.650	0.817	0.970	1.000	0.987	0.842	
(E) Crop Coefficient	(Kc)	Wet							0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.08	1.07	1.05	1.01	0.96	0.93	0.85														
		Dry	1.05	1.01	0.96	0.93	0.85																				0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.08	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																						
Land Soaking Stage (Wet)	(LS)	150							28.95	28.95	28.95	29.32	29.32	29.32	28.40																								
(Dry)		120																									23.13	23.27	23.13	23.13	23.13	23.13	22.99						
Land Preparation Stage	(LP)								7.53	7.53	7.53	7.90	7.90	7.90	6.97	6.97	6.97										5.99	5.99	5.99	6.13	6.13	6.13	5.85	5.85	5.85				
Crop Growing Stage	(CG)		5.00	4.81	4.57	4.92	4.50		5.02	5.15	5.34	6.03	6.30	6.63	5.76	6.05	6.16	5.88	5.72	5.67	4.98	4.79	4.55	4.42	4.04		3.62	3.71	3.85	4.22	4.41	4.64	4.46	4.68	4.76	4.96	4.83	4.78	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
Total	(FWR)	Wet							2.26	4.39	5.70	7.26	8.69	10.20	8.13	7.85	8.13	7.88	7.56	6.39	4.65	3.39	2.13	0.96	0.08														
		Dry	4.67	3.40	2.14	1.04	0.08																				1.81	3.52	4.51	5.57	6.67	7.88	6.76	6.52	6.74	6.96	6.74	5.71	
10-day FWR			46.68	34.04	23.49	10.38	0.34		22.61	43.89	62.74	72.65	86.91	102.01	81.29	78.49	89.39	78.83	75.62	63.90	46.54	33.94	23.42	9.63	0.31		18.06	35.19	45.07	55.74	66.69	86.67	67.58	65.24	67.36	69.62	67.39	62.82	1,794
(G) Rainfall (1982)		mm/10day	14	34	76	92	62	20	6	41	148	97	47	50	40	75	134	192	127	69	76	114	39	168	314	99	78	62	54	98	62	93	63	77	63	101	40	8	2,933
Effective Rainfall	(ER)		0	23.8	23.5	10.4	0.3		0	28.7	59.2	67.9	32.9	35	28	52.5	53.6	76.8	50.8	48.3	46.5	33.9	23.4	9.6	0.3		18.1	35.2	37.8	55.7	43.4	65.1	44.1	53.9	44.1	40.4	28	0	1,171
(H) Irrigation Water Requirement	(IWR)	mm/10day	46.7	10.2	0.0	0.0	0.0		22.6	15.2	3.5	4.7	54.0	67.0	53.3	26.0	35.8	2.0	24.8	15.6	0.0	0.0	0.0	0.0	0.0		0.0	0.0	7.3	0.0	23.3	21.6	23.5	11.3	23.3	29.2	39.4	62.8	623
(F)-(G)		mm/day	4.67	1.02	0.00	0.00	0.00		2.26	1.52	0.32	0.47	5.40	6.70	5.33	2.60	3.25	0.20	2.48	1.56	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.73	0.00	2.33	1.96	2.35	1.13	2.33	2.92	3.94	5.71	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	9.72	2.13	0.00	0.00	0.00		4.71	3.16	0.67	0.99	11.25	13.96	11.10	5.41	6.78	0.42	5.17	3.25	0.00	0.00	0.00	0.00	0.00		0.00	0.00	1.51	0.00	4.85	4.08	4.89	2.36	4.85	6.09	8.21	11.90	
(H)/(I)		lit/sec/ha	1.13	0.25	0.00	0.00	0.00		0.55	0.37	0.08	0.11	1.30	1.62	1.28	0.63	0.78	0.05	0.60	0.38	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.18	0.00	0.56	0.47	0.57	0.27	0.56	0.70	0.95	1.38	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: ARMM

Province: Maguindanao — **Climate Type: III, IV**

(A) Cropping Pattern (60 days Staggered Period)

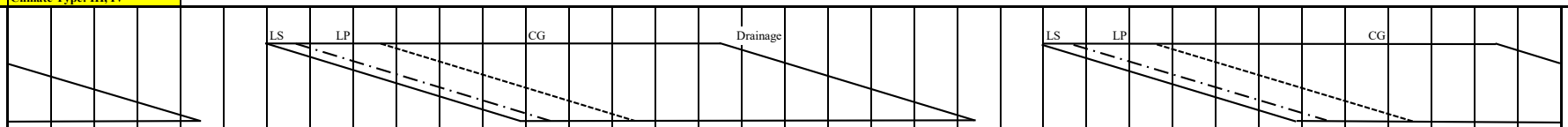
Paddy-Paddy

LS: 7 days

LP: 20 days

Seeding to Drainage: 100 days

(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet							10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	4														
		Dry	10	10	11	10	4																				10	10	10	10	10	11	10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.13			5.69			6.76			7.19			6.03			5.64			5.06			5.07			4.83			5.01			4.68			4.78			
(D) Area Factor																																							
Land Soaking Stage	(Als)								0.076	0.117	0.117	0.117	0.117	0.116	0.030																								
Land Preparation Stage	(Alp)	(Wet)							0.008	0.133	0.296	0.333	0.333	0.333	0.320	0.183	0.027																						
Crop Growing Stage	(Acg)										0.012	0.150	0.317	0.483	0.650	0.817	0.973	1.000	0.979	0.833	0.667	0.500	0.325	0.150	0.013														
Land Soaking Stage	(Als)																										0.076	0.117	0.117	0.117	0.117	0.116	0.030						
Land Preparation Stage	(Alp)	(Dry)																									0.008	0.133	0.293	0.333	0.333	0.333	0.320	0.183	0.030				
Crop Growing Stage	(Acg)		0.667	0.500	0.325	0.150	0.013																						0.008	0.133	0.300	0.475	0.650	0.817	0.970	1.000	0.987	0.842	
(E) Crop Coefficient	(Kc)	Wet							0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.08	1.07	1.05	1.01	0.96	0.93	0.85														
		Dry	1.05	1.01	0.96	0.93	0.85																				0.80	0.82	0.85	0.90	0.94	0.99	1.02	1.07	1.09	1.11	1.08	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150							29.38	29.38	29.38	29.76	29.76	29.76	28.73																								
(Dry)		120																									23.39	23.55	23.39	23.39	23.39	23.39	23.26						
Land Preparation Stage	(LP)								7.95	7.95	7.95	8.33	8.33	8.33	7.31	7.31	7.31										6.25	6.25	6.25	6.41	6.41	6.41	6.12	6.12	6.12				
Crop Growing Stage	(CG)		5.39	5.18	4.92	5.29	4.84		5.41	5.54	5.75	6.47	6.76	7.12	6.15	6.45	6.57	6.26	6.09	6.03	5.31	5.11	4.86	4.72	4.31		3.86	3.96	4.11	4.51	4.71	4.96	4.77	5.01	5.10	5.31	5.16	5.11	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
Total	(FWR)	Wet							2.30	4.49	5.88	7.53	9.03	10.63	8.50	8.24	8.54	8.26	7.92	6.69	4.88	3.56	2.23	1.01	0.08														
		Dry	4.93	3.59	2.25	1.09	0.09																				1.83	3.59	4.62	5.74	6.88	8.15	7.06	6.84	7.07	7.31	7.07	5.99	
10-day FWR			49.27	35.91	24.76	10.94	0.36		22.96	44.94	64.71	75.25	90.31	106.29	84.98	82.42	93.92	82.60	79.21	66.93	48.78	35.55	24.52	10.07	0.33		18.28	35.87	46.17	57.37	68.84	89.69	70.59	68.45	70.72	73.06	70.69	65.90	1,871
(G) Rainfall (1982)		mm/10day	9	28	50	70	46	9	16	31	65	68	30	41	41	51	89	163	89	45	36	67	28	106	280	70	41	30	23	83	37	74	34	54	49	68	41	11	2,073
Effective Rainfall	(ER)		0	19.6	24.8	10.9	0.4		0	21.7	45.5	47.6	21	28.7	28.7	35.7	62.3	65.2	62.3	31.5	25.2	35.6	19.6	10.1	0.3		18.3	21	16.1	57.4	25.9	51.8	23.8	37.8	34.3	47.6	28.7	0	959
(H) Irrigation Water Requirement	(IWR)	mm/10day	49.3	16.3	0.0	0.0	0.0		23.0	23.2	19.2	27.7	69.3	77.6	56.3	46.7	31.6	17.4	16.9	35.4	23.6	0.0	4.9	0.0	0.0		0.0	14.9	30.1	0.0	42.9	37.9	46.8	30.6	36.4	25.5	42.0	65.9	911
(F)-(G)		mm/day	4.93	1.63	0.00	0.00	0.00		2.30	2.32	1.75	2.77	6.93	7.76	5.63	4.67	2.87	1.74	1.69	3.54	2.36	0.00	0.45	0.00	0.00		0.00	1.49	3.01	0.00	4.29	3.44	4.68	3.06	3.64	2.55	4.20	5.99	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	10.26	3.40	0.00	0.00	0.00		4.78	4.84	3.64	5.76	14.44	16.16	11.72	9.73	5.99	3.63	3.52	7.38	4.91	0.00	0.93	0.00	0.00		0.00	3.10	6.27	0.00	8.95	7.18	9.75	6.39	7.59	5.30	8.75	12.48	
(H)/(I)		lit/sec/ha	1.19	0.39	0.00	0.00	0.00		0.55	0.56	0.42	0.67	1.67	1.87	1.36	1.13	0.69	0.42	0.41	0.85	0.57	0.00	0.11	0.00	0.00		0.00	0.36	0.73	0.00	1.04	0.83	1.13	0.74	0.88	0.61	1.01	1.44	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

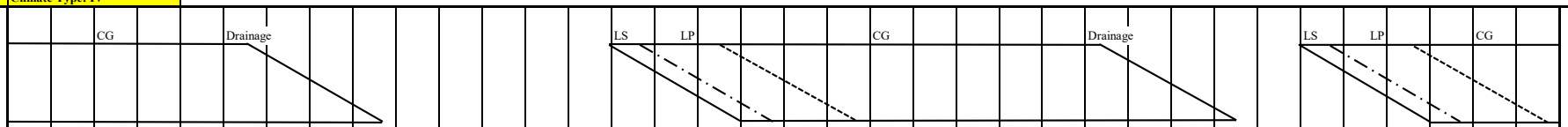
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: ARMM
Province: Sulu
Climate Type: IV

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



(B) Month			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	5								
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.10			5.63			6.66			7.10			6.00			5.66			5.09			5.10			4.86			5.03			4.68			4.77			
(D) Area Factor																																							
Land Soaking Stage	(Als)																0.154	0.226	0.226	0.079																			
Land Preparation Stage	(Alp)	(Wet)															0.023	0.290	0.587	0.631	0.387	0.079																	
Crop Growing Stage	(Acg)																		0.026	0.090	0.613	0.921	1.000	1.000	1.000	1.000	1.000	0.942	0.645	0.323	0.040								
Land Soaking Stage	(Als)																																0.152	0.226	0.226	0.079			
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.258	0.566	0.663	0.419	0.072	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet																	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85								
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																								0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150															28.71	28.41	28.41	28.41																			
(Dry)		120																															23.26	23.26	23.26	23.34			
Land Preparation Stage	(LP)																7.28	6.98	6.98	6.98	6.48	6.48	6.479										6.12	6.12	6.12	6.20	6.20	6.20	
Crop Growing Stage	(CG)		5.81	5.97	5.81	6.19	5.91	5.46	6.39	6.19	5.66								4.81	5.09	4.99	5.45	5.80	5.97	5.81	5.61	5.10	4.71	4.67	4.68	4.28				3.98	4.29	4.67	5.10	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR)	Wet															4.59	8.44	10.70	7.29	6.79	7.37	7.80	7.97	7.81	7.61	7.10	6.32	4.30	2.16	0.25								
		Dry	7.81	7.97	7.81	8.19	7.91	7.32	6.15	3.28	0.57																						3.63	6.84	8.81	7.63	6.60	7.02	
10-day FWR			78.14	79.67	85.95	81.93	79.12	58.55	61.53	32.78	3.97						50.47	84.45	106.95	72.88	67.91	73.70	85.83	79.67	78.14	83.71	71.03	63.25	42.99	21.57	1.26		36.27	68.36	88.10	76.33	66.02	77.27	1,958
(G) Rainfall (1993)		mm/10day	19	1	7	37	6	17	20	0	5	9	46	22	29	20	30	51	16	40	54	1	58	48	7	33	19	18	8	34	81	62	8	59	57	11	17	91	1,041
Effective Rainfall	(ER)		0	0	0	25.9	0	0	14	0	0						21	35.7	0	28	37.8	0	40.6	33.6	0	23.1	0	0	0	21.6	1.3		0	41.3	39.9	0	0	63.7	428
(H) Irrigation Water Requirement	(IWR)	mm/10day	78.1	79.7	86.0	56.0	79.1	58.6	47.5	32.8	4.0						29.5	48.7	107.0	44.9	30.1	73.7	45.2	46.1	78.1	60.6	71.0	63.2	43.0	0.0	0.0		36.3	27.1	48.2	76.3	66.0	13.6	1,530
(F)-(G)		mm/day	7.81	7.97	7.81	5.60	7.91	7.32	4.75	3.28	0.57						2.68	4.87	10.70	4.49	3.01	7.37	4.11	4.61	7.81	5.51	7.10	6.32	4.30	0.00	0.00		3.63	2.71	4.82	7.63	6.60	1.23	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	16.28	16.60	16.28	11.67	16.48	15.25	9.90	6.83	1.18						5.58	10.16	22.28	9.35	6.27	15.35	8.57	9.60	16.28	11.48	14.80	13.18	8.96	0.00	0.00		7.56	5.64	10.04	15.90	13.75	2.57	
(H)/(I)		lit/sec/ha	1.88	1.92	1.88	1.35	1.91	1.76	1.15	0.79	0.14						0.65	1.18	2.58	1.08	0.73	1.78	0.99	1.11	1.88	1.33	1.71	1.53	1.04	0.00	0.00		0.87	0.65	1.16	1.84	1.59	0.30	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

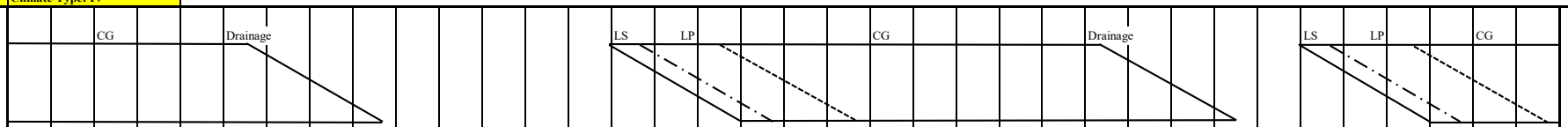
(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

CALCULATION SHEET OF IRRIGATION WATER REQUIREMENT: PROPOSED FOR FUTURE OPERATION

Region: ARMM
Province: Tawi-Tawi — **Climate Type: IV**

(A) Cropping Pattern (30 days Staggered Period)
Paddy-Paddy
LS: 7 days
LP: 20 days
Seeding to Drainage: 110 days
(Drainage: 15 days)



			Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			
(B) Month																																							
No. of Days		Calendar	10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	
(Based on Cropping Pattern)		Wet															11	10	10	10	10	10	11	10	10	11	10	10	10	10	5								
		Dry	10	10	11	10	10	8	10	10	7																						10	10	10	10	10	11	
(C) Potential Evapotranspiration or Pan Evaporation		mm/day	5.10			5.64			6.68			7.12			6.02			5.68			5.10			5.11			4.87			5.04			4.68			4.77			
(D) Area Factor																																							
Land Soaking Stage	(Als)																0.154	0.226	0.226	0.079																			
Land Preparation Stage	(Alp)	(Wet)															0.023	0.290	0.587	0.631	0.387	0.079																	
Crop Growing Stage	(Acg)																		0.026	0.090	0.613	0.921	1.000	1.000	1.000	1.000	1.000	0.942	0.645	0.323	0.040								
Land Soaking Stage	(Als)																																0.152	0.226	0.226	0.079			
Land Preparation Stage	(Alp)	(Dry)																															0.015	0.258	0.566	0.663	0.419	0.072	
Crop Growing Stage	(Acg)		1.000	1.000	1.000	1.000	1.000	0.981	0.733	0.400	0.074																								0.015	0.267	0.600	0.926	
(E) Crop Coefficient	(Kc)	Wet																	0.85	0.90	0.98	1.07	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85								
		Dry	1.14	1.17	1.14	1.10	1.05	0.97	0.96	0.93	0.85																								0.85	0.90	0.98	1.07	
(F) Farm Water Requirement	(FWR)	mm/day																																					
Land Soaking Stage (Wet)	(LS)	150															28.73	28.43	28.43	28.43																			
(Dry)		120																															23.26	23.26	23.26	23.34			
Land Preparation Stage	(LP)																7.30	7.00	7.00	7.00	6.49	6.49	6.488										6.12	6.12	6.12	6.20	6.20	6.20	
Crop Growing Stage	(CG)		5.81	5.97	5.81	6.20	5.92	5.47	6.41	6.21	5.68								4.83	5.11	5.00	5.46	5.81	5.98	5.83	5.62	5.11	4.72	4.68	4.69	4.28				3.98	4.29	4.67	5.10	
Percolation	(P)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00								2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00				2.00	2.00	2.00	2.00	
Total	(FWR)	Wet															4.59	8.45	10.71	7.30	6.80	7.38	7.81	7.98	7.83	7.62	7.11	6.33	4.31	2.16	0.25								
		Dry	7.81	7.97	7.81	8.20	7.92	7.33	6.17	3.28	0.57																						3.63	6.84	8.81	7.63	6.60	7.02	
10-day FWR			78.14	79.67	85.95	82.04	79.22	58.63	61.67	32.85	3.98						50.51	84.54	107.10	73.02	68.01	73.80	85.95	79.79	78.25	83.83	71.14	63.34	43.06	21.60	1.26		36.27	68.36	88.10	76.33	66.02	77.27	1,960
(G) Rainfall (1993)		mm/10day	25	8	16	27	1	28	37	0	3	34	40	12	12	46	20	23	9	15	76	5	42	39	19	11	9	18	7	24	43	39	8	71	27	31	16	140	981
Effective Rainfall	(ER)		17.5	0	0	18.9	0	19.6	25.9	0	0						14	16.1	0	0	53.2	0	29.4	27.3	0	0	0	0	0	16.8	1.3		0	49.7	18.9	21.7	0	56	386
(H) Irrigation Water Requirement	(IWR)	mm/10day	60.6	79.7	86.0	63.1	79.2	39.0	35.8	32.8	4.0						36.5	68.4	107.1	73.0	14.8	73.8	56.6	52.5	78.3	83.8	71.1	63.3	43.1	4.8	0.0		36.3	18.7	69.2	54.6	66.0	21.3	1,573
(F)-(G)		mm/day	6.06	7.97	7.81	6.31	7.92	4.88	3.58	3.28	0.57						3.32	6.84	10.71	7.30	1.48	7.38	5.14	5.25	7.83	7.62	7.11	6.33	4.31	0.48	0.00		3.63	1.87	6.92	5.46	6.60	1.93	
(I) Irrigation Efficiency	(IE)		0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48						0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48		0.48	0.48	0.48	0.48	0.48	0.48	
(J) Diversion Water Requirement	(DWR)	mm/day	12.63	16.60	16.28	13.15	16.50	10.16	7.45	6.84	1.18						6.91	14.26	22.31	15.21	3.08	15.38	10.71	10.93	16.30	15.88	14.82	13.20	8.97	1.00	0.00		7.56	3.89	14.42	11.38	13.75	4.03	
(H)/(I)		lit/sec/ha	1.46	1.92	1.88	1.52	1.91	1.18	0.86	0.79	0.14						0.80	1.65	2.58	1.76	0.36	1.78	1.24	1.27	1.89	1.84	1.72	1.53	1.04	0.12	0.00		0.87	0.45	1.67	1.32	1.59	0.47	

(E) Crop Coefficient

Growing Stage (%)	10	20	30	40	50	60	70	80	90	100
Crop Coefficient	0.80	0.83	0.93	1.04	1.12	1.20	1.21	1.15	1.01	0.85

(F) Land Soaking Requirements

(mm)

Item	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
Land Soaking Requirements	165	145	150	120

(I) Irrigation Efficiency

(%)

Component	Climate Type I		Climate Type II, III & IV	
	Wet	Dry	Wet	Dry
On-farm Efficiency	75	80	75	75
Conveyance Efficiency	80	80	80	80
Operation Efficiency	80	85	80	80
Overall	48	54	48	48

ANNEX F

Agricultural Water Demands

Additional Tables

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Table F 1 List of National Irrigation Systems in 2020

(As of December 31, 2020)

Region/ Province	No.	Name of NISs	Nos. of NIS	ISA (ha)	FUSA (ha)	2020 Actual Irrigated Area (ha)			Cropping Intensity (%)		
						Wet	Dry	Total	Wet	Dry	Total
CAR			**4**	**19,362**	**17,643**	**13,825**	**11,992**	**25,817**	**78.4**	**68.0**	**146.3**
Abra	1	Abra RIS	1	3,329	3,329	1,324	1,302	2,626	39.8	39.1	78.9
Apayao	2	West Apayao Abulug IS*	1	2,024	1,798	1,713	1,682	3,395	95.3	93.5	188.8
		East Apayao Abulug IS*		2,237	2,212	2,026	2,026	4,052	91.6	91.6	183.2
Benguet		*(None)*									
Ifugao	3	HAPID IS	1	2,800	2,423	1,040	149	1,189	42.9	6.1	49.1
		MARRIS Division 3*		678	664	664	664	1,328	100.0	100.0	200.0
Kalinga	4	Upper Chico RIS*	1	8,294	7,217	7,058	6,169	13,227	97.8	85.5	183.3
Mt. Province		*(None)*									
I			**28**	**71,537**	**59,571**	**53,097**	**40,724**	**93,821**	**89.1**	**68.4**	**157.5**
Ilocos Norte	5	Sulvec SRIP	1	200	200	200	200	400	100.0	100.0	200.0
	6	Laoag-Vintar RIS	1	2,433	1,838	1,750	1,113	2,863	95.2	60.6	155.8
	7	NMC & Pasuguin Extn RIS	1	746	653	565	520	1,085	86.5	79.6	166.2
	8	Bolo RIS	1	561	405	405	400	805	100.0	98.8	198.8
	9	Nueva Era RIS	1	680	361	291	291	582	80.6	80.6	161.2
	10	Cura RIS	1	734	603	603	545	1,148	100.0	90.4	190.4
	11	Dingras RIS	1	1,066	837	850	778	1,628	101.6	93.0	194.5
	12	Madongas RIS	1	3,621	2,027	2,027	1,383	3,410	100.0	68.2	168.2
	13	Solsona RIS	1	1,818	1,340	591	543	1,134	44.1	40.5	84.6
	14	Papa RIS	1	2,822	1,372	1,322	1,200	2,522	96.4	87.5	183.8
	15	Labugaon RIS	1	2,156	1,030	1,030	768	1,798	100.0	74.6	174.6
	16	Bonga Pump #1 PIS (River)	1	343	293	208	193	401	71.0	65.9	136.9
	17	Bonga Pump #2 PIS (River)	1	728	500	450	280	730	90.0	56.0	146.0
	18	Bonga Pump #3 PIS (River)	1	212	133	118	98	216	88.7	73.7	162.4
Ilocos Sur	19	Sta.Maria-Burgos NIS	1	1,003	850	780	624	1,404	91.8	73.4	165.2
	20	Gaco NIS	1	1,200	1,200	1,200	343	1,543	100.0	28.6	128.6
	21	Sta.Lucia-Candon NIS	1	1,939	1,434	1,519	1,217	2,736	105.9	84.9	190.8
	22	Tagudin NIS	1	1,376	1,333	1,231	987	2,218	92.3	74.0	166.4
	23	Banaoang PIS (River)	1	1,873	1,873	1,235	1,250	2,485	65.9	66.7	132.7
La Union	24	Amburayan RIS	1	3,489	3,271	3,092	2,309	5,401	94.5	70.6	165.1
	25	Masalip RIS	1	1,728	1,514	1,137	1,063	2,200	75.1	70.2	145.3
Pangasinan	26	Agno RIS	1	13,761	13,564	13,152	11,608	24,760	97.0	85.6	182.5
	27	Dipalo RIS	1	6,326	5,703	5,363	2,541	7,904	94.0	44.6	138.6
	28	Lower Agno RIS*	1	5,525	3,546	2,979	2,037	5,016	84.0	57.4	141.5
	29	Dumuloc RIS	1	1,432	1,432	1,131	1,078	2,209	79.0	75.3	154.3
	30	Sinocalan RIS	1	2,636	2,630	2,101	2,207	4,308	79.9	83.9	163.8
	31	San-Fabian RIS	1	2,388	2,116	1,688	1,555	3,243	79.8	73.5	153.3
	32	Ambayoan RIS	1	8,486	7,259	5,845	3,342	9,187	80.5	46.0	126.6
		NBRIS (Nayom RIS)*		255	254	234	251	485	92.1	98.8	190.9
II			**23**	**182,009**	**163,320**	**150,040**	**149,315**	**299,355**	**91.9**	**91.4**	**183.3**
Batanes		*(None)*									
Cagayan	33	East Apayao Abulug IS*	1	8,391	8,382	6,513	6,513	13,026	77.7	77.7	155.4
	34	Baggao IS	1	3,540	2,768	2,564	2,556	5,120	92.6	92.3	185.0
	35	Banurbur Creek IS	1	2,221	2,205	1,803	2,062	3,865	81.8	93.5	175.3
	36	Baua RIS	1	2,419	2,269	1,004	1,786	2,790	44.2	78.7	123.0
	37	Dummun RIS	1	2,474	2,473	2,077	1,915	3,992	84.0	77.4	161.4
	38	Visitacion IS	1	1,368	1,224	921	1,080	2,001	75.2	88.2	163.5
	39	Lower Chico RIS	1	1,530	1,524	1,522	1,522	3,044	99.9	99.9	199.7
	40	Pinacanauan RIS	1	1,122	1,122	805	792	1,597	71.7	70.6	142.3
	41	Zinundungan RIS	1	2,937	2,292	2,061	1,972	4,033	89.9	86.0	176.0
		West Apayao Abulug IS*		3,036	2,992	2,484	2,479	4,963	83.0	82.9	165.9
		East Apayao Abulug IS* (Pump, River)		510	483	304	304	608	62.9	62.9	125.9
	42	Iguig-Alcala-Amulung PIS (River)	1	2,415	2,377	2,243	2,212	4,455	94.4	93.1	187.4
	43	Magapit PIS (River)	1	11,173	11,116	8,661	10,635	19,296	77.9	95.7	173.6
	44	Nassiping PIS (River)	1	166	166	166	0	166	100.0		100.0
	45	Solana PIS (River)	1	4,072	3,376	3,188	3,188	6,376	94.4	94.4	188.9
Isabela	46	Pasa SRIS	1	846	377	377	334	711	100.0	88.6	188.6
	47	Mallig RIS	1	3,167	3,157	2,845	2,835	5,680	90.1	89.8	179.9
	48	San Pablo-Cabagan IS	1	1,281	1,214	1,153	1,083	2,236	95.0	89.2	184.2
	49	Tumauini IS	1	3,532	3,512	3,384	3,460	6,844	96.4	98.5	194.9
	50	Dububu RIS	1	907	343	269	260	529	78.4	75.8	154.2
		Upper Chico RIS*		10,274	8,803	6,373	3,291	9,664	72.4	37.4	109.8
		Addalam RIS*		3,526	3,526	3,387	3,279	6,666	96.1	93.0	189.1
	51	MARIIS Division 1*	1	20,654	17,743	17,679	17,656	35,335	99.6	99.5	199.1
		MARIIS Division 2*		26,825	24,996	24,389	24,332	48,721	97.6	97.3	194.9
		MARIIS Division 3*		17,592	15,893	15,639	15,621	31,260	98.4	98.3	196.7
	52	Siffu RIS	1	7,109	6,334	6,225	6,225	12,450	98.3	98.3	196.6
		MARIIS Division 4*		24,630	19,200	18,981	18,928	37,909	98.9	98.6	197.4
Nueva Vizcaya	53	NV Bagabag IS	1	2,721	2,647	2,461	2,461	4,922	93.0	93.0	185.9
	54	Colocol Integrated NIS	1	6,193	5,867	5,684	5,684	11,368	96.9	96.9	193.8
Quirino	55	Addalam RIS*	1	2,393	2,166	2,105	2,087	4,192	97.2	96.4	193.5
		MARIIS Division 1* (Baligaton DD)		2,985	2,773	2,773	2,763	5,536	100.0	99.6	199.6

III				**34**	**238,675**	**224,301**	**196,707**	**188,936**	**385,643**	**87.7**	**84.2**	**171.9**
	Aurora	56	Disalit Creek IS	1	572	572	555	555	1,110	97.0	97.0	194.1
		57	Amro RIS	1	1,000	1,000	1,000	1,000	2,000	100.0	100.0	200.0
	Bataan	58	CLBRIS	1	1,090	863	742	775	1,517	86.0	89.8	175.8
	Bulacan	59	Angat-Maasim (AMRIS)*	1	20,352	15,390	11,561	5,807	17,368	75.1	37.7	112.9
			AMRIS* (Pump from River)		2,092	1,920	1,736	1,039	2,775	90.4	54.1	144.5
			UPRIIS Division 4*		6,578	6,440	5,966	6,414	12,380	92.6	99.6	192.2
	Nueva Ecija	60	UPRIIS Division 1	5	22,810	22,362	22,245	21,168	43,413	99.5	94.7	194.1
			UPRIIS Division 2	5	24,187	23,762	23,762	23,762	47,524	100.0	100.0	200.0
			UPRIIS Division 3	8	36,067	34,269	33,189	33,159	66,348	96.8	96.8	193.6
			UPRIIS Division 4*	1	13,880	13,607	13,165	13,452	26,617	96.8	98.9	195.6
			UPRIIS Division 5*	1	16,994	16,175	15,568	15,583	31,151	96.2	96.3	192.6
			UPRIIS Division 6*	1	20,363	20,363	20,325	19,877	40,202	99.8	97.6	197.4
			Pampanga Delta RIS*		1,548	1,548	796	1,499	2,295	51.4	96.8	148.3
			Lower Agno RIS*		697	647	612	480	1,092	94.6	74.2	168.8
			Tarlac Ground Water IS*		360	359	295	295	590	82.2	82.2	164.3
	Pampanga	61	Porac-Gumain RIS	1	4,186	3,250	3,088	3,079	6,167	95.0	94.7	189.8
		62	Pampanga Delta RIS*	1	11,813	9,699	4,804	7,938	12,742	49.5	81.8	131.4
			Angat-Maasim (AMRIS)*		9,931	9,931	10,454	9,998	20,452	105.3	100.7	205.9
			UPRIIS Division 4*		4,915	4,892	4,135	4,763	8,898	84.5	97.4	181.9
	Tarlac	63	Camiling	1	8,630	8,273	7,215	4,200	11,415	87.2	50.8	138.0
		64	Tarlac, San Miguel-Odonel RIS	1	16,097	15,941	5,814	5,978	11,792	36.5	37.5	74.0
		65	Tarlac Ground Water IS*	1	3,091	3,035	2,118	2,068	4,186	69.8	68.1	137.9
			UPRIIS Division 5*		2,006	1,994	1,783	1,989	3,772	89.4	99.7	189.2
			UPRIIS Division 6*		633	633	633	324	957	100.0	51.2	151.2
			Lower Agno RIS*		1,522	1,112	860	860	1,720	77.3	77.3	154.7
	Zambales	66	Bucao RIS	1	1,231	967	840	503	1,343	86.9	52.0	138.9
		67	Nayom-Bayto (NB) RIS*	1	1,698	1,580	1,501	1,354	2,855	95.0	85.7	180.7
		68	Sto. Tomas RIS	1	2,252	2,252	1,289	527	1,816	57.2	23.4	80.6
		69	Upper Bagsit RIS	1	2,080	1,465	656	490	1,146	44.8	33.4	78.2
IV-A				**39**	**29,428**	**17,962**	**13,703**	**13,933**	**27,636**	**76.3**	**77.6**	**153.9**
	Batangas	70	Palico RIS	1	1,108	978	824	876	1,700	84.3	89.6	173.8
	Cavite	71	Molino RIS	1	462	50	23	14	37	46.0	28.0	74.0
		72	Embarcadero RIS	1	425	41	21	22	43	51.2	53.7	104.9
		73	Luksuhin RIS	1	336	0	0	30	30			
		74	Makuling RIS	1	516	28	19	25	44	67.9	89.3	157.1
		75	Baluctot RIS	1	516	101	52	56	108	51.5	55.4	106.9
		76	Butas-Lawang Bato RIS	1	628	320	103	85	188	32.2	26.6	58.8
		77	Butas RIS	1	453	219	54	57	111	24.7	26.0	50.7
		78	Plucena-Bayan RIS	1	539	161	43	55	98	26.7	34.2	60.9
		79	Vargas (Bankud) RIS	1	798	215	62	85	147	28.8	39.5	68.4
		80	Butas-Palanas RIS	1	665	182	56	73	129	30.8	40.1	70.9
		81	Butas-Marcele RIS	1	512	157	46	68	114	29.3	43.3	72.6
		82	Julian RIS	1	429	106	14	45	59	13.2	42.5	55.7
		83	San Augstin RIS	1	695	243	72	102	174	29.6	42.0	71.6
		84	Pasong Kastils RIS	1	545	309	123	111	234	39.8	35.9	75.7
		85	Kay-Akle RIS	1	470	325	272	317	589	83.7	97.5	181.2
		86	Balayungan RIS	1	1,688	1,337	1,079	914	1,993	80.7	68.4	149.1
		87	Culong-Culong RIS	1	630	423	104	133	237	24.6	31.4	56.0
		88	Sahing RIS	1	477	101	86	114	200	85.1	112.9	198.0
		89	Tres Cruzes RIS	1	911	443	349	234	583	78.8	52.8	131.6
		90	Matanda RIS	1	1,968	997	254	276	530	25.5	27.7	53.2
		91	Mbacao Pump (River)	1	35	35	28	12	40	80.0	34.3	114.3
	Laguna	92	Mabacan RIS	1	584	364	364	364	728	100.0	100.0	200.0
		93	San Juan RIS	1	467	257	257	257	514	100.0	100.0	200.0
		94	San Cristobal RIS	1	354	186	186	186	372	100.0	100.0	200.0
		95	Mayor RIS	1	416	400	358	358	716	89.5	89.5	179.0
		96	Sta. Cruz RIS	1	3,435	2,295	2,295	2,295	4,590	100.0	100.0	200.0
		97	Lumban IS	1	182	119	10	119	129	8.4	100.0	108.4
		98	Balanac RIS	1	1,146	1,090	1,090	1,090	2,180	100.0	100.0	200.0
		99	Sta. Maria RIS	1	1,019	1,012	885	885	1,770	87.5	87.5	174.9
		100	Malaunod RIS	1	227	174	163	163	326	93.7	93.7	187.4
		101	Macabling RIS	1	521	109	83	101	184	76.1	92.7	168.8
		102	Diezmo RIS	1	449	163	137	149	286	84.0	91.4	175.5
		103	Cabuyao East PIS (River)	1	640	350	139	139	278	39.7	39.7	79.4
		104	Dambo PIS (Laguna de Bay)	1	400	400	125	125	250	31.3	31.3	62.5
	Quezon	105	Agos RIS	1	1,456	1,456	1,300	1,304	2,604	89.3	89.6	178.8
		106	Dumacaa RIS	1	2,238	1,845	1,677	1,744	3,421	90.9	94.5	185.4
		107	Hanagdong RIS	1	330	275	254	254	508	92.4	92.4	184.7
		108	Lagnas RIS	1	758	696	696	696	1,392	100.0	100.0	200.0
	Rizal		*(None)*									
IV-B				**13**	**35,009**	**25,325**	**24,370**	**21,647**	**46,017**	**96.2**	**85.5**	**181.7**
	Marinduque		*(None)*									
	Occidental Mindoro	109	Amnay RIS	1	1,575	1,545	1,407	1,417	2,824	91.1	91.7	182.8
		110	Caguray RIS	1	3,308	1,990	1,602	1,332	2,934	80.5	66.9	147.4
		111	Lumintao RIS	1	1,504	1,167	1,167	1,167	2,334	100.0	100.0	200.0
		112	Pagbahan RIS	1	1,248	967	847	847	1,694	87.6	87.6	175.2
		113	Mongpong RIS	1	360	330	330	330	660	100.0	100.0	200.0
	Oriental Mindoro	114	Baco-Bucayao RIS	1	6,327	4,230	4,230	4,230	8,460	100.0	100.0	200.0
		115	Bansud RIS	1	1,043	1,043	1,043	1,043	2,086	100.0	100.0	200.0
		116	Mag-asawang-Tubig RIS	1	1,881	1,022	1,022	1,022	2,044	100.0	100.0	200.0
		117	Pula RIS	1	3,144	3,141	3,141	3,141	6,282	100.0	100.0	200.0
		118	*Bongabong RIS (New)*	1	4,152	2,095	2,039	0	2,039	97.3		97.3
	Palawan	119	Malatgao RIS	1	5,523	3,790	3,650	3,397	7,047	96.3	89.6	185.9
		120	Batang-Batang RIS	1	4,660	3,721	3,608	3,437	7,045	97.0	92.4	189.3
	Romblon	121	Cantingas RIS	1	284	284	284	284	568	100.0	100.0	200.0

V				**18**	**24,135**	**23,752**	**21,141**	**20,916**	**42,057**	**89.0**	**88.1**	**177.1**
	Albay	122	South Quinale RIS	1	758	753	139	148	287	18.5	19.7	38.1
		123	Mahaba RIS	2	727	727	727	727	1,454	100.0	100.0	200.0
		124	Cabilogan-San Juan RIS	1	793	731	628	552	1,180	85.9	75.5	161.4
		125	Ogsong RIS	1	210	210	210	210	420	100.0	100.0	200.0
		126	Nasisis RIS	1	628	628	628	628	1,256	100.0	100.0	200.0
		127	Hibiga RIS	1	500	500	500	500	1,000	100.0	100.0	200.0
	Camarines Norte	128	Daet-Talisay RIS	1	3,141	3,141	2,798	2,797	5,595	89.1	89.0	178.1
		129	Matogdon RIS	1	471	306	268	284	552	87.6	92.8	180.4
	Camarines Sur	130	Barit RIS	1	2,647	2,635	2,179	2,167	4,346	82.7	82.2	164.9
		131	Cagaycay RIS	1	2,135	2,095	1,803	1,783	3,586	86.1	85.1	171.2
		132	Tigman-Hinagyaman-Inarihan RIS	1	3,573	3,542	3,480	3,479	6,959	98.2	98.2	196.5
		133	Rida RIS	1	2,698	2,657	2,221	2,090	4,311	83.6	78.7	162.3
		134	Lower Lalo RIS	1	1,596	1,574	1,431	1,422	2,853	90.9	90.3	181.3
		135	Buhi-Lalo Upper-Lolo RIS	1	1,061	1,056	1,045	1,045	2,090	99.0	99.0	197.9
		136	Libmanan-Cabusao PIS (River)	1	2,195	2,195	2,082	2,082	4,164	94.9	94.9	189.7
	Catanduanes		*(None)*									
	Masbate		*(None)*									
	Sorsogon	137	San Francisco RIS	1	590	590	590	590	1,180	100.0	100.0	200.0
		138	San Ramon RIS	1	412	412	412	412	824	100.0	100.0	200.0
VI				**13**	**54,520**	**47,105**	**44,467**	**40,161**	**84,628**	**94.4**	**85.3**	**179.7**
	Aklan	139	Aklan- RIS	1	4,272	4,136	4,137	3,817	7,954	100.0	92.3	192.3
		140	Panakuyan RIS	1	1,454	1,334	600	431	1,031	45.0	32.3	77.3
	Antique	141	Sibalom-San Jose IS	1	5,416	5,065	4,996	4,506	9,502	98.6	89.0	187.6
	Capiz	142	Mambusao RIS	1	1,423	1,372	1,227	993	2,220	89.4	72.4	161.8
	Guimaras		*(None)*									
	Iloilo	143	Sta. Barbara RIS	1	3,438	2,289	2,289	2,217	4,506	100.0	96.9	196.9
		144	Aganan RIS	1	4,863	3,409	3,409	2,268	5,677	100.0	66.5	166.5
		145	Suague RIS	1	2,637	2,454	2,454	2,394	4,848	100.0	97.6	197.6
		146	Sibalom RIS	1	2,085	1,719	1,423	1,359	2,782	82.8	79.1	161.8
		147	Barotac Viejo RIS	1	2,549	1,825	1,616	1,152	2,768	88.5	63.1	151.7
		148	Jalaur Proper IS	1	9,482	8,209	8,209	7,208	15,417	100.0	87.8	187.8
		149	Jalaur Extension IS	1	2,360	2,129	2,129	1,989	4,118	100.0	93.4	193.4
	Negros Occidental	150	Bago RIS	1	12,701	11,955	10,769	10,618	21,387	90.1	88.8	178.9
		151	Pangiplan RIS	1	1,840	1,209	1,209	1,209	2,418	100.0	100.0	200.0
VII				**14**	**16,184**	**15,000**	**12,030**	**10,391**	**22,421**	**80.2**	**69.3**	**149.5**
	Bohol	152	Bohol Integrated IS- Malinao IS	1	4,961	4,741	4,034	3,851	7,885	85.1	81.2	166.3
		153	Bohol Integrated IS- Capayas IS	1	1,297	1,183	669	512	1,181	56.6	43.3	99.8
		154	Bohol Integrated IS- Bayongan IS	1	4,269	3,986	3,052	2,326	5,378	76.6	58.4	134.9
		155	Tugas-Can-Oiln SRIS	1	260	260	260	260	520	100.0	100.0	200.0
		156	Talibon SRIS	1	1,229	1,067	623	458	1,081	58.4	42.9	101.3
		157	Tubigon SRIS	1	190	190	40	0	40	21.1		21.1
		158	Ilaya SRIS	1	535	535	495	145	640	92.5	27.1	119.6
		159	San Vicente SRIP	1	56	56	56	56	112	100.0	100.0	200.0
		160	Binaojot SWIM	1	20	20	20	2	22	100.0	10.0	110.0
		161	USF Dam	1	0	0	0	0	0	0.0	0.0	0.0
	Cebu	162	Can-asujan SRIS	1	782	762	731	731	1,462	95.9	95.9	191.9
	Negros Oriental	163	Dauin SRIS	1	1,000	900	950	950	1,900	105.6	105.6	211.1
		164	Nasig-id SRIS	1	1,000	900	700	700	1,400	77.8	77.8	155.6
		165	Mayabon CIS/Calanga SRIS	1	585	400	400	400	800	100.0	100.0	200.0
	Siquijor		*(None)*									
VIII				**19**	**23,197**	**22,668**	**19,607**	**20,242**	**39,849**	**86.5**	**89.3**	**175.8**
	Biliran		*(None)*									
	Northern Leyte	166	Bao RIS	1	2,429	2,404	2,404	2,404	4,808	100.0	100.0	200.0
		167	Binahaan Norte RIS	1	1,902	1,902	1,895	1,895	3,790	99.6	99.6	199.3
		168	Mainit RIS	1	2,265	2,265	2,157	2,207	4,364	95.2	97.4	192.7
		169	Daguitan RIS	1	1,050	1,050	1,050	1,050	2,100	100.0	100.0	200.0
		170	Bito RIS	1	1,661	1,656	1,656	1,656	3,312	100.0	100.0	200.0
		171	Gibuga RIS	1	783	769	769	769	1,538	100.0	100.0	200.0
		172	Hindang-Hilongos IS	1	780	780	78	780	858	10.0	100.0	110.0
		173	Pogaso RIS	1	830	800	735	735	1,470	91.9	91.9	183.8
		174	Marabong RIS	1	856	856	856	856	1,712	100.0	100.0	200.0
		175	Binahaan South RIS	1	1,528	1,528	1,528	1,528	3,056	100.0	100.0	200.0
		176	Guinarona RIS	1	758	758	758	765	1,523	100.0	100.9	200.9
		177	Lower Binahaan RIS	1	1,447	1,447	1,364	1,364	2,728	94.3	94.3	188.5
		178	Ibawon RIS	1	310	310	310	310	620	100.0	100.0	200.0
		179	Balire South RIS	1	396	396	396	396	792	100.0	100.0	200.0
		180	Balire North RIS	1	377	357	357	357	714	100.0	100.0	200.0
		181	Tibak RIS	1	1,945	1,945	1,945	1,945	3,890	100.0	100.0	200.0
	Southern Leyte	182	Das-ay RIS	1	420	420	420	420	840	100.0	100.0	200.0
	Northern Samar	183	Catubig IS	1	1,229	1,229	449	260	709	36.5	21.2	57.7
	Western Samar		Basey IS	1	2,231	1,796	480	545	1,025	26.7	30.3	57.1
	Eastern Samar		*(None)*									
IX				**4**	**16,408**	**15,837**	**15,184**	**14,986**	**30,170**	**95.9**	**94.6**	**190.5**
	Zamboanga del Norte		*(None)*									
	Zamboanga del Sur	184	Labangan RIS	1	3,195	3,065	2,833	2,833	5,666	92.4	92.4	184.9
		185	Salug RIS	1	7,969	7,661	7,360	7,360	14,720	96.1	96.1	192.1
		186	Dipolo RIS	1	1,600	1,540	1,430	1,430	2,860	92.9	92.9	185.7
			Sibuguey Valley IS*		692	680	670	641	1,311	98.5	94.3	192.8
	Zamboanga Sibugay	187	Sibuguey Valley IS*	1	2,952	2,891	2,891	2,722	5,613	100.0	94.2	194.2

X				**8**	**33,659**	**25,119**	**21,562**	**19,889**	**41,451**	**85.8**	**79.2**	**165.0**
	Bukidnon	188	Manupali RIS	1	4,395	2,174	1,937	1,952	3,889	89.1	89.8	178.9
		189	Muleta RIS	1	4,087	1,820	1,766	1,566	3,332	97.0	86.0	183.1
		190	Pulangui RIS	1	11,616	10,885	10,529	10,523	21,052	96.7	96.7	193.4
		191	Roxas-Kuya RIS	1	1,011	805	802	796	1,598	99.6	98.9	198.5
		192	Bubunawan RIS	1	2,139	1,891	892	1,180	2,072	47.2	62.4	109.6
		193	Talakag RIS	1	2,657	1,108	186	186	372	16.8	16.8	33.6
	Camiguin		*(None)*									
	Lanao del Norte	194	Maranding RIS	1	5,254	5,061	4,705	2,988	7,693	93.0	59.0	152.0
	Misamis Occidental		*(None)*									
	Misamis Oriental	195	Balingasag RIS	1	2,500	1,375	745	698	1,443	54.2	50.8	104.9
XI				**9**	**38,814**	**36,092**	**31,312**	**31,270**	**62,582**	**86.8**	**86.6**	**173.4**
	Compostela Valley	196	Batutu RIS	1	4,475	4,435	4,435	4,435	8,870	100.0	100.0	200.0
	Davao del Norte	197	Lasang RIS	1	4,929	4,929	3,346	3,346	6,692	67.9	67.9	135.8
		198	Saug RIS	1	5,044	4,459	4,148	4,148	8,296	93.0	93.0	186.1
		199	Libuganon RIS	1	10,815	9,315	7,825	7,825	15,650	84.0	84.0	168.0
		200	Kipaliku RIS	1	2,600	2,600	2,073	2,073	4,146	79.7	79.7	159.5
		201	Libuganon Left RIS	1	1,095	995	806	806	1,612	81.0	81.0	162.0
	Davao del Sur	202	Padada RIS	1	3,512	3,015	2,715	2,714	5,429	90.0	90.0	180.1
		203	Mal RIS	1	3,200	3,200	2,820	2,783	5,603	88.1	87.0	175.1
	Davao Oriental	204	Lupon IS	1	3,144	3,144	3,144	3,140	6,284	100.0	99.9	199.9
XII				**15**	**72,442**	**66,219**	**62,204**	**62,051**	**124,255**	**93.9**	**93.7**	**187.6**
	Sarangani		*(None)*									
	South Cotabato	205	Allah RIS*	1	11,656	11,101	10,970	10,915	21,885	98.8	98.3	197.1
		206	Marbel #1 RIS	1	2,914	2,077	2,043	2,052	4,095	98.4	98.8	197.2
		207	Marbel #2 RIS*	1	979	908	893	893	1,786	98.3	98.3	196.7
		208	Banga RIS	1	3,589	2,806	2,806	2,796	5,602	100.0	99.6	199.6
		209	Sinawal SIP	1	1,231	911	911	911	1,822	100.0	100.0	200.0
		210	Buayan RIS	1	1,807	1,593	954	954	1,908	59.9	59.9	119.8
		211	Siluay RIS	1	1,466	777	777	777	1,554	100.0	100.0	200.0
			Tacurong IS*		92	90	90	90	180	100.0	100.0	200.0
	North Cotabato	212	Kabacan RIS	1	4,823	4,807	4,807	4,807	9,614	100.0	100.0	200.0
		213	Libungan RIS*	1	9,983	9,852	9,704	9,633	19,337	98.5	97.8	196.3
		214	Malasila RIS	1	4,321	4,321	4,321	4,321	8,642	100.0	100.0	200.0
		215	M'lang RIS	1	3,177	3,018	3,018	3,018	6,036	100.0	100.0	200.0
		216	Maridagao RIS*	1	5,121	5,013	4,245	4,245	8,490	84.7	84.7	169.4
			Pagalungan RIS*		89	89	89	89	178	100.0	100.0	200.0
			Alip RIS*		35	35	0	0	0	0.0	0.0	0.0
	Sultan Kudarat	217	Lambayong RIS*	1	11,550	10,955	10,422	10,422	20,844	95.1	95.1	190.3
		218	Antong IP	1	1,563	1,563	0	0	0	0.0	0.0	0.0
		219	Tacurong IS*	1	2,274	1,719	1,573	1,567	3,140	91.5	91.2	182.7
			Allah RIS*		3,956	3,772	3,769	3,749	7,518	99.9	99.4	199.3
			Marbel #2 RIS*		1,816	812	812	812	1,624	100.0	100.0	200.0
XIII				**10**	**34,442**	**30,506**	**24,852**	**24,581**	**49,433**	**81.5**	**80.6**	**162.0**
	Agusan del Norte	220	Cabadbaran-Taguibo RIS	1	3,606	3,393	3,364	3,364	6,728	99.1	99.1	198.3
		221	MAP IS	1	1,201	1,201	1,005	1,005	2,010	83.7	83.7	167.4
		222	Lower Agusan River PIS	1	6,000	3,785	2,665	2,271	4,936	70.4	60.0	130.4
	Agusan del Sur	223	Andanan RIS	1	6,150	5,384	4,673	4,696	9,369	86.8	87.2	174.0
		224	Gibong RIS	1	3,709	3,486	2,471	2,571	5,042	70.9	73.8	144.6
		225	Simulao RIS	1	3,361	2,956	2,618	2,618	5,236	88.6	88.6	177.1
		226	Baobo RIS	1	1,600	1,522	1,246	1,246	2,492	81.9	81.9	163.7
		227	Sta. Josefa PIS (River)	1	2,250	2,250	1,200	1,200	2,400	53.3	53.3	106.7
	Dinagat Islands		*(None)*									
	Surigao del Norte		*(None)*									
	Surigao del Sur	227	Cantilan RIS	1	2,209	2,209	2,010	2,010	4,020	91.0	91.0	182.0
		228	Tago RIS	1	4,356	4,320	3,600	3,600	7,200	83.3	83.3	166.7
ARMM				**6**	**27,202**	**26,233**	**19,997**	**19,419**	**39,416**	**76.2**	**74.0**	**150.3**
	Basilan		*(None)*									
	Lanao del Sur	229	Rugnan RIS	1	3,250	3,050	1,794	1,663	3,457	58.8	54.5	113.3
		230	Malaig RIS	1	2,750	2,750	1,565	1,371	2,936	56.9	49.9	106.8
	Maguindanao	231	Talayan RIS	1	766	766	715	715	1,430	93.3	93.3	186.7
		232	Alip RIS*	1	3,372	3,351	2,241	2,241	4,482	66.9	66.9	133.8
		233	Kabulnan RIS	1	12,933	12,695	10,517	10,419	20,936	82.8	82.1	164.9
		234	Pagalungan RIS*	1	1,112	614	442	287	729	72.0	46.7	118.7
			Libungan RIS*		595	592	592	592	1,184	100.0	100.0	200.0
			Maridagao RIS*		1,782	1,773	1,489	1,489	2,978	84.0	84.0	168.0
			Lambayong RIS*		642	642	642	642	1,284	100.0	100.0	200.0
	Sulu		*(None)*									
	Tawi-Tawi		*(None)*									
	Total			**257**	**917,023**	**816,653**	**724,098**	**690,453**	**1,414,551**	**88.7**	**84.5**	**173.2**

NIS by Ground Water Sources											
Nueva Ecija		Tarlac Ground Water IS*		360	359	295	295	590			
Talrac		Tarlac Ground Water IS*	1	3,091	3,035	2,118	2,068	4,186			
NISs covering more than two (2) Provinces											
Apayao	2	West Apayao Abulug IS*	1	5,060	4,790	4,197	4,161	8,358	88	87	174
Kalinga	4	Upper Chico RIS*	1	18,568	16,020	13,431	9,460	22,891	84	59	143
Pangasinan	28	Lower Agno RIS*	1	7,744	5,305	4,451	3,377	7,828	84	64	148
Cagayan	33	East Apayao Abulug IS* (Pump)	1	11,138	11,077	8,843	8,843	17,686	80	80	160
Isabela	51	MARIIS*	1	93,364	81,269	80,125	79,964	160,089	99	98	197
Quirino	55	Addalam RIS*	1	5,919	5,692	5,492	5,366	10,858	96	94	191
Bulacan	59	Angat-Maasim (AMRIS)*	1	32,375	27,241	23,751	16,844	40,595	87	62	149
Nueva Ecija	60	UPRIIS*	21	148,433	144,497	140,771	140,491	281,262	97	97	195
Pampanga	62	Pampanga Delta RIS*	1	13,361	11,247	5,600	9,437	15,037	50	84	134
Tarlac	65	Tarlac Ground Water IS*	1	3,451	3,394	2,413	2,363	4,776	71	70	141
Zambales	67	Nayom-Bayto (NB) RIS*	1	1,953	1,834	1,735	1,605	3,340	95	88	182
Zamboanga Sibugay	186	Sibuguey Valley IS*	1	3,644	3,571	3,561	3,363	6,924	100	94	194
South Cotabato	204	Allah RIS*	1	15,612	14,873	14,739	14,664	29,403	99	99	198
	206	Marbel #2 RIS*	1	2,795	1,720	1,705	1,705	3,410	99	99	198
North Cotabato	212	Libungan RIS*	1	10,578	10,444	10,296	10,225	20,521	99	98	196
	215	Maridagao RIS*	1	6,903	6,786	5,734	5,734	11,468	84	84	169
Sultan Kudarat	206	Lambayong RIS*	1	12,192	11,597	11,064	11,064	22,128	95	95	191
	218	Tacurong IS*	1	2,366	1,809	1,663	1,657	3,320	92	92	184
Maguindanao	231	Alip RIS*	1	3,407	3,386	2,241	2,241	4,482	66	66	132
	233	Pagalungan RIS*	1	1,201	703	531	376	907	76	53	129
Total			**40**	**400,064**	**367,255**	**342,343**	**332,940**	**675,283**	93	91	184
		ISA more than 10,000 ha	36	444,717	413,736	375,887	368,598	744,485	90.85	89.09	179.94
				48.5%	50.7%	51.9%	53.4%	52.6%			
		1,000 ha<ISA<10,000 ha	148	435,804	377,453	327,593	301,268	628,861	86.79	79.82	166.61
				47.5%	46.2%	45.2%	43.6%	44.5%			
		ISA less than 1,000 ha	73	36,502	25,464	20,618	20,587	41,205	80.97	80.85	161.82
				4.0%	3.1%	2.8%	3.0%	2.9%			

Source: NIA Database - Inventory of National, Communal, Private & OGA Irrigation System (as of December 31, 2020)

Table F 2 Present Communal Irrigation Systems (CIS) in 2020

Region/	CIS (Gravity)					CIS (Pump)					Others (SWIS, SRIS, etc.)					Total					Pump System by Surface Water					Pump System by Ground Water				
Province	Nos.	ISA (ha)	FUSA (ha)	Irrigated Area(ha) Wet	Irrigated Area(ha) Dry	Nos.	ISA (ha)	FUSA (ha)	Irrigated Area(ha) Wet	Irrigated Area(ha) Dry	Nos.	ISA (ha)	FUSA (ha)	Irrigated Area(ha) Wet	Irrigated Area(ha) Dry	Nos.	ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	Nos.	ISA (ha)	FUSA (ha)	Irrigated Area(ha) Wet	Irrigated Area(ha) Dry	Nos.	ISA (ha)	FUSA (ha)	Irrigated Area(ha) Wet	Irrigated Area(ha) Dry
CAR	**2,108**	**54,921**	**51,221**	**37,793**	**36,834**	**254**	**3,096**	**2,805**	**2,242**	**2,194**	**1**	**0**	**29**	**29**	**29**	**2,363**	**58,017**	**54,055**	**40,064**	**39,057**	**190**	**2,452**	**2,329**	**1,833**	**1,828**	**64**	**644**	**476**	**409**	**366**
Abra	231	9,497	8,676	5,680	5,256	63	679	586	344	344	0	0				294	10,176	9,262	6,024	5,600	45	511	511	278	314	18	168	75	66	30
Apayao	91	5,036	4,817	3,361	3,320	11	686	620	620	620	0	0				102	5,722	5,437	3,981	3,940	3	425	425	425	425	8	261	195	195	195
Benguet	430	10,993	10,447	8,160	7,972	66	590	571	440	415	1	0	29	29	29	497	11,583	11,047	8,629	8,416	38	429	419	337	319	28	161	152	103	96
Ifugao	322	9,482	8,785	6,413	6,233	38	244	244	214	214	0	0				360	9,726	9,029	6,627	6,447	30	203	203	173	173	8	41	41	41	41
Kalinga	621	11,112	9,938	8,302	8,123	62	818	729	569	560	0	0				683	11,930	10,667	8,871	8,683	61	809	720	569	560	1	9	9	0	0
Mt. Province	413	8,801	8,558	5,877	5,930	14	79	55	55	41	0	0				427	8,880	8,613	5,932	5,971	13	75	51	51	37	1	4	4	4	4
I	**521**	**48,399**	**44,502**	**36,073**	**26,837**	**563**	**18,547**	**15,755**	**11,665**	**6,833**	**17**	**1,551**	**1,479**	**1,286**	**796**	**1,101**	**68,497**	**61,736**	**49,024**	**34,466**	**115**	**4,778**	**3,994**	**3,126**	**1,603**	**448**	**13,769**	**11,761**	**8,539**	**5,230**
Ilocos Norte	127	11,739	9,525	8,231	6,396	82	1,850	1,292	1,292	546	10	373	341	331	121	219	13,962	11,158	9,854	7,063	82	1,850	1,292	1,292	546	0	0	0	0	0
Ilocos Sur	126	9,295	8,688	7,327	5,689	62	1,801	1,190	1,102	582	1	108	108	100	95	189	11,204	9,986	8,529	6,366	3	78	78	38	38	59	1,723	1,112	1,064	544
La Union	70	4,939	4,303	3,512	2,963	277	2,806	2,152	1,761	1,451	3	250	210	110	60	350	7,995	6,665	5,383	4,474	4	180	180	20	20	273	2,626	1,972	1,741	1,431
Pangasinan	198	22,426	21,986	17,003	11,789	142	12,090	11,121	7,510	4,254	3	820	820	745	520	343	35,336	33,927	25,258	16,563	26	2,670	2,444	1,776	999	116	9,420	8,677	5,734	3,255
II	**645**	**45,665**	**42,182**	**33,081**	**33,512**	**328**	**7,856**	**7,823**	**2,790**	**2,813**	**35**	**3,050**	**2,912**	**2,075**	**2,078**	**1,008**	**56,571**	**52,917**	**37,946**	**38,403**	**86**	**4,239**	**4,122**	**1,132**	**1,132**	**242**	**3,617**	**3,701**	**1,658**	**1,681**
Batanes	74	287	287	0	0	9	39	34	9	0	11	32	32	0	0	94	358	353	9	0	2	7	7	0	0	7	32	27	9	0
Cagayan	155	14,485	12,091	8,724	9,200	283	4,216	4,190	1,954	1,986	23	2,947	2,809	2,004	2,007	461	21,648	19,090	12,682	13,193	53	767	652	348	348	230	3,449	3,538	1,606	1,638
Isabela	49	7,323	7,428	5,390	5,345	22	3,405	3,419	759	759	1	71	71	71	71	72	10,799	10,918	6,220	6,175	21	3,385	3,399	759	759	1	20	20	0	0
Nueva Vizcaya	268	17,974	17,191	15,372	15,372	1	4	4	0	0	0	0				269	17,978	17,195	15,372	15,372	1	4	4	0	0	0	0	0	0	0
Quirino	99	5,596	5,185	3,595	3,595	13	192	176	68	68	0	0				112	5,788	5,361	3,663	3,663	9	76	60	25	25	4	116	116	43	43
III	**347**	**65,956**	**57,666**	**46,847**	**42,005**	**102**	**15,222**	**14,527**	**10,845**	**11,611**	**0**	**7**	**0**	**0**	**0**	**449**	**81,185**	**72,193**	**57,692**	**53,616**	**40**	**5,337**	**5,336**	**3,023**	**4,543**	**62**	**9,885**	**9,191**	**7,822**	**7,068**
Aurora	55	6,180	6,087	5,891	5,838	0	0				0	0				55	6,180	6,087	5,891	5,838	0					0				
Bataan	47	6,322	5,148	4,112	4,125	10	309	228	180	183	0	7				57	6,638	5,376	4,292	4,308	0	0	0	0	0	10	309	228	180	183
Bulacan	24	5,572	4,343	3,603	2,280	18	2,988	2,836	2,025	1,838	0	0				42	8,560	7,179	5,628	4,118	12	1,400	1,399	841	906	6	1,588	1,437	1,184	932
Nueva Ecija	60	14,262	13,929	12,062	11,892	24	2,347	2,347	2,237	2,237	0	0				84	16,609	16,276	14,299	14,129	1	105	105	105	105	23	2,242	2,242	2,132	2,132
Pampanga	66	12,259	9,513	7,215	5,737	42	6,362	6,203	4,299	5,481	0	0				108	18,621	15,716	11,514	11,218	27	3,832	3,832	2,077	3,532	15	2,530	2,371	2,222	1,949
Tarlac	45	15,037	13,194	10,601	10,605	3	2,047	1,747	1,282	1,249	0	0				48	17,084	14,941	11,883	11,854	0	0	0	0	0	3	2,047	1,747	1,282	1,249
Zambales	50	6,324	5,452	3,363	1,528	5	1,169	1,166	822	623	0	0				55	7,493	6,618	4,185	2,151	0	0	0	0	0	5	1,169	1,166	822	623
IV-A	**332**	**21,324**	**19,071**	**14,293**	**14,125**	**152**	**4,403**	**4,011**	**2,416**	**2,328**	**0**	**0**	**0**	**0**	**0**	**484**	**25,727**	**23,082**	**16,709**	**16,453**	**42**	**1,610**	**1,554**	**973**	**934**	**110**	**2,693**	**2,457**	**1,443**	**1,394**
Batangas	55	3,769	3,244	1,369	1,925	23	483	402	190	173	0	0				78	4,252	3,646	1,559	2,098	2	129	129	35	28	21	354	273	155	145
Cavite	6	928	832	323	292	23	630	578	193	101	0	0				29	1,558	1,410	516	393	11	259	244	85	59	12	371	334	108	42
Laguna	69	5,111	4,228	3,719	3,561	8	713	595	232	279	0	0				77	5,824	4,823	3,951	3,840	1	33	33	25	33	7	680	562	207	246
Quezon	150	8,549	8,192	6,753	6,256	76	1,353	1,353	994	971	0	0				226	9,902	9,545	7,747	7,227	12	259	259	158	146	64	1,094	1,094	836	825
Rizal	52	2,967	2,575	2,129	2,091	22	1,224	1,083	807	804	0	0				74	4,191	3,658	2,936	2,895	16	930	889	670	668	6	194	194	137	136
IV-B	**283**	**44,880**	**40,634**	**34,736**	**33,183**	**26**	**3,271**	**2,818**	**1,981**	**1,976**	**0**	**0**	**0**	**0**	**0**	**309**	**48,151**	**43,452**	**36,717**	**35,159**	**3**	**49**	**49**	**49**	**49**	**23**	**3,222**	**2,769**	**1,932**	**1,927**
Marinduque	35	1,628	1,589	1,371	1,371	7	211	190	97	92	0	0				42	1,839	1,779	1,468	1,463	1	7	7	7	7	6	204	183	90	85
Occidental Mindoro	44	13,103	12,290	9,316	9,121	5	1,828	1,532	1,532	1,532	0	0				49	14,931	13,822	10,848	10,653	0	42	42	42	42	5	1,786	1,490	1,490	1,490
Oriental Mindoro	57	11,314	10,222	9,701	9,510	11	1,051	939	195	195	0	0				68	12,365	11,161	9,896	9,705	0	0	0	0	0	11	1,051	939	195	195
Palawan	89	16,964	14,672	12,628	11,461	1	85	79	79	79	0	0				90	17,049	14,751	12,707	11,540	0	0	0	0	0	1	85	79	79	79
Romblon	58	1,871	1,861	1,720	1,720	2	96	78	78	78	0	0				60	1,967	1,939	1,798	1,798	2	0	0	0	0	0	96	78	78	78

V		**479**	**45,677**	**44,684**	**35,241**	**34,827**	**353**	**31,105**	**7,501**	**4,312**	**4,004**	**0**	**0**	**0**	**0**	**0**	**832**	**76,782**	**52,185**	**39,553**	**38,831**	**79**	**6,124**	**5,754**	**3,317**	**3,144**	**274**	**24,981**	**1,747**	**995**	**860**
	Albay	125	13,554	12,727	9,867	9,818	37	426	0			0	0				162	13,980	12,727	9,867	9,818	0	0	0	0	0	37	426	0	0	0
	Camarines Norte	52	3,776	3,645	2,686	2,717	14	163	0			0	0				66	3,939	3,645	2,686	2,717	0	0	0	0	0	14	163	0	0	0
	Camarines Sur	118	15,618	15,598	12,381	11,865	245	29,777	7,501	4,312	4,004	0	0				363	45,395	23,099	16,693	15,869	32	5,754	5,754	3,317	3,144	213	24,023	1,747	995	860
	Catanduanes	55	2,087	2,077	1,351	1,402	18	88	0			0	0				73	2,175	2,077	1,351	1,402	16	79	0	0	0	2	9	0	0	0
	Masbate	46	3,582	3,582	2,719	2,782	30	266	0			0	0				76	3,848	3,582	2,719	2,782	29	260	0	0	0	1	6	0	0	0
	Sorsogon	83	7,060	7,055	6,237	6,243	9	385	0			0	0				92	7,445	7,055	6,237	6,243	2	31	0	0	0	7	354	0	0	0
VI		**443**	**34,608**	**32,416**	**23,592**	**21,335**	**457**	**8,910**	**5,328**	**3,875**	**2,821**	**8**	**646**	**625**	**548**	**488**	**908**	**44,164**	**38,369**	**28,015**	**24,644**	**82**	**3,736**	**3,179**	**2,428**	**2,055**	**375**	**5,174**	**2,149**	**1,447**	**766**
	Aklan	42	3,529	3,409	3,092	2,833	11	179	169	160	160	0	0				53	3,708	3,578	3,252	2,993	1	40	40	40	40	10	139	129	120	120
	Antique	113	8,995	8,412	7,427	7,256	8	203	101	47	51	0	0				121	9,198	8,513	7,474	7,307	3	96	58	4	4	5	107	43	43	47
	Capiz	43	4,478	4,037	3,596	3,638	108	5,471	3,036	2,352	2,355	2	195	189	169	169	153	10,144	7,262	6,117	6,162	35	2,172	2,113	1,786	1,789	73	3,299	923	566	566
	Guimaras	16	714	596	475	428	22	282	229	160	65	1	83	83	60	60	39	1,079	908	695	553	4	109	59	56	32	18	173	170	104	33
	Iloilo	129	8,307	7,549	5,408	3,616	306	2,703	1,721	1,156	190	5	368	353	319	259	440	11,378	9,623	6,883	4,065	39	1,319	909	542	190	267	1,384	812	614	0
	Negros Occidental	100	8,585	8,413	3,594	3,564	2	72	72	0	0	0	0				102	8,657	8,485	3,594	3,564	0	0	0	0	0	2	72	72	0	0
VII		**411**	**25,608**	**20,996**	**17,498**	**17,193**	**87**	**3,583**	**3,228**	**2,925**	**2,193**	**1**	**35**	**35**	**35**	**35**	**499**	**29,226**	**24,259**	**20,458**	**19,421**	**56**	**2,451**	**2,251**	**1,982**	**1,498**	**31**	**1,132**	**977**	**943**	**695**
	Bohol	199	8,849	8,471	7,042	6,990	5	150	80	50	80	1	35	35	35	35	205	9,034	8,586	7,127	7,105	4	130	80	50	80	1	20	0	0	0
	Cebu	110	5,185	3,612	3,136	3,006	80	3,368	3,091	2,875	2,113	0	0				190	8,553	6,703	6,011	5,119	50	2,256	2,114	1,932	1,418	30	1,112	977	943	695
	Negros Oriental	80	10,929	8,414	7,057	7,074	1	45	45	0	0	0	0				81	10,974	8,459	7,057	7,074	1	45	45	0	0	0	0	0	0	0
	Siquijor	22	645	499	263	123	1	20	12	0	0	0	0				23	665	511	263	123	1	20	12	0	0	0	0	0	0	0
VIII		**360**	**38,545**	**37,669**	**24,292**	**24,503**	**47**	**881**	**881**	**207**	**213**	**0**	**0**	**0**	**0**	**0**	**407**	**39,426**	**38,550**	**24,499**	**24,716**	**33**	**480**	**480**	**187**	**187**	**14**	**401**	**401**	**20**	**26**
	Biliran	33	3,871	3,469	1,825	1,925	1	5	5	0	0	0	0				34	3,876	3,474	1,825	1,925	0	0	0	0	0	1	5	5	0	0
	Northern Leyte	109	16,202	15,892	10,785	10,870	5	170	170	0	0	0	0				114	16,372	16,062	10,785	10,870	0	0	0	0	0	5	170	170	0	0
	Southern Leyte	66	5,235	5,147	3,791	3,788	4	56	56	0	0	0	0				70	5,291	5,203	3,791	3,788	0	0	0	0	0	4	56	56	0	0
	Northern Samar	42	3,589	3,575	2,099	2,143	3	337	337	0	0	0	0				45	3,926	3,912	2,099	2,143	2	200	200	0	0	1	137	137	0	0
	Western Samar	57	3,274	3,212	2,197	2,277	34	313	313	207	213	0	0				91	3,587	3,525	2,404	2,490	31	280	280	187	187	3	33	33	20	26
	Eastern Samar	53	6,374	6,374	3,595	3,500	0	0				0	0				53	6,374	6,374	3,595	3,500	0					0				
IX		**165**	**24,017**	**22,363**	**16,579**	**15,367**	**80**	**1,730**	**1,016**	**317**	**281**	**0**	**0**	**0**	**0**	**0**	**245**	**25,747**	**23,379**	**16,896**	**15,648**	**51**	**1,284**	**716**	**252**	**222**	**29**	**446**	**300**	**65**	**59**
	Zamboanga del Norte	52	7,015	6,538	3,791	3,221	27	345	345	42	42	0	0				79	7,360	6,883	3,833	3,263	12	194	194	42	42	15	151	151	0	0
	Zamboanga del Sur	75	9,971	9,456	7,590	7,129	34	798	84	0	0	0	0				109	10,769	9,540	7,590	7,129	22	568	0	0	0	12	230	84	0	0
	Zamboanga Sibugay	38	7,031	6,369	5,198	5,017	19	587	587	275	239	0	0				57	7,618	6,956	5,473	5,256	17	522	522	210	180	2	65	65	65	59
X		**197**	**28,574**	**24,727**	**17,264**	**17,190**	**28**	**367**	**367**	**130**	**130**	**0**	**0**	**0**	**0**	**0**	**225**	**28,941**	**25,094**	**17,394**	**17,320**	**16**	**243**	**243**	**85**	**85**	**12**	**124**	**124**	**45**	**45**
	Bukidnon	47	8,592	7,679	5,609	5,576	0	0				0	0				47	8,592	7,679	5,609	5,576	0					0				
	Camiguin	13	665	550	344	244	0	0				0	0				13	665	550	344	244	0					0				
	Lanao del Norte	38	7,232	7,010	4,503	4,503	24	289	289	95	95	0	0				62	7,521	7,299	4,598	4,598	13	195	195	80	80	11	94	94	15	15
	Misamis Occidental	50	7,757	7,051	5,216	5,224	0	0				0	0				50	7,757	7,051	5,216	5,224	0					0				
	Misamis Oriental	49	4,328	2,437	1,592	1,643	4	78	78	35	35	0	0				53	4,406	2,515	1,627	1,678	3	48	48	5	5	1	30	30	30	30

X		**197**	**28,574**	**24,727**	**17,264**	**17,190**	**28**	**367**	**367**	**130**	**130**	**0**	**0**	**0**	**0**	**0**	**225**	**28,941**	**25,094**	**17,394**	**17,320**	**16**	**243**	**243**	**85**	**85**	**12**	**124**	**124**	**45**	**45**
	Bukidnon	47	8,592	7,679	5,609	5,576	0	0				0	0				47	8,592	7,679	5,609	5,576	0					0				
	Camiguin	13	665	550	344	244	0	0				0	0				13	665	550	344	244	0					0				
	Lanao del Norte	38	7,232	7,010	4,503	4,503	24	289	289	95	95	0	0				62	7,521	7,299	4,598	4,598	13	195	195	80	80	11	94	94	15	15
	Misamis Occidental	50	7,757	7,051	5,216	5,224	0	0				0	0				50	7,757	7,051	5,216	5,224	0					0				
	Misamis Oriental	49	4,328	2,437	1,592	1,643	4	78	78	35	35	0	0				53	4,406	2,515	1,627	1,678	3	48	48	5	5	1	30	30	30	30
XI		**132**	**28,954**	**29,571**	**20,850**	**20,797**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**132**	**28,954**	**29,571**	**20,850**	**20,797**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	Compostela Valley	35	9,791	9,704	6,786	6,786	0	0				0	0				35	9,791	9,704	6,786	6,786	0					0				
	Davao del Norte	29	3,157	3,901	3,070	3,070	0	0				0	0				29	3,157	3,901	3,070	3,070	0					0				
	Davao del Sur	35	10,457	10,457	8,127	8,026	0	0				0	0				35	10,457	10,457	8,127	8,026	0					0				
	Davao Oriental	33	5,549	5,509	2,867	2,915	0	0				0	0				33	5,549	5,509	2,867	2,915	0					0				
XII		**211**	**41,136**	**36,873**	**32,353**	**30,172**	**71**	**996**	**996**	**891**	**891**	**0**	**0**	**0**	**0**	**0**	**282**	**42,132**	**37,869**	**33,244**	**31,063**	**0**	**30**	**30**	**30**	**30**	**71**	**966**	**966**	**861**	**861**
	Sarangani	40	6,611	5,888	5,271	4,877	5	67	67	67	67	0	0				45	6,678	5,955	5,338	4,944	0	0	0	0	0	5	67	67	67	67
	South Cotabato	44	10,285	8,771	8,233	8,068	1	10	10	10	10	0	0				45	10,295	8,781	8,243	8,078	0	0	0	0	0	1	10	10	10	10
	North Cotabato	68	11,529	10,748	9,038	8,935	49	574	574	469	469	0	0				117	12,103	11,322	9,507	9,404	0	30	30	30	30	49	544	544	439	439
	Sultan Kudarat	59	12,711	11,466	9,811	8,292	16	345	345	345	345	0	0				75	13,056	11,811	10,156	8,637	0	0	0	0	0	16	345	345	345	345
XIII (CARAGA)		**211**	**24,532**	**22,597**	**14,924**	**13,557**	**22**	**2,496**	**1,505**	**449**	**437**	**6**	**520**	**486**	**218**	**297**	**239**	**27,548**	**24,588**	**15,591**	**14,291**	**16**	**2,382**	**1,436**	**434**	**437**	**6**	**114**	**69**	**15**	**0**
	Agusan del Norte	31	4,441	3,591	1,920	2,282	1	5	5	5	3	6	520	486	218	297	38	4,966	4,082	2,143	2,582	1	5	5	5	3	0	0	0	0	0
	Agusan del Sur	26	4,553	4,444	3,203	3,076	14	2,127	1,211	429	434	0	0				40	6,680	5,655	3,632	3,510	14	2,127	1,211	429	434	0	0	0	0	0
	Dinagat Islands	27	910	819	468	478	0	0				0	0				27	910	819	468	478	0					0				
	Surigao del Norte	79	7,026	6,661	5,185	3,669	5	54	54	0	0	0	0				84	7,080	6,715	5,185	3,669	0	0	0	0	0	5	54	54	0	0
	Surigao del Sur	48	7,602	7,082	4,148	4,052	2	310	235	15	0	0	0				50	7,912	7,317	4,163	4,052	1	250	220	0	0	1	60	15	15	0
ARMM		**170**	**18,998**	**18,616**	**8,585**	**8,149**	**66**	**2,187**	**1,090**	**85**	**85**	**0**	**0**	**0**	**0**	**0**	**236**	**21,185**	**19,706**	**8,670**	**8,234**	**45**	**1,678**	**965**	**17**	**17**	**21**	**509**	**125**	**68**	**68**
	Basilan	14	685	604	256	253	2	23	23	0	0	0	0				16	708	627	256	253	0	0	0	0	0	2	23	23	0	0
	Lanao del Sur	34	5,865	5,701	2,566	2,481	0	0				0	0				34	5,865	5,701	2,566	2,481	0					0				
	Maguindanao	70	9,433	9,385	5,583	5,226	14	976	958	73	73	0	0				84	10,409	10,343	5,656	5,299	7	902	902	17	17	7	74	56	56	56
	Sulu	30	1,993	1,944	146	146	14	533	99	12	12	0	0				44	2,526	2,043	158	158	10	227	53	0	0	4	306	46	12	12
	Tawi-Tawi	22	1,022	982	34	43	36	655	10	0	0	0	0				58	1,677	992	34	43	28	549	10	0	0	8	106	0	0	0
	Total	**7,015**	**591,794**	**545,788**	**414,001**	**389,586**	**2,636**	**104,650**	**69,651**	**45,130**	**38,810**	**68**	**5,809**	**5,566**	**4,191**	**3,723**	**9,719**	**702,253**	**621,005**	**463,322**	**432,119**	**854**	**36,873**	**32,438**	**18,868**	**17,764**	**1,782**	**67,677**	**37,213**	**26,262**	**21,046**

Source: NIA Database - Inventory of National, Communal, Private & OGA Irrigation System (as of December 31, 2019)

Table F 3 Present Private Irrigation Systems in 2020

Region/	Private Systems (Gravity)					Private Systems (Pump)					Private Systems (Others)					Total					Pump System by Surface Water					Pump System by Ground Water				
Province	Nos.	ISA	FUSA	Irrigated Area(ha)		Nos.	ISA	FUSA	Irrigated Area(ha)		Nos.	ISA	FUSA	Irrigated Area(ha)		Nos.	ISA	FUSA	Irrigated Area (ha)		Nos.	ISA	FUSA	Irrigated Area(ha)		Nos.	ISA	FUSA	Irrigated Area(ha)	
		(ha)	(ha)	Wet	Dry		(ha)	(ha)	Wet	Dry		(ha)	(ha)	Wet	Dry		(ha)	(ha)	Wet	Dry		(ha)	(ha)	Wet	Dry		(ha)	(ha)	Wet	Dry
CAR	**1,299**	**21,235**	**21,168**	**16,201**	**16,079**	**8**	**340**	**340**	**270**	**275**	**0**	**0**	**0**	**0**	**0**	**1,307**	**21,575**	**21,508**	**16,471**	**16,354**	**1**	**0**	**0**	**0**	**0**	**7**	**340**	**340**	**270**	**275**
Abra	116	5,671	5,603	2,991	2,926	0	0				0	0				116	5,671	5,603	2,991	2,926	0					0				
Apayao	11	209	209	189	189	0	0				0	0				11	209	209	189	189	0					0				
Benguet	241	3,677	3,677	3,264	3,264	0	0				0	0				241	3,677	3,677	3,264	3,264	0					0				
Ifugao	146	2,243	2,244	1,846	1,846	0	0				0	0				146	2,243	2,244	1,846	1,846	0					0				
Kalinga	256	5,688	5,688	4,746	4,719	7	337	337	270	275	0	0				263	6,025	6,025	5,016	4,994	0	0	0	0	0	7	337	337	270	275
Mt. Province	529	3,747	3,747	3,165	3,135	1	3	3	0	0	0	0				530	3,750	3,750	3,165	3,135	1	0	0	0	0	0	3	3	0	0
I	**257**	**11,397**	**11,377**	**8,975**	**3,220**	**77**	**8,506**	**8,486**	**8,138**	**7,222**	**1**	**8,506**	**20**	**15**	**8**	**335**	**28,409**	**19,883**	**17,128**	**10,450**	**51**	**3,248**	**3,248**	**2,994**	**2,380**	**26**	**5,258**	**5,238**	**5,144**	**4,842**
Ilocos Norte	0	20				3	20	0	0	0	1	20	20	15	8	4	60	20	15	8	0	0	0	0	-27	3	20	0	0	27
Ilocos Sur	139	3,876	3,870	3,523	456	0	0				0	0				139	3,876	3,870	3,523	456	0					0				
La Union	5	21	21	19	8	0	0				0	0				5	21	21	19	8	0					0				
Pangasinan	113	7,480	7,486	5,433	2,756	74	8,486	8,486	8,138	7,222	0	8,486				187	24,452	15,972	13,571	9,978	51	3,248	3,248	2,994	2,407	23	5,238	5,238	5,144	4,815
II	**659**	**11,270**	**11,269**	**11,297**	**11,197**	**143**	**31,375**	**31,375**	**30,992**	**30,505**	**0**	**0**	**0**	**0**	**0**	**802**	**42,645**	**42,644**	**42,289**	**41,702**	**114**	**3,714**	**3,714**	**3,529**	**3,042**	**29**	**27,661**	**27,661**	**27,463**	**27,463**
Batanes	0	0				0	0									0	0	0	0	0	0					0				
Cagayan	100	2,505	2,505	2,523	2,523	23	27,738	27,738	27,500	27,500	0					123	30,243	30,243	30,023	30,023	2	90	90	50	50	21	27,648	27,648	27,450	27,450
Isabela	48	1,869	1,869	1,681	1,581	19	3,370	3,370	3,225	2,738	0					67	5,239	5,239	4,906	4,319	19	3,370	3,370	3,225	2,738	0	0	0	0	0
Nueva Vizcaya	410	6,005	6,005	6,244	6,244	0	0				0					410	6,005	6,005	6,244	6,244	0					0				
Quirino	101	891	890	849	849	101	267	267	267	267	0					202	1,158	1,157	1,116	1,116	93	254	254	254	254	8	13	13	13	13
III	**82**	**8,365**	**8,365**	**6,498**	**4,522**	**8**	**381**	**381**	**170**	**135**	**0**	**0**	**0**	**0**	**0**	**90**	**8,746**	**8,746**	**6,668**	**4,657**	**0**	**0**	**0**	**-8**	**0**	**8**	**381**	**381**	**178**	**135**
Aurora	33	1,870	1,870	1,096	1,096	0	0				0					33	1,870	1,870	1,096	1,096	0					0				
Bataan	1	120	120	21	21	0	0				0					1	120	120	21	21	0					0				
Bulacan	2	41	41	20	15	0	0				0					2	41	41	20	15	0					0				
Nueva Ecija	29	3,559	3,559	3,306	2,190	3	178	178	170	135	0					32	3,737	3,737	3,476	2,325	0	0	0	-8	0	3	178	178	178	135
Pampanga	2	249	249	0	0	0	0				0					2	249	249	0	0	0					0				
Tarlac	15	2,526	2,526	2,055	1,200	5	203	203	0	0	0					20	2,729	2,729	2,055	1,200	0	0	0	0	0	5	203	203	0	0
Zambales	0	0				0	0				0					0	0	0	0	0	0					0				
IV-A	**162**	**6,055**	**4,747**	**3,972**	**3,168**	**143**	**734**	**595**	**408**	**408**	**0**	**0**	**0**	**0**	**0**	**305**	**6,789**	**5,342**	**4,380**	**3,576**	**143**	**734**	**595**	**408**	**408**	**0**	**0**	**0**	**0**	**0**
Batangas	5	120	47	20	20	0	0				0					5	120	47	20	20	0					0				
Cavite	0	0				0	0				0					0	0	0	0	0	0					0				
Laguna	38	1,413	1,303	1,016	969	0	0				0					38	1,413	1,303	1,016	969	0					0				
Quezon	118	4,507	3,397	2,936	2,179	1	28	28	0	0	0					119	4,535	3,425	2,936	2,179	1	28	28	0	0	0	0	0	0	0
Rizal	1	15	0	0	0	142	706	567	408	408	0					143	721	567	408	408	142	706	567	408	408	0	0	0	0	0
IV-B	**65**	**9,068**	**9,010**	**8,358**	**5,631**	**1,049**	**4,694**	**4,694**	**4,391**	**2,994**	**0**	**0**	**0**	**0**	**0**	**1,114**	**13,762**	**13,704**	**12,749**	**8,625**	**139**	**628**	**628**	**625**	**436**	**910**	**4,066**	**4,066**	**3,766**	**2,558**
Marinduque	0	0				41	123	123	123	123	0					41	123	123	123	123	0	0	0	0	0	41	123	123	123	123
Occidental Mindoro	29	4,920	4,882	4,882	3,298	565	2,188	2,188	2,188	1,320	0					594	7,108	7,070	7,070	4,618	0	0	0	0	0	565	2,188	2,188	2,188	1,320
Oriental Mindoro	19	1,747	1,727	1,336	788	236	815	815	815	791	0					255	2,562	2,542	2,151	1,579	47	142	142	142	142	189	673	673	673	649
Palawan	15	2,140	2,140	2,140	1,284	107	1,268	1,268	1,265	760	0					122	3,408	3,408	3,405	2,044	92	486	486	483	294	15	782	782	782	466
Romblon	2	261	261	0	261	100	300	300	0	0	0					102	561	561	0	261	0	0	0	0	0	100	300	300	0	0

V		**358**	**21,129**	**21,129**	**8,354**	**7,171**	**195**	**3,803**	**3,803**	**156**	**156**	**0**	**0**	**0**	**0**	**0**	**553**	**24,932**	**24,932**	**8,510**	**7,327**	**74**	**608**	**608**	**0**	**0**	**121**	**3,195**	**3,195**	**156**	**156**
	Albay	234	10,658	10,658	8,307	7,124	95	386	386	156	156	0					329	11,044	11,044	8,463	7,280	0	0	0	0	0	95	386	386	156	156
	Camarines Norte	3	69	69	47	47	1	53	53	0	0	0					4	122	122	47	47	0	0	0	0	0	1	53	53	0	0
	Camarines Sur	99	9,823	9,823	0	0	2	60	60	0	0	0					101	9,883	9,883	0	0	0	0	0	0	0	2	60	60	0	0
	Catanduanes	0	0				0	0				0					0	0	0	0	0	0					0				
	Masbate	22	579	579	0	0	84	788	788	0	0	0					106	1,367	1,367	0	0	72	602	602	0	0	12	186	186	0	0
	Sorsogon	0	0				13	2,516	2,516	0	0	0					13	2,516	2,516	0	0	2	6	6	0	0	11	2,510	2,510	0	0
VI		**56**	**1,643**	**1,643**	**840**	**372**	**475**	**3,653**	**3,557**	**0**	**0**	**194**	**9,807**	**9,773**	**1,063**	**1,081**	**725**	**15,103**	**14,973**	**1,903**	**1,453**	**0**	**0**	**0**	**0**	**0**	**475**	**3,653**	**3,557**	**0**	**0**
	Aklan	1	11	11	0	0	179	529	529	0	0	0					180	540	540	0	0	0	0	0	0	0	179	529	529	0	0
	Antique	52	1,288	1,288	496	372	0	0				0					52	1,288	1,288	496	372	0					0				
	Capiz	3	344	344	344	0	225	1,968	1,948	0	0	0					228	2,312	2,292	344	0	0	0	0	0	0	225	1,968	1,948	0	0
	Guimaras	0	0				0	0				0					0	0	0	0	0	0					0				
	Iloilo	0	0				71	1,156	1,080	0	0	13	864	830	0	0	84	2,020	1,910	0	0	0	0	0	0	0	71	1,156	1,080	0	0
	Negros Occidental	0	0				0	0				181	8,943	8,943	1,063	1,081	181	8,943	8,943	1,063	1,081	0					0				
VII		**116**	**3,396**	**3,277**	**2,729**	**2,391**	**0**	**0**	**0**	**0**	**0**	**0**	**89**	**89**	**50**	**80**	**116**	**3,485**	**3,366**	**2,779**	**2,471**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	Bohol	70	2,476	2,357	1,927	1,641	0	0				0	89	89	50	80	70	2,565	2,446	1,977	1,721	0					0				
	Cebu	9	115	115	0	0	0	0				0					9	115	115	0	0	0					0				
	Negros Oriental	29	736	736	736	714	0	0				0					29	736	736	736	714	0					0				
	Siquijor	8	69	69	66	36	0	0				0					8	69	69	66	36	0					0				
VIII		**182**	**5,410**	**5,410**	**4,051**	**3,972**	**295**	**1,067**	**1,067**	**47**	**46**	**0**	**0**	**0**	**0**	**0**	**477**	**6,477**	**6,477**	**4,098**	**4,018**	**224**	**570**	**570**	**47**	**46**	**71**	**497**	**497**	**0**	**0**
	Biliran	2	160	160	80	80	0	0				0					2	160	160	80	80	0					0				
	Northern Leyte	98	4,121	4,121	3,082	3,023	0	0				0					98	4,121	4,121	3,082	3,023	0					0				
	Southern Leyte	82	1,129	1,129	889	869	0	0				0					82	1,129	1,129	889	869	0					0				
	Northern Samar	0	0				0	0				0					0	0	0	0	0	0					0				
	Western Samar	0	0				227	567	567	47	46	0					227	567	567	47	46	223	560	560	47	46	4	7	7	0	0
	Eastern Samar	0	0				68	500	500	0	0	0					68	500	500	0	0	1	10	10	0	0	67	490	490	0	0
IX		**28**	**1,944**	**1,944**	**1,648**	**1,618**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**28**	**1,944**	**1,944**	**1,648**	**1,618**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	Zamboanga del Norte	9	188	188	0	0	0	0				0					9	188	188	0	0	0					0				
	Zamboanga del Sur	16	1,542	1,542	1,483	1,453	0	0				0					16	1,542	1,542	1,483	1,453	0					0				
	Zamboanga Sibugay	3	214	214	165	165	0	0				0					3	214	214	165	165	0					0				
X		**125**	**4,594**	**4,572**	**3,120**	**3,070**	**1**	**4**	**4**	**0**	**0**	**3**	**415**	**415**	**415**	**409**	**129**	**5,013**	**4,991**	**3,535**	**3,479**	**1**	**4**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	Bukidnon	50	3,530	3,523	2,780	2,585	0	0				3	415	415	415	409	53	3,945	3,938	3,195	2,994	0					0				
	Camiguin	0	0				0	0				0					0	0	0	0	0	0					0				
	Lanao del Norte	19	220	220	117	117	0	0				0					19	220	220	117	117	0					0				
	Misamis Occidental	6	294	294	135	135	0	0				0					6	294	294	135	135	0					0				
	Misamis Oriental	50	550	535	88	233	1	4	4	0	0	0					51	554	539	88	233	1	4	4	0	0	0	0	0	0	0

XI	**16**	**1,085**	**995**	**720**	**720**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**1,085**	**995**	**720**	**720**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Compostela Valley	0	0				0	0				0					0	0	0	0	0	0					0				
Davao del Norte	9	780	690	450	450	0	0				0					9	780	690	450	450	0					0				
Davao del Sur	7	305	305	270	270	0	0				0					7	305	305	270	270	0					0				
Davao Oriental	0	0				0	0				0					0	0	0	0	0	0					0				
XII	**64**	**2,840**	**2,840**	**2,337**	**2,317**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**64**	**2,840**	**2,840**	**2,337**	**2,317**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Sarangani	2	115	115	115	115	0	0				0					2	115	115	115	115	0					0				
South Cotabato	3	350	350	140	122	0	0				0					3	350	350	140	122	0					0				
North Cotabato	58	2,087	2,087	2,002	2,000	0	0				0					58	2,087	2,087	2,002	2,000	0					0				
Sultan Kudarat	1	288	288	80	80	0	0				0					1	288	288	80	80	0					0				
XIII (CARAGA)	**37**	**1,572**	**1,572**	**1,014**	**320**	**42**	**1,526**	**1,526**	**1,013**	**547**	**1**	**15**	**15**	**15**	**15**	**80**	**3,113**	**3,113**	**2,042**	**882**	**42**	**1,526**	**1,526**	**1,013**	**547**	**0**	**0**	**0**	**0**	**0**
Agusan del Norte	14	395	395	300	270	0	0				1	15	15	15	15	15	410	410	315	285	0					0				
Agusan del Sur	0	0				41	1,441	1,441	963	547	0					41	1,441	1,441	963	547	41	1,441	1,441	963	547	0	0	0	0	0
Dinagat Islands	2	74	74	15	10	0	0				0					2	74	74	15	10	0					0				
Surigao del Norte	3	97	97	77	40	0	0				0					3	97	97	77	40	0					0				
Surigao del Sur	18	1,006	1,006	622	0	1	85	85	50	0	0					19	1,091	1,091	672	0	1	85	85	50	0	0	0	0	0	0
ARMM	**1**	**90**	**90**	**90**	**70**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**90**	**90**	**90**	**70**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Basilan	0	0				0	0				0					0	0	0	0	0	0					0				
Lanao del Sur	0	0				0	0				0					0	0	0	0	0	0					0				
Maguindanao	1	90	90	90	70	0	0				0					1	90	90	90	70	0					0				
Sulu	0	0				0	0				0					0	0	0	0	0	0					0				
Tawi-Tawi	0	0				0	0				0					0	0	0	0	0	0					0				
Total	**3,507**	**111,093**	**109,408**	**80,204**	**65,838**	**2,436**	**56,083**	**55,828**	**45,585**	**42,288**	**199**	**18,832**	**10,312**	**1,558**	**1,593**	**6,142**	**186,008**	**175,548**	**127,347**	**109,719**	**789**	**11,032**	**10,893**	**8,608**	**6,859**	**1,647**	**45,051**	**44,935**	**36,977**	**35,429**

Source: NIA Database - Inventory of National, Communal, Private & OGA Irrigation System (as of December 31, 2019)

Table F 4 Present Other Government Assisted Irrigation Systems in 2020

Region/	OGAS (Gravity)					OGAS (Pump)					OGAS (Others)					Total					Pump System by Surface Water					Pump System by Ground Water				
Province	Nos.	ISA (ha)	FUSA (ha)	Irrigated Area(ha) Wet	Irrigated Area(ha) Dry	Nos.	ISA (ha)	FUSA (ha)	Irrigated Area(ha) Wet	Irrigated Area(ha) Dry	Nos.	ISA (ha)	FUSA (ha)	Irrigated Area(ha) Wet	Irrigated Area(ha) Dry	Nos.	ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	Nos.	ISA (ha)	FUSA (ha)	Irrigated Area(ha) Wet	Irrigated Area(ha) Dry	Nos.	ISA (ha)	FUSA (ha)	Irrigated Area(ha) Wet	Irrigated Area(ha) Dry
CAR	**157**	**3,129**	**3,129**	**2,576**	**2,285**	**11**	**409**	**409**	**409**	**409**	**0**	**0**	**0**	**0**	**0**	**168**	**3,538**	**3,538**	**2,985**	**2,694**	**0**	**0**	**0**	**0**	**0**	**11**	**409**	**409**	**409**	**409**
Abra	18	654	654	484	484	0	0				0					18	654	654	484	484	0					0				
Apayao	6	30	30	30	30	9	397	397	397	397	0					15	427	427	427	427	0	0	0	0	0	9	397	397	397	397
Benguet	22	511	511	426	426	0	0				0					22	511	511	426	426	0					0				
Ifugao	24	346	346	281	281	0	0				0					24	346	346	281	281	0					0				
Kalinga	68	1,093	1,093	890	861	0	0				0					68	1,093	1,093	890	861	0					0				
Mt. Province	19	495	495	465	203	2	12	12	12	12	0					21	507	507	477	215	0	0	0	0	0	2	12	12	12	12
I	**769**	**37,088**	**37,068**	**25,511**	**12,553**	**46**	**11,826**	**11,806**	**11,618**	**10,034**	**0**	**0**	**0**	**0**	**0**	**815**	**48,914**	**48,874**	**37,129**	**22,587**	**5**	**2,291**	**2,291**	**2,205**	**1,890**	**41**	**9,535**	**9,515**	**9,413**	**8,144**
Ilocos Norte	492	13,063	13,044	9,637	4,624	0	0				0					492	13,063	13,044	9,637	4,624	0					0				
Ilocos Sur	44	2,090	2,090	1,438	318	1	86	86	0	0	0					45	2,176	2,176	1,438	318	1	86	86	0	0	0	0	0	0	0
La Union	106	2,710	2,710	2,380	1,318	27	784	764	764	606	0					133	3,494	3,474	3,144	1,924	0	0	0	0	0	27	784	764	764	606
Pangasinan	127	19,225	19,224	12,056	6,293	18	10,956	10,956	10,854	9,428	0					145	30,181	30,180	22,910	15,721	4	2,205	2,205	2,205	1,890	14	8,751	8,751	8,649	7,538
II	**114**	**5,464**	**5,294**	**4,278**	**4,107**	**87**	**13,403**	**13,287**	**12,065**	**11,288**	**37**	**2,051**	**2,051**	**1,326**	**1,326**	**238**	**20,918**	**20,632**	**17,669**	**16,721**	**54**	**8,397**	**8,281**	**7,280**	**6,503**	**33**	**5,006**	**5,006**	**4,785**	**4,785**
Batanes	1	1	1	0	0	0	0									1	1	1	0	0	0					0				
Cagayan	26	1,721	1,721	1,335	1,335	40	6,342	6,342	5,157	5,157	36	1,981	1,981	1,256	1,256	102	10,044	10,044	7,748	7,748	12	1,435	1,435	471	471	28	4,907	4,907	4,686	4,686
Isabela	44	2,902	2,747	2,222	2,051	34	7,017	6,901	6,864	6,087	1	70	70	70	70	79	9,989	9,718	9,156	8,208	33	6,937	6,821	6,784	6,007	1	80	80	80	80
Nueva Vizcaya	17	476	476	466	466	0	0				0					17	476	476	466	466	0					0				
Quirino	26	364	349	255	255	13	44	44	44	44	0					39	408	393	299	299	9	25	25	25	25	4	19	19	19	19
III	**171**	**14,710**	**14,163**	**5,103**	**4,234**	**40**	**3,536**	**3,488**	**910**	**765**	**0**	**0**	**0**	**0**	**0**	**211**	**18,246**	**17,651**	**6,013**	**4,999**	**13**	**709**	**667**	**414**	**553**	**27**	**2,827**	**2,821**	**496**	**212**
Aurora	2	148	148	66	66	0	0				0					2	148	148	66	66	0					0				
Bataan	48	4,120	4,120	2,208	2,207	4	709	709	0	0	0					52	4,829	4,829	2,208	2,207	0	0	0	0	0	4	709	709	0	0
Bulacan	10	168	168	108	70	13	619	577	434	443	0					23	787	745	542	513	12	579	537	414	423	1	40	40	20	20
Nueva Ecija	23	2,544	2,544	2,268	1,675	0	0				0					23	2,544	2,544	2,268	1,675	0					0				
Pampanga	50	5,441	5,196	100	67	5	618	618	130	130	0					55	6,059	5,814	230	197	1	130	130	0	130	4	488	488	130	0
Tarlac	2	237	0	0	0	0	0				0					2	237	0	0	0	0					0				
Zambales	36	2,052	1,987	353	149	18	1,590	1,584	346	192	0					54	3,642	3,571	699	341	0	0	0	0	0	18	1,590	1,584	346	192
IV-A	**18**	**1,069**	**1,019**	**846**	**791**	**386**	**1,314**	**1,314**	**1,143**	**1,143**	**0**	**0**	**0**	**0**	**0**	**404**	**2,383**	**2,333**	**1,989**	**1,934**	**382**	**1,163**	**1,163**	**1,143**	**1,143**	**4**	**151**	**151**	**0**	**0**
Batangas	1	28	28	28	28	0	0				0					1	28	28	28	28	0					0				
Cavite	0	0				0	0				0					0	0	0	0	0	0					0				
Laguna	0	0				0	0				0					0	0	0	0	0	0					0				
Quezon	17	1,041	991	818	763	4	151	151	0	0	0					21	1,192	1,142	818	763	0	0	0	0	0	4	151	151	0	0
Rizal	0	0				382	1,163	1,163	1,143	1,143	0					382	1,163	1,163	1,143	1,143	382	1,163	1,163	1,143	1,143	0	0	0	0	0
IV-B	**86**	**12,499**	**12,426**	**8,153**	**5,460**	**6**	**97**	**97**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**92**	**12,596**	**12,523**	**8,153**	**5,460**	**0**	**0**	**0**	**0**	**0**	**6**	**97**	**97**	**0**	**0**
Marinduque	4	121	121	79	55	0	0				0					4	121	121	79	55	0					0				
Occidental Mindoro	21	3,886	3,886	3,740	2,252	0	0				0					21	3,886	3,886	3,740	2,252	0					0				
Oriental Mindoro	39	5,595	5,595	2,354	1,792	2	85	85	0	0	0					41	5,680	5,680	2,354	1,792	0	0	0	0	0	2	85	85	0	0
Palawan	3	2,261	2,188	1,508	1,003	0	0				0					3	2,261	2,188	1,508	1,003	0					0				
Romblon	19	636	636	472	358	4	12	12	0	0	0					23	648	648	472	358	0	0	0	0	0	4	12	12	0	0

V		**289**	**12,778**	**12,778**	**8,174**	**7,517**	**425**	**4,265**	**4,265**	**682**	**682**	**4**	**378**	**378**	**378**	**378**	**718**	**17,421**	**17,421**	**9,234**	**8,577**	**30**	**1,808**	**1,838**	**255**	**255**	**395**	**2,457**	**2,427**	**427**	**427**
	Albay	54	2,713	2,713	1,723	1,628	85	396	396	160	160	0					139	3,109	3,109	1,883	1,788	0	0	0	0	0	85	396	396	160	160
	Camarines Norte	26	1,192	1,192	762	701	277	830	830	164	164	0					303	2,022	2,022	926	865	0	0	30	0	0	277	830	800	164	164
	Camarines Sur	46	3,443	3,443	2,658	2,222	29	2,661	2,661	343	343	4	378	378	378	378	79	6,482	6,482	3,379	2,943	17	1,667	1,667	255	255	12	994	994	88	88
	Catanduanes	24	658	658	439	422	34	378	378	15	15	0					58	1,036	1,036	454	437	13	141	141	0	0	21	237	237	15	15
	Masbate	92	1,633	1,633	737	737	0	0				0					92	1,633	1,633	737	737	0					0				
	Sorsogon	47	3,139	3,139	1,855	1,807	0	0				0					47	3,139	3,139	1,855	1,807	0					0				
VI		**159**	**9,295**	**9,179**	**7,529**	**144**	**534**	**4,778**	**4,182**	**464**	**0**	**12**	**370**	**370**	**0**	**0**	**705**	**14,443**	**13,731**	**7,993**	**144**	**0**	**0**	**0**	**0**	**0**	**534**	**4,778**	**4,182**	**464**	**0**
	Aklan	0	0				0	0				12	370	370	0	0	12	370	370	0	0	0					0				
	Antique	16	462	462	199	144	99	396	396	328	0	0					115	858	858	527	144	0	0	0	0	0	99	396	396	328	0
	Capiz	10	638	638	638	0	183	838	838	136	0	0					193	1,476	1,476	774	0	0	0	0	0	0	183	838	838	136	0
	Guimaras	0	0				26	86	47	0	0	0					26	86	47	0	0	0	0	0	0	0	26	86	47	0	0
	Iloilo	29	806	690	0	0	226	3,458	2,901	0	0	0					255	4,264	3,591	0	0	0	0	0	0	0	226	3,458	2,901	0	0
	Negros Occidental	104	7,389	7,389	6,692	0	0	0				0					104	7,389	7,389	6,692	0	0					0				
VII		**29**	**1,221**	**1,212**	**444**	**432**	**1**	**5**	**5**	**5**	**5**	**14**	**236**	**236**	**190**	**178**	**44**	**1,462**	**1,453**	**639**	**615**	**1**	**5**	**5**	**5**	**5**	**0**	**0**	**0**	**0**	**0**
	Bohol	23	602	598	134	122	0	0				14	236	236	190	178	37	838	834	324	300	0					0				
	Cebu	2	54	54	0	0	0	0				0					2	54	54	0	0	0					0				
	Negros Oriental	4	565	560	310	310	1	5	5	5	5	0					5	570	565	315	315	1	5	5	5	5	0	0	0	0	0
	Siquijor	0	0				0	0				0					0	0	0	0	0	0					0				
VIII		**51**	**2,710**	**2,710**	**1,976**	**1,936**	**6**	**41**	**41**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**57**	**2,751**	**2,751**	**1,976**	**1,936**	**0**	**0**	**0**	**0**	**0**	**6**	**41**	**41**	**0**	**0**
	Biliran	3	146	146	81	81	0	0				0					3	146	146	81	81	0					0				
	Northern Leyte	18	1,906	1,906	1,571	1,571	0	0				0					18	1,906	1,906	1,571	1,571	0					0				
	Southern Leyte	14	325	325	324	284	0	0				0					14	325	325	324	284	0					0				
	Northern Samar	16	333	333	0	0	3	35	35	0	0	0					19	368	368	0	0	0	0	0	0	0	3	35	35	0	0
	Western Samar	0	0				3	6	6	0	0	0					3	6	6	0	0	0	0	0	0	0	3	6	6	0	0
	Eastern Samar	0	0				0	0				0					0	0	0	0	0	0					0				
IX		**18**	**356**	**356**	**346**	**356**	**27**	**3,125**	**60**	**60**	**60**	**0**	**0**	**0**	**0**	**0**	**45**	**3,481**	**416**	**406**	**416**	**25**	**3,065**	**0**	**0**	**0**	**2**	**60**	**60**	**60**	**60**
	Zamboanga del Norte	0	0				0	0				0					0	0	0	0	0	0					0				
	Zamboanga del Sur	9	356	356	346	356	27	3,125	60	60	60	0					36	3,481	416	406	416	25	3,065	0	0	0	2	60	60	60	60
	Zamboanga Sibugay	9	0				0	0				0					9	0	0	0	0	0					0				
X		**90**	**5,291**	**5,100**	**3,842**	**3,820**	**4**	**141**	**141**	**36**	**31**	**0**	**0**	**0**	**0**	**0**	**94**	**5,432**	**5,241**	**3,878**	**3,851**	**4**	**141**	**141**	**36**	**31**	**0**	**0**	**0**	**0**	**0**
	Bukidnon	58	3,285	3,094	2,319	2,239	0	0				0					58	3,285	3,094	2,319	2,239	0					0				
	Camiguin	4	90	90	12	12	0	0				0					4	90	90	12	12	0					0				
	Lanao del Norte	13	353	353	88	76	4	141	141	36	31	0					17	494	494	124	107	4	141	141	36	31	0	0	0	0	0
	Misamis Occidental	8	1,485	1,485	1,415	1,445	0	0				0					8	1,485	1,485	1,415	1,445	0					0				
	Misamis Oriental	7	78	78	8	48	0	0				0					7	78	78	8	48	0					0				

XI	**20**	**1,585**	**1,585**	**133**	**133**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**20**	**1,585**	**1,585**	**133**	**133**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Compostela Valley	8	580	580	0	0	0	0				0					8	580	580	0	0	0					0				
Davao del Norte	7	892	892	20	20	0	0				0					7	892	892	20	20	0					0				
Davao del Sur	0	0				0	0				0					0	0	0	0	0	0					0				
Davao Oriental	5	113	113	113	113	0	0				0					5	113	113	113	113	0					0				
XII	**87**	**10,196**	**10,196**	**8,578**	**4,304**	**1**	**80**	**80**	**80**	**80**	**0**	**0**	**0**	**0**	**0**	**88**	**10,276**	**10,276**	**8,658**	**4,384**	**1**	**80**	**80**	**80**	**80**	**0**	**0**	**0**	**0**	**0**
Sarangani	4	278	278	278	278	0	0				0					4	278	278	278	278	0					0				
South Cotabato	17	1,698	1,698	392	292	0	0				0					17	1,698	1,698	392	292	0					0				
North Cotabato	33	3,588	3,588	3,378	3,374	1	80	80	80	80	0					34	3,668	3,668	3,458	3,454	1	80	80	80	80	0	0	0	0	0
Sultan Kudarat	33	4,632	4,632	4,530	360	0	0				0					33	4,632	4,632	4,530	360	0					0				
XIII (CARAGA)	**113**	**4,807**	**4,807**	**2,129**	**1,374**	**34**	**1,314**	**1,314**	**193**	**105**	**3**	**134**	**134**	**0**	**0**	**150**	**6,255**	**6,255**	**2,322**	**1,479**	**2**	**205**	**205**	**55**	**55**	**32**	**1,109**	**1,109**	**138**	**50**
Agusan del Norte	20	1,045	1,045	672	611	2	205	205	55	55	0					22	1,250	1,250	727	666	2	205	205	55	55	0	0	0	0	0
Agusan del Sur	46	2,054	2,054	410	342	32	1,109	1,109	138	50	3	134	134	0	0	81	3,297	3,297	548	392	0	0	0	0	0	32	1,109	1,109	138	50
Dinagat Islands	3	100	100	100	41	0	0				0					3	100	100	100	41	0					0				
Surigao del Norte	24	638	638	596	355	0	0				0					24	638	638	596	355	0					0				
Surigao del Sur	20	970	970	351	25	0	0				0					20	970	970	351	25	0					0				
ARMM	**6**	**295**	**295**	**295**	**196**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**295**	**295**	**295**	**196**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Basilan	0	0				0	0				0					0	0	0	0	0	0					0				
Lanao del Sur	0	0				0	0				0					0	0	0	0	0	0					0				
Maguindanao	6	295	295	295	196	0	0				0					6	295	295	295	196	0					0				
Sulu	0	0				0	0				0					0	0	0	0	0	0					0				
Tawi-Tawi	0	0				0	0				0					0	0	0	0	0	0					0				
Total	**2,177**	**122,493**	**121,317**	**79,913**	**49,642**	**1,608**	**44,334**	**40,489**	**27,665**	**24,602**	**70**	**3,169**	**3,169**	**1,894**	**1,882**	**3,855**	**169,996**	**164,975**	**109,472**	**76,126**	**517**	**17,864**	**14,671**	**11,473**	**10,515**	**1,091**	**26,470**	**25,818**	**16,192**	**14,087**

Source: NIA Database - Inventory of National, Communal, Private & OGA Irrigation System (as of December 31, 2019)

Table F 5 Present Small Scale Irrigation Systems in 2020

Region/	CISs					Private Systems					Other Government Assisted Systems					**Total**						Irrigation			Pump System by Ground Water				
Province	Nos.	ISA	FUSA	Irrigated Area (ha)		Nos.	ISA	FUSA	Irrigated Area (ha)		Nos.	ISA	FUSA	Irrigated Area (ha)		Nos.	ISA	FUSA	Irrigated Area (ha)			Intensity (%)			Nos.	ISA	FUSA	Irrigated Area (ha)	
		(ha)	(ha)	Wet	Dry		(ha)	(ha)	Wet	Dry		(ha)	(ha)	Wet	Dry		(ha)	(ha)	Wet	Dry	Total	Wet	Dry	Total		(ha)	(ha)	Wet	Dry
CAR	**2,363**	**58,017**	**54,055**	**40,064**	**39,057**	**1,307**	**21,575**	**21,508**	**16,471**	**16,354**	**168**	**3,538**	**3,538**	**2,985**	**2,694**	**3,838**	**83,130**	**79,101**	**59,520**	**58,105**	**117,625**	**75.2**	**73.5**	**148.7**	**82**	**1,393**	**1,225**	**1,088**	**1,050**
Abra	294	10,176	9,262	6,024	5,600	116	5,671	5,603	2,991	2,926	18	654	654	484	484	428	16,501	15,519	9,499	9,010	18,509	61.2	58.1	119.3	18	168	75	66	30
Apayao	102	5,722	5,437	3,981	3,940	11	209	209	189	189	15	427	427	427	427	128	6,358	6,073	4,597	4,556	9,153	75.7	75.0	150.7	17	658	592	592	592
Benguet	497	11,583	11,047	8,629	8,416	241	3,677	3,677	3,264	3,264	22	511	511	426	426	760	15,771	15,235	12,319	12,106	24,425	80.9	79.5	160.3	28	161	152	103	96
Ifugao	360	9,726	9,029	6,627	6,447	146	2,243	2,244	1,846	1,846	24	346	346	281	281	530	12,315	11,619	8,754	8,574	17,328	75.3	73.8	149.1	8	41	41	41	41
Kalinga	683	11,930	10,667	8,871	8,683	263	6,025	6,025	5,016	4,994	68	1,093	1,093	890	861	1,014	19,048	17,785	14,777	14,538	29,315	83.1	81.7	164.8	8	346	346	270	275
Mt. Province	427	8,880	8,613	5,932	5,971	530	3,750	3,750	3,165	3,135	21	507	507	477	215	978	13,137	12,870	9,574	9,321	18,895	74.4	72.4	146.8	3	19	19	16	16
I	**1,101**	**68,497**	**61,736**	**49,024**	**34,466**	**335**	**28,409**	**19,883**	**17,128**	**10,450**	**815**	**48,914**	**48,874**	**37,129**	**22,587**	**2,251**	**145,820**	**130,493**	**103,281**	**67,503**	**170,784**	**79.1**	**51.7**	**130.9**	**515**	**28,562**	**26,514**	**23,096**	**18,216**
Ilocos Norte	219	13,962	11,158	9,854	7,063	4	60	20	15	8	492	13,063	13,044	9,637	4,624	715	27,085	24,222	19,506	11,695	31,201	80.5	48.3	128.8	3	20	0	0	27
Ilocos Sur	189	11,204	9,986	8,529	6,366	139	3,876	3,870	3,523	456	45	2,176	2,176	1,438	318	373	17,256	16,032	13,490	7,140	20,630	84.1	44.5	128.7	59	1,723	1,112	1,064	544
La Union	350	7,995	6,665	5,383	4,474	5	21	21	19	8	133	3,494	3,474	3,144	1,924	488	11,510	10,160	8,546	6,406	14,952	84.1	63.1	147.2	300	3,410	2,736	2,505	2,037
Pangasinan	343	35,336	33,927	25,258	16,563	187	24,452	15,972	13,571	9,978	145	30,181	30,180	22,910	15,721	675	89,969	80,079	61,739	42,262	104,001	77.1	52.8	129.9	153	23,409	22,666	19,527	15,608
II	**1,008**	**56,571**	**52,917**	**37,946**	**38,403**	**802**	**42,645**	**42,644**	**42,289**	**41,702**	**238**	**20,918**	**20,632**	**17,669**	**16,721**	**2,048**	**120,134**	**116,193**	**97,904**	**96,826**	**194,730**	**84.3**	**83.3**	**167.6**	**304**	**36,284**	**36,368**	**33,906**	**33,929**
Batanes	94	358	353	9	0	0	0	0	0	0	1	1	1	0	0	95	359	354	9	0	9	2.5	0.0	2.5	7	32	27	9	0
Cagayan	461	21,648	19,090	12,682	13,193	123	30,243	30,243	30,023	30,023	102	10,044	10,044	7,748	7,748	686	61,935	59,377	50,453	50,964	101,417	85.0	85.8	170.8	279	36,004	36,093	33,742	33,774
Isabela	72	10,799	10,918	6,220	6,175	67	5,239	5,239	4,906	4,319	79	9,989	9,718	9,156	8,208	218	26,027	25,875	20,282	18,702	38,984	78.4	72.3	150.7	2	100	100	80	80
Nueva Vizcaya	269	17,978	17,195	15,372	15,372	410	6,005	6,005	6,244	6,244	17	476	476	466	466	696	24,459	23,676	22,082	22,082	44,164	93.3	93.3	186.5	0	0	0	0	0
Quirino	112	5,788	5,361	3,663	3,663	202	1,158	1,157	1,116	1,116	39	408	393	299	299	353	7,354	6,911	5,078	5,078	10,156	73.5	73.5	147.0	16	148	148	75	75
III	**449**	**81,185**	**72,193**	**57,692**	**53,616**	**90**	**8,746**	**8,746**	**6,668**	**4,657**	**211**	**18,246**	**17,651**	**6,013**	**4,999**	**750**	**108,177**	**98,590**	**70,373**	**63,272**	**133,645**	**71.4**	**64.2**	**135.6**	**97**	**13,093**	**12,393**	**8,496**	**7,415**
Aurora	55	6,180	6,087	5,891	5,838	33	1,870	1,870	1,096	1,096	2	148	148	66	66	90	8,198	8,105	7,053	7,000	14,053	87.0	86.4	173.4	0	0	0	0	0
Bataan	57	6,638	5,376	4,292	4,308	1	120	120	21	21	52	4,829	4,829	2,208	2,207	110	11,587	10,325	6,521	6,536	13,057	63.2	63.3	126.5	14	1,018	937	180	183
Bulacan	42	8,560	7,179	5,628	4,118	2	41	41	20	15	23	787	745	542	513	67	9,388	7,965	6,190	4,646	10,836	77.7	58.3	136.0	7	1,628	1,477	1,204	952
Nueva Ecija	84	16,609	16,276	14,299	14,129	32	3,737	3,737	3,476	2,325	23	2,544	2,544	2,268	1,675	139	22,890	22,557	20,043	18,129	38,172	88.9	80.4	169.2	26	2,420	2,420	2,310	2,267
Pampanga	108	18,621	15,716	11,514	11,218	2	249	249	0	0	55	6,059	5,814	230	197	165	24,929	21,779	11,744	11,415	23,159	53.9	52.4	106.3	19	3,018	2,859	2,352	1,949
Tarlac	48	17,084	14,941	11,883	11,854	20	2,729	2,729	2,055	1,200	2	237	0	0	0	70	20,050	17,670	13,938	13,054	26,992	78.9	73.9	152.8	8	2,250	1,950	1,282	1,249
Zambales	55	7,493	6,618	4,185	2,151	0	0	0	0	0	54	3,642	3,571	699	341	109	11,135	10,189	4,884	2,492	7,376	47.9	24.5	72.4	23	2,759	2,750	1,168	815
IV-A	**484**	**25,727**	**23,082**	**16,709**	**16,453**	**305**	**6,789**	**5,342**	**4,380**	**3,576**	**404**	**2,383**	**2,333**	**1,989**	**1,934**	**1,193**	**34,899**	**30,757**	**23,078**	**21,963**	**45,041**	**75.0**	**71.4**	**146.4**	**114**	**2,844**	**2,608**	**1,443**	**1,394**
Batangas	78	4,252	3,646	1,559	2,098	5	120	47	20	20	1	28	28	28	28	84	4,400	3,721	1,607	2,146	3,753	43.2	57.7	100.9	21	354	273	155	145
Cavite	29	1,558	1,410	516	393	0	0	0	0	0	0	0	0	0	0	29	1,558	1,410	516	393	909	36.6	27.9	64.5	12	371	334	108	42
Laguna	77	5,824	4,823	3,951	3,840	38	1,413	1,303	1,016	969	0	0	0	0	0	115	7,237	6,126	4,967	4,809	9,776	81.1	78.5	159.6	7	680	562	207	246
Quezon	226	9,902	9,545	7,747	7,227	119	4,535	3,425	2,936	2,179	21	1,192	1,142	818	763	366	15,629	14,112	11,501	10,169	21,670	81.5	72.1	153.6	68	1,245	1,245	836	825
Rizal	74	4,191	3,658	2,936	2,895	143	721	567	408	408	382	1,163	1,163	1,143	1,143	599	6,075	5,388	4,487	4,446	8,933	83.3	82.5	165.8	6	194	194	137	136
IV-B	**309**	**48,151**	**43,452**	**36,717**	**35,159**	**1,114**	**13,762**	**13,704**	**12,749**	**8,625**	**92**	**12,596**	**12,523**	**8,153**	**5,460**	**1,515**	**74,509**	**69,679**	**57,619**	**49,244**	**106,863**	**82.7**	**70.7**	**153.4**	**939**	**7,385**	**6,932**	**5,698**	**4,485**
Marinduque	42	1,839	1,779	1,468	1,463	41	123	123	123	123	4	121	121	79	55	87	2,083	2,023	1,670	1,641	3,311	82.6	81.1	163.7	47	327	306	213	208
Occidental Mindoro	49	14,931	13,822	10,848	10,653	594	7,108	7,070	7,070	4,618	21	3,886	3,886	3,740	2,252	664	25,925	24,778	21,658	17,523	39,181	87.4	70.7	158.1	570	3,974	3,678	3,678	2,810
Oriental Mindoro	68	12,365	11,161	9,896	9,705	255	2,562	2,542	2,151	1,579	41	5,680	5,680	2,354	1,792	364	20,607	19,383	14,401	13,076	27,477	74.3	67.5	141.8	202	1,809	1,697	868	844
Palawan	90	17,049	14,751	12,707	11,540	122	3,408	3,408	3,405	2,044	3	2,261	2,188	1,508	1,003	215	22,718	20,347	17,620	14,587	32,207	86.6	71.7	158.3	16	867	861	861	545
Romblon	60	1,967	1,939	1,798	1,798	102	561	561	0	261	23	648	648	472	358	185	3,176	3,148	2,270	2,417	4,687	72.1	76.8	148.9	104	408	390	78	78

V		**832**	**76,782**	**52,185**	**39,553**	**38,831**	**553**	**24,932**	**24,932**	**8,510**	**7,327**	**718**	**17,421**	**17,421**	**9,234**	**8,577**	**2,103**	**119,135**	**94,538**	**57,297**	**54,735**	**112,032**	**60.6**	**57.9**	**118.5**	**790**	**30,633**	**7,369**	**1,578**	**1,443**
	Albay	162	13,980	12,727	9,867	9,818	329	11,044	11,044	8,463	7,280	139	3,109	3,109	1,883	1,788	630	28,133	26,880	20,213	18,886	39,099	75.2	70.3	145.5	217	1,208	782	316	316
	Camarines Norte	66	3,939	3,645	2,686	2,717	4	122	122	47	47	303	2,022	2,022	926	865	373	6,083	5,789	3,659	3,629	7,288	63.2	62.7	125.9	292	1,046	853	164	164
	Camarines Sur	363	45,395	23,099	16,693	15,869	101	9,883	9,883	0	0	79	6,482	6,482	3,379	2,943	543	61,760	39,464	20,072	18,812	38,884	50.9	47.7	98.5	227	25,077	2,801	1,083	948
	Catanduanes	73	2,175	2,077	1,351	1,402	0	0	0	0	0	58	1,036	1,036	454	437	131	3,211	3,113	1,805	1,839	3,644	58.0	59.1	117.1	23	246	237	15	15
	Masbate	76	3,848	3,582	2,719	2,782	106	1,367	1,367	0	0	92	1,633	1,633	737	737	274	6,848	6,582	3,456	3,519	6,975	52.5	53.5	106.0	13	192	186	0	0
	Sorsogon	92	7,445	7,055	6,237	6,243	13	2,516	2,516	0	0	47	3,139	3,139	1,855	1,807	152	13,100	12,710	8,092	8,050	16,142	63.7	63.3	127.0	18	2,864	2,510	0	0
VI		**908**	**44,164**	**38,369**	**28,015**	**24,644**	**725**	**15,103**	**14,973**	**1,903**	**1,453**	**705**	**14,443**	**13,731**	**7,993**	**144**	**2,338**	**73,710**	**67,073**	**37,911**	**26,241**	**64,152**	**56.5**	**39.1**	**95.6**	**1,384**	**13,605**	**9,888**	**1,911**	**766**
	Aklan	53	3,708	3,578	3,252	2,993	180	540	540	0	0	12	370	370	0	0	245	4,618	4,488	3,252	2,993	6,245	72.5	66.7	139.1	189	668	658	120	120
	Antique	121	9,198	8,513	7,474	7,307	52	1,288	1,288	496	372	115	858	858	527	144	288	11,344	10,659	8,497	7,823	16,320	79.7	73.4	153.1	104	503	439	371	47
	Capiz	153	10,144	7,262	6,117	6,162	228	2,312	2,292	344	0	193	1,476	1,476	774	0	574	13,932	11,030	7,235	6,162	13,397	65.6	55.9	121.5	481	6,105	3,709	702	566
	Guimaras	39	1,079	908	695	553	0	0	0	0	0	26	86	47	0	0	65	1,165	955	695	553	1,248	72.8	57.9	130.7	44	259	217	104	33
	Iloilo	440	11,378	9,623	6,883	4,065	84	2,020	1,910	0	0	255	4,264	3,591	0	0	779	17,662	15,124	6,883	4,065	10,948	45.5	26.9	72.4	564	5,998	4,793	614	0
	Negros Occidental	102	8,657	8,485	3,594	3,564	181	8,943	8,943	1,063	1,081	104	7,389	7,389	6,692	0	387	24,989	24,817	11,349	4,645	15,994	45.7	18.7	64.4	2	72	72	0	0
VII		**499**	**29,226**	**24,259**	**20,458**	**19,421**	**116**	**3,485**	**3,366**	**2,779**	**2,471**	**44**	**1,462**	**1,453**	**639**	**615**	**659**	**34,173**	**29,078**	**23,876**	**22,507**	**46,383**	**82.1**	**77.4**	**159.5**	**31**	**1,132**	**977**	**943**	**695**
	Bohol	205	9,034	8,586	7,127	7,105	70	2,565	2,446	1,977	1,721	37	838	834	324	300	312	12,437	11,866	9,428	9,126	18,554	79.5	76.9	156.4	1	20	0	0	0
	Cebu	190	8,553	6,703	6,011	5,119	9	115	115	0	0	2	54	54	0	0	201	8,722	6,872	6,011	5,119	11,130	87.5	74.5	162.0	30	1,112	977	943	695
	Negros Oriental	81	10,974	8,459	7,057	7,074	29	736	736	736	714	5	570	565	315	315	115	12,280	9,760	8,108	8,103	16,211	83.1	83.0	166.1	0	0	0	0	0
	Siquijor	23	665	511	263	123	8	69	69	66	36	0	0	0	0	0	31	734	580	329	159	488	56.7	27.4	84.1	0	0	0	0	0
VIII		**407**	**39,426**	**38,550**	**24,499**	**24,716**	**477**	**6,477**	**6,477**	**4,098**	**4,018**	**57**	**2,751**	**2,751**	**1,976**	**1,936**	**941**	**48,654**	**47,778**	**30,573**	**30,670**	**61,243**	**64.0**	**64.2**	**128.2**	**91**	**939**	**939**	**20**	**26**
	Biliran	34	3,876	3,474	1,825	1,925	2	160	160	80	80	3	146	146	81	81	39	4,182	3,780	1,986	2,086	4,072	52.5	55.2	107.7	1	5	5	0	0
	Northern Leyte	114	16,372	16,062	10,785	10,870	98	4,121	4,121	3,082	3,023	18	1,906	1,906	1,571	1,571	230	22,399	22,089	15,438	15,464	30,902	69.9	70.0	139.9	5	170	170	0	0
	Southern Leyte	70	5,291	5,203	3,791	3,788	82	1,129	1,129	889	869	14	325	325	324	284	166	6,745	6,657	5,004	4,941	9,945	75.2	74.2	149.4	4	56	56	0	0
	Northern Samar	45	3,926	3,912	2,099	2,143	0	0	0	0	0	19	368	368	0	0	64	4,294	4,280	2,099	2,143	4,242	49.0	50.1	99.1	4	172	172	0	0
	Western Samar	91	3,587	3,525	2,404	2,490	227	567	567	47	46	3	6	6	0	0	321	4,160	4,098	2,451	2,536	4,987	59.8	61.9	121.7	10	46	46	20	26
	Eastern Samar	53	6,374	6,374	3,595	3,500	68	500	500	0	0	0	0	0	0	0	121	6,874	6,874	3,595	3,500	7,095	52.3	50.9	103.2	67	490	490	0	0
IX		**245**	**25,747**	**23,379**	**16,896**	**15,648**	**28**	**1,944**	**1,944**	**1,648**	**1,618**	**45**	**3,481**	**416**	**406**	**416**	**318**	**31,172**	**25,739**	**18,950**	**17,682**	**36,632**	**73.6**	**68.7**	**142.3**	**31**	**506**	**360**	**125**	**119**
	Zamboanga del Norte	79	7,360	6,883	3,833	3,263	9	188	188	0	0	0	0	0	0	0	88	7,548	7,071	3,833	3,263	7,096	54.2	46.1	100.4	15	151	151	0	0
	Zamboanga del Sur	109	10,769	9,540	7,590	7,129	16	1,542	1,542	1,483	1,453	36	3,481	416	406	416	161	15,792	11,498	9,479	8,998	18,477	82.4	78.3	160.7	14	290	144	60	60
	Zamboanga Sibugay	57	7,618	6,956	5,473	5,256	3	214	214	165	165	9	0	0	0	0	69	7,832	7,170	5,638	5,421	11,059	78.6	75.6	154.2	2	65	65	65	59
X		**225**	**28,941**	**25,094**	**17,394**	**17,320**	**129**	**5,013**	**4,991**	**3,535**	**3,479**	**94**	**5,432**	**5,241**	**3,878**	**3,851**	**448**	**39,386**	**35,326**	**24,807**	**24,650**	**49,457**	**70.2**	**69.8**	**140.0**	**12**	**124**	**124**	**45**	**45**
	Bukidnon	47	8,592	7,679	5,609	5,576	53	3,945	3,938	3,195	2,994	58	3,285	3,094	2,319	2,239	158	15,822	14,711	11,123	10,809	21,932	75.6	73.5	149.1	0	0	0	0	0
	Camiguin	13	665	550	344	244	0	0	0	0	0	4	90	90	12	12	17	755	640	356	256	612	55.6	40.0	95.6	0	0	0	0	0
	Lanao del Norte	62	7,521	7,299	4,598	4,598	19	220	220	117	117	17	494	494	124	107	98	8,235	8,013	4,839	4,822	9,661	60.4	60.2	120.6	11	94	94	15	15
	Misamis Occidental	50	7,757	7,051	5,216	5,224	6	294	294	135	135	8	1,485	1,485	1,415	1,445	64	9,536	8,830	6,766	6,804	13,570	76.6	77.1	153.7	0	0	0	0	0
	Misamis Oriental	53	4,406	2,515	1,627	1,678	51	554	539	88	233	7	78	78	8	48	111	5,038	3,132	1,723	1,959	3,682	55.0	62.5	117.6	1	30	30	30	30

XI	**132**	**28,954**	**29,571**	**20,850**	**20,797**	**16**	**1,085**	**995**	**720**	**720**	**20**	**1,585**	**1,585**	**133**	**133**	**168**	**31,624**	**32,151**	**21,703**	**21,650**	**43,353**	**67.5**	**67.3**	**134.8**	**0**	**0**	**0**	**0**	**0**
Davao del Norte	35	9,791	9,704	6,786	6,786	0	0	0	0	0	8	580	580	0	0	43	10,371	10,284	6,786	6,786	13,572	66.0	66.0	132.0	0	0	0	0	0
Davao	29	3,157	3,901	3,070	3,070	9	780	690	450	450	7	892	892	20	20	45	4,829	5,483	3,540	3,540	7,080	64.6	64.6	129.1	0	0	0	0	0
Davao del Sur	35	10,457	10,457	8,127	8,026	7	305	305	270	270	0	0	0	0	0	42	10,762	10,762	8,397	8,296	16,693	78.0	77.1	155.1	0	0	0	0	0
Davao Oriental	33	5,549	5,509	2,867	2,915	0	0	0	0	0	5	113	113	113	113	38	5,662	5,622	2,980	3,028	6,008	53.0	53.9	106.9	0	0	0	0	0
XII	**282**	**42,132**	**37,869**	**33,244**	**31,063**	**64**	**2,840**	**2,840**	**2,337**	**2,317**	**88**	**10,276**	**10,276**	**8,658**	**4,384**	**434**	**55,248**	**50,985**	**44,239**	**37,764**	**82,003**	**86.8**	**74.1**	**160.8**	**71**	**966**	**966**	**861**	**861**
Sarangani	45	6,678	5,955	5,338	4,944	2	115	115	115	115	4	278	278	278	278	51	7,071	6,348	5,731	5,337	11,068	90.3	84.1	174.4	5	67	67	67	67
South Cotabato	45	10,295	8,781	8,243	8,078	3	350	350	140	122	17	1,698	1,698	392	292	65	12,343	10,829	8,775	8,492	17,267	81.0	78.4	159.5	1	10	10	10	10
North Cotabato	117	12,103	11,322	9,507	9,404	58	2,087	2,087	2,002	2,000	34	3,668	3,668	3,458	3,454	209	17,858	17,077	14,967	14,858	29,825	87.6	87.0	174.7	49	544	544	439	439
Sultan Kudarat	75	13,056	11,811	10,156	8,637	1	288	288	80	80	33	4,632	4,632	4,530	360	109	17,976	16,731	14,766	9,077	23,843	88.3	54.3	142.5	16	345	345	345	345
XIII	**239**	**27,548**	**24,588**	**15,591**	**14,291**	**80**	**3,113**	**3,113**	**2,042**	**882**	**150**	**6,255**	**6,255**	**2,322**	**1,479**	**469**	**36,916**	**33,956**	**19,955**	**16,652**	**36,607**	**58.8**	**49.0**	**107.8**	**38**	**1,223**	**1,178**	**153**	**50**
Agusan del Norte	38	4,966	4,082	2,143	2,582	15	410	410	315	285	22	1,250	1,250	727	666	75	6,626	5,742	3,185	3,533	6,718	55.5	61.5	117.0	0	0	0	0	0
Agusan del Sur	40	6,680	5,655	3,632	3,510	41	1,441	1,441	963	547	81	3,297	3,297	548	392	162	11,418	10,393	5,143	4,449	9,592	49.5	42.8	92.3	32	1,109	1,109	138	50
Dinagat Islands	27	910	819	468	478	2	74	74	15	10	3	100	100	100	41	32	1,084	993	583	529	1,112	58.7	53.3	112.0	0	0	0	0	0
Surigao del Norte	84	7,080	6,715	5,185	3,669	3	97	97	77	40	24	638	638	596	355	111	7,815	7,450	5,858	4,064	9,922	78.6	54.6	133.2	5	54	54	0	0
Surigao del Sur	50	7,912	7,317	4,163	4,052	19	1,091	1,091	672	0	20	970	970	351	25	89	9,973	9,378	5,186	4,077	9,263	55.3	43.5	98.8	1	60	15	15	0
ARMM	**236**	**21,185**	**19,706**	**8,670**	**8,234**	**1**	**90**	**90**	**90**	**70**	**6**	**295**	**295**	**295**	**196**	**243**	**21,570**	**20,091**	**9,055**	**8,500**	**17,555**	**45.1**	**42.3**	**87.4**	**21**	**509**	**125**	**68**	**68**
Basilan	16	708	627	256	253	0	0	0	0	0	0	0	0	0	0	16	708	627	256	253	509	40.8	40.4	81.2	2	23	23	0	0
Lanao del Sur	34	5,865	5,701	2,566	2,481	0	0	0	0	0	0	0	0	0	0	34	5,865	5,701	2,566	2,481	5,047	45.0	43.5	88.5	0	0	0	0	0
Maguindanao	84	10,409	10,343	5,656	5,299	1	90	90	90	70	6	295	295	295	196	91	10,794	10,728	6,041	5,565	11,606	56.3	51.9	108.2	7	74	56	56	56
Sulu	44	2,526	2,043	158	158	0	0	0	0	0	0	0	0	0	0	44	2,526	2,043	158	158	316	7.7	7.7	15.5	4	306	46	12	12
Tawi-Tawi	58	1,677	992	34	43	0	0	0	0	0	0	0	0	0	0	58	1,677	992	34	43	77	3.4	4.3	7.8	8	106	0	0	0
Total	**9,719**	**702,253**	**621,005**	**463,322**	**432,119**	**6,142**	**186,008**	**175,548**	**127,347**	**109,719**	**3,855**	**169,996**	**164,975**	**109,472**	**76,126**	**19,716**	**1,058,257**	**961,528**	**700,141**	**617,964**	**1,318,105**	**72.8**	**64.3**	**137.1**	**4,520**	**139,198**	**107,966**	**79,431**	**70,562**

Source: NIA Database - Inventory of National, Communal, Private & OGA Irrigation System (as of December 31, 2019)

Table F 6 Irrigated Area of All Irrigation Systems in 2020

Region/	NIS				CIS/Private/OGAS				Total				Cropping	
	ISA	FUSA	Irrigated Area (ha)		ISA	FUSA	Irrigated Area (ha)		ISA	FUSA	Irrigated Area (ha)		Intensity (%)	
Province	(ha)	(ha)	Wet	Dry	(ha)	(ha)	Wet	Dry	(ha)	(ha)	Wet	Dry	Wet	Dry
CAR	**19,362**	**17,643**	**13,825**	**11,992**	**83,130**	**79,101**	**59,520**	**58,105**	**102,492**	**96,744**	**73,345**	**70,097**	75.8	72.5
Abra	3,329	3,329	1,324	1,302.0	16,501	15,519	9,499	9,010	19,830	18,848	10,823	10,312	57.4	54.7
Apayao	4,261	4,010	3,739	3,708	6,358	6,073	4,597	4,556	10,619	10,083	8,336	8,264	82.7	82.0
Benguet	0	0			15,771	15,235	12,319	12,106	15,771	15,235	12,319	12,106	80.9	79.5
Ifugao	3,478	3,087	1,704	813	12,315	11,619	8,754	8,574	15,793	14,706	10,458	9,387	71.1	63.8
Kalinga	8,294	7,217	7,058	6,169	19,048	17,785	14,777	14,538	27,342	25,002	21,835	20,707	87.3	82.8
Mt. Province	0	0			13,137	12,870	9,574	9,321	13,137	12,870	9,574	9,321	74.4	72.4
I	**71,537**	**59,571**	**53,097**	**40,724**	**145,820**	**130,493**	**103,281**	**67,503**	**217,357**	**190,064**	**156,378**	**108,227**	82.3	56.9
Ilocos Norte	18,120	11,592	10,410	8,312	27,085	24,222	19,506	11,695	45,205	35,814	29,916	20,007	83.5	55.9
Ilocos Sur	7,391	6,690	5,965	4,421	17,256	16,032	13,490	7,140	24,647	22,722	19,455	11,561	85.6	50.9
La Union	5,217	4,785	4,229	3,372	11,510	10,160	8,546	6,406	16,727	14,945	12,775	9,778	85.5	65.4
Pangasinan	40,809	36,504	32,493	24,619	89,969	80,079	61,739	42,262	130,778	116,583	94,232	66,881	80.8	57.4
II	**182,009**	**163,320**	**150,040**	**149,315**	**120,134**	**116,193**	**97,904**	**96,826**	**302,143**	**279,513**	**247,944**	**246,141**	88.7	88.1
Batanes	0	0			359	354	9	0	359	354	9	0	2.5	0.0
Cagayan	47,374	44,769	36,316	39,016	61,935	59,377	50,453	50,964	109,309	104,146	86,769	89,980	83.3	86.4
Isabela	120,343	105,098	100,701	97,304	26,027	25,875	20,282	18,702	146,370	130,973	120,983	116,006	92.4	88.6
Nueva Vizcaya	8,914	8,514	8,145	8,145	24,459	23,676	22,082	22,082	33,373	32,190	30,227	30,227	93.9	93.9
Quirino	5,378	4,939	4,878	4,850	7,354	6,911	5,078	5,078	12,732	11,850	9,956	9,928	84.0	83.8
III	**238,675**	**224,301**	**196,707**	**188,936**	**108,177**	**98,590**	**70,373**	**63,272**	**346,852**	**322,891**	**267,080**	**252,208**	82.7	78.1
Aurora	1,572	1,572	1,555	1,555	8,198	8,105	7,053	7,000	9,770	9,677	8,608	8,555	89.0	88.4
Bataan	1,090	863	742	775	11,587	10,325	6,521	6,536	12,677	11,188	7,263	7,311	64.9	65.3
Bulacan	29,022	23,750	19,263	13,260	9,388	7,965	6,190	4,646	38,410	31,715	25,453	17,906	80.3	56.5
Nueva Ecija	136,906	133,092	129,957	129,275	22,890	22,557	20,043	18,129	159,796	155,649	150,000	147,404	96.4	94.7
Pampanga	30,845	27,772	22,481	25,778	24,929	21,779	11,744	11,415	55,774	49,551	34,225	37,193	69.1	75.1
Tarlac	31,979	30,988	18,423	15,419	20,050	17,670	13,938	13,054	52,029	48,658	32,361	28,473	66.5	58.5
Zambales	7,261	6,264	4,286	2,874	11,135	10,189	4,884	2,492	18,396	16,453	9,170	5,366	55.7	32.6
IV-A	**29,428**	**17,962**	**13,703**	**13,933**	**34,899**	**30,757**	**23,078**	**21,963**	**64,327**	**48,719**	**36,781**	**35,896**	75.5	73.7
Batangas	1,108	978	824	876	4,400	3,721	1,607	2,146	5,508	4,699	2,431	3,022	51.7	64.3
Cavite	13,698	5,793	2,860	2,828	1,558	1,410	516	393	15,256	7,203	3,376	3,221	46.9	44.7
Laguna	9,840	6,919	6,092	6,231	7,237	6,126	4,967	4,809	17,077	13,045	11,059	11,040	84.8	84.6
Quezon	4,782	4,272	3,927	3,998	15,629	14,112	11,501	10,169	20,411	18,384	15,428	14,167	83.9	77.1
Rizal	0	0			6,075	5,388	4,487	4,446	6,075	5,388	4,487	4,446	83.3	82.5
IV-B	**35,009**	**25,325**	**24,370**	**21,647**	**74,509**	**69,679**	**57,619**	**49,244**	**109,518**	**95,004**	**81,989**	**70,891**	86.3	74.6
Marinduque	0	0			2,083	2,023	1,670	1,641	2,083	2,023	1,670	1,641	82.6	81.1
Occidental Mindoro	7,995	5,999	5,353	5,093	25,925	24,778	21,658	17,523	33,920	30,777	27,011	22,616	87.8	73.5
Oriental Mindoro	16,547	11,531	11,475	9,436	20,607	19,383	14,401	13,076	37,154	30,914	25,876	22,512	83.7	72.8
Palawan	10,183	7,511	7,258	6,834	22,718	20,347	17,620	14,587	32,901	27,858	24,878	21,421	89.3	76.9
Romblon	284	284	284	284	3,176	3,148	2,270	2,417	3,460	3,432	2,554	2,701	74.4	78.7
V	**24,135**	**23,752**	**21,141**	**20,916**	**119,135**	**94,538**	**57,297**	**54,735**	**143,270**	**118,290**	**78,438**	**75,651**	66.3	64.0
Albay	3,616	3,549	2,832	2,765	28,133	26,880	20,213	18,886	31,749	30,429	23,045	21,651	75.7	71.2
Camarines Norte	3,612	3,447	3,066	3,081	6,083	5,789	3,659	3,629	9,695	9,236	6,725	6,710	72.8	72.7
Camarines Sur	15,905	15,754	14,241	14,068	61,760	39,464	20,072	18,812	77,665	55,218	34,313	32,880	62.1	59.5
Catanduanes	0	0			3,211	3,113	1,805	1,839	3,211	3,113	1,805	1,839	58.0	59.1
Masbate	0	0			6,848	6,582	3,456	3,519	6,848	6,582	3,456	3,519	52.5	53.5
Sorsogon	1,002	1,002	1,002	1,002	13,100	12,710	8,092	8,050	14,102	13,712	9,094	9,052	66.3	66.0
VI	**54,520**	**47,105**	**44,467**	**40,161**	**73,710**	**67,073**	**37,911**	**26,241**	**128,230**	**114,178**	**82,378**	**66,402**	72.1	58.2
Aklan	5,726	5,470	4,737	4,248	4,618	4,488	3,252	2,993	10,344	9,958	7,989	7,241	80.2	72.7
Antique	5,416	5,065	4,996	4,506	11,344	10,659	8,497	7,823	16,760	15,724	13,493	12,329	85.8	78.4
Capiz	1,423	1,372	1,227	993	13,932	11,030	7,235	6,162	15,355	12,402	8,462	7,155	68.2	57.7
Guimaras	0	0			1,165	955	695	553	1,165	955	695	553	72.8	57.9
Iloilo	27,414	22,034	21,529	18,587	17,662	15,124	6,883	4,065	45,076	37,158	28,412	22,652	76.5	61.0
Negros Occidental	14,541	13,164	11,978	11,827	24,989	24,817	11,349	4,645	39,530	37,981	23,327	16,472	61.4	43.4
VII	**16,184**	**15,000**	**12,030**	**10,391**	**34,173**	**29,078**	**23,876**	**22,507**	**50,357**	**44,078**	**35,906**	**32,898**	81.5	74.6
Bohol	12,817	12,038	9,249	7,610	12,437	11,866	9,428	9,126	25,254	23,904	18,677	16,736	78.1	70.0
Cebu	782	762	731	731	8,722	6,872	6,011	5,119	9,504	7,634	6,742	5,850	88.3	76.6
Negros Oriental	2,585	2,200	2,050	2,050	12,280	9,760	8,108	8,103	14,865	11,960	10,158	10,153	84.9	84.9
Siquijor	0	0			734	580	329	159	734	580	329	159	56.7	27.4
VIII	**23,197**	**22,668**	**19,607**	**20,242**	**48,654**	**47,778**	**30,573**	**30,670**	**71,851**	**70,446**	**50,180**	**50,912**	71.2	72.3
Biliran	0	0			4,182	3,780	1,986	2,086	4,182	3,780	1,986	2,086	52.5	55.2
Northern Leyte	19,317	19,223	18,258	19,017	22,399	22,089	15,438	15,464	41,716	41,312	33,696	34,481	81.6	83.5
Southern Leyte	420	420	420	420	6,745	6,657	5,004	4,941	7,165	7,077	5,424	5,361	76.6	75.8
Northern Samar	1,229	1,229	449	260	4,294	4,280	2,099	2,143	5,523	5,509	2,548	2,403	46.3	43.6
Western Samar	2,231	1,796	480	545	4,160	4,098	2,451	2,536	6,391	5,894	2,931	3,081	49.7	52.3
Eastern Samar	0	0			6,874	6,874	3,595	3,500	6,874	6,874	3,595	3,500	52.3	50.9
IX	**16,408**	**15,837**	**15,184**	**14,986**	**31,172**	**25,739**	**18,950**	**17,682**	**47,580**	**41,576**	**34,134**	**32,668**	82.1	78.6
Zamboanga del Norte	0	0			7,548	7,071	3,833	3,263	7,548	7,071	3,833	3,263	54.2	46.1
Zamboanga del Sur	13,456	12,946	12,293	12,264	15,792	11,498	9,479	8,998	29,248	24,444	21,772	21,262	89.1	87.0
Zamboanga Sibugay	2,952	2,891	2,891	2,722	7,832	7,170	5,638	5,421	10,784	10,061	8,529	8,143	84.8	80.9
X	**33,659**	**25,119**	**21,562**	**19,889**	**39,386**	**35,326**	**24,807**	**24,650**	**73,045**	**60,445**	**46,369**	**44,539**	76.7	73.7
Bukidnon	25,905	18,683	16,112	16,203	15,822	14,711	11,123	10,809	41,727	33,394	27,235	27,012	81.6	80.9
Camiguin	0	0			755	640	356	256	755	640	356	256	55.6	40.0
Lanao del Norte	5,254	5,061	4,705	2,988	8,235	8,013	4,839	4,822	13,489	13,074	9,544	7,810	73.0	59.7
Misamis Occidental	0	0			9,536	8,830	6,766	6,804	9,536	8,830	6,766	6,804	76.6	77.1
Misamis Oriental	2,500	1,375	745	698	5,038	3,132	1,723	1,959	7,538	4,507	2,468	2,657	54.8	59.0

XI	**38,814**	**36,092**	**31,312**	**31,270**	**31,624**	**32,151**	**21,703**	**21,650**	**70,438**	**68,243**	**53,015**	**52,920**	77.7	77.5
Compostela Valley	4,475	4,435	4,435	4,435	10,371	10,284	6,786	6,786	14,846	14,719	11,221	11,221	76.2	76.2
Davao del Norte	24,483	22,298	18,198	18,198	4,829	5,483	3,540	3,540	29,312	27,781	21,738	21,738	78.2	78.2
Davao del Sur	6,712	6,215	5,535	5,497	10,762	10,762	8,397	8,296	17,474	16,977	13,932	13,793	82.1	81.2
Davao Oriental	3,144	3,144	3,144	3,140	5,662	5,622	2,980	3,028	8,806	8,766	6,124	6,168	69.9	70.4
XII	**72,442**	**66,219**	**62,204**	**62,051**	**55,248**	**50,985**	**44,239**	**37,764**	**127,690**	**117,204**	**106,443**	**99,815**	90.8	85.2
Sarangani	0	0			7,071	6,348	5,731	5,337	7,071	6,348	5,731	5,337	90.3	84.1
South Cotabato	23,734	20,263	19,444	19,388	12,343	10,829	8,775	8,492	36,077	31,092	28,219	27,880	90.8	89.7
North Cotabato	27,549	27,135	26,184	26,113	17,858	17,077	14,967	14,858	45,407	44,212	41,151	40,971	93.1	92.7
Sultan Kudarat	21,159	18,821	16,576	16,550	17,976	16,731	14,766	9,077	39,135	35,552	31,342	25,627	88.2	72.1
XIII	**34,442**	**30,506**	**24,852**	**24,581**	**36,916**	**33,956**	**19,955**	**16,652**	**71,358**	**64,462**	**44,807**	**41,233**	69.5	64.0
Agusan del Norte	10,807	8,379	7,034	6,640	6,626	5,742	3,185	3,533	17,433	14,121	10,219	10,173	72.4	72.0
Agusan del Sur	17,070	15,598	12,208	12,331	11,418	10,393	5,143	4,449	28,488	25,991	17,351	16,780	66.8	64.6
Dinagat Islands	0	0			1,084	993	583	529	1,084	993	583	529	58.7	53.3
Surigao del Norte	0	0			7,815	7,450	5,858	4,064	7,815	7,450	5,858	4,064	78.6	54.6
Surigao del Sur	6,565	6,529	5,610	5,610	9,973	9,378	5,186	4,077	16,538	15,907	10,796	9,687	67.9	60.9
ARMM	**27,202**	**26,233**	**19,997**	**19,419**	**21,570**	**20,091**	**9,055**	**8,500**	**48,772**	**46,324**	**29,052**	**27,919**	62.7	60.3
Basilan	0	0			708	627	256	253	708	627	256	253	40.8	40.4
Lanao del Sur	6,000	5,800	3,359	3,034	5,865	5,701	2,566	2,481	11,865	11,501	5,925	5,515	51.5	48.0
Maguindanao	21,202	20,433	16,638	16,385	10,794	10,728	6,041	5,565	31,996	31,161	22,679	21,950	72.8	70.4
Sulu	0	0			2,526	2,043	158	158	2,526	2,043	158	158	7.7	7.7
Tawi-Tawi	0	0			1,677	992	34	43	1,677	992	34	43	3.4	4.3
Total	**917,023**	**816,653**	**724,098**	**690,453**	**1,058,257**	**961,528**	**700,141**	**617,964**	**1,975,280**	**1,778,181**	**1,424,239**	**1,308,417**	80.1	73.6

Source: NIA Database - Inventory of National, Communal, Private & OGA Irrigation System (as of December 31, 2019)

Table F 7 Irrigated Area of Systems by Surface Water Sources in 2020

Region/	NIS				CIS/Private/OGAS				Total				Cropping
	ISA	FUSA	Irrigated Area (ha)		ISA	FUSA	Irrigated Area (ha)		ISA	FUSA	Irrigated Area (ha)		Intensity (%)
Province	(ha)	(ha)	Wet	Dry	(ha)	(ha)	Wet	Dry	(ha)	(ha)	Wet	Dry	Wet / Dry
CAR	**19,362**	**17,643**	**13,825**	**11,992**	**81,737**	**77,876**	**58,432**	**57,055**	**101,099**	**95,519**	**72,257**	**69,047**	75.6 / 72.3
Abra	3,329	3,329	1,324	1,302.0	16,333	15,444	9,433	8,980	19,662	18,773	10,757	10,282	57.3 / 54.8
Apayao	4,261	4,010	3,739	3,708	5,700	5,481	4,005	3,964	9,961	9,491	7,744	7,672	81.6 / 80.8
Benguet	0	0			15,610	15,083	12,216	12,010	15,610	15,083	12,216	12,010	81.0 / 79.6
Ifugao	3,478	3,087	1,704	813	12,274	11,578	8,713	8,533	15,752	14,665	10,417	9,346	71.0 / 63.7
Kalinga	8,294	7,217	7,058	6,169	18,702	17,439	14,507	14,263	26,996	24,656	21,565	20,432	87.5 / 82.9
Mt. Province	0	0			13,118	12,851	9,558	9,305	13,118	12,851	9,558	9,305	74.4 / 72.4
I	**71,537**	**59,571**	**53,097**	**40,724**	**117,258**	**103,979**	**80,185**	**49,287**	**188,795**	**163,550**	**133,282**	**90,011**	81.5 / 55.0
Ilocos Norte	18,120	11,592	10,410	8,312	27,065	24,222	19,506	11,668	45,185	35,814	29,916	19,980	83.5 / 55.8
Ilocos Sur	7,391	6,690	5,965	4,421	15,533	14,920	12,426	6,596	22,924	21,610	18,391	11,017	85.1 / 51.0
La Union	5,217	4,785	4,229	3,372	8,100	7,424	6,041	4,369	13,317	12,209	10,270	7,741	84.1 / 63.4
Pangasinan	40,809	36,504	32,493	24,619	66,560	57,413	42,212	26,654	107,369	93,917	74,705	51,273	79.5 / 54.6
II	**182,009**	**163,320**	**150,040**	**149,315**	**83,850**	**79,825**	**63,998**	**62,897**	**265,859**	**243,145**	**214,038**	**212,212**	88.0 / 87.3
Batanes	0	0			327	327	0	0	327	327	0	0	0.0 / 0.0
Cagayan	47,374	44,769	36,316	39,016	25,931	23,284	16,711	17,190	73,305	68,053	53,027	56,206	77.9 / 82.6
Isabela	120,343	105,098	100,701	97,304	25,927	25,775	20,202	18,622	146,270	130,873	120,903	115,926	92.4 / 88.6
Nueva Vizcaya	8,914	8,514	8,145	8,145	24,459	23,676	22,082	22,082	33,373	32,190	30,227	30,227	93.9 / 93.9
Quirino	5,378	4,939	4,878	4,850	7,206	6,763	5,003	5,003	12,584	11,702	9,881	9,853	84.4 / 84.2
III	**235,224**	**220,907**	**194,294**	**186,573**	**95,084**	**86,197**	**61,877**	**55,857**	**330,308**	**307,104**	**256,171**	**242,430**	83.4 / 78.9
Aurora	1,572	1,572	1,555	1,555	8,198	8,105	7,053	7,000	9,770	9,677	8,608	8,555	89.0 / 88.4
Bataan	1,090	863	742	775	10,569	9,388	6,341	6,353	11,659	10,251	7,083	7,128	69.1 / 69.5
Bulacan	29,022	23,750	19,263	13,260	7,760	6,488	4,986	3,694	36,782	30,238	24,249	16,954	80.2 / 56.1
Nueva Ecija	*136,546*	*132,733*	*129,662*	*128,980*	20,470	20,137	17,733	15,862	157,016	152,870	147,395	144,842	96.4 / 94.7
Pampanga	30,845	27,772	22,481	25,778	21,911	18,920	9,392	9,466	52,756	46,692	31,873	35,244	68.3 / 75.5
Tarlac	*28,888*	*27,953*	*16,305*	*13,351*	17,800	15,720	12,656	11,805	46,688	43,673	28,961	25,156	66.3 / 57.6
Zambales	7,261	6,264	4,286	2,874	8,376	7,439	3,716	1,677	15,637	13,703	8,002	4,551	58.4 / 33.2
IV-A	**29,428**	**17,962**	**13,703**	**13,933**	**32,055**	**28,149**	**21,635**	**20,569**	**61,483**	**46,111**	**35,338**	**34,502**	76.6 / 74.8
Batangas	1,108	978	824	876	4,046	3,448	1,452	2,001	5,154	4,426	2,276	2,877	51.4 / 65.0
Cavite	13,698	5,793	2,860	2,828	1,187	1,076	408	351	14,885	6,869	3,268	3,179	47.6 / 46.3
Laguna	9,840	6,919	6,092	6,231	6,557	5,564	4,760	4,563	16,397	12,483	10,852	10,794	86.9 / 86.5
Quezon	4,782	4,272	3,927	3,998	14,384	12,867	10,665	9,344	19,166	17,139	14,592	13,342	85.1 / 77.8
Rizal	0	0			5,881	5,194	4,350	4,310	5,881	5,194	4,350	4,310	83.8 / 83.0
IV-B	**35,009**	**25,325**	**24,370**	**21,647**	**67,124**	**62,747**	**51,921**	**44,759**	**102,133**	**88,072**	**76,291**	**66,406**	86.6 / 75.4
Marinduque	0	0			1,756	1,717	1,457	1,433	1,756	1,717	1,457	1,433	84.9 / 83.5
Occidental Mindoro	7,995	5,999	5,353	5,093	21,951	21,100	17,980	14,713	29,946	27,099	23,333	19,806	86.1 / 73.1
Oriental Mindoro	16,547	11,531	11,475	9,436	18,798	17,686	13,533	12,232	35,345	29,217	25,008	21,668	85.6 / 74.2
Palawan	10,183	7,511	7,258	6,834	21,851	19,486	16,759	14,042	32,034	26,997	24,017	20,876	89.0 / 77.3
Romblon	284	284	284	284	2,768	2,758	2,192	2,339	3,052	3,042	2,476	2,623	81.4 / 86.2
V	**24,135**	**23,752**	**21,141**	**20,916**	**88,502**	**87,169**	**55,719**	**53,292**	**112,637**	**110,921**	**76,860**	**74,208**	69.3 / 66.9
Albay	3,616	3,549	2,832	2,765	26,925	26,098	19,897	18,570	30,541	29,647	22,729	21,335	76.7 / 72.0
Camarines Norte	3,612	3,447	3,066	3,081	5,037	4,936	3,495	3,465	8,649	8,383	6,561	6,546	78.3 / 78.1
Camarines Sur	15,905	15,754	14,241	14,068	36,683	36,663	18,989	17,864	52,588	52,417	33,230	31,932	63.4 / 60.9
Catanduanes	0	0			2,965	2,876	1,790	1,824	2,965	2,876	1,790	1,824	62.2 / 63.4
Masbate	0	0			6,656	6,396	3,456	3,519	6,656	6,396	3,456	3,519	54.0 / 55.0
Sorsogon	1,002	1,002	1,002	1,002	10,236	10,200	8,092	8,050	11,238	11,202	9,094	9,052	81.2 / 80.8
VI	**54,520**	**47,105**	**44,467**	**40,161**	**60,105**	**57,185**	**36,000**	**25,475**	**114,625**	**104,290**	**80,467**	**65,636**	77.2 / 62.9
Aklan	5,726	5,470	4,737	4,248	3,950	3,830	3,132	2,873	9,676	9,300	7,869	7,121	84.6 / 76.6
Antique	5,416	5,065	4,996	4,506	10,841	10,220	8,126	7,776	16,257	15,285	13,122	12,282	85.8 / 80.4
Capiz	1,423	1,372	1,227	993	7,827	7,321	6,533	5,596	9,250	8,693	7,760	6,589	89.3 / 75.8
Guimaras	0	0			906	738	591	520	906	738	591	520	80.1 / 70.5
Iloilo	27,414	22,034	21,529	18,587	11,664	10,331	6,269	4,065	39,078	32,365	27,798	22,652	85.9 / 70.0
Negros Occidental	14,541	13,164	11,978	11,827	24,917	24,745	11,349	4,645	39,458	37,909	23,327	16,472	61.5 / 43.5
VII	**16,184**	**15,000**	**12,030**	**10,391**	**33,041**	**28,101**	**22,933**	**21,812**	**49,225**	**43,101**	**34,963**	**32,203**	81.1 / 74.7
Bohol	12,817	12,038	9,249	7,610	12,417	11,866	9,428	9,126	25,234	23,904	18,677	16,736	78.1 / 70.0
Cebu	782	762	731	731	7,610	5,895	5,068	4,424	8,392	6,657	5,799	5,155	87.1 / 77.4
Negros Oriental	2,585	2,200	2,050	2,050	12,280	9,760	8,108	8,103	14,865	11,960	10,158	10,153	84.9 / 84.9
Siquijor	0	0			734	580	329	159	734	580	329	159	56.7 / 27.4
VIII	**23,197**	**22,668**	**19,607**	**20,242**	**47,715**	**46,839**	**30,553**	**30,644**	**70,912**	**69,507**	**50,160**	**50,886**	72.2 / 73.2
Biliran	0	0			4,177	3,775	1,986	2,086	4,177	3,775	1,986	2,086	52.6 / 55.3
Northern Leyte	19,317	19,223	18,258	19,017	22,229	21,919	15,438	15,464	41,546	41,142	33,696	34,481	81.9 / 83.8
Southern Leyte	420	420	420	420	6,689	6,601	5,004	4,941	7,109	7,021	5,424	5,361	77.3 / 76.4
Northern Samar	1,229	1,229	449	260	4,122	4,108	2,099	2,143	5,351	5,337	2,548	2,403	47.7 / 45.0
Western Samar	2,231	1,796	480	545	4,114	4,052	2,431	2,510	6,345	5,848	2,911	3,055	49.8 / 52.2
Eastern Samar	0	0			6,384	6,384	3,595	3,500	6,384	6,384	3,595	3,500	56.3 / 54.8
IX	**16,408**	**15,837**	**15,184**	**14,986**	**30,666**	**25,379**	**18,825**	**17,563**	**47,074**	**41,216**	**34,009**	**32,549**	82.5 / 79.0
Zamboanga del Norte	0	0			7,397	6,920	3,833	3,263	7,397	6,920	3,833	3,263	55.4 / 47.2
Zamboanga del Sur	13,456	12,946	12,293	12,264	15,502	11,354	9,419	8,938	28,958	24,300	21,712	21,202	89.3 / 87.3
Zamboanga Sibugay	2,952	2,891	2,891	2,722	7,767	7,105	5,573	5,362	10,719	9,996	8,464	8,084	84.7 / 80.9
X	**33,659**	**25,119**	**21,562**	**19,889**	**39,262**	**35,202**	**24,762**	**24,605**	**72,921**	**60,321**	**46,324**	**44,494**	76.8 / 73.8
Bukidnon	25,905	18,683	16,112	16,203	15,822	14,711	11,123	10,809	41,727	33,394	27,235	27,012	81.6 / 80.9
Camiguin	0	0			755	640	356	256	755	640	356	256	55.6 / 40.0
Lanao del Norte	5,254	5,061	4,705	2,988	8,141	7,919	4,824	4,807	13,395	12,980	9,529	7,795	73.4 / 60.1
Misamis Occidental	0	0			9,536	8,830	6,766	6,804	9,536	8,830	6,766	6,804	76.6 / 77.1
Misamis Oriental	2,500	1,375	745	698	5,008	3,102	1,693	1,929	7,508	4,477	2,438	2,627	54.5 / 58.7

XI	**38,814**	**36,092**	**31,312**	**31,270**	**31,624**	**32,151**	**21,703**	**21,650**	**70,438**	**68,243**	**53,015**	**52,920**	77.7	77.5
Compostela Valley	4,475	4,435	4,435	4,435	10,371	10,284	6,786	6,786	14,846	14,719	11,221	11,221	76.2	76.2
Davao del Norte	24,483	22,298	18,198	18,198	4,829	5,483	3,540	3,540	29,312	27,781	21,738	21,738	78.2	78.2
Davao del Sur	6,712	6,215	5,535	5,497	10,762	10,762	8,397	8,296	17,474	16,977	13,932	13,793	82.1	81.2
Davao Oriental	3,144	3,144	3,144	3,140	5,662	5,622	2,980	3,028	8,806	8,766	6,124	6,168	69.9	70.4
XII	**72,442**	**66,219**	**62,204**	**62,051**	**54,282**	**50,019**	**43,378**	**36,903**	**126,724**	**116,238**	**105,582**	**98,954**	90.8	85.1
Sarangani	0	0			7,004	6,281	5,664	5,270	7,004	6,281	5,664	5,270	90.2	83.9
South Cotabato	23,734	20,263	19,444	19,388	12,333	10,819	8,765	8,482	36,067	31,082	28,209	27,870	90.8	89.7
North Cotabato	27,549	27,135	26,184	26,113	17,314	16,533	14,528	14,419	44,863	43,668	40,712	40,532	93.2	92.8
Sultan Kudarat	21,159	18,821	16,576	16,550	17,631	16,386	14,421	8,732	38,790	35,207	30,997	25,282	88.0	71.8
XIII	**34,442**	**30,506**	**24,852**	**24,581**	**35,693**	**32,778**	**19,802**	**16,602**	**70,135**	**63,284**	**44,654**	**41,183**	70.6	65.1
Agusan del Norte	10,807	8,379	7,034	6,640	6,626	5,742	3,185	3,533	17,433	14,121	10,219	10,173	72.4	72.0
Agusan del Sur	17,070	15,598	12,208	12,331	10,309	9,284	5,005	4,399	27,379	24,882	17,213	16,730	69.2	67.2
Dinagat Islands	0	0			1,084	993	583	529	1,084	993	583	529	58.7	53.3
Surigao del Norte	0	0			7,761	7,396	5,858	4,064	7,761	7,396	5,858	4,064	79.2	54.9
Surigao del Sur	6,565	6,529	5,610	5,610	9,913	9,363	5,171	4,077	16,478	15,892	10,781	9,687	67.8	61.0
ARMM	**27,202**	**26,233**	**19,997**	**19,419**	**21,061**	**19,966**	**8,987**	**8,432**	**48,263**	**46,199**	**28,984**	**27,851**	62.7	60.3
Basilan	0	0			685	604	256	253	685	604	256	253	42.4	41.9
Lanao del Sur	6,000	5,800	3,359	3,034	5,865	5,701	2,566	2,481	11,865	11,501	5,925	5,515	51.5	48.0
Maguindanao	21,202	20,433	16,638	16,385	10,720	10,672	5,985	5,509	31,922	31,105	22,623	21,894	72.7	70.4
Sulu	0	0			2,220	1,997	146	146	2,220	1,997	146	146	7.3	7.3
Tawi-Tawi	0	0			1,571	992	34	43	1,571	992	34	43	3.4	4.3
Total	**913,572**	**813,259**	**721,685**	**688,090**	**919,059**	**853,562**	**620,710**	**547,402**	**1,832,631**	**1,666,821**	**1,342,395**	**1,235,492**	80.5	74.1

Source: NIA Database - Inventory of National, Communal, Private & OGA Irrigation System (as of December 31, 2019)

Table F 8 Irrigated Area of Pump Irrigation Systems by Groundwater Sources in 2020

Region/	NIS				CIS/Private/OGAS				Total				Cropping	
	ISA	FUSA	Irrigated Area (ha)		ISA	FUSA	Irrigated Area (ha)		ISA	FUSA	Irrigated Area (ha)		Intensity (%)	
Province	(ha)	(ha)	Wet	Dry	(ha)	(ha)	Wet	Dry	(ha)	(ha)	Wet	Dry	Wet	Dry
CAR	**0**	**0**	**0**	**0**	**1,393**	**1,225**	**1,088**	**1,050**	**1,393**	**1,225**	**1,088**	**1,050**	88.8	85.7
Abra					168	75	66	30	168	75	66	30	88.0	40.0
Apayao					658	592	592	592	658	592	592	592	100.0	100.0
Benguet					161	152	103	96	161	152	103	96	67.8	63.2
Ifugao					41	41	41	41	41	41	41	41	100.0	100.0
Kalinga					346	346	270	275	346	346	270	275	78.0	79.5
Mt. Province					19	19	16	16	19	19	16	16	84.2	84.2
I	**0**	**0**	**0**	**0**	**28,562**	**26,514**	**23,096**	**18,216**	**28,562**	**26,514**	**23,096**	**18,216**	87.1	68.7
Ilocos Norte					20	0	0	27	20	0	0	27		
Ilocos Sur					1,723	1,112	1,064	544	1,723	1,112	1,064	544	95.7	48.9
La Union					3,410	2,736	2,505	2,037	3,410	2,736	2,505	2,037	91.6	74.5
Pangasinan					23,409	22,666	19,527	15,608	23,409	22,666	19,527	15,608	86.2	68.9
II	**0**	**0**	**0**	**0**	**36,284**	**36,368**	**33,906**	**33,929**	**36,284**	**36,368**	**33,906**	**33,929**	93.2	93.3
Batanes					32	27	9	0	32	27	9	0	33.3	0.0
Cagayan					36,004	36,093	33,742	33,774	36,004	36,093	33,742	33,774	93.5	93.6
Isabela					100	100	80	80	100	100	80	80	80.0	80.0
Nueva Vizcaya					0	0	0	0	0	0	0	0		
Quirino					148	148	75	75	148	148	75	75	50.7	50.7
III	**3,451**	**3,394**	**2,413**	**2,363**	**13,093**	**12,393**	**8,496**	**7,415**	**16,544**	**15,787**	**10,909**	**9,778**	69.1	61.9
Aurora					0	0	0	0	0	0	0	0		
Bataan					1,018	937	180	183	1,018	937	180	183	19.2	19.5
Bulacan					1,628	1,477	1,204	952	1,628	1,477	1,204	952	81.5	64.5
Nueva Ecija	360	359	295	295	2,420	2,420	2,310	2,267	2,780	2,779	2,605	2,562	93.7	92.2
Pampanga					3,018	2,859	2,352	1,949	3,018	2,859	2,352	1,949	82.3	68.2
Tarlac	3,091	3,035	2,118	2,068	2,250	1,950	1,282	1,249	5,341	4,985	3,400	3,317	68.2	66.5
Zambales					2,759	2,750	1,168	815	2,759	2,750	1,168	815	42.5	29.6
IV-A	**0**	**0**	**0**	**0**	**2,844**	**2,608**	**1,443**	**1,394**	**2,844**	**2,608**	**1,443**	**1,394**	55.3	53.5
Batangas					354	273	155	145	354	273	155	145	56.8	53.1
Cavite					371	334	108	42	371	334	108	42	32.3	12.6
Laguna					680	562	207	246	680	562	207	246	36.8	43.8
Quezon					1,245	1,245	836	825	1,245	1,245	836	825	67.1	66.3
Rizal					194	194	137	136	194	194	137	136	70.6	70.1
IV-B	**0**	**0**	**0**	**0**	**7,385**	**6,932**	**5,698**	**4,485**	**7,385**	**6,932**	**5,698**	**4,485**	82.2	64.7
Marinduque					327	306	213	208	327	306	213	208	69.6	68.0
Occidental Mindoro					3,974	3,678	3,678	2,810	3,974	3,678	3,678	2,810	100.0	76.4
Oriental Mindoro					1,809	1,697	868	844	1,809	1,697	868	844	51.1	49.7
Palawan					867	861	861	545	867	861	861	545	100.0	63.3
Romblon					408	390	78	78	408	390	78	78	20.0	20.0
V	**0**	**0**	**0**	**0**	**30,633**	**7,369**	**1,578**	**1,443**	**30,633**	**7,369**	**1,578**	**1,443**	21.4	19.6
Albay					1,208	782	316	316	1,208	782	316	316	40.4	40.4
Camarines Norte					1,046	853	164	164	1,046	853	164	164	19.2	19.2
Camarines Sur					25,077	2,801	1,083	948	25,077	2,801	1,083	948	38.7	33.8
Catanduanes					246	237	15	15	246	237	15	15	6.3	6.3
Masbate					192	186	0	0	192	186	0	0	0.0	0.0
Sorsogon					2,864	2,510	0	0	2,864	2,510	0	0	0.0	0.0
VI	**0**	**0**	**0**	**0**	**13,605**	**9,888**	**1,911**	**766**	**13,605**	**9,888**	**1,911**	**766**	19.3	7.7
Aklan					668	658	120	120	668	658	120	120	18.2	18.2
Antique					503	439	371	47	503	439	371	47	84.5	10.7
Capiz					6,105	3,709	702	566	6,105	3,709	702	566	18.9	15.3
Guimaras					259	217	104	33	259	217	104	33	47.9	15.2
Iloilo					5,998	4,793	614	0	5,998	4,793	614	0	12.8	0.0
Negros Occidental					72	72	0	0	72	72	0	0	0.0	0.0
VII	**0**	**0**	**0**	**0**	**1,132**	**977**	**943**	**695**	**1,132**	**977**	**943**	**695**	96.5	71.1
Bohol					20	0	0	0	20	0	0	0		
Cebu					1,112	977	943	695	1,112	977	943	695	96.5	71.1
Negros Oriental					0	0	0	0	0	0	0	0		
Siquijor					0	0	0	0	0	0	0	0		
VIII	**0**	**0**	**0**	**0**	**939**	**939**	**20**	**26**	**939**	**939**	**20**	**26**	2.1	2.8
Biliran					5	5	0	0	5	5	0	0	0.0	0.0
Northern Leyte					170	170	0	0	170	170	0	0	0.0	0.0
Southern Leyte					56	56	0	0	56	56	0	0	0.0	0.0
Northern Samar					172	172	0	0	172	172	0	0	0.0	0.0
Western Samar					46	46	20	26	46	46	20	26	43.5	56.5
Eastern Samar					490	490	0	0	490	490	0	0	0.0	0.0
IX	**0**	**0**	**0**	**0**	**506**	**360**	**125**	**119**	**506**	**360**	**125**	**119**	34.7	33.1
Zamboanga del Norte					151	151	0	0	151	151	0	0	0.0	0.0
Zamboanga del Sur					290	144	60	60	290	144	60	60	41.7	41.7
Zamboanga Sibugay					65	65	65	59	65	65	65	59	100.0	90.8
X	**0**	**0**	**0**	**0**	**124**	**124**	**45**	**45**	**124**	**124**	**45**	**45**	36.3	36.3
Bukidnon					0	0	0	0	0	0	0	0		
Camiguin					0	0	0	0	0	0	0	0		
Lanao del Norte					94	94	15	15	94	94	15	15	16.0	16.0
Misamis Occidental					0	0	0	0	0	0	0	0		
Misamis Oriental					30	30	30	30	30	30	30	30	100.0	100.0

XI	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**		
Compostela Valley					0	0	0	0	0	0	0	0		
Davao del Norte					0	0	0	0	0	0	0	0		
Davao del Sur					0	0	0	0	0	0	0	0		
Davao Oriental					0	0	0	0	0	0	0	0		
XII	**0**	**0**	**0**	**0**	**966**	**966**	**861**	**861**	**966**	**966**	**861**	**861**	89.1	89.1
Sarangani					67	67	67	67	67	67	67	67	100.0	100.0
South Cotabato					10	10	10	10	10	10	10	10	100.0	100.0
North Cotabato					544	544	439	439	544	544	439	439	80.7	80.7
Sultan Kudarat					345	345	345	345	345	345	345	345	100.0	100.0
XIII	**0**	**0**	**0**	**0**	**1,223**	**1,178**	**153**	**50**	**1,223**	**1,178**	**153**	**50**	13.0	4.2
Agusan del Norte					0	0	0	0	0	0	0	0		
Agusan del Sur					1,109	1,109	138	50	1,109	1,109	138	50	12.4	4.5
Dinagat Islands					0	0	0	0	0	0	0	0		
Surigao del Norte					54	54	0	0	54	54	0	0	0.0	0.0
Surigao del Sur					60	15	15	0	60	15	15	0	100.0	0.0
ARMM	**0**	**0**	**0**	**0**	**509**	**125**	**68**	**68**	**509**	**125**	**68**	**68**	54.4	54.4
Basilan					23	23	0	0	23	23	0	0	0.0	0.0
Lanao del Sur					0	0	0	0	0	0	0	0		
Maguindanao					74	56	56	56	74	56	56	56	100.0	100.0
Sulu					306	46	12	12	306	46	12	12	26.1	26.1
Tawi-Tawi					106	0	0	0	106	0	0	0		
Total	**3,451**	**3,394**	**2,413**	**2,363**	**139,198**	**107,966**	**79,431**	**70,562**	**142,649**	**111,360**	**81,844**	**72,925**	73.5	65.5

Source: NIA Database - Inventory of National, Communal, Private & OGA Irrigation System (as of December 31, 2019)

Table F 9 Inventory of All Irrigation Systems from 2016 to 2019

Region/	2016				2017				2018				2019			
Province	ISA	FUSA	Irrigated Area (ha)		ISA	FUSA	Irrigated Area (ha)		ISA	FUSA	Irrigated Area (ha)		ISA	FUSA	Irrigated Area (ha)	
	(ha)	(ha)	Wet	Dry	(ha)	(ha)	Wet	Dry	(ha)	(ha)	Wet	Dry	(ha)	(ha)	Wet	Dry
CAR	**96,227**	**92,430**	**75,787**	**73,943**	**97,848**	**92,729**	**72,221**	**69,489**	**98,942**	**94,084**	**70,923**	**68,796**	**100,325**	**95,256**	**70,612**	**70,105**
Abra	18,229	18,050	12,388	12,036	18,435	17,209	12,130	11,682	18,081	17,194	10,147	10,147	19,592	18,532	9,512	9,512
Apayao	9,936	9,786	8,739	8,688	10,137	9,854	8,686	8,409	10,562	10,237	9,182	8,441	10,318	10,026	8,957	8,943
Benguet	14,977	14,530	13,079	12,765	15,242	14,691	12,288	11,285	15,393	14,978	12,298	11,524	15,240	14,735	12,722	12,722
Ifugao	14,925	14,412	10,464	10,054	15,015	14,402	9,792	9,452	15,187	14,398	9,502	9,749	15,257	14,459	9,185	9,186
Kalinga	25,825	23,484	20,443	20,045	26,500	24,470	20,140	20,040	26,778	24,549	20,552	20,330	27,013	24,738	20,766	20,565
Mt. Province	12,335	12,168	10,674	10,355	12,519	12,103	9,185	8,621	12,941	12,728	9,242	8,605	12,905	12,766	9,470	9,177
I	**188,520**	**173,150**	**129,908**	**88,239**	**190,384**	**175,059**	**134,798**	**92,800**	**195,257**	**178,624**	**139,568**	**99,548**	**204,378**	**181,892**	**144,453**	**104,133**
Ilocos Norte	43,322	34,668	27,137	18,015	43,572	35,046	27,800	17,973	43,730	35,341	27,732	19,055	44,449	35,468	28,036	19,933
Ilocos Sur	21,711	20,915	14,390	7,199	21,937	21,275	16,148	6,864	22,928	21,640	17,326	8,170	23,372	22,341	18,884	10,608
La Union	14,013	13,070	10,318	6,140	14,322	13,130	10,728	7,819	15,618	14,259	11,904	8,857	16,157	14,609	12,436	9,477
Pangasinan	109,474	104,497	78,063	56,885	110,553	105,608	80,122	60,144	112,981	107,384	82,606	63,466	120,400	109,474	85,097	64,115
II	**293,020**	**273,929**	**205,754**	**219,947**	**296,531**	**278,752**	**226,761**	**228,336**	**297,493**	**278,354**	**234,297**	**237,211**	**300,422**	**279,126**	**240,430**	**246,980**
Batanes	349	349	5	1	349	349	1	1	349	349	1	1	353	353	1	1
Cagayan	102,996	101,037	62,127	75,341	107,668	106,571	76,758	81,758	107,626	105,856	82,930	86,470	108,345	105,692	84,045	90,393
Isabela	146,222	129,906	105,661	106,439	144,411	129,265	112,115	108,765	145,022	129,333	112,693	112,144	146,077	129,658	117,577	117,644
Nueva Vizcaya	31,647	31,335	29,761	29,590	31,752	30,893	29,033	28,986	31,957	31,035	29,059	28,993	32,993	31,605	29,174	29,259
Quirino	11,806	11,302	8,200	8,576	12,351	11,674	8,854	8,826	12,539	11,781	9,614	9,603	12,654	11,818	9,633	9,683
III	**314,192**	**288,991**	**199,827**	**198,391**	**323,955**	**299,702**	**233,971**	**216,050**	**298,815**	**305,532**	**236,278**	**225,697**	**342,264**	**316,550**	**257,963**	**245,987**
Aurora	9,811	9,171	8,136	8,241	9,781	9,141	8,106	8,106	9,789	9,430	8,313	8,188	9,645	9,521	8,373	8,373
Bataan	12,578	11,261	6,961	7,114	12,624	11,262	6,964	7,569	12,681	11,319	7,100	7,079	12,812	11,061	7,166	7,156
Bulacan	37,830	30,997	19,631	22,005	37,497	30,438	22,202	21,440	37,825	30,877	23,058	21,679	38,176	31,494	26,241	23,736
Nueva Ecija	135,672	130,251	111,978	113,273	144,612	139,915	134,460	121,000	146,966	142,513	133,030	130,757	157,820	152,473	145,998	140,738
Pampanga	52,897	46,236	21,353	27,002	53,669	47,504	27,162	32,221	53,663	47,869	28,723	34,205	55,525	49,022	32,466	36,187
Tarlac	47,585	45,243	24,228	15,190	47,743	45,480	27,611	20,822	19,429	47,177	28,820	19,022	49,727	47,205	29,083	24,570
Zambales	17,819	15,832	7,540	5,566	18,029	15,962	7,466	4,892	18,462	16,347	7,234	4,767	18,559	15,774	8,636	5,227
IV-A	**60,903**	**49,292**	**36,409**	**34,518**	**61,653**	**49,675**	**37,186**	**36,086**	**62,627**	**50,298**	**38,975**	**36,267**	**63,468**	**50,508**	**39,699**	**38,063**
Batangas	4,725	4,259	3,152	3,087	4,975	4,509	3,072	2,969	5,073	4,587	3,378	3,203	5,197	4,656	3,585	2,956
Cavite	14,712	9,550	4,624	4,241	14,842	9,680	5,204	5,149	14,962	9,780	5,911	5,471	15,146	9,532	6,046	5,885
Laguna	16,348	12,985	10,578	10,401	16,518	12,776	10,526	10,440	16,559	12,815	10,870	9,970	16,751	12,815	10,726	11,027
Quezon	19,472	17,547	14,183	13,197	19,553	17,628	14,405	13,563	20,023	17,772	14,706	13,570	20,325	18,127	14,883	13,848
Rizal	5,646	4,951	3,872	3,592	5,765	5,082	3,979	3,965	6,010	5,344	4,110	4,053	6,049	5,378	4,459	4,347
IV-B	**91,345**	**79,579**	**55,617**	**45,366**	**96,068**	**85,161**	**65,421**	**56,545**	**100,848**	**87,578**	**70,387**	**59,878**	**103,330**	**90,755**	**74,911**	**66,761**
Marinduque	1,884	1,844	987	610	1,795	1,795	792	641	1,896	1,786	1,293	1,111	2,032	1,974	1,134	1,296
Occidental Mindoro	30,048	27,734	22,044	16,710	30,180	27,758	23,072	18,803	31,463	28,610	24,192	19,448	32,824	29,394	24,816	20,821
Oriental Mindoro	27,925	24,037	15,479	14,692	31,107	27,461	20,764	19,069	32,179	28,110	21,599	18,754	32,656	28,628	23,203	21,443
Palawan	28,068	22,544	14,722	11,243	29,649	24,837	18,224	15,618	31,882	25,671	20,894	18,169	32,386	27,354	23,220	20,600
Romblon	3,420	3,420	2,385	2,111	3,337	3,310	2,569	2,414	3,428	3,401	2,409	2,396	3,432	3,405	2,538	2,601
V	**138,723**	**116,300**	**64,835**	**64,727**	**139,655**	**116,384**	**68,014**	**67,444**	**142,515**	**118,233**	**73,684**	**70,903**	**143,004**	**117,930**	**73,498**	**72,222**
Albay	30,342	30,049	20,954	20,022	30,532	30,177	21,541	20,262	31,538	30,348	21,938	20,227	31,632	30,415	22,130	20,785
Camarines Norte	8,800	8,568	4,068	5,417	8,995	8,772	5,228	5,598	9,596	9,331	5,922	5,910	9,632	9,193	5,942	5,926
Camarines Sur	76,480	54,846	29,445	28,831	76,878	54,357	28,919	29,321	77,283	54,562	32,115	31,118	77,579	54,968	31,555	31,526
Catanduanes	3,195	3,195	1,641	1,567	3,202	3,200	1,675	1,636	3,201	3,195	1,704	1,687	3,211	3,113	1,757	1,732
Masbate	6,501	6,432	1,543	1,601	6,656	6,566	3,147	3,080	6,795	6,700	3,324	3,234	6,848	6,529	3,444	3,413
Sorsogon	13,405	13,210	7,184	7,289	13,392	13,312	7,504	7,547	14,102	14,097	8,681	8,727	14,102	13,712	8,670	8,840
VI	**121,954**	**108,983**	**70,999**	**41,354**	**123,293**	**109,497**	**76,668**	**58,116**	**125,257**	**110,458**	**77,479**	**58,974**	**128,330**	**111,517**	**81,883**	**60,472**
Aklan	9,877	9,633	6,305	4,983	9,941	9,699	7,649	6,817	9,966	9,701	7,650	6,802	10,026	9,701	7,713	4,576
Antique	16,538	15,482	10,860	7,798	16,649	15,560	13,747	10,006	16,788	15,761	13,868	12,109	16,713	15,660	13,441	9,808
Capiz	13,740	11,026	4,470	2,330	13,867	11,066	6,067	4,082	14,332	11,280	6,405	4,159	15,020	11,882	8,154	5,574
Guimaras	1,035	870	450	280	1,094	885	591	330	1,209	998	539	583	1,177	901	606	543
Iloilo	43,048	36,066	25,008	11,602	43,579	36,320	26,707	19,578	43,925	35,883	26,833	20,186	45,339	36,363	26,915	22,188
Negros Occidental	37,716	35,906	23,906	14,361	38,163	35,967	21,907	17,303	39,037	36,835	22,184	15,135	40,055	37,010	25,054	17,783
VII	**48,710**	**43,166**	**28,571**	**29,220**	**49,285**	**43,300**	**32,101**	**31,790**	**50,302**	**42,394**	**35,103**	**34,679**	**52,122**	**43,664**	**31,767**	**35,886**
Bohol	25,081	23,785	14,272	15,169	25,388	23,999	17,182	17,496	25,560	23,291	19,898	19,536	25,817	23,504	15,573	19,690
Cebu	7,934	6,346	4,469	4,223	8,169	6,251	5,001	4,469	8,304	6,450	5,243	5,243	9,275	7,412	5,901	5,701
Negros Oriental	15,017	12,480	9,471	9,455	15,017	12,480	9,471	9,455	15,728	12,081	9,510	9,478	16,320	12,166	10,093	10,071
Siquijor	678	555	359	373	711	570	447	370	710	572	452	422	710	582	200	424
VIII	**71,925**	**71,158**	**48,783**	**44,742**	**69,411**	**68,624**	**47,953**	**48,312**	**69,797**	**68,697**	**48,766**	**48,645**	**70,830**	**69,583**	**49,742**	**49,238**
Biliran	4,104	3,702	2,349	2,309	4,129	3,702	2,362	2,282	4,112	3,690	1,914	1,911	4,182	3,780	1,949	1,966
Northern Leyte	40,586	40,366	32,178	30,509	40,885	40,682	32,278	32,940	41,028	40,765	33,091	33,548	41,551	41,217	33,830	33,820
Southern Leyte	6,882	6,795	5,330	4,723	6,974	6,889	5,361	5,202	6,978	6,890	5,353	5,269	6,978	6,890	5,353	5,310
Northern Samar	7,192	7,192	3,896	2,466	4,994	4,994	2,502	2,526	5,222	4,993	2,523	2,519	5,464	5,222	2,632	2,535
Weatern Samar	6,530	6,472	2,700	2,555	5,788	5,716	2,575	2,487	5,816	5,718	2,627	2,568	5,861	5,748	2,793	2,707
Eastern Samar	6,631	6,631	2,330	2,180	6,641	6,641	2,875	2,875	6,641	6,641	3,258	2,830	6,794	6,726	3,185	2,900
IX	**50,639**	**39,197**	**33,571**	**31,370**	**47,671**	**40,036**	**28,974**	**29,622**	**48,688**	**40,250**	**30,475**	**30,218**	**46,812**	**40,692**	**32,758**	**30,662**
Zamboanga del Norte	7,424	6,187	4,308	4,317	7,713	6,493	1,850	1,799	8,179	7,007	2,516	2,742	7,548	7,099	3,058	2,425
Zamboanga del Sur	28,124	22,178	20,493	19,276	28,472	23,304	18,567	19,292	28,917	23,067	19,054	18,803	28,489	23,598	21,201	20,327
Zamboanga Sibugay	15,091	10,832	8,770	7,777	11,486	10,239	8,557	8,531	11,592	10,176	8,905	8,673	10,775	9,995	8,499	7,910

X		**70,565**	**60,327**	**39,323**	**38,401**	**69,106**	**60,140**	**39,686**	**41,380**	**69,291**	**60,291**	**41,928**	**41,726**	**71,948**	**60,451**	**44,491**	**41,588**
	Bukidnon	38,341	31,619	23,657	23,179	38,272	31,489	23,900	23,106	38,494	31,726	24,259	23,491	40,948	32,620	25,655	23,123
	Camiguin	735	582	216	218	735	607	216	311	735	602	263	303	755	632	343	266
	Lanao del Norte	13,367	12,655	7,819	7,802	13,247	12,967	8,293	9,155	13,208	12,928	8,694	8,754	13,271	12,993	9,448	8,863
	Misamis Occidental	10,095	9,093	5,747	5,457	9,531	9,118	5,517	6,491	9,531	9,099	6,388	6,380	9,536	8,820	6,774	6,726
	Misamis Oriental	8,027	6,378	1,884	1,745	7,321	5,959	1,760	2,317	7,323	5,936	2,324	2,798	7,438	5,386	2,271	2,610
XI		**69,804**	**64,505**	**47,191**	**44,085**	**70,802**	**65,029**	**48,881**	**45,179**	**70,382**	**66,723**	**52,084**	**52,060**	**57,765**	**67,167**	**53,103**	**52,126**
	Compostela Valley	13,407	13,045	11,563	11,412	13,688	13,418	12,167	11,951	14,134	13,907	10,495	10,495	1,373	14,164	11,554	11,560
	Davao del Norte	30,234	27,672	17,641	17,531	30,403	27,757	18,000	17,641	30,025	27,349	22,167	22,145	30,156	27,449	21,662	21,318
	Davao del Sur	17,377	15,867	13,331	10,415	17,619	15,992	13,767	10,570	17,468	16,947	13,828	13,843	17,474	16,953	14,047	13,103
	Davao Oriental	8,786	7,921	4,656	4,727	9,092	7,862	4,947	5,017	8,755	8,520	5,594	5,577	8,762	8,601	5,840	6,145
XII		**122,197**	**110,962**	**96,030**	**88,571**	**124,152**	**114,251**	**100,662**	**93,560**	**125,545**	**115,703**	**102,485**	**96,381**	**126,575**	**116,642**	**104,615**	**98,068**
	Sarangani	6,761	5,576	5,041	5,001	6,776	5,780	5,207	5,184	6,916	6,163	5,366	5,341	7,036	6,290	5,529	5,529
	South Cotabato	34,972	29,355	26,045	24,475	35,058	30,579	26,681	26,099	35,569	30,682	26,960	26,699	35,749	30,676	27,573	27,034
	North Cotabato	42,938	41,867	37,419	37,677	44,369	43,210	40,496	39,356	44,872	43,646	41,040	40,128	45,085	43,932	40,853	39,716
	Sultan Kudarat	37,526	34,164	27,525	21,418	37,949	34,682	28,278	22,921	38,188	35,212	29,119	24,213	38,705	35,744	30,660	25,789
XIII (CARAGA)		**69,113**	**58,658**	**30,561**	**28,270**	**66,942**	**59,538**	**36,491**	**31,783**	**68,514**	**61,824**	**37,980**	**34,229**	**70,898**	**64,177**	**41,456**	**36,549**
	Agusan del Norte	16,322	12,564	8,230	7,857	16,386	13,680	9,125	8,883	17,118	13,992	9,472	9,620	17,340	14,457	10,297	9,676
	Agusan del Sur	27,842	24,610	9,191	11,505	27,342	24,053	13,713	13,215	27,326	24,716	14,234	13,932	28,430	25,803	16,086	15,498
	Dinagat Islands	903	833	428	208	880	835	428	245	936	936	508	302	1,049	957	531	239
	Surigao del Norte	7,242	6,552	4,291	2,192	6,908	6,471	4,264	2,350	6,979	6,536	4,633	3,134	7,653	7,000	4,614	2,798
	Surigao del Sur	16,804	14,099	8,421	6,508	15,426	14,499	8,961	7,090	16,155	15,644	9,133	7,241	16,426	15,960	9,928	8,338
ARMM		**48,161**	**44,262**	**23,747**	**20,716**	**49,021**	**44,758**	**25,047**	**23,114**	**49,712**	**45,397**	**25,228**	**23,001**	**48,382**	**45,734**	**27,590**	**25,226**
	Basilan	578	478	450	280	648	568	390	360	708	588	403	378	708	627	407	214
	Lanao del Sur	13,894	12,290	4,639	4,247	13,633	12,290	5,507	4,646	13,633	12,290	3,998	3,968	12,110	11,738	5,390	4,241
	Maguindanao	30,132	29,402	17,123	16,099	30,309	29,567	18,024	16,982	30,881	29,865	18,983	16,826	31,351	30,334	20,012	19,013
	Sulu	1,990	1,396	1,180	40	2,714	1,562	927	927	2,773	1,813	1,359	1,349	2,526	2,043	1,281	1,337
	Tawi-Tawi	1,567	696	355	50	1,717	771	199	199	1,717	841	485	480	1,687	992	500	421
	Total	**1,855,998**	**1,674,889**	**1,186,913**	**1,091,860**	**1,875,777**	**1,702,635**	**1,274,835**	**1,169,606**	**1,873,985**	**1,724,440**	**1,315,640**	**1,218,213**	**1,930,853**	**1,751,644**	**1,368,971**	**1,274,066**
	Annual Variation					19,779	27,746	87,922	77,746	-1,792	21,805	40,805	48,607	56,868	27,204	53,331	55,853

Source: NIA Database - Inventory of National, Communal, Private & OGA Irrigation System (as of December 31, 2019)

Table F 10 Carabao Inventory 2012 to 2022

(Unit: Heads)

Region/Province	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
PHILIPPINES	**2,963,980**	**2,912,842**	**2,847,445**	**2,854,838**	**2,877,091**	**2,881,894**	**2,882,655**	**2,873,561**	**2,865,715**	**2,849,006**	**2,774,471**
NCR	..	..	..	..	..	..	..	..	..	..	..
CAR	**88,106**	**88,794**	**87,273**	**86,023**	**86,265**	**86,509**	**86,808**	**85,713**	**88,036**	**78,336**	**77,218**
Abra	41,002	41,629	39,984	36,875	34,770	33,320	31,989	30,400	29,189	15,701	17,475
Apayao	11,620	11,851	12,227	12,657	13,014	13,216	13,810	14,300	16,785	18,290	17,856
Benguet	8,964	9,141	9,482	10,260	11,300	11,806	11,655	11,325	11,212	11,433	11,427
Ifugao	7,922	8,189	7,722	7,648	7,643	7,668	7,844	7,363	7,584	7,855	5,470
Kalinga	12,784	12,174	11,773	12,634	13,699	14,879	16,203	17,131	18,153	19,988	19,585
Mountain Province	5,814	5,810	6,085	5,949	5,839	5,620	5,307	5,194	5,113	5,069	5,405
I: Ilocos Region	**152,804**	**161,197**	**157,057**	**160,310**	**163,561**	**165,850**	**169,592**	**169,996**	**178,438**	**184,469**	**166,251**
Ilocos Norte	26,956	32,620	33,089	33,455	34,339	34,756	34,654	33,932	34,726	37,621	35,957
Ilocos Sur	16,788	17,346	18,280	19,028	19,938	20,136	21,299	21,935	23,544	25,109	24,206
La Union	30,471	31,141	28,515	29,268	30,737	32,242	34,750	37,182	41,589	48,537	50,403
Pangasinan	78,589	80,090	77,173	78,559	78,547	78,716	78,889	76,947	78,579	73,202	55,685
II: Cagayan Valley	**273,572**	**258,092**	**252,830**	**247,171**	**242,831**	**235,936**	**230,707**	**225,352**	**220,592**	**216,474**	**215,188**
Batanes	..	..	2,604	2,835	3,008	3,172	3,329	3,367	3,641	3,927	3,877
Cagayan	103,460	97,383	96,235	95,876	94,868	93,522	92,751	93,156	92,050	91,124	88,118
Isabela	125,732	117,291	110,428	104,592	100,743	95,300	90,070	83,462	78,755	74,846	76,024
Nueva Vizcaya	21,537	21,111	21,245	21,447	22,037	22,612	23,339	24,278	25,234	25,632	26,248
Quirino	22,843	22,307	22,318	22,421	22,175	21,330	21,218	21,089	20,912	20,945	20,921
III: Central Luzon	**203,703**	**204,094**	**211,966**	**217,665**	**223,978**	**223,036**	**230,230**	**231,446**	**232,243**	**236,699**	**237,813**
Aurora	20,062	18,046	17,892	17,750	17,311	16,461	17,060	17,010	16,823	17,188	19,155
Bataan	7,830	8,235	8,857	8,755	8,411	8,105	7,653	7,220	6,311	5,561	4,911
Bulacan	12,022	13,410	14,454	16,118	18,179	18,728	19,407	19,809	19,887	20,968	20,812
Nueva Ecija	53,535	54,658	56,107	56,684	56,820	55,554	56,897	57,438	58,839	61,395	62,818
Pampanga	25,387	28,253	31,839	35,653	39,599	39,236	39,044	39,884	40,900	42,034	40,447
Tarlac	57,502	53,314	53,693	53,190	53,544	56,867	60,858	60,912	60,363	60,497	60,882
Zambales	27,365	28,178	29,124	29,515	30,114	28,085	29,311	29,173	29,120	29,056	28,788
IV-A: CALABARZON	**170,789**	**172,016**	**171,388**	**171,696**	**170,091**	**176,002**	**176,573**	**177,661**	**178,901**	**179,938**	**180,394**
Batangas	37,233	38,076	38,274	38,800	39,125	44,650	45,233	45,875	46,275	46,800	45,927
Cavite	4,000	4,042	4,084	4,189	4,220	4,240	4,242	4,255	4,257	4,342	4,648
Laguna	36,079	37,396	37,030	38,779	38,832	38,798	38,920	38,967	38,770	39,131	38,846
Quezon	82,820	82,695	83,300	82,028	80,114	80,614	80,578	80,864	82,005	82,075	83,455
Rizal	10,657	9,807	8,700	7,900	7,800	7,700	7,600	7,700	7,594	7,590	7,518
MIMAROPA REGION	**120,466**	**116,130**	**115,910**	**117,107**	**121,219**	**125,254**	**127,733**	**131,011**	**135,011**	**112,063**	**118,412**
Marinduque	10,889	9,559	9,610	9,706	10,412	10,597	9,837	8,806	7,382	9,528	11,137
Occidental Mindoro	45,772	41,506	38,978	38,358	39,269	40,767	42,197	45,368	50,295	26,517	22,726
Oriental Mindoro	33,332	33,299	33,805	33,760	33,606	34,447	35,287	36,416	37,841	29,124	34,901
Palawan	21,606	23,642	25,521	27,327	29,780	31,617	32,382	32,316	31,460	38,750	41,464
Romblon	8,867	8,124	7,996	7,956	8,152	7,826	8,030	8,105	8,033	8,144	8,184
V: Bicol Region	**250,726**	**257,943**	**269,100**	**278,331**	**288,641**	**302,610**	**311,988**	**313,757**	**316,528**	**325,063**	**324,073**
Albay	52,376	56,781	62,139	68,026	72,794	80,300	85,641	84,682	85,562	87,760	89,908
Camarines Norte	33,500	36,486	39,065	41,359	43,842	46,165	48,864	50,311	49,295	49,053	48,552
Camarines Sur	62,864	61,846	63,238	65,019	67,010	69,330	71,627	73,923	78,796	84,792	87,456
Catanduanes	9,622	8,509	7,732	6,865	6,412	6,092	5,812	6,340	6,078	5,195	4,601
Masbate	63,270	63,331	63,690	64,076	64,368	66,740	66,204	65,271	64,083	65,554	61,304
Sorsogon	29,094	30,990	33,236	32,986	34,215	33,983	33,840	33,230	32,714	32,709	32,252
VI: Western Visayas	**311,055**	**310,114**	**313,592**	**312,583**	**311,366**	**306,855**	**302,407**	**299,589**	**293,017**	**291,549**	**274,496**
Aklan	21,713	21,993	23,308	22,768	21,788	20,332	18,457	17,320	17,103	17,820	18,320
Antique	37,804	36,472	36,873	37,209	37,327	37,156	37,720	37,445	37,259	36,730	35,489
Capiz	39,837	40,426	41,236	41,268	41,051	39,549	37,279	37,202	35,812	33,855	26,750
Guimaras	14,738	14,643	14,889	14,362	13,953	13,060	12,041	11,483	11,070	10,864	7,988
Iloilo	94,328	93,373	93,858	93,926	93,974	92,812	92,885	92,996	91,551	92,146	91,291
Negros Occidental	102,635	103,207	103,428	103,050	103,273	103,946	104,025	103,143	100,222	100,134	94,658
VII: Central Visayas	**170,886**	**172,662**	**174,501**	**177,952**	**181,531**	**183,676**	**187,576**	**190,360**	**195,119**	**206,862**	**212,529**
Bohol	64,758	65,962	67,383	68,522	69,576	70,057	72,314	72,274	74,404	80,165	76,914
Cebu	47,327	46,909	47,098	47,722	48,414	49,213	50,215	51,817	53,404	58,217	65,053
Negros Oriental	58,006	58,985	59,199	60,864	62,664	63,474	64,066	65,240	66,227	67,363	69,441
Siquijor	795	806	821	844	877	932	981	1,029	1,084	1,117	1,121
VIII: Eastern Visayas	**293,694**	**280,210**	**234,612**	**233,613**	**230,637**	**225,421**	**224,945**	**217,244**	**206,248**	**207,924**	**190,658**
Biliran	4,192	4,096	4,320	4,414	4,820	4,905	4,998	4,984	4,810	5,077	4,870
Eastern Samar	28,984	25,124	20,160	19,175	19,527	19,858	18,293	17,307	15,406	15,708	15,472
Leyte	156,025	149,871	114,513	117,419	119,099	117,797	121,785	119,190	115,716	116,772	114,715
Northern Samar	44,674	45,680	46,825	46,640	42,124	40,255	39,635	37,782	33,370	33,701	27,505
Samar	41,917	39,160	33,291	31,517	31,532	30,056	28,930	28,189	27,152	27,488	19,839
Southern Leyte	17,902	16,279	15,503	14,448	13,535	12,550	11,304	9,792	9,794	9,178	8,257
IX: Zamboanga Peninsula	**141,339**	**139,712**	**141,849**	**144,969**	**149,471**	**151,585**	**150,210**	**147,604**	**146,813**	**145,001**	**144,418**
Zamboanga del Norte	64,546	64,466	63,265	62,707	62,790	64,567	62,819	62,760	62,688	63,968	63,618
Zamboanga del Sur	36,371	37,127	40,039	43,140	47,010	46,111	45,871	43,703	43,042	47,451	47,269
Zamboanga Sibugay	33,722	32,010	32,020	32,497	32,771	33,209	33,411	32,948	32,793	33,582	33,531
Zamboanga City	6,700	6,109	6,525	6,625	6,900	7,698	8,109	8,193	8,290	*	*

X: Northern Mindanao	**127,778**	**126,739**	**123,997**	**125,189**	**125,772**	**124,501**	**123,771**	**124,552**	**127,284**	**132,280**	**125,399**
Bukidnon	56,816	54,804	52,424	53,537	53,744	52,737	52,511	53,622	55,748	60,003	60,314
Camiguin	2,475	2,520	2,580	2,732	2,883	2,875	2,971	2,980	2,895	3,008	1,047
Lanao del Norte	33,988	35,312	36,113	37,225	37,515	37,687	37,155	37,224	37,089	37,357	32,023
Misamis Occidental	22,224	22,330	21,680	21,220	21,770	21,530	21,514	21,692	22,376	22,353	22,332
Misamis Oriental	12,275	11,773	11,200	10,475	9,860	9,672	9,620	9,034	9,176	9,559	9,683
XI: Davao Region	**166,513**	**162,009**	**162,621**	**162,801**	**162,219**	**160,519**	**155,762**	**149,972**	**143,922**	**144,405**	**129,507**
Davao del Norte	25,267	24,740	23,681	22,117	20,021	18,683	17,372	16,267	15,241	14,556	14,579
Davao del Sur	46,250	43,907	41,666	42,376	43,507	41,776	39,116	35,910	32,550	72,339	69,357
Davao City	33,946	34,763	36,817	37,508	38,695	38,642	38,715	38,273	38,301	**	**
Davao Oriental	34,430	33,068	34,532	34,224	32,824	33,170	33,492	33,615	31,814	33,836	23,776
Davao de Oro (Compostela Valley)	26,620	25,531	25,925	26,576	27,172	28,248	27,067	25,907	23,962	21,934	20,325
Davao Occidental	..	..	..	..	..	..	..	..	2,054	1,740	1,470
XII: SOCCSKSARGEN	**240,783**	**235,330**	**222,195**	**213,500**	**211,722**	**208,684**	**204,855**	**204,776**	**199,895**	**201,549**	**201,695**
Cotabato (North Cotabato)	92,065	90,010	79,704	74,144	72,021	70,278	70,951	70,139	68,699	70,616	70,032
Sarangani	30,600	29,800	28,600	27,300	26,800	25,700	25,300	25,400	24,100	22,400	23,475
South Cotabato	45,900	44,925	44,360	43,253	42,015	42,426	41,544	42,063	41,936	43,129	42,241
Sultan Kudarat	72,218	70,595	69,531	68,803	70,886	70,280	67,060	67,174	65,160	65,404	65,947
XIII: Caraga	**83,336**	**80,762**	**79,756**	**80,159**	**80,117**	**81,487**	**82,085**	**82,169**	**80,749**	**80,332**	**70,692**
Agusan del Norte	14,724	14,389	14,418	14,459	14,443	14,916	15,219	15,160	14,816	14,971	14,571
Agusan del Sur	30,262	29,878	29,881	30,321	30,301	30,364	30,452	30,366	30,170	29,863	30,161
Surigao del Norte	17,225	17,037	17,050	17,059	17,060	17,242	17,195	17,089	16,130	15,599	5,544
Surigao del Sur	19,580	17,925	16,895	16,820	16,830	17,466	17,700	18,010	18,100	18,365	18,850
Dinagat Islands	1,545	1,533	1,512	1,500	1,483	1,499	1,519	1,544	1,533	1,534	1,566
BARMM	**168,430**	**147,038**	**128,798**	**125,769**	**127,670**	**123,969**	**117,413**	**122,359**	**122,919**	**106,062**	**105,728**
Basilan	19,368	20,890	22,340	23,571	23,963	24,186	25,102	26,425	25,552	24,773	22,634
Lanao del Sur	27,500	23,578	21,477	18,470	18,395	15,936	13,800	12,470	10,835	6,890	14,800
Maguindanao	120,562	101,470	83,772	82,421	83,888	82,353	76,838	81,541	84,575	72,102	65,462
Sulu	831	891	936	957	980	1,012	1,048	1,099	1,129	1,114	1,432
Tawi-tawi	169	209	273	350	444	482	625	824	828	1,183	1,400

Source: Philippine Statistics Authority (Reference Period of 2012-2022: January 1)
NCR: National Capital Region
CAR: Cordillera Administrative Region

Table F 11 Cattle Inventory 2012 to 2022

(Unit: Heads)

Region/Province	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
PHILIPPINES	**2,493,157**	**2,497,908**	**2,512,184**	**2,534,243**	**2,553,747**	**2,547,614**	**2,553,937**	**2,535,414**	**2,541,959**	**2,605,262**	**2,557,191**
NCR	..	..	..	..	..	..	..	..	..	..	..
CAR	**57,574**	**57,078**	**58,041**	**59,856**	**60,364**	**59,213**	**57,796**	**55,528**	**55,024**	**59,773**	**56,182**
Abra	18,894	19,108	20,197	20,911	21,631	20,954	19,870	18,232	17,790	20,560	21,210
Apayao	2,409	2,385	2,574	2,922	2,974	3,014	3,043	3,050	3,419	3,764	3,575
Benguet	7,460	6,885	6,548	6,370	6,238	5,994	5,797	6,244	6,743	7,248	7,893
Ifugao	10,936	10,847	10,849	11,822	11,670	11,248	10,843	9,798	9,088	9,600	7,318
Kalinga	8,777	8,785	8,690	9,022	9,747	10,236	10,576	10,860	10,653	11,130	8,217
Mountain Province	9,098	9,068	9,183	8,809	8,104	7,767	7,667	7,344	7,331	7,471	7,969
I: Ilocos Region	**286,449**	**292,545**	**291,347**	**297,743**	**301,578**	**300,323**	**299,111**	**302,494**	**311,106**	**296,282**	**251,871**
Ilocos Norte	66,600	71,016	70,466	71,598	72,526	71,272	70,150	71,410	74,084	75,369	71,947
Ilocos Sur	54,455	54,821	55,507	56,223	57,161	56,867	56,429	55,952	57,545	60,138	57,748
La Union	30,971	32,220	32,094	32,684	35,597	37,052	36,772	36,986	38,593	40,044	42,988
Pangasinan	134,423	134,488	133,280	137,238	136,294	135,132	135,760	138,146	140,884	120,731	79,188
II: Cagayan Valley	**182,196**	**177,152**	**180,865**	**182,125**	**184,173**	**181,628**	**182,865**	**186,511**	**187,163**	**189,927**	**195,684**
Batanes	..	..	5,860	6,342	6,766	7,029	7,276	7,478	7,667	8,082	8,512
Cagayan	33,426	31,400	29,342	28,630	28,112	26,907	25,211	24,741	22,634	20,315	18,382
Isabela	111,874	109,912	109,514	111,806	115,093	115,736	119,239	123,699	126,932	131,901	139,322
Nueva Vizcaya	22,060	21,862	22,173	21,797	21,016	19,634	19,035	18,805	18,111	17,932	17,617
Quirino	14,836	13,978	13,976	13,550	13,186	12,322	12,104	11,788	11,819	11,697	11,851
III: Central Luzon	**171,821**	**175,870**	**179,655**	**186,441**	**192,997**	**198,760**	**206,781**	**203,535**	**199,187**	**194,222**	**192,002**
Aurora	7,205	7,353	7,703	9,213	12,477	14,467	16,631	16,412	17,510	18,973	21,510
Bataan	15,876	18,705	19,906	20,924	21,059	21,540	21,940	22,505	22,820	22,223	23,880
Bulacan	15,357	15,829	16,255	16,160	17,089	17,501	18,471	19,105	18,842	18,453	17,289
Nueva Ecija	32,160	31,935	31,464	31,837	30,666	29,882	32,099	29,558	29,506	29,411	29,127
Pampanga	6,589	6,622	6,653	6,683	6,803	5,299	4,299	4,384	4,135	4,215	6,122
Tarlac	62,060	63,331	66,028	70,515	73,772	75,993	77,940	76,048	71,592	67,001	64,252
Zambales	32,574	32,095	31,646	31,109	31,131	34,078	35,401	35,523	34,782	33,946	29,822
IV-A: CALABARZON	**251,744**	**253,376**	**259,110**	**264,175**	**267,663**	**271,948**	**271,288**	**269,677**	**268,354**	**266,530**	**260,971**
Batangas	127,414	127,765	131,122	133,150	135,538	136,768	133,467	130,133	128,647	125,635	120,865
Cavite	25,912	26,021	26,130	26,050	25,910	25,544	25,355	25,377	25,646	26,220	28,427
Laguna	39,874	40,316	40,885	41,559	41,928	41,679	41,560	41,372	41,434	42,725	41,868
Quezon	53,550	53,706	54,673	56,161	55,737	58,022	60,456	61,735	61,627	60,920	59,949
Rizal	4,994	5,568	6,300	7,255	8,550	9,935	10,450	11,060	11,000	11,030	9,862
MIMAROPA REGION	**91,265**	**92,819**	**93,307**	**92,690**	**93,687**	**93,169**	**90,195**	**77,151**	**67,541**	**119,832**	**139,190**
Marinduque	2,378	2,525	2,930	3,273	4,060	4,402	4,906	2,765	918	11,361	12,429
Occidental Mindoro	17,784	18,241	17,797	17,033	18,274	18,441	18,462	14,964	12,716	29,847	39,032
Oriental Mindoro	30,087	30,371	31,253	30,915	28,953	27,534	25,985	23,045	23,284	23,433	18,084
Palawan	22,348	22,816	22,779	23,188	24,266	24,715	23,470	19,925	14,635	38,830	52,528
Romblon	18,668	18,866	18,548	18,281	18,134	18,077	17,372	16,452	15,988	16,361	17,117
V: Bicol Region	**81,233**	**91,254**	**96,300**	**102,659**	**108,043**	**111,792**	**112,950**	**114,996**	**112,581**	**110,802**	**93,762**
Albay	3,612	4,201	4,939	5,916	6,792	7,320	7,652	8,180	8,089	8,014	7,978
Camarines Norte	5,726	5,745	6,050	6,175	6,270	6,372	6,618	6,611	6,238	5,331	5,040
Camarines Sur	16,280	21,192	22,133	25,385	25,387	25,787	25,666	25,325	23,455	21,917	23,114
Catanduanes	1,375	1,386	1,362	1,401	1,541	1,685	1,731	1,807	1,676	1,525	1,471
Masbate	40,030	42,932	45,021	48,032	51,650	54,741	55,376	57,500	57,473	58,077	41,203
Sorsogon	14,210	15,798	16,795	15,750	16,403	15,887	15,907	15,573	15,650	15,938	14,956
VI: Western Visayas	**253,458**	**254,573**	**254,131**	**250,603**	**249,446**	**247,817**	**244,683**	**243,979**	**246,650**	**250,576**	**247,817**
Aklan	28,288	27,980	28,061	26,808	25,121	24,409	22,547	21,567	21,818	22,908	25,728
Antique	56,487	58,384	57,831	58,648	59,090	58,865	58,436	57,972	57,775	58,791	57,003
Capiz	23,851	24,472	24,727	24,544	23,776	23,414	22,766	23,082	22,506	23,093	23,446
Guimaras	15,307	15,905	17,009	17,499	18,095	16,388	15,426	14,645	14,194	14,418	10,331
Iloilo	79,992	78,196	76,365	73,615	74,058	75,370	75,456	75,394	75,282	74,970	72,137
Negros Occidental	49,533	49,636	50,138	49,489	49,306	49,371	50,052	51,319	55,075	56,396	59,172
VII: Central Visayas	**273,562**	**272,307**	**274,280**	**273,132**	**274,265**	**275,012**	**275,617**	**281,343**	**287,262**	**298,865**	**327,833**
Bohol	73,214	73,846	75,693	74,249	73,476	74,236	75,825	77,626	74,096	74,582	71,706
Cebu	113,736	113,013	113,106	113,360	114,108	116,019	116,398	119,408	128,988	138,272	167,056
Negros Oriental	66,601	65,512	66,007	66,369	67,087	65,103	63,467	64,205	63,226	64,061	67,780
Siquijor	20,011	19,936	19,474	19,154	19,594	19,654	19,927	20,104	20,952	21,950	21,291
VIII: Eastern Visayas	**20,843**	**22,600**	**22,225**	**20,765**	**21,565**	**22,027**	**21,812**	**21,045**	**19,449**	**20,098**	**23,249**
Biliran	1,590	1,689	1,541	1,547	1,632	1,740	1,863	1,977	1,946	2,164	4,019
Eastern Samar	2,920	2,672	2,119	1,769	1,687	1,698	1,718	1,782	1,553	1,403	1,767
Leyte	9,284	10,902	10,817	9,617	10,096	10,150	9,760	9,067	8,350	9,577	11,014
Northern Samar	2,966	3,196	3,413	3,509	3,470	3,515	3,451	3,187	2,727	2,299	2,006
Samar	804	787	753	767	1,117	1,290	1,429	1,375	1,266	1,205	1,013
Southern Leyte	3,279	3,354	3,582	3,556	3,563	3,634	3,591	3,657	3,607	3,450	3,430
IX: Zamboanga Peninsula	**129,675**	**119,785**	**117,938**	**115,601**	**113,068**	**112,816**	**113,244**	**110,584**	**111,254**	**110,433**	**106,407**
Zamboanga del Norte	53,060	50,143	51,829	52,851	54,340	54,005	54,122	53,595	55,335	58,136	50,194
Zamboanga del Sur	45,324	39,195	35,562	32,088	27,866	26,790	27,354	26,713	27,859	36,910	42,058
Zamboanga Sibugay	20,615	19,790	19,750	19,679	19,657	19,806	19,000	17,434	15,055	15,387	14,155
Zamboanga City	10,676	10,657	10,797	10,983	11,205	12,215	12,768	12,842	13,005	*	*

X: Northern Mindanao	**272,711**	**271,700**	**269,687**	**267,646**	**259,759**	**240,859**	**244,908**	**227,746**	**231,687**	**242,886**	**206,347**
Bukidnon	97,400	96,450	94,750	94,950	88,394	80,600	82,951	83,018	88,243	101,315	92,355
Camiguin	7,030	6,770	6,883	7,340	6,944	6,467	6,591	6,048	5,799	5,380	3,628
Lanao del Norte	40,240	43,378	44,567	45,990	45,691	45,654	45,486	44,436	43,772	44,286	24,287
Misamis Occidental	44,290	42,832	40,630	37,841	36,994	35,990	36,154	32,558	30,105	27,455	24,391
Misamis Oriental	83,751	82,270	82,857	81,525	81,736	72,148	73,726	61,686	63,768	64,450	61,686
XI: Davao Region	**136,540**	**134,455**	**135,654**	**136,701**	**139,078**	**139,802**	**139,665**	**138,851**	**134,010**	**133,580**	**126,449**
Davao del Norte	14,336	14,402	14,097	14,012	13,898	14,144	14,543	14,879	14,240	13,652	12,802
Davao del Sur	50,303	49,234	51,262	52,417	53,987	54,297	53,050	52,026	42,499	77,426	79,473
Davao City	39,053	37,580	35,872	35,417	35,875	36,318	37,197	36,942	35,225	**	**
Davao Oriental	25,745	25,979	26,884	26,974	27,682	27,575	26,861	27,018	25,459	25,604	17,231
Davao de Oro (Compostela Valley)	7,103	7,260	7,539	7,881	7,636	7,468	8,014	7,986	7,968	8,294	8,295
Davao Occidental	..	..	..	..	..	..	..	..	8,619	8,604	8,648
XII: SOCCSKSARGEN	**192,356**	**192,808**	**194,345**	**196,413**	**197,995**	**203,687**	**201,674**	**197,911**	**194,065**	**191,464**	**193,955**
Cotabato (North Cotabato)	69,546	71,235	72,746	75,957	78,071	81,365	86,386	84,023	81,400	81,015	81,343
Sarangani	11,120	11,092	10,690	10,529	10,581	10,594	10,282	10,390	10,675	10,070	11,489
South Cotabato	75,206	74,614	74,931	73,285	71,201	70,712	65,748	63,869	62,829	61,943	61,185
Sultan Kudarat	36,484	35,867	35,978	36,642	38,142	41,016	39,258	39,629	39,161	38,436	39,938
XIII: Caraga	**19,034**	**20,312**	**20,159**	**19,621**	**19,337**	**18,818**	**18,941**	**19,018**	**20,702**	**20,795**	**20,215**
Agusan del Norte	8,426	9,283	9,080	8,756	8,723	8,410	8,707	8,789	10,733	10,762	10,501
Agusan del Sur	4,959	5,294	5,359	5,297	5,032	5,109	4,875	4,826	4,773	4,612	4,733
Surigao del Norte	2,369	2,465	2,471	2,384	2,395	2,377	2,411	2,351	2,181	265	1,296
Surigao del Sur	3,030	3,018	2,994	2,938	2,939	2,672	2,681	2,784	2,751	1,970	3,421
Dinagat Islands	250	252	255	246	248	250	267	268	264	3,186	264
BARMM	**72,696**	**69,274**	**65,140**	**68,072**	**70,729**	**69,943**	**72,407**	**85,045**	**95,924**	**99,197**	**115,257**
Basilan	14,567	15,706	17,054	19,552	19,606	18,286	19,266	21,619	26,475	26,426	25,426
Lanao del Sur	19,914	18,525	15,694	16,397	18,032	19,398	20,463	25,480	30,145	30,736	38,153
Maguindanao	20,115	15,776	10,985	8,936	7,971	6,358	5,450	7,819	8,104	10,215	20,758
Sulu	15,400	16,373	18,400	20,000	21,990	23,000	24,355	27,000	28,550	28,560	26,776
Tawi-tawi	2,700	2,894	3,007	3,187	3,130	2,901	2,873	3,127	2,650	3,260	4,144

Source: Philippine Statistics Authority (Reference Period of 2012-2022: January 1)
NCR: National Capital Region
CAR: Cordillera Administrative Region

Table F 12 Hog Inventory 2012 to 2022

(Unit: Heads)

Region/Province	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
PHILIPPINES	**11,863,021**	**11,843,051**	**11,801,656**	**11,999,722**	**12,478,711**	**12,427,790**	**12,604,441**	**12,709,248**	**12,795,721**	**9,943,119**	**9,426,092**
NCR	..	..	..	..	..	..	..	..	..	..	**5,930**
CAR	**210,113**	**211,886**	**209,623**	**196,385**	**198,375**	**188,937**	**205,264**	**229,000**	**270,933**	**223,403**	**171,907**
Abra	56,261	55,255	47,368	33,176	24,385	16,498	15,934	15,195	9,508	30,404	33,852
Apayao	23,423	24,326	24,930	25,475	26,680	26,924	26,656	25,142	32,500	37,050	10,492
Benguet	13,015	17,264	21,263	24,978	31,294	29,492	35,537	45,275	56,042	47,980	41,020
Ifugao	35,965	28,319	29,055	25,105	26,033	23,680	32,279	37,272	54,147	48,303	33,258
Kalinga	46,371	51,203	51,659	51,445	55,209	58,609	59,184	71,906	75,795	21,066	25,348
Mountain Province	35,078	35,519	35,348	36,206	34,774	33,734	35,674	34,210	42,941	38,600	27,937
I: Ilocos Region	**534,535**	**529,317**	**521,370**	**521,622**	**555,397**	**577,227**	**599,143**	**627,816**	**663,086**	**366,229**	**259,712**
Ilocos Norte	117,324	111,303	107,794	106,019	118,941	143,394	148,862	166,106	191,328	178,409	113,189
Ilocos Sur	74,976	76,733	74,417	68,993	69,837	69,436	74,686	81,325	84,330	67,768	40,416
La Union	78,221	78,266	75,159	79,434	109,242	105,734	105,130	109,797	105,087	47,586	49,595
Pangasinan	264,014	263,015	264,000	267,176	257,377	258,663	270,465	270,588	282,341	72,466	56,512
II: Cagayan Valley	**381,154**	**378,401**	**391,210**	**404,972**	**422,626**	**434,921**	**451,007**	**457,637**	**421,076**	**262,875**	**173,921**
Batanes	..	..	3,641	3,580	3,399	3,399	3,088	3,066	2,178	1,253	4,495
Cagayan	178,487	176,513	187,261	196,324	206,533	226,727	239,611	234,299	218,670	152,763	74,050
Isabela	130,427	131,423	129,473	130,052	134,893	125,447	127,275	132,175	109,259	31,309	39,796
Nueva Vizcaya	49,415	46,640	45,765	48,174	49,092	49,230	47,898	49,089	49,693	44,733	41,424
Quirino	22,825	23,825	25,070	26,842	28,709	30,118	33,135	39,008	41,276	32,817	14,156
III: Central Luzon	**1,550,286**	**1,792,618**	**1,895,150**	**1,935,084**	**2,237,244**	**2,068,617**	**2,112,432**	**2,054,370**	**2,164,853**	**552,010**	**553,968**
Aurora	64,340	61,149	66,259	64,291	69,025	60,997	59,401	61,908	56,547	49,629	34,259
Bataan	58,105	60,275	69,130	70,375	68,402	62,529	82,747	79,639	71,967	13,610	10,498
Bulacan	931,542	1,094,219	1,115,052	1,111,453	1,232,440	1,030,032	1,028,625	1,037,599	1,157,358	88,647	119,224
Nueva Ecija	120,253	121,464	123,296	124,908	126,679	104,822	123,749	125,546	110,620	54,251	67,575
Pampanga	115,338	159,790	192,008	192,342	191,988	210,699	215,075	203,739	198,215	195,861	219,091
Tarlac	193,486	224,968	259,161	302,201	477,818	494,781	500,497	450,390	459,275	113,403	85,191
Zambales	67,222	70,753	70,244	69,514	70,892	104,757	102,338	95,549	110,871	36,609	18,130
IV-A: CALABARZON	**1,642,311**	**1,563,745**	**1,553,879**	**1,574,036**	**1,665,003**	**1,574,746**	**1,596,556**	**1,570,188**	**1,575,711**	**1,077,408**	**1,021,421**
Batangas	678,763	657,514	662,050	688,320	734,019	731,143	744,987	739,646	732,610	548,872	667,913
Cavite	170,679	157,419	145,875	147,880	148,460	150,830	150,091	144,373	154,832	164,806	90,913
Laguna	211,023	187,044	176,890	180,556	192,354	182,020	165,556	146,081	194,394	60,258	64,565
Quezon	224,598	223,050	226,275	227,929	230,074	231,253	229,922	231,188	238,262	230,296	135,782
Rizal	357,248	338,718	342,789	329,351	360,096	279,500	306,000	308,900	255,613	73,176	62,248
MIMAROPA REGION	**516,013**	**518,297**	**536,430**	**555,652**	**570,543**	**602,953**	**594,104**	**561,871**	**523,516**	**505,244**	**583,539**
Marinduque	70,704	64,548	63,901	65,331	85,366	115,187	93,628	93,645	73,714	72,671	65,672
Occidental Mindoro	66,368	64,573	61,906	70,254	72,139	64,664	64,667	53,420	53,760	45,622	46,511
Oriental Mindoro	99,181	101,870	104,825	103,304	94,179	87,586	86,256	67,652	45,838	46,015	126,975
Palawan	224,469	232,346	246,602	257,601	261,577	280,410	292,724	291,320	293,145	283,545	292,241
Romblon	55,291	54,960	59,196	59,162	57,282	55,106	56,829	55,834	57,059	57,391	52,140
V: Bicol Region	**760,517**	**797,901**	**858,408**	**863,382**	**857,119**	**909,474**	**959,017**	**974,864**	**891,457**	**763,640**	**669,395**
Albay	184,823	190,182	195,249	184,379	166,489	202,673	221,880	238,830	181,136	81,767	95,533
Camarines Norte	110,700	111,622	116,430	121,367	125,698	135,538	146,756	163,195	154,413	145,029	134,356
Camarines Sur	206,784	251,698	284,010	296,956	299,797	304,181	311,941	303,781	289,819	317,215	257,083
Catanduanes	82,384	65,975	72,463	77,431	83,974	83,081	84,595	78,374	68,371	22,353	9,749
Masbate	108,149	99,812	101,400	101,910	98,706	98,174	107,570	105,701	108,483	119,580	102,944
Sorsogon	67,677	78,612	88,856	81,339	82,455	85,827	86,275	84,983	89,235	77,696	69,730
VI: Western Visayas	**1,306,912**	**1,320,668**	**1,304,271**	**1,295,787**	**1,293,661**	**1,265,647**	**1,239,382**	**1,250,681**	**1,219,234**	**1,211,118**	**1,144,662**
Aklan	114,836	114,946	111,354	115,861	113,676	110,529	108,060	111,996	103,665	102,744	105,680
Antique	71,145	71,414	71,479	74,059	75,790	73,549	73,414	72,963	72,680	72,113	73,062
Capiz	130,426	138,352	136,496	132,220	133,045	132,250	131,935	132,569	132,034	129,786	130,091
Guimaras	73,845	69,001	58,432	46,853	30,244	29,221	23,205	24,179	24,598	24,688	23,250
Iloilo	440,460	442,435	437,498	429,300	436,621	407,892	396,771	400,265	415,278	408,270	339,979
Negros Occidental	476,200	484,520	489,012	497,494	504,285	512,206	505,997	508,709	470,979	473,517	472,600
VII: Central Visayas	**960,064**	**929,869**	**898,921**	**939,817**	**956,692**	**1,012,405**	**1,059,795**	**1,057,093**	**1,107,889**	**1,178,046**	**1,141,474**
Bohol	297,718	277,651	274,543	284,851	306,292	312,288	325,694	324,814	329,377	334,358	281,156
Cebu	413,606	405,948	385,190	406,896	385,336	412,361	427,867	422,722	459,715	525,735	562,573
Negros Oriental	207,878	206,672	198,794	207,629	221,993	243,301	258,722	261,344	269,597	265,526	251,783
Siquijor	40,862	39,598	40,394	40,441	43,071	44,455	47,512	48,213	49,200	52,427	45,962
VIII: Eastern Visayas	**588,786**	**473,340**	**327,208**	**335,446**	**322,574**	**321,494**	**285,548**	**282,410**	**266,320**	**254,706**	**225,345**
Biliran	11,220	11,603	11,717	11,575	11,629	11,937	12,173	12,488	13,052	12,731	10,948
Eastern Samar	30,900	25,910	17,722	26,845	21,584	20,770	19,080	19,210	10,207	9,733	17,599
Leyte	392,192	298,872	176,809	168,147	173,134	177,506	135,930	131,693	132,500	122,472	102,168
Northern Samar	68,146	63,878	53,596	55,586	48,050	49,300	48,071	49,920	47,681	46,876	41,416
Samar	42,601	42,786	40,050	44,419	40,258	32,647	38,362	38,806	35,460	36,056	22,955
Southern Leyte	43,727	30,291	27,314	28,874	27,919	29,334	31,932	30,293	27,420	26,838	30,259
IX: Zamboanga Peninsula	**500,064**	**512,501**	**502,461**	**517,407**	**511,284**	**577,844**	**563,182**	**579,031**	**608,532**	**632,448**	**679,479**
Zamboanga del Norte	145,146	160,776	169,129	188,319	195,393	238,035	230,142	247,972	275,684	281,287	287,508
Zamboanga del Sur	158,475	160,920	143,760	135,820	119,914	133,925	128,431	124,657	133,065	227,364	234,550
Zamboanga Sibugay	119,805	110,001	114,353	119,647	120,145	127,506	127,485	124,349	113,787	123,797	157,421
Zamboanga City	76,638	80,804	75,219	73,621	75,832	78,378	77,124	82,053	85,996	*	*

X: Northern Mindanao	**897,213**	**901,818**	**899,101**	**884,673**	**914,639**	**964,349**	**999,706**	**1,021,102**	**1,059,320**	**990,765**	**950,182**
Bukidnon	436,080	443,500	444,600	442,150	479,810	525,847	557,388	578,169	610,599	591,923	580,651
Camiguin	34,103	33,756	32,106	31,152	31,051	32,430	31,631	32,301	31,920	25,810	20,651
Lanao del Norte	81,276	79,433	82,228	87,211	88,247	89,655	89,147	94,318	89,084	58,862	54,877
Misamis Occidental	126,854	130,929	127,167	130,953	123,837	123,032	129,762	128,693	132,955	130,499	131,143
Misamis Oriental	218,900	214,200	213,000	193,207	191,694	193,385	191,778	187,621	194,762	183,671	162,860
XI: Davao Region	**858,904**	**811,247**	**803,851**	**848,081**	**879,102**	**901,331**	**904,858**	**942,547**	**941,256**	**871,721**	**843,136**
Davao del Norte	139,885	138,437	136,410	134,668	139,108	142,201	140,587	158,911	149,132	128,283	120,195
Davao del Sur	216,315	187,311	187,819	239,672	269,738	270,229	285,545	286,359	273,759	477,500	474,254
Davao City	229,177	239,770	233,742	226,079	222,341	229,854	226,308	235,579	234,164	**	**
Davao Oriental	136,135	121,584	124,251	123,200	121,860	132,278	129,196	128,910	116,461	123,181	112,363
Davao de Oro (Compostela Valley)	137,392	124,145	121,629	124,462	126,055	126,769	123,222	132,788	130,027	125,787	124,833
Davao Occidental	..	..	..	..	..	..	..	..	37,713	16,970	11,491
XII: SOCCSKSARGEN	**806,009**	**795,691**	**790,533**	**809,139**	**788,413**	**760,331**	**764,853**	**816,580**	**800,434**	**780,515**	**799,720**
Cotabato (North Cotabato)	241,930	231,116	234,833	248,345	231,839	224,244	219,868	237,985	228,746	212,716	228,378
Sarangani	92,439	87,413	78,390	76,615	77,486	73,378	69,759	72,564	65,948	56,633	51,745
South Cotabato	397,262	409,641	409,799	407,577	399,402	386,067	403,096	434,745	432,027	438,010	448,385
Sultan Kudarat	74,378	67,521	67,511	76,602	79,686	76,642	72,130	71,286	73,713	73,156	71,212
XIII: Caraga	**240,526**	**240,898**	**240,714**	**251,371**	**247,270**	**223,882**	**225,079**	**235,502**	**231,685**	**223,325**	**158,655**
Agusan del Norte	58,702	59,424	62,466	62,556	61,650	58,756	58,792	59,195	56,613	56,925	40,493
Agusan del Sur	61,862	63,391	62,271	73,114	67,455	53,352	54,384	59,757	59,615	56,028	51,548
Surigao del Norte	56,167	53,049	50,609	47,927	50,089	49,776	47,066	49,824	47,715	43,250	23,406
Surigao del Sur	58,038	58,589	58,518	60,909	61,161	55,238	57,681	59,491	60,595	60,606	37,721
Dinagat Islands	5,757	6,445	6,850	6,865	6,915	6,760	7,156	7,235	7,147	6,516	5,487
BARMM	**109,614**	**64,854**	**68,526**	**66,868**	**58,769**	**43,632**	**44,515**	**48,556**	**50,419**	**49,666**	**43,646**
Basilan	37,651	39,673	40,401	40,265	39,212	39,395	40,113	42,041	41,960	41,324	32,665
Lanao del Sur	1,250	900	875	615	595	565	304	225	110	33	58
Maguindanao	69,366	22,998	25,969	24,673	18,038	3,020	3,450	5,585	7,605	7,565	10,083
Sulu	533	545	570	600	400	105	75	95	67	67	..
Tawi-tawi	814	738	711	715	524	547	573	610	677	677	840

Source: Philippine Statistics Authority (Reference Period of 2012-2022: January 1)
NCR: National Capital Region
CAR: Cordillera Administrative Region

Table F 13 Chicken Inventory 2012 to 2022

(Unit: Heads)

Region/Province	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
PHILIPPINES	**164,192,253**	**166,386,275**	**167,671,053**	**176,469,099**	**178,792,807**	**175,316,918**	**175,771,740**	**186,370,297**	**178,264,951**	**176,819,886**	**185,101,854**
NCR	..	..	..	..	..	..	..	..	..	**3,908**	**201,830**
CAR	**1,523,099**	**1,617,348**	**1,518,028**	**1,583,046**	**1,564,252**	**1,470,545**	**1,735,514**	**1,903,464**	**1,563,123**	**1,657,699**	**1,878,933**
Abra	447,178	441,181	339,160	279,754	275,940	259,197	275,416	258,927	240,098	249,234	216,813
Apayao	169,054	179,712	178,176	203,163	177,399	150,288	169,866	166,658	191,800	222,530	254,178
Benguet	244,855	290,894	241,660	211,293	204,700	188,719	225,923	222,313	213,162	208,651	260,849
Ifugao	326,413	322,856	335,754	454,162	513,729	539,058	647,805	800,670	497,783	586,208	500,582
Kalinga	182,766	229,484	263,600	269,068	216,040	167,458	234,506	268,619	235,940	175,416	236,272
Mountain Province	152,833	153,221	159,678	165,606	176,444	165,825	181,998	186,277	184,340	215,660	410,239
I: Ilocos Region	**10,113,032**	**11,799,968**	**11,028,928**	**11,520,786**	**11,631,311**	**9,263,459**	**10,009,092**	**10,041,719**	**10,675,824**	**10,814,014**	**12,081,158**
Ilocos Norte	1,252,073	1,599,682	1,522,634	1,510,628	1,609,393	1,497,886	1,653,817	1,620,498	1,871,087	2,200,180	1,683,295
Ilocos Sur	971,899	995,330	955,728	1,105,875	1,145,847	1,159,335	1,054,244	1,039,738	1,044,732	1,029,872	978,438
La Union	1,342,854	1,480,237	1,530,387	1,625,282	1,682,077	1,575,946	1,552,443	1,616,375	1,936,277	1,888,623	1,699,245
Pangasinan	6,546,206	7,724,719	7,020,179	7,279,001	7,193,994	5,030,292	5,748,588	5,765,108	5,823,728	5,695,339	7,720,180
II: Cagayan Valley	**7,459,123**	**7,752,153**	**6,345,269**	**6,813,966**	**7,058,396**	**7,349,890**	**6,181,378**	**6,838,770**	**5,937,915**	**6,407,151**	**6,536,617**
Batanes	..	..	13,187	13,572	14,449	8,966	11,860	11,810	12,346	19,078	20,384
Cagayan	2,159,794	2,470,912	2,304,026	2,407,963	2,598,579	2,126,680	2,497,532	2,311,129	1,982,277	1,949,243	1,602,397
Isabela	3,944,193	3,971,071	2,619,425	2,908,587	2,614,920	3,609,081	2,224,552	2,979,983	2,420,593	2,891,785	3,456,632
Nueva Vizcaya	926,883	789,485	727,325	822,301	1,048,762	808,285	710,405	877,154	828,938	817,989	765,504
Quirino	428,253	520,685	681,306	661,543	781,686	796,878	737,029	658,694	693,761	729,056	691,700
III: Central Luzon	**28,236,486**	**29,988,306**	**32,981,916**	**34,682,958**	**34,788,208**	**27,461,705**	**29,477,471**	**31,764,997**	**28,682,525**	**28,057,411**	**31,256,388**
Aurora	109,680	124,134	125,092	125,375	143,850	134,688	138,433	139,936	128,314	117,279	118,555
Bataan	4,208,041	4,092,479	4,452,121	4,734,029	4,491,557	1,922,409	1,219,272	1,057,759	636,767	1,537,312	1,536,862
Bulacan	5,296,422	4,950,841	5,233,259	5,725,683	6,278,314	4,454,097	4,650,875	4,840,228	4,932,286	4,191,057	4,560,131
Nueva Ecija	6,183,255	6,454,314	6,664,574	7,802,169	8,825,309	5,063,628	6,318,569	7,239,382	5,876,400	5,254,376	3,360,885
Pampanga	8,202,038	9,858,191	10,631,968	9,807,603	9,265,939	9,146,248	9,849,840	10,012,379	9,759,034	9,860,223	11,956,745
Tarlac	3,050,632	3,255,368	4,553,564	4,699,121	4,647,344	5,140,418	4,034,393	5,937,925	5,321,552	4,914,836	7,045,027
Zambales	1,186,418	1,252,979	1,321,338	1,788,978	1,135,895	1,600,217	3,266,089	2,537,388	2,028,172	2,182,328	2,678,183
IV-A: CALABARZON	**28,260,078**	**26,421,259**	**27,950,240**	**27,251,093**	**27,105,692**	**26,856,204**	**26,120,647**	**26,047,000**	**27,112,054**	**24,488,741**	**23,549,605**
Batangas	10,933,291	10,958,093	11,623,427	12,818,692	14,762,376	14,406,081	14,064,169	14,378,813	15,157,407	14,323,639	14,292,877
Cavite	2,361,236	2,119,192	1,898,640	1,415,646	1,303,232	1,740,940	2,243,847	1,962,638	2,266,145	2,157,651	1,318,371
Laguna	2,962,198	2,716,115	2,746,802	2,848,797	2,666,485	2,612,813	1,934,574	2,288,352	2,444,519	2,103,295	2,713,295
Quezon	4,784,850	4,813,869	4,824,604	4,941,558	4,379,849	4,219,370	4,100,557	4,196,397	4,217,483	3,081,256	3,054,683
Rizal	7,218,503	5,813,990	6,856,767	5,226,400	3,993,750	3,877,000	3,777,500	3,220,800	3,026,500	2,822,900	2,170,379
MIMAROPA REGION	**3,601,931**	**3,627,533**	**3,724,313**	**4,079,667**	**4,125,670**	**4,145,719**	**4,329,481**	**4,557,723**	**4,339,125**	**3,833,992**	**4,108,784**
Marinduque	111,886	113,993	98,121	97,764	98,502	109,893	106,986	102,435	89,385	87,805	518,579
Occidental Mindoro	440,498	373,274	413,921	539,685	515,720	490,833	543,103	706,263	671,640	412,240	283,843
Oriental Mindoro	502,331	480,743	416,016	554,147	565,173	499,445	506,417	515,316	586,845	607,311	876,700
Palawan	2,000,503	2,126,373	2,273,003	2,351,363	2,409,299	2,481,211	2,588,819	2,630,988	2,446,049	2,145,283	1,770,745
Romblon	546,713	533,150	523,252	536,708	536,976	564,337	584,156	602,721	545,206	581,353	658,917
V: Bicol Region	**6,699,831**	**6,443,666**	**8,282,457**	**8,201,612**	**9,992,146**	**10,388,300**	**10,434,560**	**10,342,812**	**8,751,535**	**8,884,399**	**8,313,940**
Albay	1,170,046	1,142,333	1,374,036	1,319,326	2,345,837	1,546,977	1,583,585	1,730,547	1,741,647	1,729,179	1,381,220
Camarines Norte	395,800	380,700	399,676	436,578	615,468	728,099	794,475	776,892	780,880	766,293	818,865
Camarines Sur	3,084,812	3,124,654	4,736,980	4,741,480	5,260,177	6,290,545	6,057,011	5,888,465	4,575,399	4,415,667	4,262,879
Catanduanes	342,446	56,484	60,677	64,081	71,080	73,585	76,136	76,663	89,586	123,444	145,942
Masbate	1,138,273	1,000,127	869,991	812,719	833,670	864,624	943,536	944,293	941,703	951,760	854,954
Sorsogon	568,454	739,368	841,097	827,428	865,914	884,470	979,817	925,952	622,320	898,056	850,080
VI: Western Visayas	**18,527,002**	**19,506,992**	**18,900,685**	**19,623,500**	**19,593,896**	**20,337,883**	**20,168,266**	**20,472,979**	**19,910,875**	**20,798,979**	**20,446,427**
Aklan	1,038,622	1,036,184	1,031,712	773,711	751,326	905,301	1,225,541	1,411,068	1,341,169	1,619,060	1,080,494
Antique	1,072,725	1,065,665	1,062,998	1,100,430	1,099,043	939,170	959,543	972,364	946,889	987,975	946,153
Capiz	2,256,990	2,520,771	2,065,185	2,477,065	2,507,370	2,650,220	2,616,400	2,590,000	2,469,878	2,619,483	2,527,133
Guimaras	444,116	433,062	475,914	451,848	456,155	451,235	460,760	472,261	432,991	460,538	444,558
Iloilo	6,825,145	7,432,234	7,277,858	7,281,966	6,913,370	7,073,897	6,483,836	6,642,245	6,254,385	6,250,465	6,737,562
Negros Occidental	6,889,404	7,019,076	6,987,018	7,538,480	7,866,632	8,318,060	8,422,186	8,385,041	8,465,563	8,861,458	8,710,527
VII: Central Visayas	**12,541,819**	**12,781,695**	**11,735,672**	**12,739,410**	**13,037,027**	**14,168,982**	**14,919,814**	**19,195,947**	**18,189,081**	**19,834,356**	**19,541,490**
Bohol	2,540,392	2,884,670	2,827,917	3,076,710	3,495,644	3,494,575	3,820,306	4,207,970	4,228,731	3,830,427	3,616,454
Cebu	7,431,025	7,368,082	6,268,225	6,938,874	7,127,770	8,122,380	8,281,968	11,941,567	10,482,111	12,218,863	11,708,614
Negros Oriental	2,074,130	2,049,029	2,151,578	2,206,841	1,821,282	1,956,316	2,211,077	2,453,208	2,887,814	3,150,432	3,577,669
Siquijor	496,272	479,914	487,952	516,985	592,331	595,711	606,463	593,202	590,425	634,634	638,753
VIII: Eastern Visayas	**3,821,120**	**3,076,894**	**1,619,983**	**1,736,252**	**2,272,502**	**2,737,902**	**2,463,777**	**2,524,559**	**2,124,681**	**2,437,068**	**2,203,060**
Biliran	118,246	121,405	103,349	126,336	182,337	184,728	182,855	179,235	171,724	193,990	169,795
Eastern Samar	175,200	184,150	97,549	76,491	81,163	97,592	103,382	117,668	87,268	79,505	122,776
Leyte	2,431,232	1,794,771	465,929	527,756	890,443	1,349,060	908,881	894,477	831,095	838,911	732,258
Northern Samar	348,789	233,002	211,349	210,337	213,516	156,260	242,896	220,311	257,407	283,736	363,436
Samar	376,261	401,388	404,303	454,011	533,171	494,380	612,091	693,208	338,478	451,566	479,176
Southern Leyte	371,392	342,178	337,504	341,321	371,872	455,882	413,672	419,660	438,709	589,360	335,619
IX: Zamboanga Peninsula	**5,181,302**	**5,204,205**	**5,059,850**	**5,492,561**	**5,643,355**	**5,882,033**	**6,064,534**	**7,308,871**	**7,047,962**	**5,874,781**	**7,815,088**
Zamboanga del Norte	1,481,145	1,596,845	1,680,649	1,813,413	1,916,690	1,927,271	1,965,754	2,134,348	2,004,677	2,060,469	1,980,800
Zamboanga del Sur	723,879	731,619	861,074	950,640	948,290	1,042,677	1,335,568	2,064,912	1,839,733	3,089,975	5,165,701
Zamboanga Sibugay	631,369	588,191	591,942	592,872	599,740	630,922	632,421	716,943	697,686	724,337	668,587
Zamboanga City	2,344,909	2,287,550	1,926,185	2,135,636	2,178,635	2,281,163	2,130,791	2,392,668	2,505,866	*	*

X: Northern Mindanao	**19,296,971**	**19,151,013**	**18,450,138**	**18,566,229**	**18,955,939**	**20,194,790**	**19,366,508**	**19,821,905**	**19,622,625**	**18,761,341**	**21,547,459**
Bukidnon	8,058,598	7,654,850	7,904,620	7,624,700	8,139,353	8,974,288	9,192,528	9,793,769	10,159,927	11,219,309	11,968,246
Camiguin	156,730	153,730	152,470	162,249	163,029	141,182	141,893	153,416	166,295	177,205	92,509
Lanao del Norte	1,395,600	1,485,404	1,500,477	1,662,870	1,824,420	1,865,250	1,783,600	1,948,909	1,939,955	710,774	1,952,707
Misamis Occidental	2,117,594	2,204,556	2,179,571	2,386,077	1,842,338	1,789,932	1,892,007	1,863,572	1,768,398	1,855,417	1,916,685
Misamis Oriental	7,568,449	7,652,473	6,713,000	6,730,333	6,986,799	7,424,138	6,356,480	6,062,239	5,588,050	4,798,636	5,617,312
XI: Davao Region	**8,384,020**	**8,579,356**	**10,187,776**	**13,185,601**	**12,589,929**	**13,770,535**	**11,655,512**	**11,523,579**	**10,445,112**	**10,539,816**	**11,847,128**
Davao del Norte	1,479,443	1,200,083	1,459,825	1,883,495	2,655,969	2,204,006	2,294,320	2,531,823	2,526,909	2,367,546	2,562,024
Davao del Sur	1,153,362	1,692,792	1,530,108	2,363,532	1,614,058	1,998,730	1,810,203	1,661,014	1,142,978	5,945,248	6,968,696
Davao City	3,712,392	3,815,442	5,317,457	6,943,400	6,293,775	6,833,589	5,210,063	5,047,274	4,616,508	**	**
Davao Oriental	993,699	856,550	804,434	810,802	877,757	1,175,266	1,091,877	1,095,555	819,885	881,143	862,650
Davao de Oro (Compostela Valley)	1,045,124	1,014,489	1,075,952	1,184,372	1,148,370	1,558,944	1,249,049	1,187,913	1,068,143	1,083,227	1,070,036
Davao Occidental	..	..	..	..	..	..	..	..	270,689	262,652	383,722
XII: SOCCSKSARGEN	**6,453,983**	**6,601,676**	**6,099,112**	**6,818,690**	**6,585,738**	**7,463,532**	**8,985,294**	**9,447,492**	**9,674,996**	**10,368,498**	**9,896,771**
Cotabato (North Cotabato)	2,038,332	1,893,819	1,715,383	2,051,836	1,861,223	2,230,086	2,181,242	2,538,666	2,609,762	2,874,695	2,663,826
Sarangani	923,900	905,000	916,500	918,000	862,000	875,900	790,035	754,841	767,924	794,785	801,859
South Cotabato	2,711,072	3,067,517	2,728,408	3,193,702	3,157,174	3,713,855	5,422,260	5,537,452	5,676,898	6,036,557	5,839,697
Sultan Kudarat	780,679	735,340	738,821	655,152	705,341	643,691	591,757	616,533	620,412	662,461	591,389
XIII: Caraga	**1,655,629**	**1,653,099**	**1,774,267**	**2,074,940**	**1,931,339**	**1,958,954**	**2,131,401**	**2,694,579**	**2,340,996**	**2,757,537**	**2,534,181**
Agusan del Norte	557,750	590,569	575,349	791,823	591,569	648,276	736,328	1,287,818	977,986	1,416,836	1,270,679
Agusan del Sur	446,093	459,104	601,201	661,337	719,491	712,319	751,461	735,146	728,575	705,250	665,630
Surigao del Norte	274,892	228,987	239,839	231,973	233,159	195,020	196,219	187,920	153,955	143,613	142,889
Surigao del Sur	327,464	327,059	315,069	339,439	329,827	346,664	397,182	421,379	421,695	434,185	421,460
Dinagat Islands	49,430	47,380	42,809	50,368	57,293	56,675	50,211	62,316	58,785	57,653	33,523
BARMM	**2,436,827**	**2,181,112**	**2,012,419**	**2,098,788**	**1,917,407**	**1,866,485**	**1,728,491**	**1,883,901**	**1,846,522**	**1,300,195**	**1,342,995**
Basilan	261,280	290,554	332,016	326,603	321,883	346,846	316,485	348,335	375,820	274,482	153,944
Lanao del Sur	1,082,372	944,480	754,047	825,482	875,400	853,405	720,313	810,000	700,000	210,000	400,000
Maguindanao	367,573	253,434	230,414	218,771	67,608	53,819	82,462	106,115	136,619	135,984	146,250
Sulu	537,740	502,885	507,644	528,407	499,915	458,072	462,745	475,000	481,930	481,930	490,652
Tawi-tawi	187,862	189,759	188,298	199,525	152,601	154,343	146,486	144,451	152,153	197,799	152,149

Source: Philippine Statistics Authority (Reference Period of 2012-2022: January 1)
NCR: National Capital Region
CAR: Cordillera Administrative Region

Table F 14 Projected Irrigation Service Area in 2030, 2040 & 2050 Based on NIMP 2020-2030

Region/	Potential	Year 2020				Remaining	Newly Developed ISA (ha) by			Year 2030				Year 2040				Year 2050			
Province	Irrigable	ISA	FUSA	Irrigated Area (ha)		Irrigable	Year	Year	Year	ISA	FUSA	Irrigated Area (ha)		ISA	FUSA	Irrigated Area (ha)		ISA	FUSA	Irrigated Area (ha)	
	Area (ha)	(ha)	(ha)	Wet	Dry	Area (ha)	2030	2040	2050	(ha)	(ha)	Wet	Dry	(ha)	(ha)	Wet	Dry	(ha)	(ha)	Wet	Dry
CAR	**42,767**	**102,492**	**96,744**	**73,345**	**70,097**	**5,075**	**1,519**	**2,243**	**2,584**	**104,011**	**98,263**	**85,480**	**81,567**	**104,735**	**98,987**	**86,112**	**82,167**	**105,076**	**99,328**	**86,409**	**82,448**
Abra		19,830	18,848	10,823	10,312					19,830	18,848	16,408	15,633	19,830	18,848	16,408	15,633	19,830	18,848	16,408	15,633
Apayao		10,619	10,083	8,336	8,264					10,619	10,083	8,608	8,533	10,619	10,083	8,608	8,533	10,619	10,083	8,608	8,533
Benguet		15,771	15,235	12,319	12,106					15,771	15,235	13,063	12,837	15,771	15,235	13,063	12,837	15,771	15,235	13,063	12,837
Ifugao	10,350	15,793	14,706	10,458	9,387	0				15,793	14,706	13,175	11,825	15,793	14,706	13,175	11,825	15,793	14,706	13,175	11,825
Kalinga	32,417	27,342	25,002	21,835	20,707	5,075	1,519	2,243	2,584	28,861	26,521	23,141	21,945	29,585	27,245	23,773	22,544	29,926	27,586	24,069	22,826
Mt. Province		13,137	12,870	9,574	9,321					13,137	12,870	11,086	10,793	13,137	12,870	11,086	10,793	13,137	12,870	11,086	10,793
I	**425,944**	**217,357**	**190,064**	**156,378**	**108,227**	**208,587**	**62,436**	**92,201**	**106,189**	**279,793**	**252,500**	**253,900**	**175,350**	**309,558**	**282,265**	**283,875**	**195,975**	**323,546**	**296,253**	**297,962**	**205,668**
Ilocos Norte	76,485	45,205	35,814	29,916	20,007	31,280	9,363	13,827	15,924	54,568	45,177	46,022	30,779	59,032	49,641	50,569	33,819	61,129	51,738	52,706	35,249
Ilocos Sur	56,448	24,647	22,722	19,455	11,561	31,801	9,519	14,057	16,190	34,166	32,241	34,380	20,430	38,704	36,779	39,219	23,305	40,837	38,912	41,493	24,657
La Union	29,235	16,727	14,945	12,775	9,778	12,508	3,744	5,529	6,368	20,471	18,689	17,997	13,775	22,256	20,474	19,715	15,090	23,095	21,313	20,523	15,708
Pangasinan	263,776	130,778	116,583	94,232	66,881	132,998	39,810	58,788	67,708	170,588	156,393	155,501	110,367	189,566	175,371	174,372	123,760	198,486	184,291	183,240	130,054
II	**540,733**	**302,143**	**279,513**	**247,944**	**246,141**	**241,015**	**72,143**	**106,535**	**122,698**	**374,286**	**351,656**	**300,033**	**297,782**	**408,678**	**386,048**	**329,423**	**326,858**	**424,841**	**402,211**	**343,235**	**340,524**
Batanes		359	354	9	0					359	354	354	248	359	354	354	248	359	354	354	248
Cagayan	202,257	109,310	104,146	86,769	89,980	92,947	27,822	41,085	47,318	137,132	131,968	110,135	114,210	150,395	145,231	121,204	125,689	156,628	151,464	126,406	131,083
Isabela	287,818	146,370	130,973	120,983	116,006	141,448	42,339	62,524	72,009	188,709	173,312	150,409	144,222	208,894	193,497	167,926	161,018	218,379	202,982	176,159	168,912
Nueva Vizcaya	31,306	33,372	32,190	30,227	30,227	0				33,372	32,190	27,362	27,362	33,372	32,190	27,362	27,362	33,372	32,190	27,362	27,362
Quirino	19,352	12,732	11,850	9,956	9,928	6,620	1,982	2,926	3,370	14,714	13,832	11,773	11,740	15,658	14,776	12,577	12,542	16,102	15,220	12,955	12,919
III	**705,907**	**346,852**	**322,891**	**267,080**	**252,208**	**359,055**	**107,476**	**158,711**	**182,791**	**454,328**	**430,367**	**381,064**	**350,560**	**505,563**	**481,602**	**426,930**	**391,794**	**529,643**	**505,682**	**448,486**	**411,173**
Aurora	35,373	9,770	9,677	8,608	8,555	25,603	7,664	11,317	13,034	17,434	17,341	14,785	14,694	21,087	20,994	17,900	17,790	22,804	22,711	19,364	19,245
Bataan	29,106	12,677	11,188	7,263	7,311	16,429	4,918	7,262	8,364	17,595	16,106	13,645	13,735	19,939	18,450	15,631	15,734	21,041	19,552	16,564	16,674
Bulacan	58,675	38,410	31,715	25,453	17,906	20,265	6,066	8,958	10,317	44,476	37,781	37,703	26,524	47,368	40,673	40,589	28,554	48,727	42,032	41,945	29,508
Nueva Ecija	265,333	159,796	155,649	150,000	147,404	105,537	31,590	46,650	53,728	191,386	187,239	160,543	157,764	206,446	202,299	173,455	170,453	213,524	209,377	179,524	176,417
Pampanga	108,961	55,774	49,551	34,225	37,193	53,187	15,920	23,510	27,077	71,694	65,471	53,338	57,963	79,284	73,061	59,521	64,683	82,851	76,628	62,427	67,841
Tarlac	149,569	52,029	48,658	32,361	28,473	97,540	29,197	43,115	49,656	81,226	77,855	70,406	61,947	95,144	91,773	82,993	73,022	101,685	98,314	88,908	78,226
Zambales	58,890	18,396	16,453	9,170	5,366	40,494	12,121	17,899	20,615	30,517	28,574	30,644	17,932	36,295	34,352	36,841	21,558	39,011	37,068	39,753	23,262
IV-A	**271,241**	**64,327**	**48,719**	**36,781**	**35,896**	**218,497**	**65,402**	**96,581**	**111,234**	**129,729**	**114,121**	**99,251**	**94,756**	**160,908**	**145,300**	**126,630**	**120,380**	**175,561**	**159,953**	**139,497**	**132,423**
Batangas		5,508	4,699	2,431	3,022					5,508	4,699	3,561	4,427	5,508	4,699	3,561	4,427	5,508	4,699	3,561	4,427
Cavite	48,882	15,256	7,203	3,376	3,221	33,626	10,065	14,864	17,119	25,321	17,268	15,023	14,333	30,120	22,067	19,197	18,316	32,375	24,322	21,159	20,188
Laguna	51,448	17,077	13,045	11,059	11,040	34,371	10,288	15,193	17,498	27,365	23,333	19,850	19,816	32,270	28,238	24,023	23,982	34,575	30,543	25,984	25,939
Quezon	170,911	20,411	18,384	15,428	14,167	150,500	45,049	66,525	76,618	65,460	63,433	56,215	51,621	86,936	84,909	75,248	69,097	97,029	95,002	84,192	77,311
Rizal		6,075	5,388	4,487	4,446					6,075	5,388	4,601	4,559	6,075	5,388	4,601	4,559	6,075	5,388	4,601	4,559

IV-B	**145,123**	**109,518**	**95,004**	**81,989**	**70,891**	**4,241**	**1,269**	**1,875**	**2,159**	**110,787**	**96,273**	**87,773**	**75,892**	**111,393**	**96,879**	**88,333**	**76,361**	**111,677**	**97,163**	**88,596**	**76,581**
Marinduque		2,083	2,023	1,670	1,641					2,083	2,023	1,735	1,704	2,083	2,023	1,735	1,704	2,083	2,023	1,735	1,704
Occidental Mindoro	38,161	33,920	30,777	27,011	22,616	4,241	1,269	1,875	2,159	35,189	32,046	29,652	24,827	35,795	32,652	30,212	25,296	36,079	32,936	30,475	25,516
Oriental Mindoro	21,477	37,154	30,914	25,876	22,512	0				37,154	30,914	28,104	24,450	37,154	30,914	28,104	24,450	37,154	30,914	28,104	24,450
Palawan	85,485	32,901	27,858	24,878	21,421	0				32,901	27,858	25,447	21,911	32,901	27,858	25,447	21,911	32,901	27,858	25,447	21,911
Romblon		3,460	3,432	2,554	2,701					3,460	3,432	2,836	2,999	3,460	3,432	2,836	2,999	3,460	3,432	2,836	2,999
V	**373,958**	**143,270**	**118,290**	**78,438**	**75,651**	**243,594**	**72,915**	**107,675**	**124,011**	**216,185**	**191,205**	**164,558**	**160,490**	**250,945**	**225,965**	**194,231**	**189,909**	**267,281**	**242,301**	**208,177**	**203,735**
Albay	49,323	31,749	30,429	23,045	21,651	17,574	5,260	7,768	8,947	37,009	35,689	31,282	29,390	39,517	38,197	33,480	31,455	40,696	39,376	34,513	32,425
Camarines Norte		9,695	9,236	6,725	6,710					9,695	9,236	7,859	7,842	9,695	9,236	7,859	7,842	9,695	9,236	7,859	7,842
Camarines Sur	149,823	77,665	55,218	34,313	32,880	72,158	21,599	31,896	36,735	99,264	76,817	66,687	63,902	109,561	87,114	75,626	72,467	114,400	91,953	79,827	76,493
Catanduanes		3,211	3,113	1,805	1,839					3,211	3,113	2,621	2,671	3,211	3,113	2,621	2,671	3,211	3,113	2,621	2,671
Masbate	129,951	6,848	6,582	3,456	3,519	123,103	36,848	54,415	62,670	43,696	43,430	36,582	37,249	61,263	60,997	51,379	52,315	69,518	69,252	58,333	59,396
Sorsogon	44,861	14,102	13,712	9,094	9,052	30,759	9,207	13,596	15,659	23,309	22,919	19,526	19,436	27,698	27,308	23,266	23,158	29,761	29,371	25,023	24,908
VI	**354,220**	**128,230**	**114,178**	**82,378**	**66,402**	**227,155**	**67,994**	**100,408**	**115,642**	**196,224**	**182,172**	**174,114**	**135,578**	**228,638**	**214,586**	**205,553**	**159,244**	**243,872**	**229,820**	**220,328**	**170,366**
Aklan	12,092	10,344	9,958	7,989	7,241	1,748	523	773	890	10,867	10,481	9,347	8,471	11,117	10,731	9,569	8,673	11,234	10,848	9,674	8,768
Antique	17,255	16,760	15,724	13,493	12,329	495	148	219	252	16,908	15,872	14,100	12,883	16,979	15,943	14,162	12,941	17,012	15,976	14,192	12,967
Capiz	48,739	15,355	12,402	8,462	7,155	33,384	9,993	14,757	16,995	25,348	22,395	20,629	17,442	30,112	27,159	25,017	21,153	32,350	29,397	27,079	22,897
Guimaras		1,165	955	695	553					1,165	955	904	719	1,165	955	904	719	1,165	955	904	719
Iloilo	109,859	45,076	37,158	28,412	22,652	64,783	19,391	28,636	32,980	64,467	56,549	53,489	42,645	73,712	65,794	62,233	49,616	78,056	70,138	66,342	52,893
Negros Occidental	166,275	39,530	37,981	23,327	16,472	126,745	37,938	56,024	64,524	77,468	75,919	75,646	53,417	95,554	94,005	93,667	66,142	104,054	102,505	102,137	72,122
VII	**137,288**	**50,357**	**44,078**	**35,906**	**32,898**	**97,169**	**29,085**	**42,951**	**49,468**	**79,442**	**73,163**	**64,790**	**59,588**	**93,308**	**87,029**	**76,983**	**70,967**	**99,825**	**93,546**	**82,713**	**76,315**
Bohol	86,291	25,254	23,904	18,677	16,736	61,037	18,270	26,980	31,073	43,524	42,174	37,813	33,883	52,234	50,884	45,622	40,881	56,327	54,977	49,292	44,169
Cebu		9,504	7,634	6,742	5,850					9,504	7,634	6,949	6,029	9,504	7,634	6,949	6,029	9,504	7,634	6,949	6,029
Negros Oriental	50,997	14,865	11,960	10,158	10,153	36,132	10,815	15,971	18,394	25,680	22,775	19,364	19,354	30,836	27,931	23,747	23,736	33,259	30,354	25,808	25,795
Siquijor		734	580	329	159					734	580	665	321	734	580	665	321	734	580	665	321
VIII	**232,763**	**71,851**	**70,446**	**50,180**	**50,912**	**173,309**	**51,876**	**76,607**	**88,230**	**123,727**	**122,322**	**102,954**	**104,994**	**148,458**	**147,053**	**123,659**	**126,331**	**160,081**	**158,676**	**133,390**	**136,359**
Biliran	5,558	4,182	3,780	1,986	2,086	1,376	412	608	701	4,594	4,192	3,476	3,651	4,790	4,388	3,638	3,822	4,883	4,481	3,715	3,902
Northern Leyte	158,649	41,716	41,312	33,696	34,481	116,933	35,001	51,687	59,529	76,717	76,313	64,120	65,613	93,403	92,999	78,139	79,960	101,245	100,841	84,728	86,702
Southern Leyte	11,984	7,165	7,077	5,424	5,361	4,819	1,442	2,130	2,453	8,607	8,519	7,284	7,199	9,295	9,207	7,872	7,780	9,618	9,530	8,148	8,053
Northern Samar		5,523	5,509	2,548	2,403					5,523	5,509	4,820	4,546	5,523	5,509	4,820	4,546	5,523	5,509	4,820	4,546
Western Samar	56,572	6,391	5,894	2,931	3,081	50,181	15,021	22,181	25,547	21,412	20,915	17,334	18,221	28,572	28,075	23,269	24,459	31,938	31,441	26,058	27,391
Eastern Samar		6,874	6,874	3,595	3,500					6,874	6,874	5,921	5,765	6,874	6,874	5,921	5,765	6,874	6,874	5,921	5,765
IX	**119,470**	**47,580**	**41,576**	**34,134**	**32,668**	**79,438**	**23,778**	**35,114**	**40,441**	**71,358**	**65,354**	**56,851**	**54,251**	**82,694**	**76,690**	**66,664**	**63,708**	**88,021**	**82,017**	**71,276**	**68,153**
Zamboanga del Norte		7,548	7,071	3,833	3,263					7,548	7,071	6,493	5,528	7,548	7,071	6,493	5,528	7,548	7,071	6,493	5,528
Zamboanga del Sur	62,240	29,248	24,444	21,772	21,262	32,992	9,875	14,583	16,796	39,123	34,319	29,517	28,826	43,831	39,027	33,566	32,780	46,044	41,240	35,469	34,638
Zamboanga Sibugay	57,230	10,784	10,061	8,529	8,143	46,446	13,903	20,530	23,645	24,687	23,964	20,841	19,897	31,314	30,591	26,605	25,401	34,429	33,706	29,314	27,987

X		**270,695**	**73,045**	**60,445**	**46,369**	**44,539**	**198,405**	**59,388**	**87,700**	**101,006**	**132,433**	**119,833**	**103,959**	**99,758**	**160,745**	**148,145**	**128,475**	**123,372**	**174,051**	**161,451**	**139,997**	**134,469**
	Bukidnon	127,582	41,727	33,394	27,235	27,012	85,855	25,699	37,950	43,708	67,426	59,093	50,435	50,022	79,677	71,344	60,892	60,393	85,435	77,102	65,806	65,267
	Camiguin		755	640	356	256					755	640	633	455	755	640	633	455	755	640	633	455
	Lanao del Norte	60,001	13,489	13,074	9,544	7,810	46,512	13,922	20,559	23,679	27,411	26,996	25,240	20,654	34,048	33,633	31,445	25,732	37,168	36,753	34,361	28,118
	Misamis Occidental	43,444	9,536	8,830	6,766	6,804	33,908	10,150	14,988	17,262	19,686	18,980	16,088	16,178	24,524	23,818	20,189	20,302	26,798	26,092	22,116	22,240
	Misamis Oriental	39,668	7,538	4,507	2,468	2,657	32,130	9,617	14,202	16,357	17,155	14,124	11,563	12,449	21,740	18,709	15,316	16,489	23,895	20,864	17,080	18,388
XI		**266,372**	**70,438**	**68,243**	**53,015**	**52,920**	**195,934**	**58,649**	**86,608**	**99,748**	**129,087**	**126,892**	**107,945**	**107,771**	**157,046**	**154,851**	**131,730**	**131,516**	**170,186**	**167,991**	**142,908**	**142,676**
	Compostela Valley	52,005	14,846	14,719	11,221	11,221	37,159	11,123	16,425	18,917	25,969	25,842	21,966	21,966	31,271	31,144	26,473	26,473	33,763	33,636	28,591	28,591
	Davao del Norte	94,456	29,312	27,781	21,738	21,738	65,144	19,499	28,795	33,164	48,811	47,280	40,188	40,188	58,107	56,576	48,090	48,090	62,476	60,945	51,803	51,803
	Davao del Sur	75,370	17,474	16,977	13,932	13,793	57,896	17,330	25,591	29,474	34,804	34,307	29,307	29,015	43,065	42,568	36,365	36,002	46,948	46,451	39,681	39,286
	Davao Oriental	44,541	8,806	8,766	6,124	6,168	35,735	10,697	15,796	18,192	19,503	19,463	16,484	16,602	24,602	24,562	20,803	20,952	26,998	26,958	22,832	22,997
XII		**335,442**	**127,690**	**117,204**	**106,443**	**99,815**	**211,324**	**63,255**	**93,410**	**107,583**	**190,945**	**180,459**	**158,088**	**148,693**	**221,100**	**210,614**	**184,308**	**173,737**	**235,273**	**224,787**	**196,630**	**185,507**
	Sarangani	3,499	7,071	6,348	5,731	5,337	0				7,071	6,348	5,588	5,204	7,071	6,348	5,588	5,204	7,071	6,348	5,588	5,204
	South Cotabato	98,753	36,077	31,092	28,219	27,880	62,676	18,761	27,704	31,908	54,838	49,853	42,631	42,119	63,781	58,796	50,279	49,675	67,985	63,000	53,873	53,226
	North Cotabato	151,879	45,407	44,212	41,151	40,971	106,472	31,870	47,063	54,204	77,277	76,082	64,812	64,528	92,470	91,275	77,754	77,414	99,611	98,416	83,837	83,470
	Sultan Kudarat	81,311	39,135	35,552	31,342	25,627	42,176	12,624	18,643	21,471	51,759	48,176	45,058	36,842	57,778	54,195	50,687	41,444	60,606	57,023	53,332	43,607
XIII (CARAGA)		**223,781**	**71,358**	**64,462**	**44,807**	**41,233**	**161,322**	**48,288**	**71,308**	**82,127**	**119,646**	**112,750**	**99,240**	**92,435**	**142,666**	**135,770**	**119,326**	**111,484**	**153,485**	**146,589**	**128,765**	**120,436**
	Agusan del Norte	48,009	17,433	14,121	10,219	10,173	30,576	9,152	13,515	15,566	26,585	23,273	19,827	19,738	30,948	27,636	23,544	23,438	32,999	29,687	25,291	25,177
	Agusan del Sur	105,285	28,488	25,991	17,351	16,780	76,797	22,988	33,946	39,096	51,476	48,979	42,328	40,935	62,434	59,937	51,799	50,094	67,584	65,087	56,250	54,399
	Dinagat Islands		1,084	993	583	529					1,084	993	885	803	1,084	993	885	803	1,084	993	885	803
	Surigao del Norte		7,815	7,450	5,858	4,064					7,815	7,450	7,477	5,188	7,815	7,450	7,477	5,188	7,815	7,450	7,477	5,188
	Surigao del Sur	70,487	16,538	15,907	10,796	9,687	53,949	16,148	23,847	27,465	32,686	32,055	28,722	25,772	40,385	39,754	35,620	31,961	44,003	43,372	38,862	34,870
ARMM		**174,683**	**48,772**	**46,324**	**29,052**	**27,919**	**130,822**	**39,159**	**57,827**	**66,600**	**87,931**	**85,483**	**73,988**	**71,333**	**106,599**	**104,151**	**90,160**	**86,896**	**115,372**	**112,924**	**97,761**	**94,210**
	Basilan		708	627	256	253					708	627	536	530	708	627	536	530	708	627	536	530
	Lanao del Sur	31,202	11,865	11,501	5,925	5,515	19,337	5,788	8,547	9,844	17,653	17,289	15,222	14,169	20,412	20,048	17,652	16,430	21,709	21,345	18,794	17,493
	Maguindanao	143,481	31,996	31,161	22,679	21,950	111,485	33,371	49,279	56,756	65,367	64,532	55,748	53,956	81,275	80,440	69,491	67,257	88,752	87,917	75,950	73,509
	Sulu		2,526	2,043	158	158					2,526	2,043	1,737	1,737	2,526	2,043	1,737	1,737	2,526	2,043	1,737	1,737
	Tawi-Tawi		1,677	992	34	43					1,677	992	745	942	1,677	992	745	942	1,677	992	745	942
	Total	**4,620,387**	**1,975,280**	**1,778,181**	**1,424,239**	**1,308,417**	**2,754,942**	**824,634**	**1,217,753**	**1,402,508**	**2,799,914**	**2,602,815**	**2,313,988**	**2,110,798**	**3,193,033**	**2,995,934**	**2,662,389**	**2,430,699**	**3,377,788**	**3,180,689**	**2,826,128**	**2,581,043**

Source: NIA Database - Inventory of National, Communal, Private & OGA Irrigation System (as of December 31, 2019 & 2020)
National Irrigation Master Plan 2020-2030
JICA Survey Team

Table F 15 Projected Irrigation Service Area in 2030, 2040 & 2050 Based on NIA's 2011-2020 Irrigation Programs

Region/	Potential	Year 2020				Remaining	Newly Developed ISA (ha) by			Year 2030				Year 2040				Year 2050			
Province	Irrigable	ISA	FUSA	Irrigated Area (ha)		Irrigable	Year	Year	Year	ISA	FUSA	Irrigated Area (ha)		ISA	FUSA	Irrigated Area (ha)		ISA	FUSA	Irrigated Area (ha)	
	Area (ha)	(ha)	(ha)	Wet	Dry	Area (ha)	2030	2040	2050	(ha)	(ha)	Wet	Dry	(ha)	(ha)	Wet	Dry	(ha)	(ha)	Wet	Dry
CAR	**111,297**	**102,492**	**96,744**	**73,345**	**70,097**	**11,108**	**3,610**	**7,220**	**10,830**	**106,102**	**100,354**	**87,327**	**83,275**	**109,712**	**103,964**	**90,500**	**86,239**	**113,322**	**107,574**	**93,673**	**89,203**
Abra	18,498	19,830	18,848	10,823	10,312	0				19,830	18,848	16,408	15,633	19,830	18,848	16,408	15,633	19,830	18,848	16,408	15,633
Apayao	10,863	10,619	10,083	8,336	8,264	244	79	159	238	10,698	10,162	8,675	8,600	10,778	10,242	8,743	8,668	10,857	10,321	8,811	8,735
Benguet	15,316	15,771	15,235	12,319	12,106	0				15,771	15,235	13,063	12,837	15,771	15,235	13,063	12,837	15,771	15,235	13,063	12,837
Ifugao	19,019	15,793	14,706	10,458	9,387	3,226	1,048	2,097	3,145	16,841	15,754	14,114	12,669	17,890	16,803	15,053	13,512	18,938	17,851	15,993	14,355
Kalinga	34,980	27,342	25,002	21,835	20,707	7,638	2,482	4,965	7,447	29,824	27,484	23,981	22,742	32,307	29,967	26,147	24,796	34,789	32,449	28,313	26,850
Mt. Province	12,621	13,137	12,870	9,574	9,321	0				13,137	12,870	11,086	10,793	13,137	12,870	11,086	10,793	13,137	12,870	11,086	10,793
I	**264,491**	**217,357**	**190,064**	**156,378**	**108,227**	**49,242**	**16,004**	**32,008**	**48,012**	**233,361**	**206,068**	**207,049**	**143,266**	**249,365**	**222,072**	**223,075**	**154,447**	**265,369**	**238,076**	**239,101**	**165,628**
Ilocos Norte	43,654	45,205	35,814	29,916	20,007	0				45,205	35,814	36,484	24,400	45,205	35,814	36,484	24,400	45,205	35,814	36,484	24,400
Ilocos Sur	29,487	24,647	22,722	19,455	11,561	4,840	1,573	3,146	4,719	26,220	24,295	25,907	15,395	27,793	25,868	27,584	16,391	29,366	27,441	29,261	17,388
La Union	16,170	16,727	14,945	12,775	9,778	0				16,727	14,945	14,391	11,015	16,727	14,945	14,391	11,015	16,727	14,945	14,391	11,015
Pangasinan	175,180	130,778	116,583	94,232	66,881	44,402	14,431	28,862	43,293	145,209	131,014	130,267	92,457	159,640	145,445	144,616	102,641	174,071	159,876	158,964	112,825
II	**457,247**	**302,143**	**279,513**	**247,944**	**246,141**	**155,114**	**50,413**	**100,825**	**151,238**	**352,556**	**329,926**	**281,584**	**279,290**	**402,968**	**380,338**	**324,785**	**321,790**	**453,381**	**430,751**	**367,987**	**364,291**
Batanes	349	359	354	9	0	0				359	354	354	248	359	354	354	248	359	354	354	248
Cagayan	146,739	109,310	104,146	86,769	89,980	37,429	12,164	24,329	36,493	121,474	116,310	97,068	100,660	133,639	128,475	107,220	111,188	145,803	140,639	117,372	121,715
Isabela	238,411	146,370	130,973	120,983	116,006	92,041	29,914	59,827	89,741	176,284	160,887	139,626	133,882	206,197	190,800	165,586	158,774	236,111	220,714	191,547	183,667
Nueva Vizcaya	48,281	33,372	32,190	30,227	30,227	14,909	4,845	9,691	14,536	38,217	37,035	31,480	31,480	43,063	41,881	35,599	35,599	47,908	46,726	39,717	39,717
Quirino	23,468	12,732	11,850	9,956	9,928	10,736	3,489	6,978	10,467	16,221	15,339	13,057	13,020	19,710	18,828	16,027	15,981	23,199	22,317	18,997	18,943
III	**483,830**	**346,852**	**322,891**	**267,080**	**252,208**	**139,343**	**45,287**	**90,574**	**135,861**	**392,139**	**368,178**	**326,233**	**299,669**	**437,426**	**413,465**	**367,615**	**335,275**	**482,713**	**458,752**	**408,997**	**370,881**
Aurora	16,407	9,770	9,677	8,608	8,555	6,637	2,157	4,314	6,471	11,927	11,834	10,090	10,028	14,084	13,991	11,929	11,856	16,241	16,148	13,768	13,684
Bataan	12,674	12,677	11,188	7,263	7,311	0				12,677	11,188	9,478	9,541	12,677	11,188	9,478	9,541	12,677	11,188	9,478	9,541
Bulacan	45,442	38,410	31,715	25,453	17,906	7,032	2,286	4,571	6,857	40,696	34,001	33,931	23,870	42,981	36,286	36,212	25,475	45,267	38,572	38,493	27,079
Nueva Ecija	205,790	159,796	155,649	150,000	147,404	45,994	14,948	29,897	44,845	174,744	170,597	146,273	143,742	189,693	185,546	159,090	156,337	204,641	200,494	171,907	168,932
Pampanga	53,413	55,774	49,551	34,225	37,193	0				55,774	49,551	40,368	43,869	55,774	49,551	40,368	43,869	55,774	49,551	40,368	43,869
Tarlac	112,921	52,029	48,658	32,361	28,473	60,892	19,790	39,580	59,371	71,819	68,448	61,899	54,463	91,609	88,238	79,796	70,209	111,400	108,029	97,693	85,956
Zambales	37,183	18,396	16,453	9,170	5,366	18,787	6,106	12,212	18,318	24,502	22,559	24,193	14,157	30,608	28,665	30,741	17,989	36,714	34,771	37,290	21,821
IV-A	**85,929**	**64,327**	**48,719**	**36,781**	**35,896**	**21,602**	**7,021**	**14,042**	**21,062**	**71,348**	**55,740**	**47,779**	**46,978**	**78,369**	**62,761**	**53,740**	**52,953**	**85,389**	**69,781**	**59,700**	**58,928**
Batangas	8,774	5,508	4,699	2,431	3,022	3,266	1,061	2,123	3,184	6,569	5,760	4,366	5,427	7,631	6,822	5,170	6,427	8,692	7,883	5,975	7,427
Cavite	18,598	15,256	7,203	3,376	3,221	3,342	1,086	2,172	3,258	16,342	8,289	7,211	6,880	17,428	9,375	8,156	7,782	18,514	10,461	9,101	8,683
Laguna	24,147	17,077	13,045	11,059	11,040	7,070	2,298	4,596	6,893	19,375	15,343	13,053	13,030	21,673	17,641	15,007	14,982	23,970	19,938	16,962	16,933
Quezon	25,873	20,411	18,384	15,428	14,167	5,462	1,775	3,550	5,326	22,186	20,159	17,865	16,405	23,961	21,934	19,439	17,850	25,737	23,710	21,012	19,294
Rizal	8,537	6,075	5,388	4,487	4,446	2,462	800	1,600	2,400	6,875	6,188	5,284	5,236	7,675	6,988	5,967	5,913	8,475	7,788	6,651	6,590

IV-B	**143,559**	**109,518**	**95,004**	**81,989**	**70,891**	**38,594**	**12,543**	**25,086**	**37,630**	**122,061**	**107,547**	**98,049**	**84,782**	**134,604**	**120,090**	**109,499**	**94,655**	**147,148**	**132,634**	**120,949**	**104,528**
Marinduque	2,190	2,083	2,023	1,670	1,641	107	35	70	104	2,118	2,058	1,764	1,734	2,153	2,093	1,794	1,763	2,187	2,127	1,824	1,792
Occidental Mindoro	54,056	33,920	30,777	27,011	22,616	20,136	6,544	13,089	19,633	40,464	37,321	34,533	28,914	47,009	43,866	40,588	33,984	53,553	50,410	46,643	39,054
Oriental Mindoro	53,395	37,154	30,914	25,876	22,512	16,241	5,278	10,557	15,835	42,432	36,192	32,902	28,625	47,711	41,471	37,701	32,800	52,989	46,749	42,499	36,974
Palawan	28,348	32,901	27,858	24,878	21,421	0				32,901	27,858	25,447	21,911	32,901	27,858	25,447	21,911	32,901	27,858	25,447	21,911
Romblon	5,570	3,460	3,432	2,554	2,701	2,110	686	1,372	2,057	4,146	4,118	3,402	3,598	4,832	4,804	3,969	4,197	5,517	5,489	4,535	4,796
V	**239,440**	**143,270**	**118,290**	**78,438**	**75,651**	**96,170**	**31,256**	**62,511**	**93,767**	**174,526**	**149,546**	**129,319**	**124,908**	**205,781**	**180,801**	**156,324**	**151,038**	**237,037**	**212,057**	**183,329**	**177,168**
Albay	54,435	31,749	30,429	23,045	21,651	22,686	7,373	14,746	22,119	39,122	37,802	33,134	31,130	46,495	45,175	39,596	37,201	53,868	52,548	46,059	43,273
Camarines Norte	22,555	9,695	9,236	6,725	6,710	12,860	4,180	8,359	12,539	13,875	13,416	11,416	11,390	18,054	17,595	14,973	14,939	22,234	21,775	18,529	18,488
Camarines Sur	123,700	77,665	55,218	34,313	32,880	46,035	14,962	29,923	44,885	92,627	70,180	60,925	58,380	107,588	85,141	73,913	70,827	122,550	100,103	86,902	83,273
Catanduanes	3,770	3,211	3,113	1,805	1,839	559	182	363	545	3,393	3,295	2,774	2,827	3,574	3,476	2,927	2,982	3,756	3,658	3,080	3,138
Masbate	19,880	6,848	6,582	3,456	3,519	13,032	4,235	8,471	12,706	11,083	10,817	9,112	9,278	15,319	15,053	12,679	12,911	19,554	19,288	16,247	16,543
Sorsogon	15,100	14,102	13,712	9,094	9,052	998	324	649	973	14,426	14,036	11,959	11,903	14,751	14,361	12,235	12,178	15,075	14,685	12,511	12,453
VI	**191,253**	**128,230**	**114,178**	**82,378**	**66,402**	**64,642**	**21,009**	**42,018**	**63,027**	**149,239**	**135,187**	**128,459**	**101,359**	**170,248**	**156,196**	**148,751**	**116,782**	**191,257**	**177,205**	**169,043**	**132,205**
Aklan	10,345	10,344	9,958	7,989	7,241	1	0	0	1	10,344	9,958	8,880	8,049	10,344	9,958	8,880	8,049	10,345	9,959	8,881	8,049
Antique	23,193	16,760	15,724	13,493	12,329	6,433	2,091	4,182	6,272	18,851	17,815	15,825	14,460	20,942	19,906	17,682	16,157	23,032	21,996	19,540	17,854
Capiz	13,857	15,355	12,402	8,462	7,155	0				15,355	12,402	11,424	9,659	15,355	12,402	11,424	9,659	15,355	12,402	11,424	9,659
Guimaras	1,044	1,165	955	695	553	0				1,165	955	904	719	1,165	955	904	719	1,165	955	904	719
Iloilo	70,384	45,076	37,158	28,412	22,652	25,308	8,225	16,450	24,676	53,301	45,383	42,927	34,224	61,526	53,608	50,707	40,427	69,752	61,834	58,487	46,630
Negros Occidental	72,430	39,530	37,981	23,327	16,472	32,900	10,693	21,386	32,078	50,223	48,674	48,499	34,247	60,916	59,367	59,153	41,770	71,608	70,059	69,807	49,293
VII	**53,674**	**50,357**	**44,078**	**35,906**	**32,898**	**4,751**	**1,544**	**3,088**	**4,632**	**51,901**	**45,622**	**40,587**	**36,971**	**53,445**	**47,166**	**41,959**	**38,223**	**54,989**	**48,710**	**43,332**	**39,475**
Bohol	29,232	25,254	23,904	18,677	16,736	3,978	1,293	2,586	3,879	26,547	25,197	22,591	20,243	27,840	26,490	23,750	21,282	29,133	27,783	24,910	22,321
Cebu	8,106	9,504	7,634	6,742	5,850	0				9,504	7,634	6,949	6,029	9,504	7,634	6,949	6,029	9,504	7,634	6,949	6,029
Negros Oriental	15,638	14,865	11,960	10,158	10,153	773	251	502	754	15,116	12,211	10,382	10,377	15,367	12,462	10,596	10,590	15,619	12,714	10,809	10,804
Siquijor	698	734	580	329	159	0				734	580	665	321	734	580	665	321	734	580	665	321
VIII	**91,983**	**71,851**	**70,446**	**50,180**	**50,912**	**20,691**	**6,725**	**13,449**	**20,174**	**78,576**	**77,171**	**65,225**	**65,965**	**85,300**	**83,895**	**70,929**	**71,693**	**92,025**	**90,620**	**76,634**	**77,421**
Biliran	4,114	4,182	3,780	1,986	2,086	0				4,182	3,780	3,134	3,292	4,182	3,780	3,134	3,292	4,182	3,780	3,134	3,292
Northern Leyte	55,379	41,716	41,312	33,696	34,481	13,663	4,441	8,881	13,322	46,157	45,753	38,442	39,337	50,597	50,193	42,173	43,155	55,038	54,634	45,904	46,973
Southern Leyte	6,902	7,165	7,077	5,424	5,361	0				7,165	7,077	6,051	5,980	7,165	7,077	6,051	5,980	7,165	7,077	6,051	5,980
Northern Samar	10,860	5,523	5,509	2,548	2,403	5,337	1,735	3,469	5,204	7,258	7,244	6,337	5,977	8,992	8,978	7,855	7,408	10,727	10,713	9,372	8,839
Western Samar	8,082	6,391	5,894	2,931	3,081	1,691	550	1,099	1,649	6,941	6,444	5,340	5,614	7,490	6,993	5,796	6,092	8,040	7,543	6,251	6,571
Eastern Samar	6,646	6,874	6,874	3,595	3,500	0				6,874	6,874	5,921	5,765	6,874	6,874	5,921	5,765	6,874	6,874	5,921	5,765
IX	**93,706**	**47,580**	**41,576**	**34,134**	**32,668**	**46,126**	**14,991**	**29,982**	**44,974**	**62,571**	**56,567**	**49,639**	**46,526**	**77,562**	**71,558**	**63,010**	**58,639**	**92,554**	**86,550**	**76,382**	**70,752**
Zamboanga del Norte	32,072	7,548	7,071	3,833	3,263	24,524	7,970	15,941	23,911	15,518	15,041	13,812	11,758	23,489	23,012	21,131	17,989	31,459	30,982	28,450	24,220
Zamboanga del Sur	46,221	29,248	24,444	21,772	21,262	16,973	5,516	11,033	16,549	34,764	29,960	25,768	25,164	40,281	35,477	30,512	29,798	45,797	40,993	35,257	34,431
Zamboanga Sibugay	15,413	10,784	10,061	8,529	8,143	4,629	1,504	3,009	4,513	12,288	11,565	10,058	9,603	13,793	13,070	11,367	10,852	15,297	14,574	12,675	12,101

X		**121,122**	**73,045**	**60,445**	**46,369**	**44,539**	**48,179**	**15,658**	**31,317**	**46,975**	**88,703**	**76,103**	**65,812**	**63,563**	**104,362**	**91,762**	**79,093**	**76,902**	**120,020**	**107,420**	**92,374**	**90,241**
	Bukidnon	81,984	41,727	33,394	27,235	27,012	40,257	13,084	26,167	39,251	54,811	46,478	39,668	39,344	67,894	59,561	50,835	50,419	80,978	72,645	62,002	61,495
	Camiguin	735	755	640	356	256	0				755	640	633	455	755	640	633	455	755	640	633	455
	Lanao del Norte	13,407	13,489	13,074	9,544	7,810	0				13,489	13,074	12,223	10,003	13,489	13,074	12,223	10,003	13,489	13,074	12,223	10,003
	Misamis Occidental	10,164	9,536	8,830	6,766	6,804	628	204	408	612	9,740	9,034	7,657	7,700	9,944	9,238	7,830	7,874	10,148	9,442	8,003	8,048
	Misamis Oriental	14,832	7,538	4,507	2,468	2,657	7,294	2,371	4,741	7,112	9,909	6,878	5,630	6,062	12,279	9,248	7,571	8,151	14,650	11,619	9,512	10,240
XI		**177,547**	**70,438**	**68,243**	**53,015**	**52,920**	**107,109**	**34,811**	**69,622**	**104,433**	**105,249**	**103,054**	**87,654**	**87,538**	**140,060**	**137,865**	**117,256**	**117,115**	**174,871**	**172,676**	**146,857**	**146,692**
	Compostela Valley	96,780	14,846	14,719	11,221	11,221	81,934	26,629	53,258	79,887	41,475	41,348	35,146	35,146	68,104	67,977	57,780	57,780	94,733	94,606	80,415	80,415
	Davao del Norte	30,234	29,312	27,781	21,738	21,738	922	300	599	899	29,612	28,081	23,869	23,869	29,911	28,380	24,123	24,123	30,211	28,680	24,378	24,378
	Davao del Sur	32,773	17,474	16,977	13,932	13,793	15,299	4,972	9,944	14,917	22,446	21,949	18,750	18,563	27,418	26,921	22,998	22,769	32,391	31,894	27,246	26,974
	Davao Oriental	17,760	8,806	8,766	6,124	6,168	8,954	2,910	5,820	8,730	11,716	11,676	9,889	9,960	14,626	14,586	12,354	12,443	17,536	17,496	14,819	14,925
XII		**293,226**	**127,690**	**117,204**	**106,443**	**99,815**	**165,643**	**53,835**	**107,670**	**161,505**	**181,525**	**171,039**	**149,275**	**141,491**	**235,360**	**224,874**	**195,462**	**186,824**	**289,195**	**278,709**	**241,648**	**232,157**
	Sarangani	6,964	7,071	6,348	5,731	5,337	0				7,071	6,348	5,588	5,204	7,071	6,348	5,588	5,204	7,071	6,348	5,588	5,204
	South Cotabato	96,772	36,077	31,092	28,219	27,880	60,695	19,726	39,452	59,179	55,803	50,818	43,456	42,934	75,529	70,544	60,325	59,600	95,256	90,271	77,194	76,266
	North Cotabato	140,699	45,407	44,212	41,151	40,971	95,292	30,970	61,941	92,911	76,377	75,182	64,045	63,765	107,348	106,153	90,428	90,032	138,318	137,123	116,810	116,299
	Sultan Kudarat	48,791	39,135	35,552	31,342	25,627	9,656	3,138	6,277	9,415	42,273	38,690	36,186	29,588	45,412	41,829	39,121	31,988	48,550	44,967	42,056	34,388
XIII (CARAGA)		**160,177**	**71,358**	**64,462**	**44,807**	**41,233**	**88,975**	**28,917**	**57,834**	**86,752**	**100,275**	**93,379**	**82,445**	**76,299**	**129,192**	**122,296**	**107,783**	**100,121**	**158,110**	**151,214**	**133,121**	**123,942**
	Agusan del Norte	50,515	17,433	14,121	10,219	10,173	33,082	10,752	21,503	32,255	28,185	24,873	21,190	21,094	38,936	35,624	30,349	30,212	49,688	46,376	39,509	39,331
	Agusan del Sur	55,794	28,488	25,991	17,351	16,780	27,306	8,875	17,749	26,624	37,363	34,866	30,132	29,140	46,237	43,740	37,801	36,557	55,112	52,615	45,471	43,974
	Dinagat Islands	928	1,084	993	583	529	0				1,084	993	885	803	1,084	993	885	803	1,084	993	885	803
	Surigao del Norte	13,070	7,815	7,450	5,858	4,064	5,255	1,708	3,416	5,124	9,523	9,158	9,192	6,377	11,231	10,866	10,906	7,566	12,939	12,574	12,620	8,755
	Surigao del Sur	39,870	16,538	15,907	10,796	9,687	23,332	7,583	15,166	22,749	24,121	23,490	21,048	18,885	31,704	31,073	27,842	24,982	39,287	38,656	34,637	31,079
ARMM		**160,150**	**48,772**	**46,324**	**29,052**	**27,919**	**111,924**	**36,376**	**72,752**	**109,128**	**85,148**	**82,700**	**71,678**	**68,912**	**121,524**	**119,076**	**103,293**	**99,136**	**157,900**	**155,452**	**134,908**	**129,360**
	Basilan	608	708	627	256	253	0				708	627	536	530	708	627	536	530	708	627	536	530
	Lanao del Sur	47,190	11,865	11,501	5,925	5,515	35,325	11,481	22,962	34,442	23,346	22,982	20,235	18,834	34,827	34,463	30,343	28,243	46,307	45,943	40,451	37,652
	Maguindanao	108,595	31,996	31,161	22,679	21,950	76,599	24,895	49,790	74,686	56,891	56,056	48,426	46,869	81,786	80,951	69,933	67,685	106,682	105,847	91,439	88,500
	Sulu	2,105	2,526	2,043	158	158	0				2,526	2,043	1,737	1,737	2,526	2,043	1,737	1,737	2,526	2,043	1,737	1,737
	Tawi-Tawi	1,652	1,677	992	34	43	0				1,677	992	745	942	1,677	992	745	942	1,677	992	745	942
	Total	**3,128,631**	**1,975,280**	**1,778,181**	**1,424,239**	**1,308,417**	**1,169,213**	**380,000**	**760,000**	**1,140,000**	**2,355,280**	**2,158,181**	**1,918,116**	**1,750,792**	**2,735,280**	**2,538,181**	**2,253,076**	**2,061,832**	**3,115,280**	**2,918,181**	**2,588,035**	**2,372,872**

Source: NIA Database - Inventory of National, Communal, Private & OGA Irrigation System (as of December 31, 2019 & 2020)
JICA Survey Team

Table F 16 Ten-Days Diversion Water Requirements by Provinces: Present Operation

Region/	Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
Province	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
CAR																																				
Abra	1.76	1.77	1.69	1.70	1.64	1.54	1.03	0.20								1.22	2.34	1.28	0.37	0.20	0.40	0.35	0.27	0.22	0.35	1.03	1.44	0.24	0.00		1.08	2.13	1.70	1.39	0.19	1.62
Apayao	1.04	1.06	1.04	1.34	1.30	1.21	0.76	0.58	0.10							0.00	1.52	1.67	1.08	0.86	0.68	0.50	0.64	0.12	0.18	0.47	1.37	0.04	0.42	0.05	0.66	0.00	0.00	0.00	0.86	0.91
Benguet	1.29	1.30	1.25	1.23	1.19	1.12	0.72	0.14				0.19	1.70	0.36	0.00	0.01	0.17	0.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00						1.02	1.95	0.00	1.01	1.08	0.42
Ifugao			0.97	1.38	1.16	0.87	1.03	1.11	0.86	1.51	0.86	0.80	1.22	0.67	0.18	0.00					0.11	1.81	0.00	0.00	0.00	0.00	0.36	0.00	0.88	0.74	0.00	0.29	0.00	0.00		
Kalinga	1.51	1.52	1.46	1.56	1.51	1.42	0.91	0.18								0.56	2.03	0.67	0.29	0.26	0.74	0.31	0.72	0.34	0.62	0.00	0.72	0.76	0.00		1.06	2.09	1.65	1.26	1.36	1.45
Mt. Province	1.05	1.02	0.00	0.49	0.04								1.58	1.28	0.03	0.63	0.16	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.71	1.92	0.00	0.00	0.00	0.60	0.04	0.33	1.01
I																																				
Ilocos Norte	1.60	1.63	1.60	1.70	1.51	1.08	0.69	0.12									0.55	1.46	1.47	1.68	0.72	0.67	0.68	1.13	0.09	0.72	0.20	0.00	0.00	0.00	0.91	1.68	0.74	1.66	0.17	1.47
Ilocos Sur	1.59	1.62	1.59	1.68	1.49	1.06	0.68	0.12									0.00	0.88	0.44	1.14	0.41	0.69	0.69	1.54	0.70	0.52	1.04	0.00	0.52	0.06	0.00	1.67	2.09	1.65	1.35	1.46
La Union	1.57	1.60	1.57	1.66	1.48	1.05	0.67	0.12									0.05	0.61	1.40	0.67	0.60	0.33	0.77	0.54	0.77	0.04	0.83	1.06	0.00	0.00	0.91	1.66	2.08	1.64	1.34	1.45
Pangasinan	1.60	1.65	1.65	1.77	1.64	1.31	1.08	0.67	0.00	0.00							0.00	0.00	0.41	0.38	0.67	0.91	0.68	0.62	0.69	1.11	0.47	0.98	0.00	0.73	1.00	1.28	1.42	1.72	1.88	1.44
II																																				
Batanes	1.37	1.43	1.69	1.76	1.70	1.59	1.10	0.21								0.38	2.80	1.84	0.91	1.95	2.10	1.57	1.61	0.97	1.35	1.87	1.01	0.89	0.00		0.47	2.20	1.80	0.10	1.52	1.63
Cagayan	1.21	1.48	1.79	1.89	1.49	1.69	1.44	0.77	0.00							0.72	2.06	2.08	1.67	1.65	1.30	1.13	1.25	0.80	1.35	1.71	0.60	0.00	0.00	0.00	0.00	1.68	2.16	0.95	0.45	1.32
Isabela	1.69	1.21	1.77	1.90	1.85	1.74	1.62	1.17	0.00	0.25	0.00					0.02	1.37	1.17	1.42	1.23	0.54	1.26	0.80	0.65	0.36	0.00	1.27	0.00	0.00	0.00	0.69	0.00	0.21	0.67	0.27	1.53
Nueva Vizcaya	1.69	1.72	1.69	1.79	1.73	1.61	1.37	0.73	0.13							0.28	2.01	2.18	0.27	0.48	0.80	0.49	0.22	0.73	0.48	0.37	0.00	0.00	0.50	0.00	0.00	1.65	2.10	1.05	0.00	0.19
Quirino	1.37	1.78	1.36	1.85	1.79	1.65	1.41	0.75	0.00							0.36	2.04	1.73	1.40	0.46	0.54	0.71	0.78	0.50	0.66	0.68	0.00	0.47	0.00	0.00	0.86	0.71	2.14	1.75	0.66	1.59
III																																				
Aurora	0.59	0.51	0.49	0.53	0.76	0.66	0.90	1.26	0.81	0.72	0.00					0.39	1.64	0.95	0.31	1.35	0.48	0.40	1.01	0.95	0.69	0.00	0.19	0.00	0.00					0.91	1.71	0.50
Bataan	2.14	2.18	2.14	2.08	2.00	1.85	1.37	0.73	0.13								0.00	0.65	1.25	1.39	1.16	1.10	1.23	1.89	1.88	1.09	1.10	0.83	1.03	0.00	0.28	1.43	1.51	2.12	1.84	1.59
Bulacan	1.53	1.56	1.53	1.61	1.00	1.44	1.25	0.67	0.00								0.41	0.83	0.44	0.65	0.00	0.47	0.66	0.10	0.83	1.94	0.63	0.35	0.00	0.10	0.00	0.47	1.83	0.57	0.63	1.31
Nueva Ecija	0.86	1.50	1.55	1.35	1.70	1.64	1.63	0.80	0.95	0.24	0.36	0.07			0.13	0.03	1.04	0.13	0.69	1.09	0.14	0.49	0.97	0.77	0.13	0.47	0.21	1.10	0.14	0.00	0.71	0.94	1.03	1.29	1.47	1.13
Pampanga	1.75	1.79	1.75	1.99	1.92	1.77	1.32	0.70	0.12								0.12	0.83	1.36	0.68	0.50	0.26	0.00	0.10	0.96	0.40	0.13	0.59	0.29	0.47	0.77	1.48	1.92	1.65	1.42	1.54
Tarlac	1.66	1.69	1.66	1.85	1.79	1.65	1.26	0.67	0.12								0.13	1.12	1.29	1.23	0.22	0.00	0.36	1.15	1.00	0.40	0.04	0.09	0.40	0.12	0.55	1.69	2.13	1.65	1.34	1.07
Zambales	0.81	0.82	0.81	0.60	0.59	0.57	0.84	0.45	0.00								0.00	1.13	1.83	1.30	1.05	1.83	1.35	0.99	1.61	1.47	0.85	1.52	0.98	0.00	0.00	1.43	2.38	1.89	2.02	2.22
IV-A																																				
Batangas	0.97	0.98	1.44	1.62	1.56	1.45	1.20	0.64	0.11				0.30	1.57	1.82	0.76	0.36	1.07	0.00	1.29	0.43	0.46	0.16	0.00	0.00	0.00	0.00				0.00	0.98	1.07	1.31	0.02	1.33
Cavite	1.44	1.46	1.44	1.62	1.56	1.45	1.20	0.64	0.11				0.75	1.57	1.39	0.00	0.00	0.45	0.11	0.38	1.07	0.30	0.92	1.50	0.29	0.00	0.00				0.00	0.04	0.39	1.31	1.23	0.41
Laguna	1.44	1.46	1.44	1.62	1.56	1.45	1.20	0.64	0.00				0.75	0.71	1.15	0.59	1.11	0.39	0.51	0.65	0.41	0.62	0.44	0.00	0.00	0.00	0.00				0.00	0.00	0.81	0.11	0.15	1.33
Quezon	0.00	1.25	0.90	1.41	0.80	1.27	0.68	0.00	0.10				0.16	0.97	1.56	0.72	0.86	0.02	0.00	0.53	0.31	1.02	1.63	0.23	0.00	0.00	0.00				0.41	0.21	0.72	0.17	0.56	0.00
Rizal	1.24	0.00	0.68	1.31	1.27	1.19	0.97	0.00	0.09				0.00	0.34	1.29	0.53	0.00	0.00	0.21	0.51	0.33	0.05	0.08	0.00	0.00	0.00	0.00				0.00	0.85	0.43	1.09	0.40	1.06
IV-B																																				
Marinduque	0.98	0.73	1.83	2.06	1.52	1.98	2.18	2.10	1.94	1.15	0.00		1.22	3.14	2.34	0.76	0.91	1.23	0.59	1.95	1.10	1.30	1.11	0.56	0.00	0.00								1.31	1.12	1.94
Occidental Mindoro	1.63	1.66	1.63	1.72	1.66	1.53	1.30	0.69	0.12								0.00	0.87	1.62	0.55	0.67	0.00	0.06	0.70	0.79	0.38	0.12	1.10	0.00	0.22	0.33	0.33	2.11	1.67	0.88	1.20
Oriental Mindoro	1.31	1.41	1.51	1.29	1.30	1.25	1.19	0.77	0.41	0.73	0.11		1.20	1.23	0.85	1.10	1.12	1.61	1.45	2.16	1.67	0.89	0.59	0.89	0.00	0.00								0.73	2.56	2.17
Palawan	1.59	1.72	1.85	2.08	2.09	2.00	2.19	2.11	1.96	1.15	0.18		1.62	2.17	1.47	0.96	0.99	0.11	0.64	0.45	0.73	0.95	0.62	0.04	0.00	0.00								1.32	1.67	1.24
Romblon	1.24	1.71	1.84	2.07	2.08	1.99	2.18	2.10	1.95	1.15	0.18		1.62	3.14	2.34	1.37	1.88	0.89	0.95	0.88	0.52	0.20	0.75	0.79	0.08	0.00								0.94	2.20	1.94

V																																						
	Albay	1.57	0.42	1.44	1.31	1.44	1.51	2.17	1.96	0.16	0.17			0.54	2.09	1.41	2.01	0.75	1.52	1.06	0.64	0.52	1.08	0.32	0.62	0.32	0.00	0.00							0.00	2.55	0.47	
	Camarines Norte	1.56	0.94	1.39	2.05	0.99	1.97	2.17	1.56	0.11	0.00			1.08	1.43	1.69	0.35	0.52	0.94	0.93	0.92	0.43	1.19	0.40	0.49	0.00	0.00	0.00							0.43	1.13	1.50	
	Camarines Sur	1.19	1.72	1.92	2.01	2.37	2.26	2.16	1.96	1.12	0.16			0.78	1.51	1.43	1.65	1.50	1.45	0.72	0.23	0.77	1.51	0.34	0.19	0.00	0.00	0.00	0.00						0.01	1.32	0.88	
	Catanduanes	1.57	0.38	1.83	1.57	0.93	1.98	2.17	0.77	1.13	0.17			0.00	2.09	1.98	1.60	1.15	1.59	1.36	0.31	0.87	1.14	0.61	1.59	0.46	0.00	0.04							0.10	1.66	0.85	
	Masbate	1.04	1.72	1.26	2.07	2.09	1.02	2.18	0.45	1.01	0.16			0.71	0.82	2.04	2.01	0.37	0.93	0.74	1.12	0.80	0.60	1.24	0.82	0.16	0.00	0.04							0.42	1.47	1.94	
	Sorsogon	0.02	1.71	1.51	1.61	2.07	0.84	2.17	0.70	1.13	0.17			0.10	0.69	2.22	1.49	0.62	0.72	0.35	0.96	0.90	0.57	1.34	0.51	0.01	0.00	0.04							0.34	1.76	1.94	
VI																																						
	Aklan	1.47	1.43	1.28	0.86	0.40	0.04							0.51	2.09	1.48	0.87	0.81	0.00	0.63	0.19	0.51	0.23	0.83	0.25	0.32	0.00	0.04	0.00	0.46	0.97	0.18	0.24	0.53	0.47	1.45	0.37	
	Antique	1.85	1.71	0.93	0.88	0.50	0.00	0.00						0.00	0.00	1.46	0.69	1.40	0.00	0.56	0.68	0.62	0.69	0.55	0.00	0.00	0.00	0.00	0.00	0.00	0.83	0.61	0.64	1.27	1.79	1.88	1.88	
	Capiz	1.63	1.57	0.49	0.92	0.42	0.00							1.14	0.77	1.83	0.70	0.00	0.00	0.15	0.78	0.81	1.16	0.00	0.49	0.00	0.00	0.00	0.00	0.21	1.25	0.50	0.65	1.58	0.87	1.25	1.39	
	Guimaras	1.89	1.22	1.62	1.08	0.50	0.00							0.31	0.87	2.23	1.26	0.82	0.38	0.39	0.57	0.81	1.07	1.01	1.24	0.00	0.00	0.00	0.00	0.00	1.54	1.07	0.89	0.21	1.94	0.94	1.94	
	Iloilo	1.70	1.65	0.87	1.14	0.79	0.48	0.18	0.00					0.73	0.09	1.03	0.64	0.45	0.25	0.47	0.12	1.04	1.50	0.00	0.74	0.24	0.00	0.00	0.00	0.00	1.22	0.77	1.15	1.50	1.05	1.72	1.72	
	Negros Occidental	2.14	2.63	2.35	1.57	0.24	0.08							0.37	2.42	2.24	2.06	1.03	2.00	1.55	1.73	2.04	2.19	1.39	1.40	0.38	0.00	0.00	0.35	0.95	1.25	1.01	2.45	2.64	2.77	2.66	1.90	
VII																																						
	Bohol	1.08	0.95	0.26	0.36	0.62	0.33	0.71	0.00	0.00					0.00	0.52	0.00	0.00	1.20	0.97	0.52	1.07	1.32	0.34	0.99	0.33	0.09	0.85	0.00	0.00	0.93	0.91	1.12	1.33	0.88	1.65	1.36	
	Cebu	1.99	1.95	1.05	1.39	0.81	0.00	0.00								0.70	0.67	1.86	1.52	1.73	0.47	0.79	0.72	1.46	1.59	1.65	0.00	0.00	0.00		0.59	1.79	1.68	1.14	0.77	1.78	1.47	
	Negros Oriental	1.89	2.23	2.01	1.43	0.66	0.07							1.16	1.63	3.10	2.48	1.25	1.17	1.26	1.64	1.17	1.10	1.60	0.98	0.11	0.00	0.00	0.17	1.01	1.78	2.20	0.92	1.76	1.14	0.80	1.15	
	Siquijor	1.38	1.19	1.28	1.24	1.12	0.58	0.11								1.14	2.10	1.51	0.60	0.67	1.22	1.42	1.92	1.10	1.83	1.56	0.49	0.05	0.00		0.94	1.16	1.44	0.85	0.19	1.69	1.78	
VIII																																						
	Biliran	0.68	0.94	1.87	1.96	1.27	1.75	1.48	0.33	0.00						0.25	1.53	1.21	1.49	1.16	1.79	1.09	0.86	0.82	0.86	1.24	0.22	0.21	0.00	0.00		0.00	1.18	2.19	1.83	1.56	0.01	
	Northern Leyte	1.86	1.90	0.80	1.05	0.36	0.44	0.00	0.00	0.00						0.50	0.47	1.94	1.47	1.64	0.37	0.43	0.76	1.43	1.47	1.71	0.02	0.60	0.00	0.00		0.87	0.26	0.80	0.56	1.55	0.67	
	Southern Leyte	1.86	1.90	0.82	0.85	0.91	0.00	0.00	0.00	0.14	1.12	2.20	1.68	1.49	0.85	1.52	0.46	1.48	2.05	1.84	0.76	0.40	0.10	0.02	0.00							0.87	0.85	0.97	0.39	1.55	0.81	
	Northern Samar	1.06	1.30	0.99	1.96	1.90	1.76	1.04	0.79	0.14	1.12	2.20	2.87	2.21	1.86	1.65	2.06	1.75	1.06	0.73	0.06	0.09	0.07	0.01	0.00							0.00	0.62	0.45	0.78	0.00	0.77	
	Weatern Samar	0.06	1.90	0.69	1.96	1.89	1.75	0.82	0.43	0.14	1.12	2.20	2.39	2.20	0.21	1.08	1.08	0.46	0.92	0.50	0.60	0.92	0.00	0.00	0.00							0.00	0.57	1.51	0.41	1.01	0.71	
	Eastern Samar	0.80	1.90	1.08	1.96	1.38	1.75	0.66	0.43	0.14	1.12	2.19	1.98	1.75	0.88	1.09	1.39	0.65	1.07	0.81	0.78	0.79	0.31	0.00	0.00							0.00	0.44	1.34	0.34	0.80	0.74	
IX																																						
	Zamboanga del Norte	1.21	1.78	1.04	0.96	0.94	0.58	0.24	0.00		0.74	0.96	1.00	1.14	1.75	0.88	1.09	0.87	0.99	0.72	0.89	0.66	0.63	0.00	0.00	0.00			0.00	0.00	0.47	0.45	0.89	0.03	0.21	1.77	0.89	
	Zamboanga del Sur	2.16	2.10	1.92	1.50	1.05	0.64	0.28	0.00		0.79	1.54	1.62	1.82	1.73	0.69	0.58	0.53	0.37	0.63	0.01	0.50	0.09	0.00	0.00	0.00			0.00	0.14	0.64	0.54	1.08	0.49	0.71	0.85	0.88	
	Zamboanga Sibugay	1.16	1.38	1.02	1.37	0.96	0.59	0.25	0.00		0.74	0.61	0.60	0.64	1.19	0.97	1.09	0.76	0.92	0.50	0.77	0.56	0.71	0.00	0.00	0.00			0.02	0.00	0.52	0.75	0.97	0.13	0.50	1.80	1.06	
X																																						
	Bukidnon	1.49	1.53	0.95	0.99	1.32	0.55	0.00	0.03	0.00	0.11			0.00	0.00	0.00	0.41	0.01	0.01	0.00	0.25	0.11	0.50	0.84	0.42	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.34	0.59	1.25	0.31	
	Camiguin	0.77	0.81	0.68	0.82	1.88	1.74	1.47	0.78	0.14						1.11	1.41	1.48	0.68	0.95	1.78	0.96	1.27	1.28	1.47	1.36	1.12	1.04	0.00	0.00		0.00	1.65	1.09	1.83	0.53	1.68	
	Lanao del Norte	1.25	0.91	0.84	1.01	0.64	1.09	0.00	1.20	0.59	0.00	0.00				0.35	0.40	0.28	1.18	0.48	0.37	0.77	1.36	0.89	0.94	0.16	0.24	0.00	0.00	0.00	0.00	0.16	0.00	1.45	1.36	1.49	0.76	
	Misamis Occidental	1.85	1.88	1.85	1.94	1.87	1.31	1.46	0.78	0.13						0.40	1.20	1.42	0.64	0.66	0.54	0.37	0.80	0.49	1.09	0.99	0.94	0.00	0.00	0.00		0.00	0.14	1.01	0.37	0.10	0.16	
	Misamis Oriental	1.49	0.94	0.94	0.69	1.03	1.06	1.46	0.00	0.00						0.41	0.51	1.49	1.07	0.86	0.71	1.32	1.16	0.42	1.14	0.76	0.80	0.69	0.00	0.00		0.50	1.27	1.77	0.91	0.96	1.67	
XI																																						
	Compostela Valley	0.78	0.75	1.80	0.00	1.82	0.23	0.44	0.00	0.00						0.03	0.95	1.91	0.90	0.61	0.81	0.42	0.90	0.75	1.02	1.05	0.85	0.48	0.00	0.00		0.00	0.33	1.04	1.79	0.45	0.48	
	Davao del Norte	1.26	1.45	1.63	1.01	1.58	1.96	1.85	1.11	0.00						0.26	0.92	0.20	0.00	0.24	0.47	0.52	0.61	0.95	0.47	0.72	0.01	0.00	0.00				0.13	1.13	0.79	1.64	1.88	
	Davao del Sur	0.72	1.88	1.85	1.57	0.63	1.74	0.85	0.39	0.00						0.39	1.12	1.32	1.00	1.27	0.92	1.52	0.53	1.85	0.77	0.26	0.65	0.00	0.00	0.00		0.16	0.98	1.71	1.82	1.54	0.82	
	Davao Oriental	1.84	1.88	1.84	1.93	1.23	1.73	1.45	0.00	0.13						0.43	1.34	1.22	0.80	0.62	0.98	0.96	0.98	1.25	1.33	0.39	0.12	0.00	0.00	0.00		0.00	0.59	0.67	0.21	0.53	0.76	

XII																																					
Sarangani	1.16	0.00	0.13	0.00	0.00		0.00	1.07	1.40	0.85	1.66	2.51	1.39	0.98	2.01	1.95	1.16	0.56	0.00	0.00	0.11	0.24	0.00		0.00	0.18	0.65	0.69	1.64	1.02	1.09	0.97	0.79	1.36	1.09	0.23	
South Cotabato	1.41	1.02	0.00	0.29	0.02		0.53	0.23	1.36	0.80	2.02	2.37	1.74	1.54	1.15	1.08	1.22	0.82	0.06	0.00	0.00	0.00	0.00		0.00	0.55	1.35	0.56	1.18	1.28	1.81	1.55	1.61	1.72	1.50	1.80	
North Cotabato	1.56	0.55	0.00	0.00	0.00		0.59	0.59	0.82	1.62	2.25	1.85	1.58	1.21	1.36	0.83	0.82	1.43	0.62	0.00	0.14	0.00	0.00		0.00	0.49	0.95	0.46	1.43	1.41	1.67	1.47	1.74	1.31	1.70	1.99	
Sultan Kudarat	1.17	0.12	0.00	0.00	0.00		0.00	1.07	1.40	0.44	1.61	2.53	1.28	0.57	2.02	1.32	0.65	0.05	0.00	0.00	0.00	0.24	0.00		0.00	0.00	0.24	0.51	1.27	0.67	0.80	0.37	1.68	1.39	1.68	0.32	
XIII (CARAGA)																																					
Agusan del Norte	1.16	1.65	1.90	1.96	1.88	1.82	1.46	1.17	0.20						0.87	2.51	1.71	0.39	0.55	0.63	0.21	1.04	0.48	0.92	0.98	0.27	0.00	0.00				0.00	1.04	0.43	0.12	0.35	
Agusan del Sur	1.82	1.89	1.90	1.96	1.89	1.82	1.95	1.17	0.00						0.24	1.98	0.85	0.57	0.05	0.64	0.87	0.58	0.85	0.61	0.54	0.25	0.00	0.00				0.00	1.42	0.76	0.21	0.24	
Dinagat Islands	0.83	1.90	1.02	1.96	1.23	1.75	0.59	0.78	0.14						0.76	1.65	1.16	1.08	1.19	0.17	1.89	1.22	1.27	1.85	1.72	0.23	0.18	0.00	0.00		0.00	0.17	0.78	0.89	1.55	0.21	
Surigao del Norte	0.80	1.90	0.89	1.50	1.11	1.75	0.96	0.23	0.00						0.62	1.63	0.99	0.87	1.64	0.18	1.46	1.39	1.24	1.85	1.33	0.13	0.13	0.00	0.00		0.00	0.00	1.13	0.59	0.89	0.79	
Surigao del Sur	0.78	0.58	0.68	0.25	1.53	0.00	1.12	0.00	0.00						0.00	0.93	1.65	0.47	0.39	0.80	1.04	0.79	1.88	0.34	0.83	1.18	0.61	0.00	0.00		0.87	1.15	1.21	0.47	0.37	1.67	
ARMM																																					
Basilan	1.88	1.92	1.88	1.98	1.91	1.77	1.49	0.79	0.14						0.51	2.03	2.10	0.89	0.88	0.69	0.71	1.28	1.51	1.05	0.74	0.04	0.03	0.00	0.00		0.33	0.85	0.75	1.30	1.15	0.37	
Lanao del Sur	1.13	0.25	0.00	0.00	0.00		0.55	0.37	0.08	0.11	1.30	1.62	1.28	0.63	0.78	0.05	0.60	0.38	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.18	0.00	0.56	0.47	0.57	0.27	0.56	0.70	0.95	1.38	
Maguindanao	1.19	0.39	0.00	0.00	0.00		0.55	0.56	0.42	0.67	1.67	1.87	1.36	1.13	0.69	0.42	0.41	0.85	0.57	0.00	0.11	0.00	0.00		0.00	0.36	0.73	0.00	1.04	0.83	1.13	0.74	0.88	0.61	1.01	1.44	
Sulu	1.88	1.92	1.88	1.35	1.91	1.76	1.15	0.79	0.14						0.65	1.18	2.58	1.08	0.73	1.78	0.99	1.11	1.88	1.33	1.71	1.53	1.04	0.00	0.00		0.87	0.65	1.16	1.84	1.59	0.30	
Tawi-Tawi	1.46	1.92	1.88	1.52	1.91	1.18	0.86	0.79	0.14						0.80	1.65	2.58	1.76	0.36	1.78	1.24	1.27	1.89	1.84	1.72	1.53	1.04	0.12	0.00		0.87	0.45	1.67	1.32	1.59	0.47	

Source: JICA Survey Team

Table F 17 Ten-Days Diversion Water Requirements by Provinces: Proposed for Future Operation

(Unit: litter/second/ha)

Region/	Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec		
Province	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
CAR																																				
Abra	1.56	1.59	1.56	1.66	1.60	1.48	1.26	0.67	0.00							0.59	1.14	1.52	0.82	0.19	0.38	0.53	0.49	0.47	0.55	1.14	1.49	0.57	0.00	0.00	0.68	1.34	1.76	1.51	0.10	1.42
Apayao	1.71	1.74	1.71	1.81	1.75	1.62	1.05	0.74	0.13							0.00	1.41	1.57	1.20	1.01	0.88	0.87	1.00	0.53	0.48	0.73	1.50	0.32	0.51	0.06	0.76	0.00	0.00	0.00	1.44	1.56
Benguet	1.54	1.57	1.54	1.63	1.58	1.46	1.24	0.66	0.11			0.00	1.05	1.12	0.69	0.57	0.80	0.61	0.59	0.38	0.22	0.46	0.36	0.00	0.00	0.00					0.67	1.33	0.30	1.50	1.30	0.74
Ifugao			0.79	1.09	2.03	1.69	1.74	1.90	1.72	2.24	1.58	1.52	1.81	1.13	0.70	0.00	0.00				0.00	1.10	0.71	0.27	0.08	0.00	0.53	0.03	1.12	0.99	0.14	0.70	0.00	0.00	0.00	
Kalinga	1.72	1.75	1.72	1.83	1.77	1.64	1.40	0.74	0.13							0.01	0.92	1.05	0.79	0.28	0.73	0.43	0.82	0.52	0.74	0.00	0.81	1.06	0.00	0.00	0.76	1.51	1.98	1.69	1.46	1.58
Mt. Province	1.35	1.30	0.17	0.91	0.52	0.04							1.04	0.61	1.22	1.48	0.75	1.05	0.75	0.00	0.12	0.08	0.55	0.44	0.15	0.00	0.00	0.37	1.47	0.72	0.03	0.00	0.85	0.41	0.70	1.33
I																																				
Ilocos Norte	1.60	1.63	1.60	1.70	1.51	1.08	0.69	0.12									0.55	1.46	1.47	1.68	0.72	0.67	0.68	1.13	0.09	0.72	0.20	0.00	0.00	0.00	0.91	1.68	0.74	1.66	0.17	1.47
Ilocos Sur	1.59	1.62	1.59	1.68	1.49	1.06	0.68	0.12									0.00	0.88	0.44	1.14	0.41	0.69	0.69	1.54	0.70	0.52	1.04	0.00	0.52	0.06	0.00	1.67	2.09	1.65	1.35	1.46
La Union	1.57	1.60	1.57	1.66	1.48	1.05	0.67	0.12									0.05	0.61	1.40	0.67	0.60	0.33	0.77	0.54	0.77	0.04	0.83	1.06	0.00	0.00	0.91	1.66	2.08	1.64	1.34	1.45
Pangasinan	1.60	1.65	1.65	1.77	1.64	1.31	1.08	0.67	0.00	0.00							0.00	0.00	0.41	0.38	0.67	0.91	0.68	0.62	0.69	1.11	0.47	0.98	0.00	0.73	1.00	1.28	1.42	1.72	1.88	1.44
II																																				
Batanes	1.37	1.43	1.69	1.76	1.70	1.59	1.10	0.21								0.38	2.80	1.84	0.91	1.95	2.10	1.57	1.61	0.97	1.35	1.87	1.01	0.89	0.00		0.47	2.20	1.80	0.10	1.52	1.63
Cagayan	1.21	1.48	1.79	1.89	1.49	1.69	1.44	0.77	0.00							0.72	2.06	2.08	1.67	1.65	1.30	1.13	1.25	0.80	1.35	1.71	0.60	0.00	0.00	0.00	0.00	1.68	2.16	0.95	0.45	1.32
Isabela	1.69	1.21	1.77	1.90	1.85	1.74	1.62	1.17	0.00	0.25	0.00					0.02	1.37	1.17	1.42	1.23	0.54	1.26	0.80	0.65	0.36	0.00	1.27	0.00	0.00	0.00	0.69	0.00	0.21	0.67	0.27	1.53
Nueva Vizcaya	1.69	1.72	1.69	1.79	1.73	1.61	1.37	0.73	0.13							0.28	2.01	2.18	0.27	0.48	0.80	0.49	0.22	0.73	0.48	0.37	0.00	0.00	0.50	0.00	0.00	1.65	2.10	1.05	0.00	0.19
Quirino	1.37	1.78	1.36	1.85	1.79	1.65	1.41	0.75	0.00							0.36	2.04	1.73	1.40	0.46	0.54	0.71	0.78	0.50	0.66	0.68	0.00	0.47	0.00	0.00	0.86	0.71	2.14	1.75	0.66	1.59
III																																				
Aurora	1.29	0.98	1.02	1.09	1.38	1.29	1.67	2.05	1.47	1.43	0.00	0.00				0.00	0.99	1.60	0.93	1.61	0.68	0.73	1.43	1.39	1.11	0.06	0.51	0.00	0.03	0.00				0.76	1.51	1.19
Bataan	1.65	1.68	1.65	1.74	1.68	1.55	1.32	0.70	0.12								0.00	0.51	0.90	0.97	0.72	0.60	0.69	1.34	1.28	0.51	0.55	0.39	0.72	0.00	0.20	1.21	1.14	1.68	1.37	1.07
Bulacan	1.63	1.66	1.63	1.72	1.11	1.54	1.31	0.70	0.00								0.47	1.00	0.59	0.83	0.00	0.63	0.83	0.28	0.63	1.76	0.45	0.34	0.00	0.10	0.00	0.52	1.91	0.71	0.77	1.47
Nueva Ecija	0.86	1.50	1.55	1.35	1.70	1.64	1.63	0.80	0.95	0.24	0.36	0.07			0.13	0.03	1.04	0.13	0.69	1.09	0.14	0.49	0.97	0.77	0.13	0.47	0.21	1.10	0.14	0.00	0.71	0.94	1.03	1.29	1.47	1.13
Pampanga	1.63	1.66	1.63	1.73	1.67	1.55	1.32	0.70	0.12								0.15	0.90	1.48	0.83	0.66	0.55	0.12	0.42	1.15	0.58	0.30	0.77	0.42	0.53	0.77	1.48	1.91	1.60	1.36	1.48
Tarlac	1.64	1.67	1.64	1.73	1.68	1.55	1.32	0.70	0.12								0.15	1.18	1.37	1.32	0.32	0.00	0.62	1.42	1.06	0.46	0.10	0.21	0.48	0.16	0.54	1.68	2.11	1.67	1.36	1.09
Zambales	1.61	1.64	1.61	1.70	1.64	1.52	1.29	0.69	0.00								0.00	0.88	1.30	0.66	0.37	1.05	0.51	0.13	0.71	0.61	0.02	0.84	0.51	0.00	0.00	1.11	1.84	1.25	1.34	1.45
IV-A																																				
Batangas	1.21	1.23	1.65	1.74	1.68	1.55	1.32	0.70	0.12				0.31	1.53	1.84	1.02	0.68	1.36	0.05	1.48	0.70	0.70	0.42	0.06	0.00	0.00	0.00				0.00	0.98	1.11	1.43	0.25	1.49
Cavite	1.64	1.67	1.64	1.73	1.67	1.54	1.31	0.70	0.12				0.71	1.53	1.45	0.24	0.01	0.80	0.40	0.65	1.26	0.55	1.08	1.57	0.42	0.00	0.00				0.00	0.11	0.48	1.43	1.36	0.63
Laguna	1.83	1.86	1.83	1.93	1.86	1.73	1.47	0.78	0.00				0.71	0.75	1.23	0.86	1.35	0.75	0.76	0.89	0.67	0.84	0.66	0.05	0.00	0.00	0.00				0.00	0.00	0.97	0.34	0.40	1.66
Quezon	0.12	1.87	1.50	1.94	1.28	1.73	1.10	0.06	0.14				0.19	1.02	1.64	1.02	1.17	0.47	0.23	0.83	0.62	1.25	1.78	0.48	0.00	0.00	0.00				0.48	0.39	1.03	0.57	1.01	0.23
Rizal	1.61	0.41	1.10	1.70	1.64	1.52	1.29	0.00	0.12				0.00	0.54	1.55	0.92	0.25	0.31	0.63	0.91	0.73	0.63	0.63	0.00	0.29	0.00	0.00				0.00	0.97	0.69	1.44	0.82	1.49
IV-B																																				
Marinduque	1.21	0.64	1.76	2.01	1.42	2.01	2.24	2.16	1.98	1.50	0.29	0.15	0.68	2.09	2.70	1.05	0.80	1.15	0.54	1.86	1.12	1.35	1.16	0.58	0.19	0.00	0.04							0.95	0.27	2.21
Occidental Mindoro	1.63	1.66	1.63	1.72	1.66	1.53	1.30	0.69	0.12								0.00	0.87	1.62	0.55	0.67	0.00	0.06	0.70	0.79	0.38	0.12	1.10	0.00	0.22	0.33	0.33	2.11	1.67	0.88	1.20
Oriental Mindoro	1.64	1.59	1.72	1.97	1.94	1.97	2.20	1.73	1.26	1.47	0.06	0.14	0.81	0.48	1.11	0.67	0.32	0.76	0.20	0.87	0.55	0.59	0.31	0.61	0.00	0.13	0.00							0.27	1.21	1.20
Palawan	1.81	1.64	1.78	2.03	2.00	2.03	2.26	2.18	1.99	1.50	0.77	0.15	1.08	1.12	1.83	1.24	0.89	0.03	0.60	0.37	0.76	1.00	0.67	0.05	0.02	0.00	0.00							0.95	0.81	1.52
Romblon	1.47	1.62	1.76	2.01	1.99	2.01	2.25	2.17	1.98	1.50	0.77	0.15	1.08	2.09	2.70	1.66	1.78	0.81	0.90	0.80	0.55	0.25	0.80	0.80	0.39	0.00	0.00							0.58	1.35	2.21

V																																					
Albay	1.79	0.33	1.37	1.26	1.42	1.54	2.23	2.06	0.47	0.76	0.12		0.54	2.09	1.41	2.01	0.75	1.52	1.06	0.64	0.52	1.08	0.32	0.62	0.32	0.00	0.00							0.00	1.70	0.75	
Camarines Norte	1.79	0.85	1.32	2.00	0.96	2.00	2.23	1.65	0.42	0.39	0.12		1.08	1.43	1.69	0.35	0.52	0.94	0.93	0.92	0.43	1.19	0.40	0.49	0.00	0.00	0.00							0.00	0.28	1.78	
Camarines Sur	1.12	1.24	1.42	1.66	2.04	2.00	2.23	2.06	1.44	0.76	0.00		0.77	1.48	1.37	1.51	1.31	1.25	1.06	0.59	1.14	1.86	0.69	0.50	0.00	0.00	0.00	0.00						0.00	0.51	1.45	
Catanduanes	1.80	0.29	1.76	1.52	0.90	2.01	2.24	0.86	1.44	0.76	0.12		0.00	2.09	1.98	1.60	1.15	1.59	1.36	0.31	0.87	1.14	0.61	1.59	0.46	0.00	0.04							0.00	0.81	1.13	
Masbate	1.27	1.63	1.19	2.02	2.06	1.05	2.24	0.55	1.29	0.68	0.10		0.71	0.82	2.04	2.01	0.37	0.93	0.74	1.12	0.80	0.60	1.24	0.82	0.16	0.00	0.04							0.00	0.61	2.22	
Sorsogon	0.25	1.62	1.44	1.55	2.05	0.87	2.24	0.79	1.44	0.76	0.00		0.10	0.69	2.22	1.49	0.62	0.72	0.35	0.96	0.90	0.57	1.34	0.51	0.01	0.00	0.04							0.00	0.91	2.21	
VI																																					
Aklan	1.71	1.66	1.48	1.06	0.49	0.05							0.54	2.15	1.79	1.25	1.22	0.54	1.00	0.58	0.90	0.63	1.15	0.58	0.48	0.00	0.04	0.00	0.64	1.29	0.39	0.45	0.75	0.73	1.61	0.63	
Antique	1.62	1.50	0.79	0.83	0.47	0.00	0.00						0.00	0.00	1.38	0.65	0.33	0.00	0.39	0.50	0.44	0.51	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.44	0.44	1.01	1.49	1.56	1.56	
Capiz	1.56	1.50	0.40	0.96	0.44	0.00							1.04	0.75	1.73	0.66	0.00	0.00	0.01	0.00	0.60	0.92	0.00	0.34	0.00	0.00	0.00	0.00	0.17	1.20	0.33	0.48	1.42	0.68	1.09	1.22	
Guimaras	1.83	1.15	1.57	1.13	0.53	0.00							0.30	0.83	2.09	1.15	0.76	0.37	0.21	0.38	0.59	0.82	0.78	1.00	0.00	0.00	0.00	0.00	0.00	1.51	0.92	0.72	0.00	1.79	0.77	1.79	
Iloilo	1.43	1.39	0.68	1.05	0.73	0.45	0.19	0.00					0.67	0.11	0.98	0.59	0.42	0.25	0.28	0.00	0.79	1.20	0.00	0.54	0.08	0.00	0.00	0.00	0.00	1.20	0.57	0.89	1.20	0.77	1.38	1.38	
Negros Occidental	1.70	2.23	2.01	1.43	0.16	0.07							0.30	2.07	1.83	1.55	0.62	1.44	0.84	1.04	1.29	1.44	0.75	0.82	0.01	0.00	0.00	0.29	0.78	0.93	0.54	2.02	2.14	2.25	2.17	1.35	
VII																																					
Bohol	1.52	1.40	0.70	0.84	1.00	0.62	0.92	0.00	0.00					0.00	0.43	0.00	0.00	1.39	1.22	0.81	1.39	1.53	0.56	1.20	0.58	0.29	1.00	0.00	0.00	1.02	1.03	1.29	1.56	1.18	2.00	1.74	
Cebu	1.99	1.95	1.05	1.39	0.81	0.00	0.00								0.70	0.67	1.86	1.52	1.73	0.47	0.79	0.72	1.46	1.59	1.65	0.00	0.00	0.00		0.59	1.79	1.68	1.14	0.77	1.78	1.47	
Negros Oriental	1.89	2.23	2.01	1.43	0.66	0.07							1.16	1.63	3.10	2.48	1.25	1.17	1.26	1.64	1.17	1.10	1.60	0.98	0.11	0.00	0.00	0.17	1.01	1.78	2.20	0.92	1.76	1.14	0.80	1.15	
Siquijor	1.38	1.19	1.28	1.24	1.12	0.58	0.11								1.14	2.10	1.51	0.60	0.67	1.22	1.42	1.92	1.10	1.83	1.56	0.49	0.05	0.00		0.94	1.16	1.44	0.85	0.19	1.69	1.78	
VIII																																					
Biliran	0.68	0.94	1.87	1.96	1.27	1.75	1.48	0.33	0.00						0.25	1.53	1.21	1.49	1.16	1.79	1.09	0.86	0.82	0.86	1.24	0.22	0.21	0.00	0.00		0.00	1.18	2.19	1.83	1.56	0.01	
Northern Leyte	1.86	1.90	0.80	1.05	0.36	0.44	0.00	0.00	0.00						0.50	0.47	1.94	1.47	1.64	0.37	0.43	0.76	1.43	1.47	1.71	0.02	0.60	0.00	0.00		0.87	0.26	0.80	0.56	1.55	0.67	
Southern Leyte	1.86	1.90	0.82	0.85	0.91	0.00	0.00	0.00	0.14	1.12	2.20	1.68	1.49	0.85	1.52	0.46	1.48	2.05	1.84	0.76	0.40	0.10	0.02	0.00							0.87	0.85	0.97	0.39	1.55	0.81	
Northern Samar	1.06	1.30	0.99	1.96	1.90	1.76	1.04	0.79	0.14	1.12	2.20	2.87	2.21	1.86	1.65	2.06	1.75	1.06	0.73	0.06	0.09	0.07	0.01	0.00							0.00	0.62	0.45	0.78	0.00	0.77	
Weatern Samar	0.06	1.90	0.69	1.96	1.89	1.75	0.82	0.43	0.14	1.12	2.20	2.39	2.20	0.21	1.08	1.08	0.46	0.92	0.50	0.60	0.92	0.00	0.00	0.00							0.00	0.57	1.51	0.41	1.01	0.71	
Eastern Samar	0.80	1.90	1.08	1.96	1.38	1.75	0.66	0.43	0.14	1.12	2.19	1.98	1.75	0.88	1.09	1.39	0.65	1.07	0.81	0.78	0.79	0.31	0.00	0.00							0.00	0.44	1.34	0.34	0.80	0.74	
IX																																					
Zamboanga del Norte	1.21	1.78	1.04	0.96	0.94	0.58	0.24	0.00		0.74	0.96	1.00	1.14	1.75	0.88	1.09	0.87	0.99	0.72	0.89	0.66	0.63	0.00	0.00	0.00			0.00	0.00	0.47	0.45	0.89	0.03	0.21	1.77	0.89	
Zamboanga del Sur	1.85	1.80	1.65	1.36	0.95	0.58	0.25	0.00		0.74	1.47	1.56	1.83	1.78	0.82	0.77	0.73	0.57	0.82	0.20	0.67	0.14	0.00	0.00	0.00			0.00	0.01	0.51	0.39	0.96	0.47	0.59	0.72	0.75	
Zamboanga Sibugay	1.16	1.38	1.02	1.37	0.96	0.59	0.25	0.00		0.74	0.61	0.60	0.64	1.19	0.97	1.09	0.76	0.92	0.50	0.77	0.56	0.71	0.00	0.00	0.00			0.02	0.00	0.52	0.75	0.97	0.13	0.50	1.80	1.06	
X																																					
Bukidnon	1.68	1.72	1.14	1.31	1.60	0.78	0.13	0.25	0.10	0.15			0.00	0.00	0.15	0.57	0.23	0.28	0.09	0.44	0.30	0.70	1.04	0.61	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.40	0.67	1.35	0.42	
Camiguin	0.77	0.81	0.68	0.82	1.88	1.74	1.47	0.78	0.14						1.11	1.41	1.48	0.68	0.95	1.78	0.96	1.27	1.28	1.47	1.36	1.12	1.04	0.00	0.00		0.00	1.65	1.09	1.83	0.53	1.68	
Lanao del Norte	1.25	0.91	0.84	1.01	0.64	1.09	0.00	1.20	0.59	0.00	0.00				0.35	0.40	0.28	1.18	0.48	0.37	0.77	1.36	0.89	0.94	0.16	0.24	0.00	0.00	0.00	0.00	0.16	0.00	1.45	1.36	1.49	0.76	
Misamis Occidental	1.85	1.88	1.85	1.94	1.87	1.31	1.46	0.78	0.13						0.40	1.20	1.42	0.64	0.66	0.54	0.37	0.80	0.49	1.09	0.99	0.94	0.00	0.00	0.00		0.00	0.14	1.01	0.37	0.10	0.16	
Misamis Oriental	1.49	0.94	0.94	0.69	1.03	1.06	1.46	0.00	0.00						0.41	0.51	1.49	1.07	0.86	0.71	1.32	1.16	0.42	1.14	0.76	0.80	0.69	0.00	0.00		0.50	1.27	1.77	0.91	0.96	1.67	
XI																																					
Compostela Valley	0.78	0.75	1.80	0.00	1.82	0.23	0.44	0.00	0.00						0.03	0.95	1.91	0.90	0.61	0.81	0.42	0.90	0.75	1.02	1.05	0.85	0.48	0.00	0.00		0.00	0.33	1.04	1.79	0.45	0.48	
Davao del Norte	0.49	0.59	0.72	0.84	1.43	1.74	1.47	0.78	0.00						0.00	0.44	0.88	0.50	0.62	0.91	1.01	1.00	1.37	0.89	0.86	0.15	0.00	0.00	0.00		0.00	0.42	0.74	0.14	1.11	1.28	
Davao del Sur	0.72	1.88	1.85	1.57	0.63	1.74	0.85	0.39	0.00						0.39	1.12	1.32	1.00	1.27	0.92	1.52	0.53	1.85	0.77	0.26	0.65	0.00	0.00	0.00		0.16	0.98	1.71	1.82	1.54	0.82	
Davao Oriental	1.84	1.88	1.84	1.93	1.23	1.73	1.45	0.00	0.13						0.43	1.34	1.22	0.80	0.62	0.98	0.96	0.98	1.25	1.33	0.39	0.12	0.00	0.00	0.00		0.00	0.59	0.67	0.21	0.53	0.76	
XII																																					
Sarangani	1.16	0.00	0.13	0.00	0.00		0.00	1.07	1.40	0.85	1.66	2.51	1.39	0.98	2.01	1.95	1.16	0.56	0.00	0.00	0.11	0.24	0.00		0.00	0.18	0.65	0.69	1.64	1.02	1.09	0.97	0.79	1.36	1.09	0.23	
South Cotabato	1.14	0.83	0.00	0.25	0.02		0.55	0.22	1.39	0.84	2.12	2.49	1.58	1.34	0.93	0.75	0.91	0.55	0.00	0.00	0.00	0.00	0.00		0.00	0.46	1.21	0.32	0.89	0.91	1.33	1.03	1.06	1.18	0.98	1.39	
North Cotabato	1.33	0.37	0.00	0.00	0.00		0.61	0.61	0.84	1.74	2.41	2.01	1.46	1.06	1.21	0.54	0.55	1.24	0.34	0.00	0.01	0.00	0.00		0.00	0.41	0.82	0.24	1.18	1.09	1.24	0.99	1.25	0.82	1.25	1.63	
Sultan Kudarat	1.17	0.12	0.00	0.00	0.00		0.00	1.07	1.40	0.44	1.61	2.53	1.28	0.57	2.02	1.32	0.65	0.05	0.00	0.00	0.00	0.24	0.00		0.00	0.00	0.24	0.51	1.27	0.67	0.80	0.37	1.68	1.39	1.68	0.32	

XIII (CARAGA)																																					
Agusan del Norte	1.18	1.63	1.84	1.94	1.87	1.73	0.97	0.78	0.13						0.30	1.47	2.22	0.68	0.46	0.55	0.16	1.02	0.51	0.97	1.02	0.33	0.00	0.00	0.00		0.00	0.28	0.67	0.26	0.17	0.40	
Agusan del Sur	1.84	1.88	1.84	1.94	1.87	1.73	1.46	0.78	0.00						0.00	0.95	1.36	0.86	0.00	0.56	0.82	0.56	0.87	0.66	0.59	0.31	0.00	0.00	0.00		0.00	0.28	1.06	0.60	0.26	0.29	
Dinagat Islands	0.83	1.90	1.02	1.96	1.23	1.75	0.59	0.78	0.14						0.76	1.65	1.16	1.08	1.19	0.17	1.89	1.22	1.27	1.85	1.72	0.23	0.18	0.00	0.00		0.00	0.17	0.78	0.89	1.55	0.21	
Surigao del Norte	0.80	1.90	0.89	1.50	1.11	1.75	0.96	0.23	0.00						0.62	1.63	0.99	0.87	1.64	0.18	1.46	1.39	1.24	1.85	1.33	0.13	0.13	0.00	0.00		0.00	0.00	1.13	0.59	0.89	0.79	
Surigao del Sur	0.78	0.58	0.68	0.25	1.53	0.00	1.12	0.00	0.00						0.00	0.93	1.65	0.47	0.39	0.80	1.04	0.79	1.88	0.34	0.83	1.18	0.61	0.00	0.00		0.87	1.15	1.21	0.47	0.37	1.67	
ARMM																																					
Basilan	1.88	1.92	1.88	1.98	1.91	1.77	1.49	0.79	0.14						0.51	2.03	2.10	0.89	0.88	0.69	0.71	1.28	1.51	1.05	0.74	0.04	0.03	0.00	0.00		0.33	0.85	0.75	1.30	1.15	0.37	
Lanao del Sur	1.13	0.25	0.00	0.00	0.00		0.55	0.37	0.08	0.11	1.30	1.62	1.28	0.63	0.78	0.05	0.60	0.38	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.18	0.00	0.56	0.47	0.57	0.27	0.56	0.70	0.95	1.38	
Maguindanao	1.19	0.39	0.00	0.00	0.00		0.55	0.56	0.42	0.67	1.67	1.87	1.36	1.13	0.69	0.42	0.41	0.85	0.57	0.00	0.11	0.00	0.00		0.00	0.36	0.73	0.00	1.04	0.83	1.13	0.74	0.88	0.61	1.01	1.44	
Sulu	1.88	1.92	1.88	1.35	1.91	1.76	1.15	0.79	0.14						0.65	1.18	2.58	1.08	0.73	1.78	0.99	1.11	1.88	1.33	1.71	1.53	1.04	0.00	0.00		0.87	0.65	1.16	1.84	1.59	0.30	
Tawi-Tawi	1.46	1.92	1.88	1.52	1.91	1.18	0.86	0.79	0.14						0.80	1.65	2.58	1.76	0.36	1.78	1.24	1.27	1.89	1.84	1.72	1.53	1.04	0.12	0.00		0.87	0.45	1.67	1.32	1.59	0.47	

Source: JICA Survey Team

Table F 18 Irrigation Water Demands by Provinces in 2020

(Unit: MCM)

Region/	Irrigated Area (ha)		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			Annual
Province	Wet	Dry	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
CAR																																							
Abra	10,823	10,312	15.66	15.76	16.58	15.12	14.60	10.95	9.18	1.76								11.45	21.91	11.98	3.45	1.91	4.10	3.23	2.52	2.23	3.28	9.59	13.49	2.25	0.00		9.61	18.95	15.14	12.40	1.73	15.87	264.71
Apayao	8,336	8,264	7.45	7.56	8.20	9.54	9.26	6.91	5.45	4.14	0.79							0.00	10.94	12.03	7.81	6.16	5.36	3.57	4.58	0.96	1.26	3.38	9.88	0.28	3.00	0.35	4.68	0.00	0.00	0.00	6.12	7.11	146.76
Benguet	12,319	12,106	13.50	13.57	14.36	12.85	12.47	9.40	7.53	1.46				2.06	18.09	3.87	0.00	0.07	1.82	5.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00						10.67	20.44	0.00	10.57	11.30	4.87	174.44
Ifugao	10,458	9,387			8.70	11.22	9.39	5.66	8.37	9.00	7.63	12.22	6.94	6.46	9.93	5.42	1.59	0.00					1.12	16.39	0.00	0.00	0.00	0.00	3.25	0.00	7.98	7.33	0.00	2.59	0.00	0.00			141.18
Kalinga	21,835	20,707	26.96	27.11	28.65	27.86	26.97	20.28	16.21	3.13								10.59	38.28	12.60	5.47	4.95	15.34	5.77	13.50	7.04	11.61	0.00	13.52	14.34	0.00		19.05	37.32	29.44	22.60	24.30	28.50	491.39
Mt. Province	9,574	9,321	8.47	8.20	0.00	3.95	0.30								13.07	10.62	0.29	5.21	1.32	3.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		5.70	15.47	0.00	0.00	0.00	4.84	0.33	2.69	8.91	92.64
I																																							
Ilocos Norte	29,916	20,007	27.73	28.26	30.50	29.38	26.15	14.89	11.94	2.07									14.21	37.63	37.96	43.37	20.34	17.26	17.59	32.16	2.37	18.69	5.05	0.00	0.00	0.00	15.78	29.02	12.82	28.65	3.01	27.93	534.76
Ilocos Sur	19,455	11,561	15.85	16.15	17.44	16.74	14.90	8.49	6.77	1.17									0.00	14.84	7.46	19.16	7.52	11.68	11.62	28.52	11.76	8.74	17.53	0.00	8.76	1.03	0.00	16.68	20.87	16.46	13.48	16.01	329.63
La Union	12,775	9,778	13.30	13.56	14.63	14.04	12.50	7.12	5.68	0.98									0.58	6.71	15.42	7.35	7.28	3.64	8.49	6.50	8.48	0.40	9.17	11.70	0.00	0.00	7.67	14.06	17.58	13.84	11.31	13.44	245.44
Pangasinan	94,232	66,881	92.21	95.23	#####	#####	94.48	60.45	62.52	38.45	0.00	0.00							0.00	0.00	33.59	30.73	60.20	73.86	55.11	55.58	56.44	90.27	38.30	79.58	0.00	65.67	57.75	74.02	81.91	99.40	#####	91.26	1,802.16
II																																							
Batanes	9	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00								0.00	0.02	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.15
Cagayan	86,769	89,980	94.39	#####	#####	#####	#####	#####	#####	59.77	0.00							53.62	#####	#####	#####	#####	#####	84.93	94.04	65.67	#####	#####	45.24	0.00	0.00	0.00	0.00	#####	#####	74.17	35.25	#####	2,662.86
Isabela	120,983	116,006	#####	#####	#####	#####	#####	#####	#####	#####	0.00	25.44	0.19					1.87	#####	#####	#####	#####	62.46	#####	83.71	75.18	37.99	0.00	#####	0.00	0.00	0.00	69.08	0.00	21.44	67.16	26.68	#####	2,729.33
Nueva Vizcaya	30,227	30,227	44.11	44.94	48.52	46.81	45.26	33.57	35.78	19.07	3.64							7.27	52.51	56.82	7.04	12.56	23.10	12.75	5.71	20.88	12.54	9.67	0.00	0.00	13.15	0.00	0.00	43.03	54.93	27.43	0.00	5.42	686.50
Quirino	9,956	9,928	11.77	15.24	12.84	15.85	15.32	11.36	12.10	6.45	0.00							3.05	17.53	14.90	12.05	3.94	5.14	6.12	6.72	4.73	5.65	5.86	0.00	4.05	0.00	0.00	7.41	6.05	18.33	15.00	5.63	14.98	258.09
III																																							
Aurora	8,608	8,555	4.37	3.76	3.98	3.94	5.63	3.93	6.65	9.28	6.58	5.32	0.00					2.90	12.18	7.05	2.27	10.04	3.91	2.99	7.52	7.77	5.12	0.00	1.39	0.00	0.00					6.70	12.66	4.09	140.03
Bataan	7,263	7,311	13.51	13.80	14.86	13.13	12.66	9.34	8.65	4.61	0.88								0.00	4.10	7.82	8.71	8.03	6.92	7.72	13.04	11.82	6.84	6.88	5.22	6.47	0.00	1.77	9.03	9.56	13.41	11.62	11.05	241.44
Bulacan	25,453	17,906	23.64	24.09	26.01	24.87	15.45	17.83	19.33	10.30	0.00								8.96	18.17	9.59	14.33	0.00	10.28	14.51	2.45	18.19	42.69	13.76	7.70	0.00	2.52	0.00	7.25	28.29	8.81	9.74	22.32	401.07
Nueva Ecija	150,000	147,404	#####	#####	#####	#####	#####	#####	#####	#####	#####	31.08	46.06	8.74			17.86	3.84	#####	16.30	88.84	#####	20.46	63.05	#####	#####	16.69	60.43	26.63	#####	18.51	0.00	90.89	#####	#####	#####	#####	#####	3,438.09
Pampanga	34,225	37,193	56.25	57.37	61.88	64.08	61.80	45.63	42.38	22.57	4.30								3.69	24.51	40.13	20.19	16.39	7.70	0.00	3.26	28.37	11.71	3.75	17.47	8.68	15.40	24.82	47.63	61.63	53.06	45.50	54.35	904.51
Tarlac	32,361	28,473	40.79	41.60	44.87	45.57	43.96	32.47	30.94	16.48	3.14								3.72	31.44	36.15	34.47	6.82	0.00	10.03	35.43	27.94	11.10	1.03	2.56	11.15	3.79	13.48	41.59	52.34	40.62	32.97	29.04	725.51
Zambales	9,170	5,366	3.76	3.81	4.13	2.78	2.74	2.10	3.89	2.08	0.00								0.00	8.96	14.49	10.32	9.17	14.46	10.66	8.61	12.72	11.65	6.71	12.06	7.79	0.00	0.00	6.62	11.03	8.75	9.36	11.31	199.99
IV-A																																							
Batangas	2,431	3,022	2.52	2.55	4.13	4.22	4.08	3.03	3.12	1.67	0.32				0.63	3.30	4.21	1.60	0.75	2.24	0.00	2.71	1.00	0.97	0.34	0.00	0.00	0.00	0.00				0.00	2.55	2.78	3.43	0.07	3.81	56.04
Cavite	3,376	3,221	4.00	4.07	4.40	4.50	4.35	3.23	3.33	1.78	0.34				2.20	4.59	4.47	0.00	0.00	1.30	0.33	1.12	3.42	0.88	2.67	4.80	0.86	0.00	0.00				0.00	0.10	1.08	3.66	3.43	1.27	66.17
Laguna	11,059	11,040	13.70	13.95	15.07	15.42	14.92	11.08	11.41	6.09	0.00				7.20	6.74	12.12	5.65	10.61	3.73	4.89	6.23	4.30	5.97	4.24	0.00	0.00	0.00	0.00				0.00	0.00	7.69	1.06	1.43	13.94	197.44
Quezon	15,428	14,167	0.00	15.25	12.14	17.26	9.79	12.47	8.28	0.00	1.30				2.11	13.00	22.89	9.54	11.40	0.21	0.00	7.08	4.50	13.58	21.68	3.30	0.00	0.00	0.00				5.04	2.63	8.82	2.06	6.90	0.00	211.24
Rizal	4,487	4,446	4.75	0.00	2.86	5.03	4.88	3.64	3.73	0.00	0.38				0.00	1.31	5.50	2.05	0.00	0.00	0.81	1.98	1.39	0.19	0.30	0.00	0.00	0.00	0.00				0.00	3.28	1.64	4.20	1.53	4.50	53.92
IV-B																																							
Marinduque	1,670	1,641	1.39	1.03	2.85	2.92	2.15	2.25	3.09	2.97	3.03	1.63	0.00		1.76	4.53	3.72	1.10	1.31	1.78	0.85	2.82	1.74	1.88	1.60	0.89	0.00	0.00								1.86	1.59	3.02	53.76
Occidental Mindoro	27,011	22,616	31.82	32.44	35.00	33.53	32.39	23.98	25.38	13.52	2.57								0.00	20.31	37.80	12.90	17.15	0.00	1.46	17.92	18.33	8.83	2.79	25.72	0.00	5.62	6.52	6.42	41.18	32.61	17.14	25.78	529.13
Oriental Mindoro	25,876	22,512	25.46	27.50	32.27	25.10	25.23	19.44	23.15	14.95	8.73	14.27	2.21		26.72	27.53	20.79	24.67	24.96	36.08	32.45	48.37	41.02	19.84	13.23	21.93	0.00	0.00								14.24	49.83	46.42	666.38
Palawan	24,878	21,421	29.35	31.92	37.69	38.52	38.77	29.61	40.57	39.08	39.86	21.28	3.25		34.84	46.63	34.87	20.56	21.37	2.44	13.86	9.77	17.36	20.50	13.32	0.90	0.00	0.00								24.37	30.90	25.25	666.84
Romblon	2,554	2,701	2.89	4.00	4.72	4.82	4.86	3.71	5.09	4.90	5.00	2.68	0.41		3.58	6.92	5.68	3.02	4.15	1.97	2.10	1.95	1.27	0.45	1.65	1.91	0.18	0.00								2.20	5.14	4.97	90.23
V																																							
Albay	23,045	21,651	29.29	7.86	29.70	24.56	27.02	22.62	40.58	36.74	3.33	3.27			10.76	41.57	30.84	40.02	14.92	30.17	21.05	12.71	11.36	21.47	6.36	13.55	6.45	0.00	0.00							0.00	47.76	9.75	543.70
Camarines Norte	6,725	6,710	9.07	5.45	8.89	11.90	5.72	9.15	12.58	9.04	0.71	0.00			6.29	8.33	10.83	2.02	3.03	5.49	5.41	5.33	2.78	6.91	2.34	3.13	0.00	0.00	0.00							2.52	6.57	9.56	153.03
Camarines Sur	34,313	32,880	33.70	48.90	59.97	57.22	67.26	51.28	61.40	55.60	35.14	4.68			23.19	44.87	46.51	48.96	44.34	42.96	21.29	6.86	25.18	44.64	10.10	6.15	0.00	0.00	0.00	0.00						0.29	37.62	27.59	905.67
Catanduanes	1,805	1,839	2.50	0.60	3.20	2.50	1.47	2.52	3.45	1.22	1.97	0.28			0.00	3.26	3.39	2.49	1.79	2.48	2.11	0.49	1.49	1.78	0.95	2.73	0.72	0.00	0.06							0.16	2.64	1.48	47.74
Masbate	3,456	3,519	3.16	5.22	4.21	6.30	6.34	2.48	6.63	1.38	3.37	0.47			2.12	2.46	6.70	6.01	1.09	2.78	2.22	3.34	2.64	1.80	3.71	2.71	0.48	0.00	0.12							1.28	4.46	6.50	89.99
Sorsogon	9,094	9,052	0.14	13.36	12.99	12.56	16.23	5.27	17.00	5.44	9.73	1.37			0.80	5.40	19.20	11.70	4.90	5.69	2.78	7.56	7.82	4.46	10.53	4.44	0.05	0.00	0.31							2.66	13.79	16.65	212.80

VI																																							
	Aklan	7,989	7,241	9.20	8.94	8.83	5.37	2.50	0.21							3.49	14.46	11.24	6.03	5.58	0.00	4.33	1.33	3.90	1.62	5.75	1.91	2.21	0.00	0.27	0.00	2.88	6.70	1.14	1.51	3.31	2.97	9.04	2.52	127.24
	Antique	13,493	12,329	19.71	18.24	10.90	9.36	5.34	0.00	0.02						0.00	0.00	18.69	8.02	16.29	0.01	6.48	7.97	8.01	8.07	6.47	0.00	0.00	0.00	0.00	0.00	0.00	9.76	6.49	6.81	13.57	19.05	19.97	21.97	241.19
	Capiz	8,462	7,155	10.09	9.70	3.36	5.69	2.63	0.00							8.33	5.65	14.72	5.13	0.00	0.00	1.08	5.68	6.51	8.50	0.00	3.91	0.00	0.00	0.00	0.00	1.33	8.50	3.12	4.05	9.76	5.39	7.75	9.44	140.32
	Guimaras	695	553	0.90	0.59	0.85	0.52	0.24	0.00							0.19	0.52	1.47	0.76	0.49	0.23	0.24	0.34	0.53	0.64	0.61	0.82	0.00	0.00	0.00	0.00	0.00	0.81	0.51	0.43	0.10	0.93	0.45	1.02	14.17
	Iloilo	28,412	22,652	33.22	32.20	18.63	22.23	15.54	7.56	3.51	0.03					17.93	2.21	27.77	15.71	10.94	6.26	11.47	2.92	28.20	36.88	0.00	20.10	5.87	0.00	0.00	0.00	0.00	26.35	15.16	22.56	29.44	20.55	33.72	37.10	504.06
	Negros Occidental	23,327	16,472	30.47	37.39	36.76	22.36	3.47	0.87							7.54	48.87	49.66	41.46	20.85	40.25	31.14	34.77	45.29	44.10	27.94	31.12	7.57	0.00	0.00	5.01	13.55	19.55	14.38	34.93	37.59	39.47	37.85	29.81	794.00
VII																																							
	Bohol	18,677	16,736	15.67	13.67	4.16	5.21	9.00	3.83	10.23	0.00	0.00					0.00	9.23	0.00	0.00	19.44	15.71	8.34	19.01	21.35	5.56	17.65	5.38	1.53	13.70	0.00	0.00	14.79	13.19	16.18	19.24	12.76	23.83	21.59	320.24
	Cebu	6,742	5,850	10.07	9.88	5.82	7.04	4.08	0.00	0.00								4.49	3.88	10.83	8.87	10.08	2.75	5.08	4.18	8.48	10.20	9.61	0.00	0.00	0.00		3.27	9.07	8.51	5.76	3.88	8.98	8.18	163.00
	Negros Oriental	10,158	10,153	16.56	19.59	19.38	12.53	5.83	0.49							1.02	1.43	29.93	21.72	10.94	10.24	11.10	14.35	11.29	9.68	14.01	9.46	0.99	0.00	0.00	0.15	8.86	17.20	19.29	8.05	15.40	10.00	7.06	11.09	317.65
	Siquijor	329	159	0.19	0.16	0.19	0.17	0.15	0.06	0.02								0.36	0.60	0.43	0.17	0.19	0.35	0.44	0.55	0.31	0.57	0.44	0.14	0.01	0.00		0.14	0.16	0.20	0.12	0.03	0.23	0.27	6.65
VIII																																							
	Biliran	1,986	2,086	1.23	1.70	3.70	3.54	2.29	2.53	2.66	0.60	0.00						0.48	2.63	2.08	2.55	1.98	3.07	2.06	1.47	1.41	1.62	2.13	0.38	0.36	0.00	0.00		0.00	2.12	3.95	3.31	2.81	0.01	52.66
	Northern Leyte	33,696	34,481	55.48	56.56	26.26	31.23	10.62	10.41	0.00	0.00	0.00						16.02	13.60	56.34	42.73	47.81	10.66	13.66	22.19	41.75	47.14	49.86	0.57	17.33	0.00	0.00		26.02	7.80	23.85	16.82	46.17	21.92	712.79
	Southern Leyte	5,424	5,361	8.64	8.81	4.19	3.93	4.22	0.00	0.00	0.00	0.69	5.24	10.30	7.87	6.98	3.99	7.82	2.17	6.95	9.60	8.61	3.58	2.07	0.48	0.10	0.00							4.05	3.95	4.50	1.82	7.19	4.12	131.85
	Northern Samar	2,548	2,403	2.20	2.69	2.27	4.08	3.94	2.92	2.17	1.64	0.31	2.46	4.85	6.32	4.86	4.10	3.99	4.54	3.85	2.33	1.60	0.13	0.21	0.16	0.01	0.00							0.00	1.30	0.94	1.61	0.00	1.76	67.21
	Weatern Samar	2,931	3,081	0.15	5.05	2.03	5.21	5.03	3.72	2.18	1.15	0.40	2.83	5.57	6.05	5.57	0.54	3.02	2.74	1.18	2.32	1.26	1.53	2.56	0.00	0.00	0.00							0.00	1.53	4.02	1.09	2.68	2.09	71.49
	Eastern Samar	3,595	3,500	2.42	5.74	3.59	5.92	4.18	4.23	2.00	1.30	0.45	3.47	6.81	6.13	5.45	2.74	3.71	4.31	2.02	3.33	2.51	2.43	2.68	0.95	0.00	0.00							0.00	1.34	4.05	1.03	2.43	2.46	87.71
IX																																							
	Zamboanga del Norte	3,833	3,263	3.41	5.03	3.23	2.70	2.66	1.30	0.69	0.01		2.46	3.18	3.30	3.77	5.79	3.20	3.62	2.87	3.28	2.37	2.94	2.39	2.08	0.00	0.00	0.00			0.00	0.00	1.45	1.26	2.50	0.07	0.58	4.99	2.77	73.86
	Zamboanga del Sur	21,772	21,262	39.67	38.57	38.86	27.62	19.32	9.43	5.08	0.04		14.88	28.97	30.47	34.24	32.61	14.32	10.99	9.96	6.88	11.76	0.19	10.44	1.73	0.00	0.00	0.00			0.00	2.54	12.92	9.95	19.83	8.97	13.06	15.58	17.85	486.73
	Zamboanga Sibugay	8,529	8,143	8.15	9.70	7.93	9.64	6.75	3.30	1.74	0.01		5.48	4.51	4.42	4.72	8.75	7.83	8.05	5.57	6.78	3.65	5.66	4.58	5.20	0.00	0.00	0.00			0.11	0.00	4.05	5.27	6.85	0.90	3.53	12.64	8.20	163.97
X																																							
	Bukidnon	27,235	27,012	34.84	35.68	24.42	23.09	30.69	10.21	0.00	0.59	0.00	2.48			0.00	0.00	0.06	9.60	0.34	0.17	0.00	5.91	2.79	11.75	19.86	10.96	9.42	0.00	0.00	0.00	0.00	0.00	0.00	8.21	8.01	13.78	29.25	8.03	300.13
	Camiguin	356	256	0.17	0.18	0.17	0.18	0.42	0.31	0.32	0.17	0.03						0.37	0.43	0.46	0.21	0.29	0.55	0.33	0.39	0.39	0.50	0.42	0.34	0.32	0.00	0.00		0.00	0.36	0.24	0.40	0.12	0.41	8.48
	Lanao del Norte	9,544	7,810	8.42	6.13	6.24	6.84	4.32	5.88	0.00	8.12	4.40	0.00	0.01				3.14	3.31	2.31	9.72	3.98	3.04	7.00	11.25	7.35	8.53	1.31	1.94	0.00	0.00	0.00	0.00	1.06	0.00	9.81	9.15	10.08	5.61	148.95
	Misamis Occidental	6,766	6,804	10.85	11.06	11.94	11.40	11.01	6.16	8.59	4.58	0.87						2.56	7.02	8.29	3.72	3.84	3.17	2.39	4.68	2.89	7.03	5.76	5.47	0.00	0.00	0.00		0.00	0.80	5.93	2.15	0.58	1.05	143.79
	Misamis Oriental	2,468	2,657	3.42	2.15	2.38	1.58	2.37	1.95	3.36	0.00	0.00						0.97	1.08	3.19	2.28	1.83	1.51	3.10	2.47	0.89	2.68	1.63	1.70	1.47	0.00	0.00		1.15	2.91	4.06	2.08	2.20	4.21	58.61
XI																																							
	Compostela Valley	11,221	11,221	7.60	7.28	19.16	0.00	17.68	1.81	4.30	0.00	0.00						0.29	9.23	18.55	8.70	5.93	7.84	4.47	8.70	7.30	10.93	10.20	8.25	4.66	0.00	0.00		0.00	3.15	10.04	17.31	4.39	5.14	202.89
	Davao del Norte	21,738	21,738	23.75	27.19	33.69	18.92	29.64	29.46	34.75	20.82	0.00						5.32	17.21	3.83	0.00	4.54	8.87	10.73	11.39	17.86	9.69	13.56	0.17	0.00	0.00				2.36	21.25	14.81	30.77	38.82	429.41
	Davao del Sur	13,932	13,793	8.55	22.42	24.19	18.71	7.46	16.54	10.18	4.65	0.00						5.11	13.52	15.86	12.01	15.32	11.09	20.17	6.43	22.25	10.23	3.18	7.84	0.00	0.00	0.00		1.92	11.67	20.43	21.63	18.31	10.78	340.46
	Davao Oriental	6,124	6,168	9.81	10.00	10.79	10.30	6.53	7.37	7.73	0.00	0.78						2.51	7.12	6.43	4.23	3.29	5.17	5.59	5.19	6.61	7.76	2.06	0.62	0.00	0.00	0.00		0.00	3.15	3.57	1.12	2.83	4.46	135.03
XII																																							
	Sarangani	5,731	5,337	5.33	0.00	0.66	0.00	0.00		0.00	5.30	7.60	4.22	8.22	12.41	6.91	4.83	10.93	9.64	5.73	2.80	0.00	0.00	0.60	1.18	0.00		0.00	0.84	2.98	3.19	7.55	5.15	5.04	4.48	3.63	6.29	5.02	1.16	131.67
	South Cotabato	28,219	27,880	33.89	24.64	0.00	6.93	0.56		12.96	5.61	36.51	19.44	49.28	57.88	42.52	37.43	30.78	26.45	29.76	20.01	1.52	0.00	0.00	0.00	0.00		0.00	13.35	32.49	13.37	28.38	33.99	43.57	37.37	38.84	41.41	36.07	47.78	802.79
	North Cotabato	41,151	40,971	55.09	19.53	0.00	0.00	0.00		20.91	20.90	31.88	57.64	80.11	65.71	56.13	42.95	53.03	29.35	29.27	51.02	21.91	0.00	5.39	0.00	0.00		0.00	17.50	33.79	16.19	50.48	55.03	59.20	51.94	61.52	46.34	60.22	77.52	1,170.56
	Sultan Kudarat	31,342	25,627	25.82	2.75	0.00	0.00	0.00		0.00	29.10	41.80	11.98	43.57	68.43	34.55	15.46	60.32	35.77	17.60	1.47	0.00	0.00	0.00	6.49	0.00		0.00	0.00	5.39	11.29	28.17	16.36	17.68	8.28	37.12	30.88	37.12	7.69	595.09
XIII (CARAGA)																																							
	Agusan del Norte	10,219	10,173	10.18	14.47	18.37	17.25	16.55	12.78	12.80	10.24	1.95						8.46	22.13	15.12	3.44	4.84	5.52	2.06	9.18	4.25	8.90	8.62	2.37	0.00	0.00				0.00	9.10	3.74	1.07	3.40	226.77
	Agusan del Sur	17,351	16,780	26.37	27.41	30.34	28.49	27.34	21.10	28.24	16.91	0.00						3.99	29.73	12.76	8.58	0.70	9.52	14.35	8.75	12.68	10.05	8.09	3.69	0.00	0.00				0.00	20.66	11.06	3.09	3.86	367.76
	Dinagat Islands	583	529	0.38	0.87	0.51	0.90	0.56	0.64	0.27	0.36	0.07						0.42	0.83	0.58	0.54	0.60	0.09	1.05	0.62	0.64	1.02	0.87	0.11	0.09	0.00	0.00		0.00	0.08	0.36	0.40	0.71	0.11	13.67
	Surigao del Norte	5,858	4,064	2.82	6.66	3.45	5.26	3.90	4.91	3.38	0.79	0.00						3.46	8.25	5.00	4.43	8.32	0.93	8.11	7.05	6.26	10.28	6.73	0.63	0.64	0.00	0.00		0.00	0.00	3.98	2.09	3.12	3.06	113.51
	Surigao del Sur	10,796	9,687	6.57	4.85	6.26	2.10	12.84	0.00	9.38	0.00	0.00						0.00	8.69	15.41	4.42	3.63	7.46	10.72	7.34	17.52	3.50	7.72	10.98	5.67	0.00	0.00		7.29	9.63	10.14	3.91	3.11	15.36	194.51
ARMM																																							
	Basilan	256	253	0.41	0.42	0.45	0.43	0.42	0.31	0.33	0.17	0.03						0.12	0.45	0.46	0.20	0.19	0.15	0.17	0.28	0.33	0.26	0.16	0.01	0.01	0.00	0.00		0.07	0.19	0.16	0.28	0.25	0.09	6.83
	Lanao del Sur	5,925	5,515	5.36	1.18	0.00	0.00	0.00		2.79	1.87	0.44	0.59	6.67	8.27	6.58	3.21	4.42	0.25	3.06	1.93	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.84	0.00	2.68	2.48	2.70	1.30	2.67	3.36	4.53	7.22	74.37
	Maguindanao	22,679	21,950	22.53	7.46	0.00	0.00	0.00		10.85	10.98	9.08	13.06	32.75	36.66	26.59	22.08	14.94	8.22	7.99	16.74	11.14	0.00	2.32	0.00	0.00		0.00	6.80	13.75	0.00	19.64	17.33	21.39	14.02	16.65	11.64	19.20	30.13	423.95
	Sulu	158	158	0.26	0.26	0.28	0.18	0.26	0.19	0.16	0.11	0.02						0.10	0.16	0.35	0.15	0.10	0.24	0.15	0.15	0.26	0.20	0.23	0.21	0.14	0.00	0.00		0.12	0.09	0.16	0.25	0.22	0.04	5.04
	Tawi-Tawi	34	43	0.05	0.07	0.08	0.06	0.07	0.03	0.03	0.03	0.01						0.03	0.05	0.08	0.05	0.01	0.05	0.04	0.04	0.06	0.06	0.05	0.04	0.03	0.00	0.00		0.03	0.02	0.06	0.05	0.06	0.02	1.26
																																							31,527
	Nos of Days			10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	

Source: JICA Survey Team

Table F 19 Irrigation Water Demands by Provinces in 2030
(Based on Irrigated Areas Projected under NIMP 2020-2030)

(Unit: MCM)

Region/	Irrigated Area (ha)		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			Annual
Province	Wet	Dry	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
CAR																																							
Abra	16,408	15,633	21.10	21.51	23.21	22.38	21.63	16.03	17.06	9.09	0.00							8.31	16.23	21.55	11.64	2.70	6.00	7.51	6.91	7.35	7.76	16.20	21.19	8.04	0.00	0.00	9.12	18.12	23.77	20.45	1.29	21.13	387.30
Apayao	8,608	8,533	12.59	12.83	13.85	13.37	12.93	9.58	7.77	5.47	1.04							0.00	10.45	11.68	8.93	7.50	7.18	6.45	7.47	4.35	3.58	5.42	11.17	2.40	3.81	0.45	5.57	0.00	0.00	0.00	10.62	12.65	209.13
Benguet	13,063	12,837	17.08	17.41	18.79	18.09	17.48	12.96	13.77	7.34	1.40			0.00	11.83	12.60	8.52	6.47	9.07	6.90	6.63	4.29	2.77	5.24	4.11	0.00	0.00	0.00					7.45	14.78	3.37	16.62	14.39	8.98	268.36
Ifugao	13,175	11,825			8.84	11.12	20.74	13.80	17.78	19.37	19.34	22.86	16.16	15.51	18.47	11.56	7.87	0.00	0.00				0.00	12.56	8.06	3.44	0.90	0.00	6.05	0.39	12.77	12.35	1.57	8.00	0.00	0.00	0.00		269.53
Kalinga	23,141	21,945	32.63	33.23	35.90	34.60	33.49	24.88	26.48	14.12	2.70							0.22	18.38	20.98	15.70	5.66	16.15	8.66	16.48	11.46	14.81	0.00	16.15	21.18	0.00	0.00	14.40	28.61	37.53	32.11	27.76	32.95	577.22
Mt. Province	11,086	10,793	12.58	12.15	1.77	8.48	4.85	0.30							10.01	5.87	12.86	14.15	7.20	10.08	7.18	0.00	1.24	0.73	5.26	4.66	1.44	0.00	0.00	3.42	13.68	7.36	0.24	0.00	7.93	3.80	6.52	13.67	177.43
I																																							
Ilocos Norte	46,022	30,779	42.65	43.48	46.92	45.19	40.22	22.90	18.36	3.18									21.85	57.89	58.40	66.73	31.29	26.55	27.07	49.48	3.65	28.75	7.77	0.00	0.00	0.00	24.28	44.64	19.72	44.08	4.64	42.96	822.67
Ilocos Sur	34,380	20,430	28.01	28.55	30.81	29.58	26.34	15.00	11.96	2.07									0.00	26.23	13.19	33.85	13.29	20.64	20.53	50.40	20.79	15.44	30.98	0.00	15.48	1.83	0.00	29.47	36.88	29.09	23.82	28.30	582.51
La Union	17,997	13,775	18.74	19.10	20.61	19.78	17.61	10.03	8.00	1.39									0.82	9.45	21.72	10.35	10.25	5.13	11.96	9.16	11.95	0.57	12.92	16.48	0.00	0.00	10.81	19.81	24.77	19.50	15.94	18.93	345.76
Pangasinan	155,501	110,367	#####	#####	#####	#####	#####	99.75	#####	63.45	0.00	0.00							0.00	0.00	55.43	50.70	99.34	#####	90.94	91.72	93.13	#####	63.20	#####	0.00	#####	95.29	#####	#####	#####	#####	#####	2,973.92
II																																							
Batanes	354	248	0.29	0.31	0.40	0.38	0.36	0.27	0.24	0.05								0.12	0.86	0.56	0.28	0.60	0.71	0.48	0.49	0.33	0.41	0.57	0.31	0.27	0.00		0.10	0.47	0.38	0.02	0.32	0.38	9.96
Cagayan	110,135	114,210	#####	#####	#####	#####	#####	#####	#####	75.86	0.00							68.06	#####	#####	#####	#####	#####	#####	#####	83.36	#####	#####	57.43	0.00	0.00	0.00	0.00	#####	#####	94.15	44.75	#####	3,379.93
Isabela	150,409	144,222	#####	#####	#####	#####	#####	#####	#####	#####	0.00	31.63	0.24					2.32	#####	#####	#####	#####	77.66	#####	#####	93.47	47.23	0.00	#####	0.00	0.00	0.00	85.88	0.00	26.66	83.50	33.17	#####	3,393.17
Nueva Vizcaya	27,362	27,362	39.93	40.68	43.92	42.38	40.97	30.38	32.38	17.26	3.29							6.58	47.53	51.44	6.37	11.37	20.91	11.54	5.17	18.91	11.35	8.75	0.00	0.00	11.90	0.00	0.00	38.95	49.72	24.83	0.00	4.90	621.42
Quirino	11,773	11,740	13.92	18.03	15.18	18.75	18.12	13.43	14.31	7.63	0.00							3.61	20.73	17.62	14.25	4.66	6.08	7.24	7.95	5.60	6.68	6.93	0.00	4.79	0.00	0.00	8.76	7.16	21.67	17.74	6.65	17.71	305.20
III																																							
Aurora	14,785	14,694	16.43	12.48	14.31	13.88	17.57	13.12	21.25	26.08	20.50	18.19	0.00	0.00				0.00	12.61	20.47	11.84	20.55	9.53	9.36	18.29	19.54	14.21	0.76	6.50	0.00	0.40	0.00				9.65	19.18	16.56	363.25
Bataan	13,645	13,735	19.53	19.91	21.48	20.62	19.91	14.74	15.63	8.33	1.58								0.00	6.06	10.65	11.48	9.39	7.12	8.18	17.37	15.14	6.03	6.43	4.55	8.53	0.00	2.39	14.33	13.58	19.96	16.28	13.90	333.08
Bulacan	37,703	26,524	37.32	38.04	41.05	39.49	25.42	28.24	30.01	15.99	0.00								15.21	32.69	19.10	27.15	0.00	20.46	27.13	10.00	20.67	57.18	14.61	11.19	0.00	3.66	0.00	11.81	43.70	16.19	17.75	37.16	641.21
Nueva Ecija	160,543	157,764	#####	#####	#####	#####	#####	#####	#####	#####	#####	33.27	49.30	9.35			19.11	4.11	#####	17.45	95.08	#####	21.90	67.48	#####	#####	17.86	64.67	28.51	#####	19.82	0.00	97.28	#####	#####	#####	#####	#####	3,679.74
Pampanga	53,338	57,963	81.80	83.38	89.97	86.64	83.68	61.95	66.04	35.18	6.69								6.80	41.32	68.24	38.35	33.59	25.41	5.55	21.39	53.07	26.81	14.02	35.48	19.21	27.03	38.58	73.95	95.58	80.12	68.18	81.34	1,449.40
Tarlac	70,406	61,947	87.55	89.25	96.30	92.85	89.67	66.39	70.82	37.73	7.18								9.14	71.52	83.20	80.50	21.16	0.00	37.51	94.74	64.59	27.88	5.87	12.96	29.38	10.99	29.17	90.06	#####	89.52	72.87	64.45	1,646.37
Zambales	30,644	17,932	24.90	25.39	27.39	26.36	25.45	18.83	20.02	10.66	0.00								0.00	23.20	34.34	17.45	10.79	27.84	13.57	3.87	18.87	16.12	0.62	22.16	13.54	0.00	0.00	17.14	28.58	19.31	20.73	24.76	491.89
IV-A																																							
Batangas	3,561	4,427	4.64	4.70	6.93	6.64	6.42	4.75	5.04	2.69	0.51				0.95	4.71	6.21	3.14	2.09	4.19	0.14	4.54	2.36	2.14	1.28	0.20	0.00	0.00	0.00				0.00	3.75	4.26	5.48	0.97	6.26	95.01
Cavite	15,023	14,333	20.26	20.65	22.28	21.40	20.66	15.30	16.26	8.66	1.65				9.27	19.81	20.66	3.10	0.09	10.37	5.25	8.48	17.94	7.09	14.06	22.41	5.42	0.00	0.00				0.00	1.33	5.98	17.66	16.89	8.63	341.53
Laguna	19,850	19,816	31.32	31.92	34.45	33.05	31.92	23.64	25.11	13.38	0.00				12.24	12.82	23.18	14.77	23.11	12.79	13.06	15.34	12.62	14.33	11.34	0.95	0.00	0.00	0.00				0.00	0.00	16.65	5.89	6.83	31.19	451.88
Quezon	56,215	51,621	5.38	83.54	73.58	86.34	57.04	61.74	48.85	2.48	6.63				9.26	49.48	87.88	49.61	56.88	22.77	11.07	40.51	33.35	60.56	86.26	25.67	0.00	0.00	0.00				21.60	17.37	45.78	25.63	45.08	11.07	1,125.40
Rizal	4,601	4,559	6.36	1.63	4.75	6.70	6.48	4.80	5.09	0.00	0.52				0.00	2.14	6.79	3.64	1.01	1.23	2.50	3.62	3.21	2.51	2.50	0.00	1.16	0.00	0.00				0.00	3.82	2.73	5.67	3.24	6.48	88.56
IV-B																																							
Marinduque	1,735	1,704	1.78	0.94	2.85	2.96	2.10	2.37	3.30	3.18	3.20	2.20	0.43	0.22	1.01	3.13	4.45	1.58	1.21	1.72	0.81	2.80	1.85	2.03	1.73	0.95	0.29	0.00	0.06							1.40	0.40	3.58	54.52
Occidental Mindoro	29,652	24,827	34.93	35.61	38.42	36.81	35.55	26.33	27.87	14.85	2.83								0.00	22.30	41.49	14.16	18.83	0.00	1.61	19.67	20.13	9.70	3.06	28.23	0.00	6.17	7.15	7.05	45.21	35.80	18.82	28.30	580.86
Oriental Mindoro	28,104	24,450	34.70	33.49	40.00	41.54	40.99	33.24	46.38	36.54	29.38	31.06	1.27	3.03	19.78	11.55	29.64	16.17	7.69	18.43	4.85	21.01	14.68	14.34	7.55	16.34	0.00	3.08	0.00							5.80	25.51	27.97	616.00
Palawan	25,447	21,911	34.33	30.96	37.02	38.38	37.86	30.70	42.72	41.20	41.48	28.39	14.52	2.77	23.74	24.71	44.36	27.35	19.66	0.65	13.10	8.11	18.35	22.04	14.71	1.28	0.43	0.00	0.00							18.02	15.40	31.57	663.80
Romblon	2,836	2,999	3.80	4.21	5.03	5.22	5.15	4.17	5.82	5.61	5.65	3.88	1.98	0.38	2.65	5.12	7.27	4.06	4.36	1.98	2.21	1.96	1.48	0.61	1.95	2.16	0.96	0.00	0.00							1.50	3.50	6.31	98.98
V																																							
Albay	31,282	29,390	45.56	8.44	38.26	31.99	36.00	31.25	56.70	52.27	13.25	19.35	2.95		14.61	56.43	41.86	54.33	20.25	40.95	28.57	17.25	15.42	29.14	8.64	18.39	8.75	0.00	0.00							0.00	43.19	20.99	754.79
Camarines Norte	7,859	7,842	12.14	5.78	9.85	13.55	6.50	10.84	15.13	11.20	3.16	2.66	0.79		7.35	9.73	12.65	2.36	3.54	6.41	6.32	6.23	3.25	8.08	2.73	3.65	0.00	0.00	0.00							0.00	1.91	13.25	179.05
Camarines Sur	66,687	63,902	61.84	68.66	85.99	91.91	#####	88.44	#####	#####	87.53	42.17	0.00		44.40	85.15	86.59	86.79	75.66	72.05	61.01	34.23	71.94	#####	39.59	31.74	0.00	0.00	0.00	0.00						0.00	28.30	88.26	1,789.39
Catanduanes	2,621	2,671	4.15	0.67	4.46	3.50	2.08	3.71	5.16	1.99	3.66	1.76	0.27		0.00	4.73	4.93	3.62	2.60	3.61	3.07	0.71	2.16	2.58	1.38	3.97	1.05	0.00	0.09							0.00	1.87	2.86	70.62
Masbate	36,582	37,249	40.77	52.41	41.97	64.97	66.27	26.99	72.20	17.66	45.56	21.87	3.34		22.43	26.02	70.89	63.67	11.55	29.38	23.54	35.38	27.92	19.01	39.30	28.67	5.04	0.00	1.27							0.00	19.63	78.59	956.32
Sorsogon	19,526	19,436	4.12	27.20	26.53	26.06	34.39	11.67	37.58	13.26	26.68	12.81	0.00		1.72	11.59	41.22	25.12	10.52	12.22	5.96	16.23	16.79	9.57	22.60	9.53	0.10	0.00	0.67							0.00	15.27	40.88	460.32

VI																																							
	Aklan	9,347	8,471	12.55	12.16	11.92	7.77	3.61	0.30							4.39	17.35	15.87	10.10	9.87	4.33	8.07	4.71	7.97	5.12	9.30	5.14	3.91	0.00	0.35	0.00	4.68	10.35	2.82	3.32	5.48	5.34	11.79	5.07	203.64
	Antique	14,100	12,883	18.00	16.68	9.73	9.26	5.28	0.00	0.02						0.00	0.00	18.44	7.90	3.99	0.00	4.74	6.06	5.95	6.21	4.82	0.00	0.00	0.00	0.00	0.00	0.00	9.94	4.91	4.87	11.26	16.56	17.34	19.08	201.04
	Capiz	20,629	17,442	23.46	22.56	6.57	14.49	6.69	0.00							18.51	13.29	33.92	11.71	0.00	0.00	0.11	0.00	11.73	16.44	0.00	6.58	0.00	0.00	0.00	0.00	2.51	19.97	5.02	7.19	21.33	10.22	16.41	20.14	288.86
	Guimaras	904	719	1.14	0.71	1.08	0.71	0.33	0.00							0.23	0.65	1.80	0.90	0.59	0.29	0.17	0.30	0.50	0.64	0.61	0.86	0.00	0.00	0.00	0.00	0.00	1.03	0.57	0.45	0.00	1.11	0.48	1.23	16.37
	Iloilo	53,489	42,645	52.86	51.27	27.65	38.70	27.05	13.17	7.08	0.05					30.76	5.30	49.77	27.12	19.24	11.42	13.02	0.00	40.16	55.59	0.00	27.57	3.60	0.00	0.00	0.00	0.00	48.74	21.12	32.66	44.05	28.30	50.76	55.85	782.87
	Negros Occidental	75,646	53,417	78.46	#####	#####	65.78	7.25	2.56							19.64	#####	#####	#####	40.20	94.08	55.07	67.80	92.63	94.15	48.73	59.25	0.83	0.00	0.00	13.57	35.77	47.43	25.12	93.01	98.94	#####	#####	68.31	1,885.78
VII																																							
	Bohol	37,813	33,883	44.60	41.00	22.66	24.54	29.41	14.60	26.84	0.00	0.00					0.00	15.57	0.00	0.00	45.27	39.92	26.60	50.00	49.90	18.17	43.13	19.02	9.58	32.56	0.00	0.00	32.98	30.14	37.86	45.81	34.56	58.69	56.09	849.45
	Cebu	6,949	6,029	10.37	10.18	6.00	7.25	4.21	0.00	0.00								4.63	4.00	11.17	9.14	10.39	2.84	5.23	4.30	8.74	10.52	9.90	0.00	0.00	0.00		3.37	9.35	8.77	5.94	4.00	9.25	8.43	167.99
	Negros Oriental	19,364	19,354	31.58	37.34	36.94	23.88	11.12	0.93							19.41	27.34	57.06	41.41	20.86	19.52	21.15	27.36	21.52	18.45	26.71	18.03	1.88	0.00	0.00	2.87	16.88	32.80	36.78	15.35	29.36	19.06	13.46	21.13	650.18
	Siquijor	665	321	0.38	0.33	0.39	0.34	0.31	0.13	0.03								0.72	1.21	0.86	0.34	0.39	0.70	0.89	1.10	0.63	1.16	0.90	0.28	0.03	0.00		0.29	0.32	0.40	0.23	0.05	0.47	0.54	13.44
VIII																																							
	Biliran	3,476	3,651	2.15	2.97	6.48	6.19	4.01	4.42	4.66	1.05	0.00						0.84	4.60	3.64	4.46	3.47	5.37	3.60	2.58	2.47	2.84	3.73	0.67	0.63				0.00	3.71	6.91	5.79	4.91	0.02	92.16
	Northern Leyte	64,120	65,613	#####	#####	49.96	59.42	20.21	19.82	0.00	0.00	0.00						30.49	25.88	#####	81.31	90.98	20.29	25.99	42.22	79.44	89.70	94.88	1.09	32.99				49.51	14.84	45.38	32.01	87.86	41.70	1,356.36
	Southern Leyte	7,284	7,199	11.60	11.83	5.62	5.28	5.67	0.00	0.00	0.00	0.93	7.03	13.83	10.56	9.38	5.35	10.50	2.91	9.33	12.90	11.56	4.80	2.78	0.65									5.43	5.31	6.04	2.45	9.65	5.54	176.93
	Northern Samar	4,820	4,546	4.15	5.09	4.29	7.72	7.45	5.52	4.10	3.10	0.59	4.66	9.18	11.95	9.19	7.76	7.55	8.58	7.28	4.40	3.03	0.24	0.39	0.30									0.00	2.45	1.78	3.05	0.00	3.33	127.12
	Weatern Samar	17,334	18,221	0.88	29.84	12.01	30.81	29.75	22.03	12.89	6.80	2.36	16.75	32.95	35.80	32.94	3.20	17.87	16.20	6.95	13.71	7.47	9.04	15.13	0.00									0.00	9.02	23.76	6.43	15.86	12.37	422.82
	Eastern Samar	5,921	5,765	3.99	9.46	5.91	9.75	6.89	6.97	3.29	2.14	0.74	5.71	11.22	10.10	8.97	4.51	6.11	7.10	3.33	5.49	4.13	4.00	4.42	1.56									0.00	2.20	6.68	1.70	4.01	4.06	144.45
IX																																							
	Zamboanga del Norte	6,493	5,528	5.77	8.52	5.47	4.57	4.50	2.20	1.17	0.01		4.16	5.39	5.58	6.38	9.81	5.42	6.13	4.85	5.56	4.02	4.98	4.05	3.53	0.00	0.00	0.00			0.00	0.00	2.46	2.13	4.24	0.12	0.98	8.45	4.70	125.12
	Zamboanga del Sur	29,517	28,826	46.04	44.83	45.28	33.83	23.67	11.56	6.13	0.05		18.93	37.48	39.67	46.65	45.45	22.90	19.70	18.62	14.45	20.84	4.98	18.88	3.50	0.00	0.00	0.00			0.00	0.22	14.07	9.76	23.91	11.61	14.62	17.83	20.59	636.06
	Zamboanga Sibugay	20,841	19,897	19.92	23.71	19.38	23.56	16.49	8.05	4.26	0.03		13.39	11.03	10.79	11.54	21.37	19.14	19.66	13.62	16.58	8.93	13.82	11.18	12.70	0.00	0.00	0.00			0.26	0.00	9.89	12.88	16.73	2.20	8.61	30.87	20.04	400.65
X																																							
	Bukidnon	50,435	50,022	72.56	74.40	54.31	56.56	69.03	26.80	5.66	10.89	4.60	6.58			0.00	0.00	7.28	24.97	10.04	12.15	3.73	18.99	14.43	30.50	45.44	29.24	22.10	0.00	0.00	0.00	0.00	0.00	0.00	16.87	17.08	29.07	58.42	19.91	741.60
	Camiguin	633	455	0.30	0.32	0.30	0.32	0.74	0.55	0.58	0.31	0.06						0.67	0.77	0.81	0.37	0.52	0.97	0.58	0.69	0.70	0.88	0.74	0.61	0.57	0.00	0.00		0.00	0.65	0.43	0.72	0.21	0.73	15.08
	Lanao del Norte	25,240	20,654	22.26	16.21	16.51	18.09	11.41	15.56	0.00	21.47	11.64	0.00	0.03				8.29	8.76	6.12	25.71	10.51	8.03	18.50	29.75	19.45	22.55	3.47	5.13	0.00	0.00	0.00	0.00	2.80	0.00	25.95	24.20	26.65	14.83	393.91
	Misamis Occidental	16,088	16,178	25.80	26.30	28.38	27.09	26.17	14.66	20.43	10.88	2.07						6.10	16.70	19.72	8.84	9.14	7.53	5.67	11.14	6.88	16.70	13.71	13.01	0.00	0.00	0.00		0.00	1.91	14.11	5.11	1.37	2.49	341.90
	Misamis Oriental	11,563	12,449	16.04	10.07	11.15	7.39	11.09	9.12	15.74	0.00	0.00						4.54	5.08	14.93	10.67	8.59	7.10	14.53	11.58	4.18	12.54	7.63	7.98	6.87	0.00	0.00		5.38	13.62	19.03	9.74	10.31	19.71	274.60
XI																																							
	Compostela Valley	21,966	21,966	14.87	14.24	37.50	0.00	34.62	3.54	8.42	0.00	0.00						0.57	18.06	36.32	17.03	11.60	15.35	8.75	17.02	14.29	21.39	19.96	16.15	9.11	0.00	0.00		0.00	6.17	19.65	33.88	8.60	10.06	397.17
	Davao del Norte	40,188	40,188	16.90	20.50	27.44	28.99	49.54	48.39	51.04	27.19	0.00						0.00	15.27	30.38	17.19	21.46	31.61	38.62	34.76	47.55	34.03	29.99	5.22	0.00	0.00	0.00		0.00	14.52	25.58	4.86	38.50	48.89	708.44
	Davao del Sur	29,307	29,015	17.98	47.17	50.90	39.35	15.69	34.80	21.40	9.79	0.00						10.76	28.44	33.37	25.26	32.23	23.33	42.43	13.52	46.80	21.51	6.70	16.50	0.00	0.00	0.00		4.05	24.55	42.98	45.51	38.51	22.67	716.20
	Davao Oriental	16,484	16,602	26.40	26.91	29.04	27.73	17.58	19.83	20.82	0.00	2.11						6.77	19.15	17.31	11.38	8.85	13.91	15.06	13.98	17.79	20.88	5.56	1.68	0.00	0.00	0.00		0.00	8.49	9.61	3.01	7.61	12.00	363.46
XII																																							
	Sarangani	5,588	5,204	5.20	0.00	0.64	0.00	0.00		0.00	5.17	7.41	4.11	8.01	12.10	6.73	4.71	10.66	9.40	5.59	2.73	0.00	0.00	0.59	1.15	0.00		0.00	0.82	2.90	3.11	7.36	5.03	4.91	4.37	3.54	6.13	4.90	1.13	128.38
	South Cotabato	42,631	42,119	41.36	30.14	0.00	9.21	0.75		20.16	8.14	56.18	31.07	78.17	91.86	58.03	49.43	37.53	27.72	33.60	20.33	0.00	0.00	0.00	0.00	0.00		0.00	16.91	44.03	11.70	32.43	36.36	48.45	37.37	38.67	43.05	35.53	55.44	993.62
	North Cotabato	64,812	64,528	74.18	20.37	0.00	0.00	0.00		34.24	34.08	51.92	97.44	#####	#####	81.87	59.56	74.43	30.31	31.03	69.38	19.03	0.00	0.55	0.00	0.00		0.00	23.01	45.50	13.62	65.89	66.59	69.06	55.29	69.60	45.44	69.41	99.87	1,549.38
	Sultan Kudarat	45,058	36,842	37.12	3.95	0.00	0.00	0.00		0.00	41.84	60.09	17.22	62.64	98.38	49.67	22.23	86.71	51.43	25.30	2.11	0.00	0.00	0.00	9.32	0.00		0.00	0.00	7.76	16.24	40.50	23.52	25.42	11.90	53.36	44.39	53.36	11.06	855.51
XIII (CARAGA)																																							
	Agusan del Norte	19,827	19,738	20.16	27.88	34.52	33.01	31.88	23.61	16.52	13.25	2.52						5.59	25.18	38.07	11.60	7.87	9.44	3.09	17.39	8.67	18.19	17.51	5.60	0.00	0.00	0.00		0.00	4.81	11.45	4.48	2.84	7.49	402.61
	Agusan del Sur	42,328	40,935	65.18	66.45	71.70	68.56	66.22	49.03	51.63	27.51	0.00						0.00	34.62	49.79	31.46	0.00	20.50	33.05	20.46	31.82	26.48	21.43	11.16	0.00	0.00	0.00		0.00	10.01	37.55	21.22	9.13	11.27	836.22
	Dinagat Islands	885	803	0.58	1.32	0.78	1.36	0.86	0.97	0.41	0.54	0.10						0.64	1.26	0.88	0.82	0.91	0.13	1.59	0.94	0.97	1.55	1.31	0.17	0.13	0.00	0.00		0.00	0.12	0.54	0.61	1.08	0.16	20.76
	Surigao del Norte	7,477	5,188	3.60	8.50	4.40	6.72	4.98	6.26	4.32	1.01	0.00						4.42	10.54	6.38	5.65	10.62	1.18	10.36	8.99	7.99	13.12	8.59	0.81	0.81	0.00	0.00		0.00	0.00	5.08	2.66	3.99	3.91	144.89
	Surigao del Sur	28,722	25,772	17.47	12.90	16.64	5.58	34.17	0.00	24.95	0.00	0.00						0.00	23.13	41.00	11.76	9.65	19.85	28.51	19.53	46.62	9.32	20.53	29.23	15.09	0.00	0.00		19.41	25.63	26.97	10.40	8.27	40.87	517.48
ARMM																																							
	Basilan	536	530	0.86	0.88	0.95	0.91	0.88	0.65	0.68	0.36	0.07						0.03	0.09	0.10	0.04	0.04	0.03	0.04	0.06	0.07	0.05	0.03	0.00	0.00	0.00	0.00		0.15	0.39	0.34	0.59	0.53	0.19	9.01
	Lanao del Sur	15,222	14,169	13.78	3.02	0.00	0.00	0.00		0.72	0.48	0.11	0.15	1.71	2.13	1.69	0.82	1.14	0.06	0.79	0.49	0.00	0.00	0.00	0.00	0.00		0.00	0.00	2.15	0.00	6.88	6.37	6.93	3.35	6.87	8.62	11.63	18.54	98.42
	Maguindanao	55,748	53,956	55.38	18.33	0.00	0.00	0.00		2.67	2.70	2.23	3.21	8.05	9.01	6.54	5.43	3.67	2.02	1.96	4.11	2.74	0.00	0.57	0.00	0.00		0.00	16.71	33.80	0.00	48.27	42.59	52.59	34.45	40.94	28.62	47.20	74.07	547.87
	Sulu	1,737	1,737	2.83	2.88	3.11	2.03	2.86	2.12	1.72	1.19	0.23						0.11	0.18	0.39	0.16	0.11	0.27	0.16	0.17	0.28	0.22	0.26	0.23	0.16	0.00	0.00		1.31	0.98	1.74	2.76	2.39	0.49	31.31
	Tawi-Tawi	745	942	1.19	1.56	1.69	1.24	1.55	0.77	0.70	0.64	0.12						0.06	0.11	0.17	0.11	0.02	0.11	0.09	0.08	0.12	0.13	0.11	0.10	0.07	0.01	0.00		0.71	0.37	1.36	1.07	1.30	0.42	15.97
																																							49,901
	Nos of Days			10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	

Source: JICA Survey Team

Table F 20 Irrigation Water Demands by Provinces in 2040
(Based on Irrigated Areas Projected under NIMP 2020-2030)

(Unit: MCM)

Region/	Irrigated Area (ha)		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			Annual
Province	Wet	Dry	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
CAR																																							
Abra	16,408	15,633	21.10	21.51	23.21	22.38	21.63	16.03	17.06	9.09	0.00							8.31	16.23	21.55	11.64	2.70	6.00	7.51	6.91	7.35	7.76	16.20	21.19	8.04	0.00	0.00	9.12	18.12	23.77	20.45	1.29	21.13	387.30
Apayao	8,608	8,533	12.59	12.83	13.85	13.37	12.93	9.58	7.77	5.47	1.04							0.00	10.45	11.68	8.93	7.50	7.18	6.45	7.47	4.35	3.58	5.42	11.17	2.40	3.81	0.45	5.57	0.00	0.00	0.00	10.62	12.65	209.13
Benguet	13,063	12,837	17.08	17.41	18.79	18.09	17.48	12.96	13.77	7.34	1.40			0.00	11.83	12.60	8.52	6.47	9.07	6.90	6.63	4.29	2.77	5.24	4.11	0.00	0.00	0.00					7.45	14.78	3.37	16.62	14.39	8.98	268.36
Ifugao	13,175	11,825			8.84	11.12	20.74	13.80	17.78	19.37	19.34	22.86	16.16	15.51	18.47	11.56	7.87	0.00	0.00				0.00	12.56	8.06	3.44	0.90	0.00	6.05	0.39	12.77	12.35	1.57	8.00	0.00	0.00	0.00		269.53
Kalinga	23,773	22,544	33.52	34.14	36.88	35.55	34.40	25.56	27.20	14.51	2.77							0.23	18.88	21.55	16.13	5.81	16.59	8.90	16.93	11.78	15.21	0.00	16.59	21.76	0.00	0.00	14.79	29.39	38.55	32.99	28.52	33.85	592.98
Mt. Province	11,086	10,793	12.58	12.15	1.77	8.48	4.85	0.30							10.01	5.87	12.86	14.15	7.20	10.08	7.18	0.00	1.24	0.73	5.26	4.66	1.44	0.00	0.00	3.42	13.68	7.36	0.24	0.00	7.93	3.80	6.52	13.67	177.43
I																																							
Ilocos Norte	50,569	33,819	46.87	47.77	51.55	49.66	44.20	25.16	20.18	3.49									24.01	63.61	64.17	73.32	34.39	29.18	29.74	54.37	4.01	31.60	8.54	0.00	0.00	0.00	26.68	49.06	21.67	48.43	5.09	47.21	903.96
Ilocos Sur	39,219	23,305	31.95	32.57	35.15	33.75	30.04	17.11	13.65	2.36									0.00	29.92	15.05	38.62	15.16	23.54	23.42	57.49	23.71	17.62	35.34	0.00	17.66	2.09	0.00	33.62	42.07	33.18	27.17	32.28	664.50
La Union	19,715	15,090	20.53	20.92	22.58	21.67	19.29	10.99	8.76	1.52									0.90	10.35	23.79	11.34	11.23	5.62	13.10	10.03	13.09	0.62	14.15	18.05	0.00	0.00	11.84	21.70	27.14	21.36	17.46	20.74	378.78
Pangasinan	174,372	123,760	#####	#####	#####	#####	#####	#####	#####	71.15	0.00	0.00							0.00	0.00	62.16	56.86	#####	#####	#####	#####	#####	#####	70.87	#####	0.00	#####	#####	#####	#####	#####	#####	#####	3,334.80
II																																							
Batanes	354	248	0.29	0.31	0.40	0.38	0.36	0.27	0.24	0.05								0.12	0.86	0.56	0.28	0.60	0.71	0.48	0.49	0.33	0.41	0.57	0.31	0.27	0.00		0.10	0.47	0.38	0.02	0.32	0.38	9.96
Cagayan	121,204	125,689	#####	#####	#####	#####	#####	#####	#####	83.48	0.00							74.90	#####	#####	#####	#####	#####	#####	#####	91.74	#####	#####	63.20	0.00	0.00	0.00	0.00	#####	#####	#####	49.24	#####	3,719.63
Isabela	167,926	161,018	#####	#####	#####	#####	#####	#####	#####	#####	0.00	35.32	0.27					2.59	#####	#####	#####	#####	86.70	#####	#####	#####	52.73	0.00	#####	0.00	0.00	0.00	95.88	0.00	29.76	93.22	37.03	#####	3,788.34
Nueva Vizcaya	27,362	27,362	39.93	40.68	43.92	42.38	40.97	30.38	32.38	17.26	3.29							6.58	47.53	51.44	6.37	11.37	20.91	11.54	5.17	18.91	11.35	8.75	0.00	0.00	11.90	0.00	0.00	38.95	49.72	24.83	0.00	4.90	621.42
Quirino	12,577	12,542	14.87	19.26	16.22	20.03	19.36	14.35	15.29	8.15	0.00							3.86	22.15	18.82	15.22	4.98	6.49	7.73	8.49	5.98	7.14	7.41	0.00	5.11	0.00	0.00	9.36	7.65	23.16	18.95	7.11	18.92	326.04
III																																							
Aurora	17,900	17,790	19.89	15.11	17.33	16.80	21.27	15.88	25.72	31.58	24.82	22.03	0.00	0.00				0.00	15.27	24.78	14.33	24.88	11.53	11.33	22.14	23.66	17.20	0.92	7.87	0.00	0.48	0.00				11.68	23.22	20.05	439.78
Bataan	15,631	15,734	22.37	22.80	24.61	23.62	22.81	16.88	17.91	9.54	1.82								0.00	6.94	12.20	13.15	10.75	8.16	9.37	19.89	17.34	6.91	7.36	5.22	9.78	0.00	2.74	16.41	15.56	22.87	18.65	15.93	381.56
Bulacan	40,589	28,554	40.17	40.95	44.19	42.51	27.36	30.40	32.31	17.21	0.00								16.37	35.19	20.57	29.22	0.00	22.03	29.21	10.77	22.26	61.56	15.73	12.05	0.00	3.94	0.00	12.72	47.05	17.42	19.10	40.01	690.29
Nueva Ecija	173,455	170,453	#####	#####	#####	#####	#####	#####	#####	#####	#####	35.94	53.27	10.10			20.65	4.44	#####	18.85	#####	#####	23.66	72.91	#####	#####	19.30	69.88	30.80	#####	21.41	0.00	#####	#####	#####	#####	#####	#####	3,975.70
Pampanga	59,521	64,683	91.28	93.05	#####	96.69	93.38	69.14	73.70	39.26	7.47								7.59	46.11	76.15	42.80	37.49	28.36	6.20	23.87	59.23	29.92	15.64	39.59	21.44	30.16	43.05	82.52	#####	89.41	76.09	90.77	1,617.42
Tarlac	82,993	73,022	#####	#####	#####	#####	#####	78.25	83.48	44.47	8.46								10.77	84.30	98.08	94.89	24.94	0.00	44.21	#####	76.14	32.87	6.92	15.28	34.63	12.95	34.38	#####	#####	#####	85.90	75.97	1,940.70
Zambales	36,841	21,558	29.93	30.52	32.92	31.69	30.60	22.64	24.07	12.82	0.00								0.00	27.89	41.28	20.98	12.97	33.47	16.32	4.65	22.68	19.38	0.75	26.64	16.28	0.00	0.00	20.60	34.36	23.21	24.92	29.77	591.36
IV-A																																							
Batangas	3,561	4,427	4.64	4.70	6.93	6.64	6.42	4.75	5.04	2.69	0.51				0.95	4.71	6.21	3.14	2.09	4.19	0.14	4.54	2.36	2.14	1.28	0.20	0.00	0.00	0.00				0.00	3.75	4.26	5.48	0.97	6.26	95.01
Cavite	19,197	18,316	25.89	26.39	28.47	27.34	26.41	19.55	20.77	11.07	2.11				11.85	25.31	26.40	3.96	0.11	13.25	6.71	10.83	22.93	9.05	17.97	28.64	6.93	0.00	0.00				0.00	1.69	7.65	22.57	21.58	11.02	436.43
Laguna	24,023	23,982	37.90	38.64	41.69	40.00	38.64	28.61	30.39	16.19	0.00				14.81	15.52	28.05	17.87	27.97	15.47	15.80	18.56	15.28	17.34	13.72	1.16	0.00	0.00	0.00				0.00	0.00	20.15	7.13	8.26	37.74	546.87
Quezon	75,248	69,097	7.20	#####	98.50	#####	76.35	82.65	65.39	3.32	8.88				12.39	66.23	#####	66.40	76.14	30.48	14.82	54.22	44.65	81.06	#####	34.36	0.00	0.00	0.00				28.92	23.25	61.28	34.30	60.34	14.82	1,506.42
Rizal	4,601	4,559	6.36	1.63	4.75	6.70	6.48	4.80	5.09	0.00	0.52				0.00	2.14	6.79	3.64	1.01	1.23	2.50	3.62	3.21	2.51	2.50	0.00	1.16	0.00	0.00				0.00	3.82	2.73	5.67	3.24	6.48	88.56
IV-B																																							
Marinduque	1,735	1,704	1.78	0.94	2.85	2.96	2.10	2.37	3.30	3.18	3.20	2.20	0.43	0.22	1.01	3.13	4.45	1.58	1.21	1.72	0.81	2.80	1.85	2.03	1.73	0.95	0.29	0.00	0.06							1.40	0.40	3.58	54.52
Occidental Mindoro	30,212	25,296	35.59	36.28	39.15	37.50	36.22	26.82	28.39	15.13	2.88								0.00	22.72	42.28	14.43	19.18	0.00	1.64	20.05	20.51	9.88	3.12	28.76	0.00	6.28	7.29	7.18	46.06	36.47	19.18	28.83	591.83
Oriental Mindoro	28,104	24,450	34.70	33.49	40.00	41.54	40.99	33.24	46.38	36.54	29.38	31.06	1.27	3.03	19.78	11.55	29.64	16.17	7.69	18.43	4.85	21.01	14.68	14.34	7.55	16.34	0.00	3.08	0.00							5.80	25.51	27.97	616.00
Palawan	25,447	21,911	34.33	30.96	37.02	38.38	37.86	30.70	42.72	41.20	41.48	28.39	14.52	2.77	23.74	24.71	44.36	27.35	19.66	0.65	13.10	8.11	18.35	22.04	14.71	1.28	0.43	0.00	0.00							18.02	15.40	31.57	663.80
Romblon	2,836	2,999	3.80	4.21	5.03	5.22	5.15	4.17	5.82	5.61	5.65	3.88	1.98	0.38	2.65	5.12	7.27	4.06	4.36	1.98	2.21	1.96	1.48	0.61	1.95	2.16	0.96	0.00	0.00							1.50	3.50	6.31	98.98
V																																							
Albay	33,480	31,455	48.76	9.03	40.95	34.23	38.53	33.44	60.68	55.94	14.18	20.71	3.16		15.64	60.40	44.81	58.14	21.67	43.83	30.58	18.46	16.50	31.19	9.25	19.68	9.37	0.00	0.00							0.00	46.22	22.47	807.82
Camarines Norte	7,859	7,842	12.14	5.78	9.85	13.55	6.50	10.84	15.13	11.20	3.16	2.66	0.79		7.35	9.73	12.65	2.36	3.54	6.41	6.32	6.23	3.25	8.08	2.73	3.65	0.00	0.00	0.00							0.00	1.91	13.25	179.05
Camarines Sur	75,626	72,467	70.13	77.87	97.51	#####	#####	#####	#####	#####	99.26	47.82	0.00		50.35	96.57	98.20	98.42	85.81	81.71	69.19	38.82	81.58	#####	44.90	35.99	0.00	0.00	0.00	0.00						0.00	32.09	#####	2,029.24
Catanduanes	2,621	2,671	4.15	0.67	4.46	3.50	2.08	3.71	5.16	1.99	3.66	1.76	0.27		0.00	4.73	4.93	3.62	2.60	3.61	3.07	0.71	2.16	2.58	1.38	3.97	1.05	0.00	0.09							0.00	1.87	2.86	70.62
Masbate	51,379	52,315	57.26	73.61	58.95	91.25	93.08	37.91	#####	24.80	63.99	30.72	4.69		31.50	36.54	99.57	89.42	16.22	41.27	33.06	49.69	39.21	26.70	55.20	40.27	7.08	0.00	1.78							0.00	27.57	#####	1,343.12
Sorsogon	23,266	23,158	4.91	32.40	31.61	31.06	40.98	13.90	44.78	15.81	31.79	15.27	0.00		2.04	13.81	49.12	29.93	12.54	14.56	7.10	19.33	20.01	11.40	26.93	11.35	0.12	0.00	0.80							0.00	18.20	48.70	548.47

VI																																							
	Aklan	9,569	8,673	12.85	12.45	12.21	7.96	3.69	0.31							4.50	17.76	16.25	10.34	10.10	4.43	8.26	4.82	8.16	5.24	9.52	5.27	4.01	0.00	0.36	0.00	4.79	10.60	2.89	3.40	5.61	5.47	12.08	5.19	208.49
	Antique	14,162	12,941	18.08	16.75	9.77	9.31	5.30	0.00	0.02						0.00	0.00	18.52	7.93	4.01	0.00	4.77	6.08	5.97	6.24	4.84	0.00	0.00	0.00	0.00	0.00	0.00	9.98	4.93	4.89	11.31	16.64	17.42	19.16	201.93
	Capiz	25,017	21,153	28.45	27.36	7.97	17.57	8.11	0.00							22.44	16.12	41.13	14.20	0.00	0.00	0.13	0.00	14.23	19.94	0.00	7.98	0.00	0.00	0.00	0.00	3.04	24.22	6.09	8.72	25.87	12.39	19.90	24.43	350.30
	Guimaras	904	719	1.14	0.71	1.08	0.71	0.33	0.00							0.23	0.65	1.80	0.90	0.59	0.29	0.17	0.30	0.50	0.64	0.61	0.86	0.00	0.00	0.00	0.00	0.00	1.03	0.57	0.45	0.00	1.11	0.48	1.23	16.37
	Iloilo	62,233	49,616	61.50	59.65	32.17	45.03	31.47	15.32	8.23	0.06					35.79	6.17	57.90	31.56	22.38	13.29	15.15	0.00	46.72	64.68	0.00	32.08	4.19	0.00	0.00	0.00	0.00	56.71	24.57	38.00	51.25	32.92	59.06	64.98	910.85
	Negros Occidental	93,667	66,142	97.15	#####	#####	81.45	8.97	3.17							24.32	#####	#####	#####	49.78	#####	68.19	83.95	#####	#####	60.34	73.37	1.03	0.00	0.00	16.81	44.29	58.73	31.11	#####	#####	#####	#####	84.59	2,335.03
VII																																							
	Bohol	45,622	40,881	53.81	49.46	27.34	29.61	35.48	17.61	32.39	0.00	0.00					0.00	18.78	0.00	0.00	54.62	48.17	32.09	60.33	60.20	21.92	52.03	22.94	11.56	39.28	0.00	0.00	39.79	36.36	45.67	55.27	41.69	70.81	67.67	1,024.88
	Cebu	6,949	6,029	10.37	10.18	6.00	7.25	4.21	0.00	0.00								4.63	4.00	11.17	9.14	10.39	2.84	5.23	4.30	8.74	10.52	9.90	0.00	0.00	0.00		3.37	9.35	8.77	5.94	4.00	9.25	8.43	167.99
	Negros Oriental	23,747	23,736	38.72	45.79	45.30	29.29	13.63	1.14							23.80	33.52	69.98	50.78	25.58	23.94	25.94	33.55	26.39	22.62	32.76	22.11	2.31	0.00	0.00	3.52	20.70	40.22	45.11	18.83	36.00	23.37	16.51	25.92	797.37
	Siquijor	665	321	0.38	0.33	0.39	0.34	0.31	0.13	0.03								0.72	1.21	0.86	0.34	0.39	0.70	0.89	1.10	0.63	1.16	0.90	0.28	0.03	0.00		0.29	0.32	0.40	0.23	0.05	0.47	0.54	13.44
VIII																																							
	Biliran	3,638	3,822	2.25	3.11	6.78	6.48	4.19	4.63	4.88	1.10	0.00						0.88	4.82	3.81	4.67	3.63	5.62	3.77	2.70	2.58	2.98	3.91	0.71	0.66				0.00	3.88	7.23	6.06	5.14	0.02	96.48
	Northern Leyte	78,139	79,960	#####	#####	60.89	72.41	24.63	24.15	0.00	0.00	0.00						37.15	31.54	#####	99.09	#####	24.73	31.67	51.45	96.81	#####	#####	1.32	40.20				60.33	18.09	55.30	39.01	#####	50.82	1,652.92
	Southern Leyte	7,872	7,780	12.54	12.78	6.07	5.70	6.13	0.00	0.00	0.00	1.01	7.60	14.95	11.41	10.14	5.78	11.34	3.15	10.08	13.94	12.50	5.19	3.00	0.70									5.87	5.74	6.53	2.64	10.43	5.99	191.21
	Northern Samar	4,820	4,546	4.15	5.09	4.29	7.72	7.45	5.52	4.10	3.10	0.59	4.66	9.18	11.95	9.19	7.76	7.55	8.58	7.28	4.40	3.03	0.24	0.39	0.30									0.00	2.45	1.78	3.05	0.00	3.33	127.12
	Weatern Samar	23,269	24,459	1.18	40.06	16.12	41.36	39.94	29.57	17.30	9.13	3.16	22.48	44.24	48.06	44.21	4.30	23.98	21.74	9.33	18.40	10.03	12.14	20.32	0.00									0.00	12.11	31.90	8.63	21.29	16.61	567.58
	Eastern Samar	5,921	5,765	3.99	9.46	5.91	9.75	6.89	6.97	3.29	2.14	0.74	5.71	11.22	10.10	8.97	4.51	6.11	7.10	3.33	5.49	4.13	4.00	4.42	1.56									0.00	2.20	6.68	1.70	4.01	4.06	144.45
IX																																							
	Zamboanga del Norte	6,493	5,528	5.77	8.52	5.47	4.57	4.50	2.20	1.17	0.01		4.16	5.39	5.58	6.38	9.81	5.42	6.13	4.85	5.56	4.02	4.98	4.05	3.53	0.00	0.00	0.00			0.00	0.00	2.46	2.13	4.24	0.12	0.98	8.45	4.70	125.12
	Zamboanga del Sur	33,566	32,780	52.36	50.98	51.49	38.47	26.92	13.15	6.97	0.05		21.53	42.62	45.12	53.05	51.68	26.04	22.41	21.18	16.43	23.70	5.66	21.47	3.98	0.00	0.00	0.00			0.00	0.25	16.00	11.10	27.19	13.20	16.62	20.28	23.42	723.32
	Zamboanga Sibugay	26,605	25,401	25.43	30.27	24.74	30.08	21.05	10.28	5.44	0.04		17.09	14.08	13.78	14.73	27.29	24.43	25.10	17.39	21.16	11.40	17.65	14.27	16.21	0.00	0.00	0.00			0.33	0.00	12.63	16.45	21.35	2.81	11.00	39.41	25.58	511.46
X																																							
	Bukidnon	60,892	60,393	87.60	89.82	65.57	68.29	83.34	32.35	6.84	13.15	5.55	7.95			0.00	0.00	8.78	30.14	12.12	14.67	4.51	22.92	17.43	36.82	54.87	35.30	26.68	0.00	0.00	0.00	0.00	0.00	0.00	20.37	20.62	35.09	70.54	24.04	895.35
	Camiguin	633	455	0.30	0.32	0.30	0.32	0.74	0.55	0.58	0.31	0.06						0.67	0.77	0.81	0.37	0.52	0.97	0.58	0.69	0.70	0.88	0.74	0.61	0.57	0.00	0.00		0.00	0.65	0.43	0.72	0.21	0.73	15.08
	Lanao del Norte	31,445	25,732	27.73	20.20	20.57	22.53	14.22	19.38	0.00	26.75	14.51	0.00	0.04				10.33	10.92	7.62	32.03	13.10	10.00	23.05	37.07	24.23	28.09	4.33	6.39	0.00	0.00	0.00	0.00	3.49	0.00	32.33	30.15	33.20	18.48	490.75
	Misamis Occidental	20,189	20,302	32.38	33.00	35.61	34.00	32.84	18.39	25.64	13.66	2.60						7.65	20.96	24.75	11.10	11.47	9.44	7.12	13.98	8.63	20.96	17.20	16.32	0.00	0.00	0.00		0.00	2.40	17.70	6.41	1.72	3.13	429.06
	Misamis Oriental	15,316	16,489	21.25	13.34	14.77	9.79	14.69	12.08	20.85	0.00	0.00						6.02	6.73	19.77	14.14	11.38	9.40	19.25	15.33	5.53	16.61	10.11	10.57	9.09	0.00	0.00		7.12	18.05	25.21	12.90	13.66	26.11	363.73
XI																																							
	Compostela Valley	26,473	26,473	17.92	17.17	45.19	0.00	41.72	4.27	10.14	0.00	0.00						0.69	21.77	43.77	20.52	13.98	18.50	10.54	20.51	17.22	25.78	24.06	19.47	10.98	0.00	0.00		0.00	7.43	23.68	40.84	10.37	12.13	478.66
	Davao del Norte	48,090	48,090	20.22	24.53	32.84	34.69	59.28	57.90	61.08	32.54	0.00						0.00	18.28	36.36	20.57	25.68	37.83	46.21	41.60	56.90	40.72	35.89	6.24	0.00	0.00	0.00		0.00	17.37	30.60	5.81	46.07	58.50	847.72
	Davao del Sur	36,365	36,002	22.31	58.53	63.15	48.83	19.46	43.18	26.56	12.14	0.00						13.35	35.29	41.41	31.34	39.99	28.95	52.65	16.78	58.08	26.70	8.31	20.47	0.00	0.00	0.00		5.02	30.46	53.33	56.47	47.78	28.13	888.66
	Davao Oriental	20,803	20,952	33.31	33.96	36.64	34.99	22.19	25.03	26.27	0.00	2.66						8.54	24.17	21.85	14.36	11.17	17.56	19.00	17.64	22.45	26.35	7.01	2.12	0.00	0.00	0.00		0.00	10.72	12.13	3.80	9.61	15.14	458.69
XII																																							
	Sarangani	5,588	5,204	5.20	0.00	0.64	0.00	0.00		0.00	5.17	7.41	4.11	8.01	12.10	6.73	4.71	10.66	9.40	5.59	2.73	0.00	0.00	0.59	1.15	0.00		0.00	0.82	2.90	3.11	7.36	5.03	4.91	4.37	3.54	6.13	4.90	1.13	128.38
	South Cotabato	50,279	49,675	48.77	35.54	0.00	10.86	0.88		23.78	9.60	66.26	36.64	92.19	#####	68.44	58.30	44.26	32.69	39.63	23.98	0.00	0.00	0.00	0.00	0.00		0.00	19.94	51.93	13.80	38.25	42.88	57.15	44.07	45.61	50.77	41.90	65.39	1,171.88
	North Cotabato	77,754	77,414	89.00	24.44	0.00	0.00	0.00		41.08	40.89	62.29	#####	#####	#####	98.22	71.46	89.30	36.36	37.23	83.23	22.83	0.00	0.66	0.00	0.00		0.00	27.60	54.58	16.34	79.05	79.89	82.85	66.34	83.50	54.52	83.28	#####	1,858.78
	Sultan Kudarat	50,687	41,444	41.75	4.45	0.00	0.00	0.00		0.00	47.06	67.60	19.37	70.46	#####	55.88	25.00	97.54	57.85	28.46	2.38	0.00	0.00	0.00	10.49	0.00		0.00	0.00	8.72	18.26	45.56	26.45	28.59	13.39	60.03	49.94	60.03	12.44	962.38
XIII (CARAGA)																																							
	Agusan del Norte	23,544	23,438	23.93	33.11	40.99	39.20	37.86	28.03	19.61	15.73	2.99						6.64	29.90	45.21	13.77	9.34	11.21	3.67	20.65	10.29	21.59	20.80	6.65	0.00	0.00	0.00		0.00	5.71	13.60	5.32	3.37	8.89	478.08
	Agusan del Sur	51,799	50,094	79.76	81.31	87.74	83.90	81.03	60.00	63.18	33.66	0.00						0.00	42.36	60.93	38.50	0.00	25.09	40.44	25.04	38.94	32.40	26.23	13.66	0.00	0.00	0.00		0.00	12.25	45.95	25.97	11.18	13.79	1,023.32
	Dinagat Islands	885	803	0.58	1.32	0.78	1.36	0.86	0.97	0.41	0.54	0.10						0.64	1.26	0.88	0.82	0.91	0.13	1.59	0.94	0.97	1.55	1.31	0.17	0.13	0.00	0.00		0.00	0.12	0.54	0.61	1.08	0.16	20.76
	Surigao del Norte	7,477	5,188	3.60	8.50	4.40	6.72	4.98	6.26	4.32	1.01	0.00						4.42	10.54	6.38	5.65	10.62	1.18	10.36	8.99	7.99	13.12	8.59	0.81	0.81	0.00	0.00		0.00	0.00	5.08	2.66	3.99	3.91	144.89
	Surigao del Sur	35,620	31,961	21.67	16.00	20.64	6.92	42.38	0.00	30.94	0.00	0.00						0.00	28.68	50.85	14.58	11.97	24.61	35.36	24.22	57.82	11.55	25.46	36.24	18.71	0.00	0.00		24.07	31.79	33.45	12.90	10.26	50.69	641.76
ARMM																																							
	Basilan	536	530	0.86	0.88	0.95	0.91	0.88	0.65	0.68	0.36	0.07						0.03	0.09	0.10	0.04	0.04	0.03	0.04	0.06	0.07	0.05	0.03	0.00	0.00	0.00	0.00		0.15	0.39	0.34	0.59	0.53	0.19	9.01
	Lanao del Sur	17,652	16,430	15.98	3.50	0.00	0.00	0.00		0.83	0.56	0.13	0.17	1.99	2.46	1.96	0.96	1.32	0.07	0.91	0.57	0.00	0.00	0.00	0.00	0.00		0.00	0.00	2.49	0.00	7.97	7.38	8.04	3.88	7.96	10.00	13.48	21.50	114.13
	Maguindanao	69,491	67,257	69.03	22.85	0.00	0.00	0.00		3.32	3.37	2.78	4.00	10.03	11.23	8.15	6.76	4.58	2.52	2.45	5.13	3.41	0.00	0.71	0.00	0.00		0.00	20.83	42.14	0.00	60.17	53.09	65.56	42.94	51.03	35.67	58.84	92.33	682.94
	Sulu	1,737	1,737	2.83	2.88	3.11	2.03	2.86	2.12	1.72	1.19	0.23						0.11	0.18	0.39	0.16	0.11	0.27	0.16	0.17	0.28	0.22	0.26	0.23	0.16	0.00	0.00		1.31	0.98	1.74	2.76	2.39	0.49	31.31
	Tawi-Tawi	745	942	1.19	1.56	1.69	1.24	1.55	0.77	0.70	0.64	0.12						0.06	0.11	0.17	0.11	0.02	0.11	0.09	0.08	0.12	0.13	0.11	0.10	0.07	0.01	0.00		0.71	0.37	1.36	1.07	1.30	0.42	15.97
																																							57,283
	Nos of Days			10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	

Source: JICA Survey Team

Table F 21 Irrigation Water Demands by Provinces in 2050
(Based on Irrigated Areas Projected under NIMP 2020-2030)

(Unit: MCM)

Region/	Irrigated Area (ha)		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			Annual
Province	Wet	Dry	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
CAR																																							
Abra	16,408	15,633	21.10	21.51	23.21	22.38	21.63	16.03	17.06	9.09	0.00							8.31	16.23	21.55	11.64	2.70	6.00	7.51	6.91	7.35	7.76	16.20	21.19	8.04	0.00	0.00	9.12	18.12	23.77	20.45	1.29	21.13	387.30
Apayao	8,608	8,533	12.59	12.83	13.85	13.37	12.93	9.58	7.77	5.47	1.04							0.00	10.45	11.68	8.93	7.50	7.18	6.45	7.47	4.35	3.58	5.42	11.17	2.40	3.81	0.45	5.57	0.00	0.00	0.00	10.62	12.65	209.13
Benguet	13,063	12,837	17.08	17.41	18.79	18.09	17.48	12.96	13.77	7.34	1.40			0.00	11.83	12.60	8.52	6.47	9.07	6.90	6.63	4.29	2.77	5.24	4.11	0.00	0.00	0.00					7.45	14.78	3.37	16.62	14.39	8.98	268.36
Ifugao	13,175	11,825			8.84	11.12	20.74	13.80	17.78	19.37	19.34	22.86	16.16	15.51	18.47	11.56	7.87	0.00	0.00				0.00	12.56	8.06	3.44	0.90	0.00	6.05	0.39	12.77	12.35	1.57	8.00	0.00	0.00	0.00		269.53
Kalinga	24,069	22,826	33.94	34.56	37.34	35.99	34.83	25.88	27.54	14.69	2.81							0.23	19.12	21.82	16.33	5.89	16.80	9.01	17.15	11.92	15.40	0.00	16.79	22.03	0.00	0.00	14.98	29.76	39.03	33.40	28.88	34.27	600.39
Mt. Province	11,086	10,793	12.58	12.15	1.77	8.48	4.85	0.30							10.01	5.87	12.86	14.15	7.20	10.08	7.18	0.00	1.24	0.73	5.26	4.66	1.44	0.00	0.00	3.42	13.68	7.36	0.24	0.00	7.93	3.80	6.52	13.67	177.43
I																																							
Ilocos Norte	52,706	35,249	48.85	49.79	53.73	51.76	46.06	26.23	21.03	3.64									25.03	66.30	66.88	76.42	35.84	30.41	31.00	56.67	4.18	32.93	8.90	0.00	0.00	0.00	27.80	51.13	22.59	50.48	5.31	49.20	942.16
Ilocos Sur	41,493	24,657	33.81	34.45	37.19	35.70	31.78	18.10	14.44	2.50									0.00	31.66	15.92	40.85	16.04	24.91	24.77	60.82	25.09	18.64	37.39	0.00	18.69	2.21	0.00	35.56	44.51	35.11	28.75	34.15	703.03
La Union	20,523	15,708	21.37	21.78	23.51	22.55	20.08	11.44	9.12	1.58									0.94	10.78	24.77	11.80	11.69	5.85	13.64	10.44	13.63	0.65	14.73	18.79	0.00	0.00	12.33	22.59	28.25	22.24	18.17	21.59	394.29
Pangasinan	183,240	130,054	#####	#####	#####	#####	#####	#####	#####	74.76	0.00	0.00							0.00	0.00	65.32	59.75	#####	#####	#####	#####	#####	#####	74.48	#####	0.00	#####	#####	#####	#####	#####	#####	#####	3,504.41
II																																							
Batanes	354	248	0.29	0.31	0.40	0.38	0.36	0.27	0.24	0.05								0.12	0.86	0.56	0.28	0.60	0.71	0.48	0.49	0.33	0.41	0.57	0.31	0.27	0.00		0.10	0.47	0.38	0.02	0.32	0.38	9.96
Cagayan	126,406	131,083	#####	#####	#####	#####	#####	#####	#####	87.07	0.00							78.11	#####	#####	#####	#####	#####	#####	#####	95.67	#####	#####	65.91	0.00	0.00	0.00	0.00	#####	#####	#####	51.36	#####	3,879.27
Isabela	176,159	168,912	#####	#####	#####	#####	#####	#####	#####	#####	0.00	37.05	0.28					2.72	#####	#####	#####	#####	90.95	#####	#####	#####	55.31	0.00	#####	0.00	0.00	0.00	#####	0.00	31.22	97.79	38.84	#####	3,974.06
Nueva Vizcaya	27,362	27,362	39.93	40.68	43.92	42.38	40.97	30.38	32.38	17.26	3.29							6.58	47.53	51.44	6.37	11.37	20.91	11.54	5.17	18.91	11.35	8.75	0.00	0.00	11.90	0.00	0.00	38.95	49.72	24.83	0.00	4.90	621.42
Quirino	12,955	12,919	15.32	19.84	16.70	20.63	19.94	14.78	15.74	8.39	0.00							3.97	22.81	19.39	15.68	5.13	6.69	7.97	8.75	6.16	7.35	7.63	0.00	5.27	0.00	0.00	9.64	7.88	23.85	19.52	7.32	19.49	335.84
III																																							
Aurora	19,364	19,245	21.52	16.34	18.74	18.18	23.01	17.18	27.83	34.16	26.85	23.83	0.00	0.00				0.00	16.52	26.81	15.51	26.92	12.48	12.25	23.95	25.60	18.61	0.99	8.52	0.00	0.52	0.00				12.64	25.12	21.69	475.75
Bataan	16,564	16,674	23.71	24.17	26.08	25.03	24.17	17.89	18.98	10.11	1.92								0.00	7.36	12.92	13.94	11.39	8.65	9.93	21.08	18.38	7.32	7.80	5.53	10.36	0.00	2.90	17.39	16.49	24.23	19.76	16.88	404.35
Bulacan	41,945	29,508	41.52	42.32	45.67	43.93	28.28	31.41	33.39	17.79	0.00								16.92	36.36	21.25	30.20	0.00	22.76	30.19	11.13	23.00	63.62	16.25	12.45	0.00	4.07	0.00	13.14	48.62	18.01	19.74	41.35	713.36
Nueva Ecija	179,524	176,417	#####	#####	#####	#####	#####	#####	#####	#####	#####	37.20	55.13	10.46			21.37	4.59	#####	19.51	#####	#####	24.49	75.46	#####	#####	19.97	72.32	31.88	#####	22.16	0.00	#####	#####	#####	#####	#####	#####	4,114.79
Pampanga	62,427	67,841	95.73	97.59	#####	#####	97.94	72.51	77.29	41.18	7.83								7.96	48.37	79.87	44.89	39.32	29.75	6.50	25.04	62.12	31.38	16.41	41.53	22.49	31.64	45.15	86.55	#####	93.77	79.80	95.20	1,696.39
Tarlac	88,908	78,226	#####	#####	#####	#####	#####	83.83	89.43	47.64	9.06								11.54	90.31	#####	#####	26.72	0.00	47.36	#####	81.56	35.21	7.42	16.37	37.10	13.87	36.83	#####	#####	#####	92.02	81.38	2,079.03
Zambales	39,753	23,262	32.30	32.93	35.53	34.20	33.02	24.43	25.98	13.83	0.00								0.00	30.10	44.55	22.64	13.99	36.12	17.61	5.02	24.47	20.91	0.81	28.74	17.56	0.00	0.00	22.23	37.08	25.05	26.89	32.12	638.11
IV-A																																							
Batangas	3,561	4,427	4.64	4.70	6.93	6.64	6.42	4.75	5.04	2.69	0.51				0.95	4.71	6.21	3.14	2.09	4.19	0.14	4.54	2.36	2.14	1.28	0.20	0.00	0.00	0.00				0.00	3.75	4.26	5.48	0.97	6.26	95.01
Cavite	21,159	20,188	28.53	29.08	31.38	30.14	29.11	21.55	22.90	12.20	2.32				13.06	27.90	29.10	4.36	0.13	14.60	7.39	11.94	25.27	9.98	19.80	31.57	7.64	0.00	0.00				0.00	1.87	8.43	24.87	23.78	12.15	481.04
Laguna	25,984	25,939	40.99	41.79	45.09	43.26	41.79	30.94	32.87	17.51	0.00				16.02	16.78	30.34	19.33	30.26	16.74	17.09	20.08	16.53	18.75	14.84	1.25	0.00	0.00	0.00				0.00	0.00	21.79	7.71	8.93	40.83	591.51
Quezon	84,192	77,311	8.06	#####	#####	#####	85.43	92.47	73.16	3.71	9.93				13.86	74.10	#####	74.30	85.19	34.10	16.58	60.67	49.95	90.70	#####	38.44	0.00	0.00	0.00				32.36	26.01	68.57	38.38	67.51	16.58	1,685.48
Rizal	4,601	4,559	6.36	1.63	4.75	6.70	6.48	4.80	5.09	0.00	0.52				0.00	2.14	6.79	3.64	1.01	1.23	2.50	3.62	3.21	2.51	2.50	0.00	1.16	0.00	0.00				0.00	3.82	2.73	5.67	3.24	6.48	88.56
IV-B																																							
Marinduque	1,735	1,704	1.78	0.94	2.85	2.96	2.10	2.37	3.30	3.18	3.20	2.20	0.43	0.22	1.01	3.13	4.45	1.58	1.21	1.72	0.81	2.80	1.85	2.03	1.73	0.95	0.29	0.00	0.06							1.40	0.40	3.58	54.52
Occidental Mindoro	30,475	25,516	35.90	36.60	39.49	37.83	36.54	27.06	28.64	15.26	2.90								0.00	22.92	42.65	14.56	19.35	0.00	1.65	20.22	20.68	9.97	3.14	29.02	0.00	6.34	7.35	7.24	46.46	36.79	19.34	29.08	596.99
Oriental Mindoro	28,104	24,450	34.70	33.49	40.00	41.54	40.99	33.24	46.38	36.54	29.38	31.06	1.27	3.03	19.78	11.55	29.64	16.17	7.69	18.43	4.85	21.01	14.68	14.34	7.55	16.34	0.00	3.08	0.00							5.80	25.51	27.97	616.00
Palawan	25,447	21,911	34.33	30.96	37.02	38.38	37.86	30.70	42.72	41.20	41.48	28.39	14.52	2.77	23.74	24.71	44.36	27.35	19.66	0.65	13.10	8.11	18.35	22.04	14.71	1.28	0.43	0.00	0.00							18.02	15.40	31.57	663.80
Romblon	2,836	2,999	3.80	4.21	5.03	5.22	5.15	4.17	5.82	5.61	5.65	3.88	1.98	0.38	2.65	5.12	7.27	4.06	4.36	1.98	2.21	1.96	1.48	0.61	1.95	2.16	0.96	0.00	0.00							1.50	3.50	6.31	98.98
V																																							
Albay	34,513	32,425	50.27	9.31	42.21	35.29	39.72	34.47	62.55	57.66	14.62	21.35	3.26		16.12	62.26	46.19	59.94	22.34	45.18	31.52	19.03	17.01	32.15	9.53	20.29	9.66	0.00	0.00							0.00	47.65	23.16	832.75
Camarines Norte	7,859	7,842	12.14	5.78	9.85	13.55	6.50	10.84	15.13	11.20	3.16	2.66	0.79		7.35	9.73	12.65	2.36	3.54	6.41	6.32	6.23	3.25	8.08	2.73	3.65	0.00	0.00	0.00							0.00	1.91	13.25	179.05
Camarines Sur	79,827	76,493	74.03	82.19	#####	#####	#####	#####	#####	#####	#####	50.48	0.00		53.15	#####	#####	#####	90.57	86.24	73.03	40.98	86.11	#####	47.39	37.99	0.00	0.00	0.00	0.00						0.00	33.87	#####	2,141.97
Catanduanes	2,621	2,671	4.15	0.67	4.46	3.50	2.08	3.71	5.16	1.99	3.66	1.76	0.27		0.00	4.73	4.93	3.62	2.60	3.61	3.07	0.71	2.16	2.58	1.38	3.97	1.05	0.00	0.09							0.00	1.87	2.86	70.62
Masbate	58,333	59,396	65.01	83.58	66.93	#####	#####	43.04	#####	28.16	72.65	34.88	5.33		35.77	41.48	#####	#####	18.42	46.85	37.53	56.41	44.52	30.31	62.67	45.72	8.04	0.00	2.02							0.00	31.31	#####	1,524.91
Sorsogon	25,023	24,908	5.29	34.85	34.00	33.40	44.07	14.95	48.17	17.00	34.19	16.42	0.00		2.20	14.85	52.83	32.19	13.48	15.66	7.64	20.79	21.52	12.26	28.96	12.21	0.13	0.00	0.86							0.00	19.57	52.38	589.90

VI																																							
	Aklan	9,674	8,768	12.99	12.58	12.34	8.05	3.73	0.31							4.55	17.96	16.43	10.45	10.21	4.48	8.35	4.87	8.25	5.30	9.62	5.32	4.05	0.00	0.36	0.00	4.85	10.72	2.92	3.44	5.67	5.53	12.21	5.25	210.77
	Antique	14,192	12,967	18.12	16.79	9.79	9.33	5.32	0.00	0.02						0.00	0.00	18.56	7.95	4.02	0.00	4.78	6.10	5.99	6.25	4.85	0.00	0.00	0.00	0.00	0.00	0.00	10.00	4.94	4.90	11.33	16.67	17.45	19.20	202.35
	Capiz	27,079	22,897	30.80	29.61	8.63	19.02	8.78	0.00							24.29	17.45	44.52	15.37	0.00	0.00	0.14	0.00	15.40	21.58	0.00	8.64	0.00	0.00	0.00	0.00	3.30	26.22	6.60	9.44	28.00	13.42	21.54	26.44	379.18
	Guimaras	904	719	1.14	0.71	1.08	0.71	0.33	0.00							0.23	0.65	1.80	0.90	0.59	0.29	0.17	0.30	0.50	0.64	0.61	0.86	0.00	0.00	0.00	0.00	0.00	1.03	0.57	0.45	0.00	1.11	0.48	1.23	16.37
	Iloilo	66,342	52,893	65.56	63.59	34.29	48.00	33.55	16.33	8.78	0.07					38.15	6.57	61.73	33.64	23.86	14.16	16.15	0.00	49.81	68.95	0.00	34.19	4.47	0.00	0.00	0.00	0.00	60.46	26.20	40.51	54.64	35.10	62.96	69.27	971.00
	Negros Occidental	102,137	72,122	#####	#####	#####	88.81	9.79	3.46							26.52	#####	#####	#####	54.28	#####	74.35	91.54	#####	#####	65.79	80.01	1.12	0.00	0.00	18.33	48.30	64.04	33.92	#####	#####	#####	#####	92.24	2,546.16
VII																																							
	Bohol	49,292	44,169	58.14	53.44	29.53	31.99	38.33	19.03	34.99	0.00	0.00					0.00	20.29	0.00	0.00	59.01	52.04	34.68	65.18	65.04	23.69	56.22	24.79	12.49	42.44	0.00	0.00	42.99	39.29	49.35	59.71	45.05	76.50	73.12	1,107.33
	Cebu	6,949	6,029	10.37	10.18	6.00	7.25	4.21	0.00	0.00								4.63	4.00	11.17	9.14	10.39	2.84	5.23	4.30	8.74	10.52	9.90	0.00	0.00	0.00		3.37	9.35	8.77	5.94	4.00	9.25	8.43	167.99
	Negros Oriental	25,808	25,795	42.08	49.77	49.23	31.83	14.81	1.24							25.87	36.43	76.05	55.19	27.80	26.02	28.19	36.46	28.68	24.59	35.60	24.03	2.51	0.00	0.00	3.83	22.50	43.71	49.02	20.46	39.13	25.40	17.94	28.17	866.55
	Siquijor	665	321	0.38	0.33	0.39	0.34	0.31	0.13	0.03								0.72	1.21	0.86	0.34	0.39	0.70	0.89	1.10	0.63	1.16	0.90	0.28	0.03	0.00		0.29	0.32	0.40	0.23	0.05	0.47	0.54	13.44
VIII																																							
	Biliran	3,715	3,902	2.30	3.18	6.93	6.62	4.28	4.73	4.98	1.12	0.00						0.90	4.92	3.89	4.77	3.71	5.73	3.84	2.76	2.64	3.04	3.99	0.72	0.67				0.00	3.97	7.38	6.18	5.25	0.02	98.50
	Northern Leyte	84,728	86,702	#####	#####	66.02	78.52	26.71	26.19	0.00	0.00	0.00						40.28	34.20	#####	#####	#####	26.81	34.34	55.79	#####	#####	#####	1.44	43.59				65.42	19.61	59.96	42.30	#####	55.11	1,792.30
	Southern Leyte	8,148	8,053	12.98	13.23	6.29	5.90	6.34	0.00	0.00	0.00	1.04	7.87	15.48	11.82	10.49	5.99	11.74	3.26	10.44	14.43	12.94	5.37	3.11	0.72									6.08	5.94	6.76	2.74	10.80	6.20	197.93
	Northern Samar	4,820	4,546	4.15	5.09	4.29	7.72	7.45	5.52	4.10	3.10	0.59	4.66	9.18	11.95	9.19	7.76	7.55	8.58	7.28	4.40	3.03	0.24	0.39	0.30									0.00	2.45	1.78	3.05	0.00	3.33	127.12
	Weatern Samar	26,058	27,391	1.32	44.86	18.05	46.31	44.73	33.11	19.37	10.23	3.54	25.18	49.54	53.82	49.51	4.82	26.86	24.35	10.45	20.60	11.23	13.60	22.75	0.00									0.00	13.56	35.72	9.66	23.84	18.60	635.62
	Eastern Samar	5,921	5,765	3.99	9.46	5.91	9.75	6.89	6.97	3.29	2.14	0.74	5.71	11.22	10.10	8.97	4.51	6.11	7.10	3.33	5.49	4.13	4.00	4.42	1.56									0.00	2.20	6.68	1.70	4.01	4.06	144.45
IX																																							
	Zamboanga del Norte	6,493	5,528	5.77	8.52	5.47	4.57	4.50	2.20	1.17	0.01		4.16	5.39	5.58	6.38	9.81	5.42	6.13	4.85	5.56	4.02	4.98	4.05	3.53	0.00	0.00	0.00			0.00	0.00	2.46	2.13	4.24	0.12	0.98	8.45	4.70	125.12
	Zamboanga del Sur	35,469	34,638	55.33	53.87	54.41	40.65	28.44	13.89	7.36	0.06		22.75	45.04	47.67	56.06	54.61	27.51	23.68	22.38	17.36	25.04	5.98	22.69	4.21	0.00	0.00	0.00			0.00	0.27	16.91	11.73	28.74	13.95	17.56	21.43	24.74	764.32
	Zamboanga Sibugay	29,314	27,987	28.02	33.35	27.26	33.14	23.19	11.33	5.99	0.05		18.83	15.51	15.18	16.23	30.06	26.91	27.65	19.16	23.32	12.56	19.44	15.73	17.86	0.00	0.00	0.00			0.37	0.00	13.91	18.12	23.53	3.10	12.12	43.43	28.19	563.54
X																																							
	Bukidnon	65,806	65,267	94.67	97.07	70.86	73.80	90.07	34.97	7.39	14.21	6.00	8.59			0.00	0.00	9.49	32.58	13.10	15.85	4.87	24.77	18.83	39.79	59.29	38.15	28.83	0.00	0.00	0.00	0.00	0.00	0.00	22.01	22.28	37.93	76.23	25.98	967.61
	Camiguin	633	455	0.30	0.32	0.30	0.32	0.74	0.55	0.58	0.31	0.06						0.67	0.77	0.81	0.37	0.52	0.97	0.58	0.69	0.70	0.88	0.74	0.61	0.57	0.00	0.00		0.00	0.65	0.43	0.72	0.21	0.73	15.08
	Lanao del Norte	34,361	28,118	30.30	22.07	22.48	24.62	15.54	21.18	0.00	29.23	15.85	0.00	0.05				11.29	11.93	8.33	35.00	14.31	10.93	25.19	40.51	26.48	30.69	4.73	6.98	0.00	0.00	0.00	0.00	3.82	0.00	35.33	32.95	36.28	20.19	536.26
	Misamis Occidental	22,116	22,240	35.47	36.16	39.01	37.25	35.98	20.15	28.08	14.96	2.85						8.38	22.96	27.11	12.16	12.56	10.35	7.80	15.31	9.46	22.96	18.84	17.88	0.00	0.00	0.00		0.00	2.63	19.39	7.02	1.88	3.43	470.02
	Misamis Oriental	17,080	18,388	23.69	14.88	16.47	10.92	16.38	13.47	23.25	0.00	0.00						6.71	7.50	22.05	15.77	12.69	10.48	21.47	17.10	6.17	18.53	11.28	11.78	10.14	0.00	0.00		7.94	20.12	28.11	14.38	15.23	29.11	405.63
XI																																							
	Compostela Valley	28,591	28,591	19.35	18.54	48.81	0.00	45.06	4.61	10.95	0.00	0.00						0.75	23.51	47.27	22.17	15.10	19.98	11.39	22.16	18.60	27.85	25.98	21.03	11.86	0.00	0.00		0.00	8.03	25.57	44.10	11.19	13.10	516.96
	Davao del Norte	51,803	51,803	21.79	26.42	35.37	37.37	63.85	62.37	65.79	35.05	0.00						0.00	19.69	39.16	22.16	27.67	40.75	49.78	44.81	61.30	43.87	38.66	6.72	0.00	0.00	0.00		0.00	18.71	32.97	6.26	49.62	63.02	913.18
	Davao del Sur	39,681	39,286	24.34	63.87	68.91	53.28	21.24	47.11	28.98	13.25	0.00						14.57	38.51	45.18	34.20	43.64	31.59	57.45	18.31	63.37	29.13	9.07	22.34	0.00	0.00	0.00		5.48	33.23	58.20	61.62	52.14	30.70	969.72
	Davao Oriental	22,832	22,997	36.56	37.27	40.22	38.41	24.35	27.47	28.84	0.00	2.92						9.37	26.53	23.98	15.76	12.26	19.27	20.86	19.36	24.64	28.92	7.70	2.33	0.00	0.00	0.00		0.00	11.76	13.31	4.17	10.55	16.62	503.44
XII																																							
	Sarangani	5,588	5,204	5.20	0.00	0.64	0.00	0.00		0.00	5.17	7.41	4.11	8.01	12.10	6.73	4.71	10.66	9.40	5.59	2.73	0.00	0.00	0.59	1.15	0.00		0.00	0.82	2.90	3.11	7.36	5.03	4.91	4.37	3.54	6.13	4.90	1.13	128.38
	South Cotabato	53,873	53,226	52.26	38.09	0.00	11.64	0.95		25.48	10.29	71.00	39.26	98.78	#####	73.33	62.47	47.43	35.02	42.46	25.69	0.00	0.00	0.00	0.00	0.00		0.00	21.37	55.64	14.78	40.99	45.95	61.23	47.23	48.87	54.40	44.90	70.06	1,255.66
	North Cotabato	83,837	83,470	95.96	26.35	0.00	0.00	0.00		44.29	44.09	67.16	#####	#####	#####	#####	77.05	96.28	39.21	40.14	89.74	24.61	0.00	0.71	0.00	0.00		0.00	29.76	58.85	17.62	85.23	86.14	89.33	71.53	90.04	58.78	89.79	#####	2,004.20
	Sultan Kudarat	53,332	43,607	43.93	4.68	0.00	0.00	0.00		0.00	49.52	71.12	20.39	74.14	#####	58.80	26.31	#####	60.87	29.94	2.50	0.00	0.00	0.00	11.04	0.00		0.00	0.00	9.18	19.22	47.93	27.83	30.09	14.09	63.16	52.54	63.16	13.09	1,012.61
XIII (CARAGA)																																							
	Agusan del Norte	25,291	25,177	25.71	35.56	44.03	42.11	40.67	30.11	21.07	16.90	3.22						7.14	32.12	48.56	14.79	10.04	12.04	3.94	22.18	11.06	23.20	22.34	7.15	0.00	0.00	0.00		0.00	6.13	14.61	5.71	3.62	9.55	513.56
	Agusan del Sur	56,250	54,399	86.62	88.30	95.28	91.11	88.00	65.15	68.61	36.55	0.00						0.00	46.00	66.17	41.80	0.00	27.24	43.92	27.19	42.29	35.19	28.48	14.83	0.00	0.00	0.00		0.00	13.30	49.90	28.20	12.14	14.97	1,111.25
	Dinagat Islands	885	803	0.58	1.32	0.78	1.36	0.86	0.97	0.41	0.54	0.10						0.64	1.26	0.88	0.82	0.91	0.13	1.59	0.94	0.97	1.55	1.31	0.17	0.13	0.00	0.00		0.00	0.12	0.54	0.61	1.08	0.16	20.76
	Surigao del Norte	7,477	5,188	3.60	8.50	4.40	6.72	4.98	6.26	4.32	1.01	0.00						4.42	10.54	6.38	5.65	10.62	1.18	10.36	8.99	7.99	13.12	8.59	0.81	0.81	0.00	0.00		0.00	0.00	5.08	2.66	3.99	3.91	144.89
	Surigao del Sur	38,862	34,870	23.64	17.46	22.52	7.55	46.24	0.00	33.76	0.00	0.00						0.00	31.29	55.47	15.91	13.06	26.85	38.58	26.42	63.08	12.60	27.78	39.54	20.41	0.00	0.00		26.26	34.68	36.49	14.08	11.19	55.30	700.16
ARMM																																							
	Basilan	536	530	0.86	0.88	0.95	0.91	0.88	0.65	0.68	0.36	0.07						0.03	0.09	0.10	0.04	0.04	0.03	0.04	0.06	0.07	0.05	0.03	0.00	0.00	0.00	0.00		0.15	0.39	0.34	0.59	0.53	0.19	9.01
	Lanao del Sur	18,794	17,493	17.01	3.73	0.00	0.00	0.00		0.89	0.59	0.14	0.19	2.11	2.62	2.09	1.02	1.40	0.08	0.97	0.61	0.00	0.00	0.00	0.00	0.00		0.00	0.00	2.65	0.00	8.49	7.86	8.56	4.13	8.48	10.65	14.35	22.90	121.51
	Maguindanao	75,950	73,509	75.45	24.97	0.00	0.00	0.00		3.63	3.68	3.04	4.38	10.97	12.28	8.91	7.39	5.00	2.75	2.68	5.61	3.73	0.00	0.78	0.00	0.00		0.00	22.77	46.05	0.00	65.76	58.03	71.65	46.94	55.77	38.99	64.31	#####	746.41
	Sulu	1,737	1,737	2.83	2.88	3.11	2.03	2.86	2.12	1.72	1.19	0.23						0.11	0.18	0.39	0.16	0.11	0.27	0.16	0.17	0.28	0.22	0.26	0.23	0.16	0.00	0.00		1.31	0.98	1.74	2.76	2.39	0.49	31.31
	Tawi-Tawi	745	942	1.19	1.56	1.69	1.24	1.55	0.77	0.70	0.64	0.12						0.06	0.11	0.17	0.11	0.02	0.11	0.09	0.08	0.12	0.13	0.11	0.10	0.07	0.01	0.00		0.71	0.37	1.36	1.07	1.30	0.42	15.97
																																							60,753
	Nos of Days			10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	

Source: JICA Survey Team

Table F 22 Irrigation Water Demands by Provinces in 2030
(Based on Irrigated Areas Projected in Consideration of Past Financial Program)

(Unit: MCM)

Region/	Irrigated Area (ha)		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			Annual
Province	Wet	Dry	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
CAR																																							
Abra	16,408	15,633	21.10	21.51	23.21	22.38	21.63	16.03	17.06	9.09	0.00							8.31	16.23	21.55	11.64	2.70	6.00	7.51	6.91	7.35	7.76	16.20	21.19	8.04	0.00	0.00	9.12	18.12	23.77	20.45	1.29	21.13	387.30
Apayao	8,675	8,600	12.69	12.93	13.96	13.48	13.03	9.66	7.83	5.51	1.05							0.00	10.53	11.78	9.00	7.56	7.24	6.50	7.52	4.38	3.60	5.46	11.26	2.42	3.84	0.45	5.62	0.00	0.00	0.00	10.71	12.75	210.78
Benguet	13,063	12,837	17.08	17.41	18.79	18.09	17.48	12.96	13.77	7.34	1.40			0.00	11.83	12.60	8.52	6.47	9.07	6.90	6.63	4.29	2.77	5.24	4.11	0.00	0.00	0.00					7.45	14.78	3.37	16.62	14.39	8.98	268.36
Ifugao	14,114	12,669			9.47	11.91	22.22	14.78	19.05	20.75	20.72	24.49	17.32	16.61	19.78	12.38	8.44	0.00	0.00				0.00	13.46	8.64	3.68	0.96	0.00	6.48	0.42	13.68	13.23	1.68	8.57	0.00	0.00	0.00		288.75
Kalinga	23,981	22,742	33.82	34.43	37.20	35.86	34.70	25.78	27.44	14.64	2.80							0.23	19.05	21.74	16.27	5.86	16.73	8.97	17.08	11.88	15.34	0.00	16.73	21.95	0.00	0.00	14.92	29.65	38.89	33.28	28.77	34.14	598.18
Mt. Province	11,086	10,793	12.58	12.15	1.77	8.48	4.85	0.30							10.01	5.87	12.86	14.15	7.20	10.08	7.18	0.00	1.24	0.73	5.26	4.66	1.44	0.00	0.00	3.42	13.68	7.36	0.24	0.00	7.93	3.80	6.52	13.67	177.43
I																																							
Ilocos Norte	36,484	24,400	33.81	34.47	37.19	35.83	31.89	18.15	14.56	2.52									17.33	45.90	46.30	52.90	24.81	21.05	21.46	39.23	2.89	22.80	6.16	0.00	0.00	0.00	19.25	35.39	15.64	34.94	3.68	34.06	652.17
Ilocos Sur	25,907	15,395	21.11	21.51	23.22	22.29	19.85	11.30	9.02	1.56									0.00	19.77	9.94	25.51	10.02	15.55	15.47	37.98	15.66	11.64	23.34	0.00	11.67	1.38	0.00	22.21	27.79	21.92	17.95	21.32	438.95
La Union	14,391	11,015	14.99	15.27	16.48	15.81	14.08	8.02	6.40	1.11									0.66	7.56	17.37	8.28	8.20	4.10	9.56	7.32	9.55	0.46	10.33	13.18	0.00	0.00	8.64	15.84	19.81	15.59	12.74	15.14	276.49
Pangasinan	130,267	92,457	#####	#####	#####	#####	#####	83.56	86.42	53.15	0.00	0.00							0.00	0.00	46.44	42.47	83.22	#####	76.19	76.84	78.02	#####	52.95	#####	0.00	90.78	79.83	#####	#####	#####	#####	#####	2,491.32
II																																							
Batanes	354	248	0.29	0.31	0.40	0.38	0.36	0.27	0.24	0.05								0.12	0.86	0.56	0.28	0.60	0.71	0.48	0.49	0.33	0.41	0.57	0.31	0.27	0.00		0.10	0.47	0.38	0.02	0.32	0.38	9.96
Cagayan	97,068	100,660	#####	#####	#####	#####	#####	#####	#####	66.86	0.00							59.98	#####	#####	#####	#####	#####	95.01	#####	73.47	#####	#####	50.62	0.00	0.00	0.00	0.00	#####	#####	82.98	39.44	#####	2,978.92
Isabela	139,626	133,882	#####	#####	#####	#####	#####	#####	#####	#####	0.00	29.37	0.22					2.15	#####	#####	#####	#####	72.09	#####	96.61	86.77	43.84	0.00	#####	0.00	0.00	0.00	79.72	0.00	24.75	77.51	30.79	#####	3,149.90
Nueva Vizcaya	31,480	31,480	45.94	46.80	50.53	48.75	47.13	34.96	37.26	19.86	3.79							7.57	54.68	59.18	7.33	13.08	24.06	13.28	5.95	21.75	13.06	10.07	0.00	0.00	13.69	0.00	0.00	44.82	57.21	28.57	0.00	5.64	714.96
Quirino	13,057	13,020	15.44	19.99	16.83	20.79	20.09	14.89	15.87	8.46	0.00							4.01	22.99	19.54	15.80	5.17	6.74	8.03	8.82	6.21	7.41	7.69	0.00	5.31	0.00	0.00	9.72	7.94	24.04	19.68	7.38	19.64	338.46
III																																							
Aurora	10,090	10,028	11.21	8.52	9.77	9.47	11.99	8.95	14.50	17.80	13.99	12.42	0.00	0.00				0.00	8.61	13.97	8.08	14.02	6.50	6.38	12.48	13.34	9.70	0.52	4.44	0.00	0.27	0.00				6.59	13.09	11.30	247.90
Bataan	9,478	9,541	13.56	13.83	14.92	14.32	13.83	10.24	10.86	5.78	1.10								0.00	4.21	7.40	7.98	6.52	4.95	5.68	12.06	10.51	4.19	4.46	3.16	5.93	0.00	1.66	9.95	9.43	13.87	11.31	9.66	231.38
Bulacan	33,931	23,870	33.58	34.23	36.94	35.54	22.87	25.41	27.01	14.39	0.00								13.68	29.42	17.19	24.43	0.00	18.41	24.42	9.00	18.61	51.46	13.15	10.07	0.00	3.29	0.00	10.63	39.33	14.57	15.97	33.45	577.05
Nueva Ecija	146,273	143,742	#####	#####	#####	#####	#####	#####	#####	99.24	#####	30.31	44.92	8.52			17.41	3.74	#####	15.90	86.63	#####	19.95	61.48	#####	#####	16.27	58.93	25.97	#####	18.05	0.00	88.63	#####	#####	#####	#####	#####	3,352.68
Pampanga	40,368	43,869	61.91	63.11	68.10	65.58	63.33	46.89	49.98	26.63	5.07								5.14	31.28	51.65	29.03	25.42	19.23	4.20	16.19	40.17	20.29	10.61	26.85	14.54	20.46	29.20	55.97	72.34	60.64	51.60	61.56	1,096.96
Tarlac	61,899	54,463	76.97	78.46	84.67	81.63	78.84	58.37	62.26	33.17	6.31								8.03	62.88	73.15	70.77	18.60	0.00	32.97	83.30	56.78	24.51	5.16	11.40	25.83	9.66	25.64	79.18	99.47	78.71	64.07	56.66	1,447.45
Zambales	24,193	14,157	19.66	20.04	21.62	20.81	20.09	14.87	15.81	8.42	0.00								0.00	18.32	27.11	13.78	8.52	21.98	10.71	3.06	14.89	12.73	0.49	17.49	10.69	0.00	0.00	13.53	22.56	15.24	16.37	19.55	388.34
IV-A																																							
Batangas	4,366	5,427	5.69	5.77	8.50	8.15	7.87	5.82	6.18	3.29	0.63				1.17	5.77	7.62	3.84	2.56	5.13	0.17	5.57	2.89	2.63	1.57	0.25	0.00	0.00	0.00				0.00	4.60	5.22	6.72	1.19	7.67	116.47
Cavite	7,211	6,880	9.72	9.91	10.70	10.27	9.92	7.34	7.80	4.16	0.79				4.45	9.51	9.92	1.49	0.04	4.98	2.52	4.07	8.61	3.40	6.75	10.76	2.60	0.00	0.00				0.00	0.64	2.87	8.48	8.11	4.14	163.94
Laguna	13,053	13,030	20.59	20.99	22.65	21.73	20.99	15.54	16.51	8.80	0.00				8.05	8.43	15.24	9.71	15.20	8.41	8.58	10.08	8.30	9.42	7.46	0.63	0.00	0.00	0.00				0.00	0.00	10.95	3.87	4.49	20.51	297.14
Quezon	17,865	16,405	1.71	26.55	23.38	27.44	18.13	19.62	15.52	0.79	2.11				2.94	15.72	27.93	15.77	18.08	7.24	3.52	12.87	10.60	19.25	27.41	8.16	0.00	0.00	0.00				6.87	5.52	14.55	8.14	14.33	3.52	357.66
Rizal	5,284	5,236	7.30	1.88	5.45	7.70	7.44	5.51	5.84	0.00	0.59				0.00	2.45	7.80	4.18	1.16	1.42	2.87	4.16	3.69	2.88	2.87	0.00	1.33	0.00	0.00				0.00	4.39	3.13	6.51	3.72	7.44	101.71
IV-B																																							
Marinduque	1,764	1,734	1.81	0.96	2.90	3.01	2.13	2.41	3.36	3.24	3.26	2.24	0.44	0.22	1.03	3.19	4.53	1.60	1.23	1.75	0.82	2.84	1.88	2.06	1.76	0.97	0.29	0.00	0.06							1.42	0.41	3.65	55.45
Occidental Mindoro	34,533	28,914	40.68	41.47	44.75	42.87	41.41	30.66	32.45	17.29	3.29								0.00	25.97	48.32	16.49	21.93	0.00	1.87	22.91	23.44	11.30	3.56	32.88	0.00	7.18	8.33	8.21	52.65	41.69	21.92	32.95	676.47
Oriental Mindoro	32,902	28,625	40.62	39.21	46.83	48.64	47.99	38.91	54.30	42.78	34.39	36.36	1.49	3.55	23.16	13.52	34.70	18.93	9.00	21.57	5.68	24.60	17.19	16.79	8.84	19.13	0.00	3.60	0.00							6.80	29.86	32.74	721.18
Palawan	25,447	21,911	34.33	30.96	37.02	38.38	37.86	30.70	42.72	41.20	41.48	28.39	14.52	2.77	23.74	24.71	44.36	27.35	19.66	0.65	13.10	8.11	18.35	22.04	14.71	1.28	0.43	0.00	0.00							18.02	15.40	31.57	663.80
Romblon	3,402	3,598	4.55	5.05	6.03	6.26	6.18	5.01	6.98	6.73	6.78	4.65	2.38	0.45	3.18	6.14	8.73	4.87	5.24	2.38	2.65	2.35	1.78	0.74	2.34	2.60	1.15	0.00	0.00							1.80	4.20	7.57	118.76
V																																							
Albay	33,134	31,130	48.26	8.93	40.53	33.88	38.13	33.10	60.05	55.36	14.04	20.50	3.13		15.47	59.77	44.34	57.54	21.45	43.38	30.26	18.27	16.33	30.86	9.15	19.48	9.27	0.00	0.00							0.00	45.74	22.23	799.47
Camarines Norte	11,416	11,390	17.64	8.40	14.30	19.68	9.44	15.74	21.97	16.27	4.59	3.86	1.15		10.67	14.13	18.38	3.43	5.15	9.31	9.18	9.04	4.72	11.74	3.97	5.31	0.00	0.00	0.00							0.00	2.77	19.25	260.08
Camarines Sur	60,925	58,380	56.50	62.73	78.56	83.97	#####	80.80	#####	#####	79.96	38.53	0.00		40.56	77.80	79.11	79.29	69.13	65.82	55.74	31.28	65.72	98.17	36.17	28.99	0.00	0.00	0.00	0.00						0.00	25.85	80.64	1,634.78
Catanduanes	2,774	2,827	4.39	0.70	4.72	3.71	2.20	3.92	5.46	2.11	3.88	1.86	0.28		0.00	5.01	5.21	3.83	2.75	3.82	3.25	0.75	2.29	2.73	1.46	4.20	1.11	0.00	0.10							0.00	1.97	3.02	74.74
Masbate	9,112	9,278	10.16	13.06	10.45	16.18	16.51	6.72	17.98	4.40	11.35	5.45	0.83		5.59	6.48	17.66	15.86	2.88	7.32	5.86	8.81	6.95	4.73	9.79	7.14	1.26	0.00	0.32							0.00	4.89	19.58	238.20
Sorsogon	11,959	11,903	2.53	16.66	16.25	15.96	21.06	7.15	23.02	8.12	16.34	7.85	0.00		1.05	7.10	25.25	15.38	6.44	7.49	3.65	9.94	10.28	5.86	13.84	5.83	0.06	0.00	0.41							0.00	9.35	25.03	281.91
VI																																							

VI																																							
	Aklan	8,880	8,049	11.92	11.55	11.33	7.39	3.43	0.28							4.17	16.48	15.08	9.60	9.37	4.11	7.66	4.47	7.57	4.87	8.83	4.89	3.72	0.00	0.33	0.00	4.45	9.84	2.68	3.16	5.20	5.08	11.21	4.82	193.48
	Antique	15,825	14,460	20.20	18.72	10.92	10.40	5.93	0.00	0.02						0.00	0.00	20.70	8.87	4.48	0.00	5.32	6.80	6.68	6.97	5.41	0.00	0.00	0.00	0.00	0.00	0.00	11.15	5.51	5.47	12.64	18.59	19.46	21.41	225.64
	Capiz	11,424	9,659	12.99	12.49	3.64	8.02	3.70	0.00							10.25	7.36	18.78	6.48	0.00	0.00	0.06	0.00	6.50	9.10	0.00	3.64	0.00	0.00	0.00	0.00	1.39	11.06	2.78	3.98	11.81	5.66	9.09	11.16	159.97
	Guimaras	904	719	1.14	0.71	1.08	0.71	0.33	0.00							0.23	0.65	1.80	0.90	0.59	0.29	0.17	0.30	0.50	0.64	0.61	0.86	0.00	0.00	0.00	0.00	0.00	1.03	0.57	0.45	0.00	1.11	0.48	1.23	16.37
	Iloilo	42,927	34,224	42.42	41.15	22.19	31.06	21.71	10.57	5.68	0.04					24.69	4.25	39.94	21.77	15.44	9.16	10.45	0.00	32.23	44.61	0.00	22.13	2.89	0.00	0.00	0.00	0.00	39.12	16.95	26.21	35.35	22.71	40.74	44.82	628.29
	Negros Occidental	48,499	34,247	50.30	66.00	65.29	42.17	4.65	1.64							12.59	86.70	84.45	64.96	25.77	60.32	35.31	43.47	59.39	60.36	31.24	37.99	0.53	0.00	0.00	8.70	22.93	30.41	16.11	59.63	63.43	66.60	64.27	43.80	1,209.02
VII																																							
	Bohol	22,591	20,243	26.65	24.49	13.54	14.66	17.57	8.72	16.04	0.00	0.00					0.00	9.30	0.00	0.00	27.04	23.85	15.89	29.87	29.81	10.86	25.77	11.36	5.72	19.45	0.00	0.00	19.70	18.01	22.62	27.37	20.65	35.06	33.51	507.50
	Cebu	6,949	6,029	10.37	10.18	6.00	7.25	4.21	0.00	0.00								4.63	4.00	11.17	9.14	10.39	2.84	5.23	4.30	8.74	10.52	9.90	0.00	0.00	0.00		3.37	9.35	8.77	5.94	4.00	9.25	8.43	167.99
	Negros Oriental	10,382	10,377	16.93	20.02	19.80	12.80	5.96	0.50							10.41	14.66	30.59	22.20	11.19	10.47	11.34	14.67	11.54	9.89	14.32	9.67	1.01	0.00	0.00	1.54	9.05	17.58	19.72	8.23	15.74	10.22	7.22	11.33	348.60
	Siquijor	665	321	0.38	0.33	0.39	0.34	0.31	0.13	0.03								0.72	1.21	0.86	0.34	0.39	0.70	0.89	1.10	0.63	1.16	0.90	0.28	0.03	0.00		0.29	0.32	0.40	0.23	0.05	0.47	0.54	13.44
VIII																																							
	Biliran	3,134	3,292	1.94	2.68	5.84	5.58	3.61	3.99	4.20	0.94	0.00						0.76	4.15	3.28	4.03	3.13	4.84	3.24	2.33	2.23	2.56	3.36	0.61	0.57				0.00	3.35	6.23	5.22	4.43	0.02	83.10
	Northern Leyte	38,442	39,337	63.29	64.52	29.95	35.62	12.12	11.88	0.00	0.00	0.00						18.28	15.52	64.27	48.75	54.55	12.16	15.58	25.31	47.63	53.78	56.89	0.65	19.78				29.68	8.90	27.20	19.19	52.67	25.00	813.18
	Southern Leyte	6,051	5,980	9.64	9.82	4.67	4.38	4.71	0.00	0.00	0.00	0.77	5.84	11.49	8.77	7.79	4.45	8.72	2.42	7.75	10.71	9.61	3.99	2.31	0.54									4.51	4.41	5.02	2.03	8.02	4.60	146.98
	Northern Samar	6,337	5,977	5.46	6.69	5.64	10.15	9.80	7.25	5.39	4.08	0.78	6.13	12.07	15.71	12.09	10.20	9.93	11.28	9.57	5.79	3.98	0.31	0.52	0.39									0.00	3.22	2.34	4.01	0.00	4.38	167.14
	Weatern Samar	5,340	5,614	0.27	9.19	3.70	9.49	9.17	6.79	3.97	2.10	0.73	5.16	10.15	11.03	10.15	0.99	5.50	4.99	2.14	4.22	2.30	2.79	4.66	0.00									0.00	2.78	7.32	1.98	4.89	3.81	130.27
	Eastern Samar	5,921	5,765	3.99	9.46	5.91	9.75	6.89	6.97	3.29	2.14	0.74	5.71	11.22	10.10	8.97	4.51	6.11	7.10	3.33	5.49	4.13	4.00	4.42	1.56									0.00	2.20	6.68	1.70	4.01	4.06	144.45
IX																																							
	Zamboanga del Norte	13,812	11,758	12.27	18.13	11.63	9.73	9.57	4.67	2.48	0.02		8.85	11.47	11.88	13.57	20.86	11.52	13.05	10.33	11.83	8.54	10.59	8.60	7.50	0.00	0.00	0.00			0.00	0.00	5.22	4.53	9.02	0.25	2.08	17.97	9.99	266.16
	Zamboanga del Sur	25,768	25,164	40.20	39.13	39.53	29.53	20.66	10.09	5.35	0.04		16.53	32.72	34.64	40.73	39.67	19.99	17.20	16.26	12.61	18.19	4.34	16.48	3.06	0.00	0.00	0.00			0.00	0.19	12.29	8.52	20.88	10.14	12.76	15.57	17.98	555.27
	Zamboanga Sibugay	10,058	9,603	9.61	11.44	9.35	11.37	7.96	3.89	2.06	0.02		6.46	5.32	5.21	5.57	10.32	9.24	9.49	6.57	8.00	4.31	6.67	5.40	6.13	0.00	0.00	0.00			0.13	0.00	4.77	6.22	8.07	1.06	4.16	14.90	9.67	193.36
X																																							
	Bukidnon	39,668	39,344	57.07	58.52	42.71	44.49	54.29	21.08	4.45	8.56	3.62	5.18			0.00	0.00	5.72	19.64	7.90	9.56	2.94	14.93	11.35	23.99	35.74	23.00	17.38	0.00	0.00	0.00	0.00	0.00	0.00	13.27	13.43	22.86	45.95	15.66	583.29
	Camiguin	633	455	0.30	0.32	0.30	0.32	0.74	0.55	0.58	0.31	0.06						0.67	0.77	0.81	0.37	0.52	0.97	0.58	0.69	0.70	0.88	0.74	0.61	0.57	0.00	0.00		0.00	0.65	0.43	0.72	0.21	0.73	15.08
	Lanao del Norte	12,223	10,003	10.78	7.85	8.00	8.76	5.53	7.53	0.00	10.40	5.64	0.00	0.02				4.02	4.24	2.96	12.45	5.09	3.89	8.96	14.41	9.42	10.92	1.68	2.48	0.00	0.00	0.00	0.00	1.36	0.00	12.57	11.72	12.90	7.18	190.76
	Misamis Occidental	7,657	7,700	12.28	12.52	13.51	12.90	12.46	6.98	9.72	5.18	0.99						2.90	7.95	9.39	4.21	4.35	3.58	2.70	5.30	3.27	7.95	6.52	6.19	0.00	0.00	0.00		0.00	0.91	6.72	2.43	0.65	1.19	162.74
	Misamis Oriental	5,630	6,062	7.81	4.90	5.43	3.60	5.40	4.44	7.66	0.00	0.00						2.21	2.47	7.27	5.20	4.18	3.46	7.08	5.64	2.03	6.11	3.72	3.88	3.34	0.00	0.00		2.62	6.63	9.27	4.74	5.02	9.60	133.71
XI																																							
	Compostela Valley	35,146	35,146	23.79	22.79	60.00	0.00	55.39	5.67	13.47	0.00	0.00						0.92	28.90	58.11	27.25	18.56	24.56	14.00	27.24	22.87	34.23	31.94	25.85	14.58	0.00	0.00		0.00	9.87	31.43	54.22	13.76	16.10	635.49
	Davao del Norte	23,869	23,869	10.04	12.17	16.30	17.22	29.42	28.74	30.31	16.15	0.00						0.00	9.07	18.05	10.21	12.75	18.78	22.94	20.65	28.24	20.21	17.81	3.10	0.00	0.00	0.00		0.00	8.62	15.19	2.89	22.86	29.04	420.75
	Davao del Sur	18,750	18,563	11.50	30.18	32.56	25.18	10.04	22.26	13.69	6.26	0.00						6.88	18.20	21.35	16.16	20.62	14.92	27.15	8.65	29.95	13.76	4.29	10.55	0.00	0.00	0.00		2.59	15.70	27.50	29.12	24.64	14.51	458.21
	Davao Oriental	9,889	9,960	15.84	16.14	17.42	16.64	10.55	11.90	12.49	0.00	1.27						4.06	11.49	10.39	6.83	5.31	8.35	9.03	8.39	10.67	12.53	3.33	1.01	0.00	0.00	0.00		0.00	5.09	5.76	1.80	4.57	7.20	218.05
XII																																							
	Sarangani	5,588	5,204	5.20	0.00	0.64	0.00	0.00		0.00	5.17	7.41	4.11	8.01	12.10	6.73	4.71	10.66	9.40	5.59	2.73	0.00	0.00	0.59	1.15	0.00		0.00	0.82	2.90	3.11	7.36	5.03	4.91	4.37	3.54	6.13	4.90	1.13	128.38
	South Cotabato	43,456	42,934	42.16	30.72	0.00	9.39	0.76		20.55	8.30	57.27	31.67	79.68	93.64	59.15	50.39	38.26	28.25	34.25	20.73	0.00	0.00	0.00	0.00	0.00		0.00	17.24	44.88	11.93	33.06	37.06	49.39	38.09	39.42	43.88	36.21	56.52	1,012.87
	North Cotabato	64,045	63,765	73.30	20.13	0.00	0.00	0.00		33.84	33.68	51.31	96.29	#####	#####	80.90	58.86	73.55	29.95	30.67	68.56	18.80	0.00	0.54	0.00	0.00		0.00	22.74	44.96	13.46	65.11	65.80	68.24	54.64	68.78	44.91	68.59	98.69	1,531.06
	Sultan Kudarat	36,186	29,588	29.81	3.17	0.00	0.00	0.00		0.00	33.60	48.26	13.83	50.31	79.01	39.89	17.85	69.64	41.30	20.32	1.70	0.00	0.00	0.00	7.49	0.00		0.00	0.00	6.23	13.04	32.52	18.89	20.41	9.56	42.86	35.65	42.85	8.88	687.06
XIII (CARAGA)																																							
	Agusan del Norte	21,190	21,094	21.54	29.79	36.89	35.28	34.08	25.23	17.65	14.16	2.69						5.98	26.91	40.69	12.39	8.41	10.09	3.30	18.59	9.26	19.44	18.72	5.99	0.00	0.00	0.00		0.00	5.14	12.24	4.78	3.04	8.00	430.28
	Agusan del Sur	30,132	29,140	46.40	47.30	51.04	48.80	47.14	34.90	36.75	19.58	0.00						0.00	24.64	35.45	22.39	0.00	14.59	23.53	14.56	22.65	18.85	15.26	7.95	0.00	0.00	0.00		0.00	7.13	26.73	15.11	6.50	8.02	595.27
	Dinagat Islands	885	803	0.58	1.32	0.78	1.36	0.86	0.97	0.41	0.54	0.10						0.64	1.26	0.88	0.82	0.91	0.13	1.59	0.94	0.97	1.55	1.31	0.17	0.13	0.00	0.00		0.00	0.12	0.54	0.61	1.08	0.16	20.76
	Surigao del Norte	9,192	6,377	4.43	10.44	5.41	8.26	6.12	7.70	5.31	1.25	0.00						5.43	12.95	7.85	6.95	13.06	1.45	12.73	11.06	9.82	16.12	10.56	0.99	1.00	0.00	0.00		0.00	0.00	6.24	3.27	4.90	4.81	178.11
	Surigao del Sur	21,048	18,885	12.80	9.46	12.20	4.09	25.04	0.00	18.28	0.00	0.00						0.00	16.95	30.04	8.62	7.07	14.54	20.90	14.31	34.16	6.83	15.05	21.42	11.05	0.00	0.00		14.22	18.78	19.76	7.62	6.06	29.95	379.21
ARMM																																							
	Basilan	536	530	0.86	0.88	0.95	0.91	0.88	0.65	0.68	0.36	0.07						0.03	0.09	0.10	0.04	0.04	0.03	0.04	0.06	0.07	0.05	0.03	0.00	0.00	0.00	0.00		0.15	0.39	0.34	0.59	0.53	0.19	9.01
	Lanao del Sur	20,235	18,834	18.32	4.02	0.00	0.00	0.00		0.95	0.64	0.15	0.20	2.28	2.82	2.25	1.10	1.51	0.09	1.05	0.66	0.00	0.00	0.00	0.00	0.00		0.00	0.00	2.85	0.00	9.14	8.46	9.21	4.45	9.13	11.46	15.46	24.65	130.83
	Maguindanao	48,426	46,869	48.11	15.92	0.00	0.00	0.00		2.32	2.34	1.94	2.79	6.99	7.83	5.68	4.71	3.19	1.76	1.71	3.57	2.38	0.00	0.50	0.00	0.00		0.00	14.52	29.36	0.00	41.93	37.00	45.68	29.93	35.56	24.86	41.00	64.34	475.92
	Sulu	1,737	1,737	2.83	2.88	3.11	2.03	2.86	2.12	1.72	1.19	0.23						0.11	0.18	0.39	0.16	0.11	0.27	0.16	0.17	0.28	0.22	0.26	0.23	0.16	0.00	0.00		1.31	0.98	1.74	2.76	2.39	0.49	31.31
	Tawi-Tawi	745	942	1.19	1.56	1.69	1.24	1.55	0.77	0.70	0.64	0.12						0.06	0.11	0.17	0.11	0.02	0.11	0.09	0.08	0.12	0.13	0.11	0.10	0.07	0.01	0.00		0.71	0.37	1.36	1.07	1.30	0.42	15.97
																																							41,300
	Nos of Days			10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	

Source: JICA Survey Team

Table F 23 Irrigation Water Demands by Provinces in 2040
(Based on Irrigated Areas Projected in Consideration of Past Financial Program)

(Unit: MCM)

Region/	Irrigated Area (ha)		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			Annual
Province	Wet	Dry	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
CAR																																							
Abra	16,408	15,633	21.10	21.51	23.21	22.38	21.63	16.03	17.06	9.09	0.00							8.31	16.23	21.55	11.64	2.70	6.00	7.51	6.91	7.35	7.76	16.20	21.19	8.04	0.00	0.00	9.12	18.12	23.77	20.45	1.29	21.13	387.30
Apayao	8,743	8,668	12.79	13.03	14.07	13.58	13.13	9.73	7.90	5.56	1.06							0.00	10.61	11.87	9.07	7.62	7.30	6.55	7.58	4.42	3.63	5.50	11.34	2.44	3.87	0.46	5.66	0.00	0.00	0.00	10.79	12.84	212.42
Benguet	13,063	12,837	17.08	17.41	18.79	18.09	17.48	12.96	13.77	7.34	1.40			0.00	11.83	12.60	8.52	6.47	9.07	6.90	6.63	4.29	2.77	5.24	4.11	0.00	0.00	0.00					7.45	14.78	3.37	16.62	14.39	8.98	268.36
Ifugao	15,053	13,512			10.10	12.70	23.70	15.77	20.31	22.13	22.10	26.12	18.47	17.72	21.10	13.21	9.00	0.00	0.00				0.00	14.35	9.21	3.93	1.02	0.00	6.92	0.45	14.59	14.11	1.80	9.14	0.00	0.00	0.00		307.96
Kalinga	26,147	24,796	36.87	37.54	40.56	39.10	37.84	28.11	29.92	15.96	3.05							0.25	20.77	23.71	17.74	6.39	18.25	9.79	18.63	12.95	16.73	0.00	18.24	23.93	0.00	0.00	16.27	32.33	42.40	36.28	31.37	37.23	652.21
Mt. Province	11,086	10,793	12.58	12.15	1.77	8.48	4.85	0.30							10.01	5.87	12.86	14.15	7.20	10.08	7.18	0.00	1.24	0.73	5.26	4.66	1.44	0.00	0.00	3.42	13.68	7.36	0.24	0.00	7.93	3.80	6.52	13.67	177.43
I																																							
Ilocos Norte	36,484	24,400	33.81	34.47	37.19	35.83	31.89	18.15	14.56	2.52									17.33	45.90	46.30	52.90	24.81	21.05	21.46	39.23	2.89	22.80	6.16	0.00	0.00	0.00	19.25	35.39	15.64	34.94	3.68	34.06	652.17
Ilocos Sur	27,584	16,391	22.47	22.90	24.72	23.73	21.13	12.03	9.60	1.66									0.00	21.04	10.58	27.16	10.66	16.56	16.47	40.44	16.68	12.39	24.85	0.00	12.42	1.47	0.00	23.64	29.59	23.34	19.11	22.70	467.36
La Union	14,391	11,015	14.99	15.27	16.48	15.81	14.08	8.02	6.40	1.11									0.66	7.56	17.37	8.28	8.20	4.10	9.56	7.32	9.55	0.46	10.33	13.18	0.00	0.00	8.64	15.84	19.81	15.59	12.74	15.14	276.49
Pangasinan	144,616	102,641	#####	#####	#####	#####	#####	92.77	95.94	59.00	0.00	0.00							0.00	0.00	51.55	47.15	92.38	#####	84.58	85.30	86.61	#####	58.78	#####	0.00	#####	88.62	#####	#####	#####	#####	#####	2,765.73
II																																							
Batanes	354	248	0.29	0.31	0.40	0.38	0.36	0.27	0.24	0.05								0.12	0.86	0.56	0.28	0.60	0.71	0.48	0.49	0.33	0.41	0.57	0.31	0.27	0.00		0.10	0.47	0.38	0.02	0.32	0.38	9.96
Cagayan	107,220	111,188	#####	#####	#####	#####	#####	#####	#####	73.85	0.00							66.26	#####	#####	#####	#####	#####	#####	#####	81.15	#####	#####	55.91	0.00	0.00	0.00	0.00	#####	#####	91.66	43.56	#####	3,290.48
Isabela	165,586	158,774	#####	#####	#####	#####	#####	#####	#####	#####	0.00	34.83	0.26					2.55	#####	#####	#####	#####	85.49	#####	#####	#####	51.99	0.00	#####	0.00	0.00	0.00	94.54	0.00	29.35	91.92	36.51	#####	3,735.56
Nueva Vizcaya	35,599	35,599	51.95	52.93	57.14	55.13	53.30	39.53	42.13	22.46	4.28							8.56	61.84	66.92	8.29	14.79	27.21	15.02	6.73	24.60	14.77	11.39	0.00	0.00	15.48	0.00	0.00	50.68	64.69	32.30	0.00	6.38	808.50
Quirino	16,027	15,981	18.95	24.54	20.66	25.52	24.66	18.28	19.48	10.38	0.00							4.92	28.22	23.99	19.40	6.34	8.27	9.85	10.82	7.62	9.09	9.44	0.00	6.51	0.00	0.00	11.93	9.75	29.50	24.15	9.05	24.11	415.45
III																																							
Aurora	11,929	11,856	13.26	10.07	11.55	11.20	14.17	10.58	17.14	21.05	16.54	14.68	0.00	0.00				0.00	10.18	16.51	9.55	16.58	7.69	7.55	14.75	15.77	11.46	0.61	5.25	0.00	0.32	0.00				7.79	15.47	13.36	293.08
Bataan	9,478	9,541	13.56	13.83	14.92	14.32	13.83	10.24	10.86	5.78	1.10								0.00	4.21	7.40	7.98	6.52	4.95	5.68	12.06	10.51	4.19	4.46	3.16	5.93	0.00	1.66	9.95	9.43	13.87	11.31	9.66	231.38
Bulacan	36,212	25,475	35.84	36.54	39.43	37.92	24.41	27.12	28.83	15.36	0.00								14.60	31.39	18.35	26.07	0.00	19.65	26.06	9.61	19.86	54.92	14.03	10.75	0.00	3.51	0.00	11.35	41.97	15.55	17.04	35.69	615.84
Nueva Ecija	159,090	156,337	#####	#####	#####	#####	#####	#####	#####	#####	#####	32.97	48.85	9.27			18.94	4.07	#####	17.29	94.22	#####	21.70	66.87	#####	#####	17.70	64.09	28.25	#####	19.64	0.00	96.40	#####	#####	#####	#####	#####	3,646.45
Pampanga	40,368	43,869	61.91	63.11	68.10	65.58	63.33	46.89	49.98	26.63	5.07								5.14	31.28	51.65	29.03	25.42	19.23	4.20	16.19	40.17	20.29	10.61	26.85	14.54	20.46	29.20	55.97	72.34	60.64	51.60	61.56	1,096.96
Tarlac	79,796	70,209	99.22	#####	#####	#####	#####	75.24	80.27	42.76	8.13								10.36	81.06	94.30	91.23	23.98	0.00	42.51	#####	73.20	31.60	6.66	14.69	33.29	12.45	33.06	#####	#####	#####	82.59	73.04	1,865.95
Zambales	30,741	17,989	24.98	25.47	27.47	26.45	25.53	18.89	20.09	10.70	0.00								0.00	23.28	34.45	17.51	10.82	27.93	13.61	3.88	18.93	16.17	0.62	22.23	13.58	0.00	0.00	17.19	28.67	19.37	20.80	24.84	493.45
IV-A																																							
Batangas	5,170	6,427	6.73	6.83	10.07	9.65	9.32	6.90	7.32	3.90	0.74				1.39	6.83	9.02	4.55	3.03	6.08	0.21	6.60	3.43	3.11	1.86	0.29	0.00	0.00	0.00				0.00	5.44	6.18	7.96	1.40	9.09	137.93
Cavite	8,156	7,782	11.00	11.21	12.10	11.62	11.22	8.31	8.83	4.70	0.89				5.03	10.75	11.22	1.68	0.05	5.63	2.85	4.60	9.74	3.85	7.63	12.17	2.94	0.00	0.00				0.00	0.72	3.25	9.59	9.17	4.68	185.43
Laguna	15,007	14,982	23.68	24.14	26.04	24.99	24.14	17.87	18.98	10.11	0.00				9.25	9.69	17.53	11.16	17.47	9.67	9.87	11.59	9.54	10.83	8.57	0.72	0.00	0.00	0.00				0.00	0.00	12.59	4.45	5.16	23.58	341.64
Quezon	19,439	17,850	1.86	28.89	25.44	29.85	19.72	21.35	16.89	0.86	2.29				3.20	17.11	30.39	17.15	19.67	7.87	3.83	14.01	11.53	20.94	29.83	8.87	0.00	0.00	0.00				7.47	6.01	15.83	8.86	15.59	3.83	389.15
Rizal	5,967	5,913	8.24	2.12	6.16	8.69	8.40	6.22	6.60	0.00	0.67				0.00	2.77	8.81	4.72	1.31	1.60	3.24	4.70	4.16	3.25	3.24	0.00	1.50	0.00	0.00				0.00	4.96	3.54	7.35	4.20	8.40	114.86
IV-B																																							
Marinduque	1,794	1,763	1.84	0.97	2.94	3.06	2.17	2.45	3.41	3.29	3.31	2.28	0.45	0.22	1.05	3.24	4.61	1.63	1.25	1.78	0.84	2.89	1.91	2.10	1.79	0.98	0.30	0.00	0.06							1.45	0.41	3.71	56.39
Occidental Mindoro	40,588	33,984	47.81	48.74	52.59	50.38	48.67	36.04	38.14	20.32	3.87								0.00	30.52	56.80	19.39	25.77	0.00	2.20	26.93	27.55	13.28	4.19	38.64	0.00	8.44	9.79	9.65	61.88	49.00	25.76	38.73	795.09
Oriental Mindoro	37,701	32,800	46.54	44.93	53.66	55.73	54.99	44.59	62.22	49.01	39.41	41.66	1.71	4.07	26.53	15.49	39.76	21.69	10.32	24.72	6.51	28.19	19.69	19.24	10.13	21.92	0.00	4.13	0.00							7.79	34.22	37.52	826.36
Palawan	25,447	21,911	34.33	30.96	37.02	38.38	37.86	30.70	42.72	41.20	41.48	28.39	14.52	2.77	23.74	24.71	44.36	27.35	19.66	0.65	13.10	8.11	18.35	22.04	14.71	1.28	0.43	0.00	0.00							18.02	15.40	31.57	663.80
Romblon	3,969	4,197	5.31	5.89	7.04	7.30	7.20	5.84	8.15	7.85	7.91	5.43	2.78	0.53	3.71	7.16	10.18	5.68	6.11	2.77	3.09	2.74	2.07	0.86	2.73	3.03	1.35	0.00	0.00							2.10	4.89	8.83	138.53
V																																							
Albay	39,596	37,201	57.67	10.68	48.43	40.49	45.57	39.55	71.77	66.16	16.78	24.50	3.74		18.49	71.43	52.99	68.77	25.63	51.84	36.16	21.84	19.51	36.88	10.93	23.28	11.08	0.00	0.00							0.00	54.67	26.57	955.40
Camarines Norte	14,973	14,939	23.13	11.01	18.76	25.81	12.38	20.65	28.82	21.34	6.02	5.07	1.51		13.99	18.54	24.11	4.50	6.75	12.22	12.03	11.86	6.19	15.39	5.20	6.96	0.00	0.00	0.00							0.00	3.64	25.24	341.11
Camarines Sur	73,913	70,827	68.54	76.10	95.31	#####	#####	98.03	#####	#####	97.01	46.74	0.00		49.21	94.38	95.98	96.19	83.86	79.86	67.62	37.94	79.73	#####	43.88	35.18	0.00	0.00	0.00	0.00						0.00	31.36	97.83	1,983.30
Catanduanes	2,927	2,982	4.63	0.74	4.98	3.91	2.32	4.14	5.76	2.22	4.09	1.96	0.30		0.00	5.28	5.50	4.04	2.90	4.03	3.43	0.79	2.41	2.88	1.54	4.43	1.18	0.00	0.10							0.00	2.08	3.19	78.86
Masbate	12,679	12,911	14.13	18.17	14.55	22.52	22.97	9.35	25.02	6.12	15.79	7.58	1.16		7.77	9.02	24.57	22.07	4.00	10.18	8.16	12.26	9.68	6.59	13.62	9.94	1.75	0.00	0.44							0.00	6.80	27.24	331.46
Sorsogon	12,235	12,178	2.58	17.04	16.62	16.33	21.55	7.31	23.55	8.31	16.72	8.03	0.00		1.07	7.26	25.83	15.74	6.59	7.66	3.74	10.17	10.52	6.00	14.16	5.97	0.06	0.00	0.42							0.00	9.57	25.61	288.43

VI																																							
	Aklan	8,880	8,049	11.92	11.55	11.33	7.39	3.43	0.28							4.17	16.48	15.08	9.60	9.38	4.11	7.66	4.47	7.57	4.87	8.83	4.89	3.72	0.00	0.33	0.00	4.45	9.84	2.68	3.16	5.20	5.08	11.21	4.82	193.49
	Antique	17,682	16,157	22.57	20.92	12.20	11.62	6.62	0.00	0.02						0.00	0.00	23.13	9.91	5.01	0.00	5.95	7.59	7.46	7.79	6.05	0.00	0.00	0.00	0.00	0.00	0.00	12.46	6.15	6.11	14.12	20.77	21.75	23.93	252.12
	Capiz	11,424	9,659	12.99	12.49	3.64	8.02	3.70	0.00							10.25	7.36	18.78	6.48	0.00	0.00	0.06	0.00	6.50	9.10	0.00	3.64	0.00	0.00	0.00	0.00	1.39	11.06	2.78	3.98	11.81	5.66	9.09	11.16	159.97
	Guimaras	904	719	1.14	0.71	1.08	0.71	0.33	0.00							0.23	0.65	1.80	0.90	0.59	0.29	0.17	0.30	0.50	0.64	0.61	0.86	0.00	0.00	0.00	0.00	0.00	1.03	0.57	0.45	0.00	1.11	0.48	1.23	16.37
	Iloilo	50,707	40,427	50.11	48.61	26.21	36.69	25.64	12.48	6.71	0.05					29.16	5.02	47.18	25.71	18.24	10.83	12.35	0.00	38.07	52.70	0.00	26.14	3.42	0.00	0.00	0.00	0.00	46.21	20.02	30.96	41.76	26.83	48.12	52.95	742.16
	Negros Occidental	59,153	41,770	61.35	80.49	79.63	51.44	5.67	2.00							15.36	#####	#####	79.24	31.43	73.57	43.06	53.02	72.43	73.62	38.10	46.34	0.65	0.00	0.00	10.61	27.97	37.09	19.65	72.73	77.37	81.24	78.39	53.42	1,474.62
VII																																							
	Bohol	23,750	21,282	28.01	25.75	14.23	15.41	18.47	9.17	16.86	0.00	0.00					0.00	9.78	0.00	0.00	28.43	25.07	16.71	31.41	31.34	11.41	27.09	11.94	6.02	20.45	0.00	0.00	20.71	18.93	23.78	28.77	21.70	36.86	35.23	533.54
	Cebu	6,949	6,029	10.37	10.18	6.00	7.25	4.21	0.00	0.00								4.63	4.00	11.17	9.14	10.39	2.84	5.23	4.30	8.74	10.52	9.90	0.00	0.00	0.00		3.37	9.35	8.77	5.94	4.00	9.25	8.43	167.99
	Negros Oriental	10,596	10,590	17.28	20.43	20.21	13.07	6.08	0.51							10.62	14.96	31.22	22.66	11.42	10.68	11.57	14.97	11.78	10.09	14.62	9.87	1.03	0.00	0.00	1.57	9.24	17.95	20.13	8.40	16.06	10.43	7.37	11.56	355.77
	Siquijor	665	321	0.38	0.33	0.39	0.34	0.31	0.13	0.03								0.72	1.21	0.86	0.34	0.39	0.70	0.89	1.10	0.63	1.16	0.90	0.28	0.03	0.00		0.29	0.32	0.40	0.23	0.05	0.47	0.54	13.44
VIII																																							
	Biliran	3,134	3,292	1.94	2.68	5.84	5.58	3.61	3.99	4.20	0.94	0.00						0.76	4.15	3.28	4.03	3.13	4.84	3.24	2.33	2.23	2.56	3.36	0.61	0.57				0.00	3.35	6.23	5.22	4.43	0.02	83.10
	Northern Leyte	42,173	43,155	69.43	70.79	32.86	39.08	13.29	13.03	0.00	0.00	0.00						20.05	17.02	70.51	53.48	59.84	13.34	17.09	27.77	52.25	59.00	62.41	0.71	21.70				32.56	9.76	29.84	21.05	57.79	27.43	892.11
	Southern Leyte	6,051	5,980	9.64	9.82	4.67	4.38	4.71	0.00	0.00	0.00	0.77	5.84	11.49	8.77	7.79	4.45	8.72	2.42	7.75	10.71	9.61	3.99	2.31	0.54									4.51	4.41	5.02	2.03	8.02	4.60	146.98
	Northern Samar	7,855	7,408	6.77	8.30	6.99	12.58	12.15	8.99	6.68	5.05	0.96	7.60	14.96	19.47	14.98	12.64	12.31	13.98	11.86	7.17	4.93	0.39	0.64	0.49									0.00	4.00	2.90	4.97	0.00	5.42	207.17
	Weatern Samar	5,796	6,092	0.29	9.98	4.01	10.30	9.95	7.36	4.31	2.28	0.79	5.60	11.02	11.97	11.01	1.07	5.97	5.42	2.33	4.58	2.50	3.02	5.06	0.00									0.00	3.02	7.95	2.15	5.30	4.14	141.38
	Eastern Samar	5,921	5,765	3.99	9.46	5.91	9.75	6.89	6.97	3.29	2.14	0.74	5.71	11.22	10.10	8.97	4.51	6.11	7.10	3.33	5.49	4.13	4.00	4.42	1.56									0.00	2.20	6.68	1.70	4.01	4.06	144.45
IX																																							
	Zamboanga del Norte	21,131	17,989	18.78	27.73	17.79	14.89	14.64	7.15	3.80	0.03		13.54	17.55	18.17	20.76	31.92	17.62	19.96	15.80	18.09	13.07	16.20	13.16	11.48	0.00	0.00	0.00			0.00	0.00	7.99	6.94	13.81	0.39	3.19	27.49	15.29	407.20
	Zamboanga del Sur	30,512	29,798	47.60	46.34	46.81	34.97	24.47	11.95	6.33	0.05		19.57	38.74	41.01	48.23	46.98	23.67	20.37	19.25	14.94	21.54	5.14	19.52	3.62	0.00	0.00	0.00			0.00	0.23	14.55	10.09	24.72	12.00	15.11	18.43	21.29	657.51
	Zamboanga Sibugay	11,367	10,852	10.86	12.93	10.57	12.85	8.99	4.39	2.32	0.02		7.30	6.01	5.89	6.29	11.66	10.44	10.72	7.43	9.04	4.87	7.54	6.10	6.93	0.00	0.00	0.00			0.14	0.00	5.39	7.03	9.12	1.20	4.70	16.84	10.93	218.52
X																																							
	Bukidnon	50,835	50,419	73.13	74.99	54.74	57.01	69.58	27.01	5.71	10.98	4.64	6.64			0.00	0.00	7.33	25.16	10.12	12.25	3.76	19.14	14.55	30.74	45.80	29.47	22.27	0.00	0.00	0.00	0.00	0.00	0.00	17.00	17.21	29.30	58.89	20.07	747.48
	Camiguin	633	455	0.30	0.32	0.30	0.32	0.74	0.55	0.58	0.31	0.06						0.67	0.77	0.81	0.37	0.52	0.97	0.58	0.69	0.70	0.88	0.74	0.61	0.57	0.00	0.00		0.00	0.65	0.43	0.72	0.21	0.73	15.08
	Lanao del Norte	12,223	10,003	10.78	7.85	8.00	8.76	5.53	7.53	0.00	10.40	5.64	0.00	0.02				4.02	4.24	2.96	12.45	5.09	3.89	8.96	14.41	9.42	10.92	1.68	2.48	0.00	0.00	0.00	0.00	1.36	0.00	12.57	11.72	12.90	7.18	190.76
	Misamis Occidental	7,830	7,874	12.56	12.80	13.81	13.19	12.74	7.13	9.94	5.30	1.01						2.97	8.13	9.60	4.30	4.45	3.66	2.76	5.42	3.35	8.13	6.67	6.33	0.00	0.00	0.00		0.00	0.93	6.87	2.49	0.67	1.21	166.42
	Misamis Oriental	7,571	8,151	10.50	6.59	7.30	4.84	7.26	5.97	10.30	0.00	0.00						2.97	3.33	9.77	6.99	5.62	4.65	9.52	7.58	2.74	8.21	5.00	5.22	4.49	0.00	0.00		3.52	8.92	12.46	6.38	6.75	12.90	179.80
XI																																							
	Compostela Valley	57,780	57,780	39.11	37.47	98.64	0.00	91.06	9.32	22.14	0.00	0.00						1.51	47.51	95.54	44.79	30.52	40.38	23.01	44.77	37.60	56.27	52.51	42.49	23.98	0.00	0.00		0.00	16.23	51.68	89.13	22.62	26.46	1,044.75
	Davao del Norte	24,123	24,123	10.14	12.30	16.47	17.40	29.73	29.05	30.64	16.32	0.00						0.00	9.17	18.24	10.32	12.88	18.98	23.18	20.87	28.54	20.43	18.00	3.13	0.00	0.00	0.00		0.00	8.71	15.35	2.92	23.11	29.35	425.24
	Davao del Sur	22,998	22,769	14.11	37.01	39.94	30.88	12.31	27.31	16.80	7.68	0.00						8.44	22.32	26.19	19.82	25.29	18.31	33.30	10.61	36.73	16.88	5.26	12.95	0.00	0.00	0.00		3.18	19.26	33.73	35.71	30.22	17.79	562.02
	Davao Oriental	12,354	12,443	19.78	20.17	21.76	20.78	13.18	14.86	15.60	0.00	1.58						5.07	14.35	12.97	8.53	6.63	10.43	11.29	10.48	13.33	15.65	4.17	1.26	0.00	0.00	0.00		0.00	6.36	7.20	2.25	5.71	8.99	272.40
XII																																							
	Sarangani	5,588	5,204	5.20	0.00	0.64	0.00	0.00		0.00	5.17	7.41	4.11	8.01	12.10	6.73	4.71	10.66	9.40	5.59	2.73	0.00	0.00	0.59	1.15	0.00		0.00	0.82	2.90	3.11	7.36	5.03	4.91	4.37	3.54	6.13	4.90	1.13	128.38
	South Cotabato	60,325	59,600	58.52	42.65	0.00	13.03	1.06		28.53	11.52	79.50	43.96	#####	#####	82.11	69.95	53.11	39.22	47.54	28.77	0.00	0.00	0.00	0.00	0.00		0.00	23.93	62.31	16.56	45.89	51.45	68.57	52.88	54.73	60.92	50.27	78.46	1,406.03
	North Cotabato	90,428	90,032	#####	28.42	0.00	0.00	0.00		47.78	47.55	72.44	#####	#####	#####	#####	83.11	#####	42.29	43.30	96.80	26.55	0.00	0.77	0.00	0.00		0.00	32.10	63.48	19.01	91.93	92.91	96.36	77.15	97.11	63.40	96.85	#####	2,161.76
	Sultan Kudarat	39,121	31,988	32.23	3.43	0.00	0.00	0.00		0.00	36.33	52.17	14.95	54.39	85.42	43.13	19.30	75.29	44.65	21.96	1.83	0.00	0.00	0.00	8.10	0.00		0.00	0.00	6.73	14.10	35.16	20.42	22.07	10.34	46.33	38.54	46.33	9.60	742.79
XIII (CARAGA)																																							
	Agusan del Norte	30,349	30,212	30.85	42.67	52.84	50.53	48.81	36.14	25.28	20.28	3.86						8.56	38.54	58.27	17.75	12.04	14.45	4.73	26.62	13.27	27.84	26.81	8.58	0.00	0.00	0.00		0.00	7.36	17.53	6.85	4.35	11.46	616.27
	Agusan del Sur	37,801	36,557	58.21	59.34	64.03	61.23	59.13	43.78	46.11	24.57	0.00						0.00	30.91	44.47	28.09	0.00	18.31	29.51	18.27	28.42	23.65	19.14	9.97	0.00	0.00	0.00		0.00	8.94	33.53	18.95	8.16	10.06	746.78
	Dinagat Islands	885	803	0.58	1.32	0.78	1.36	0.86	0.97	0.41	0.54	0.10						0.64	1.26	0.88	0.82	0.91	0.13	1.59	0.94	0.97	1.55	1.31	0.17	0.13	0.00	0.00		0.00	0.12	0.54	0.61	1.08	0.16	20.76
	Surigao del Norte	10,906	7,566	5.25	12.39	6.42	9.80	7.26	9.13	6.30	1.48	0.00						6.44	15.37	9.31	8.24	15.50	1.73	15.10	13.12	11.65	19.13	12.53	1.18	1.18	0.00	0.00		0.00	0.00	7.41	3.88	5.81	5.70	211.32
	Surigao del Sur	27,842	24,982	16.94	12.51	16.13	5.41	33.12	0.00	24.19	0.00	0.00						0.00	22.42	39.74	11.40	9.36	19.24	27.64	18.93	45.19	9.03	19.90	28.33	14.62	0.00	0.00		18.81	24.85	26.14	10.08	8.02	39.62	501.62
ARMM																																							
	Basilan	536	530	0.86	0.88	0.95	0.91	0.88	0.65	0.68	0.36	0.07						0.03	0.09	0.10	0.04	0.04	0.03	0.04	0.06	0.07	0.05	0.03	0.00	0.00	0.00	0.00		0.15	0.39	0.34	0.59	0.53	0.19	9.01
	Lanao del Sur	30,343	28,243	27.46	6.02	0.00	0.00	0.00		1.43	0.96	0.22	0.30	3.41	4.24	3.37	1.64	2.26	0.13	1.57	0.99	0.00	0.00	0.00	0.00	0.00		0.00	0.00	4.28	0.00	13.70	12.69	13.81	6.67	13.68	17.19	23.18	36.97	196.18
	Maguindanao	69,933	67,685	69.47	22.99	0.00	0.00	0.00		3.35	3.39	2.80	4.03	10.10	11.30	8.20	6.81	4.61	2.54	2.46	5.16	3.44	0.00	0.72	0.00	0.00		0.00	20.97	42.40	0.00	60.55	53.43	65.97	43.22	51.35	35.90	59.21	92.92	687.28
	Sulu	1,737	1,737	2.83	2.88	3.11	2.03	2.86	2.12	1.72	1.19	0.23						0.11	0.18	0.39	0.16	0.11	0.27	0.16	0.17	0.28	0.22	0.26	0.23	0.16	0.00	0.00		1.31	0.98	1.74	2.76	2.39	0.49	31.31
	Tawi-Tawi	745	942	1.19	1.56	1.69	1.24	1.55	0.77	0.70	0.64	0.12						0.06	0.11	0.17	0.11	0.02	0.11	0.09	0.08	0.12	0.13	0.11	0.10	0.07	0.01	0.00		0.71	0.37	1.36	1.07	1.30	0.42	15.97
																																							48,186
	Nos of Days			10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	

Source: JICA Survey Team

Table F 24 Irrigation Water Demands by Provinces in 2050
(Based on Irrigated Areas Projected in Consideration of Past Financial Program)

(Unit: MCM)

Region/	Irrigated Area (ha)		Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			Annual
Province	Wet	Dry	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
CAR																																							
Abra	16,408	15,633	21.10	21.51	23.21	22.38	21.63	16.03	17.06	9.09	0.00							8.31	16.23	21.55	11.64	2.70	6.00	7.51	6.91	7.35	7.76	16.20	21.19	8.04	0.00	0.00	9.12	18.12	23.77	20.45	1.29	21.13	387.30
Apayao	8,811	8,735	12.89	13.14	14.18	13.69	13.23	9.81	7.96	5.60	1.07							0.00	10.70	11.96	9.14	7.68	7.35	6.60	7.64	4.45	3.66	5.55	11.43	2.46	3.90	0.46	5.71	0.00	0.00	0.00	10.88	12.94	214.07
Benguet	13,063	12,837	17.08	17.41	18.79	18.09	17.48	12.96	13.77	7.34	1.40			0.00	11.83	12.60	8.52	6.47	9.07	6.90	6.63	4.29	2.77	5.24	4.11	0.00	0.00	0.00					7.45	14.78	3.37	16.62	14.39	8.98	268.36
Ifugao	15,993	14,355			10.73	13.50	25.18	16.75	21.58	23.51	23.47	27.75	19.62	18.83	22.42	14.03	9.56	0.00	0.00				0.00	15.25	9.79	4.17	1.09	0.00	7.35	0.48	15.51	15.00	1.91	9.71	0.00	0.00	0.00		327.18
Kalinga	28,313	26,850	39.93	40.65	43.92	42.34	40.97	30.44	32.40	17.28	3.30							0.27	22.49	25.67	19.21	6.92	19.76	10.60	20.17	14.03	18.11	0.00	19.75	25.91	0.00	0.00	17.62	35.01	45.91	39.29	33.97	40.31	706.24
Mt. Province	11,086	10,793	12.58	12.15	1.77	8.48	4.85	0.30							10.01	5.87	12.86	14.15	7.20	10.08	7.18	0.00	1.24	0.73	5.26	4.66	1.44	0.00	0.00	3.42	13.68	7.36	0.24	0.00	7.93	3.80	6.52	13.67	177.43
I																																							
Ilocos Norte	36,484	24,400	33.81	34.47	37.19	35.83	31.89	18.15	14.56	2.52									17.33	45.90	46.30	52.90	24.81	21.05	21.46	39.23	2.89	22.80	6.16	0.00	0.00	0.00	19.25	35.39	15.64	34.94	3.68	34.06	652.17
Ilocos Sur	29,261	17,388	23.84	24.30	26.22	25.18	22.41	12.76	10.18	1.76									0.00	22.32	11.23	28.81	11.31	17.56	17.47	42.89	17.69	13.14	26.36	0.00	13.18	1.56	0.00	25.08	31.39	24.76	20.27	24.08	495.78
La Union	14,391	11,015	14.99	15.27	16.48	15.81	14.08	8.02	6.40	1.11									0.66	7.56	17.37	8.28	8.20	4.10	9.56	7.32	9.55	0.46	10.33	13.18	0.00	0.00	8.64	15.84	19.81	15.59	12.74	15.14	276.49
Pangasinan	158,964	112,825	#####	#####	#####	#####	#####	#####	#####	64.86	0.00	0.00							0.00	0.00	56.67	51.83	#####	#####	92.97	93.76	95.21	#####	64.61	#####	0.00	#####	97.41	#####	#####	#####	#####	#####	3,040.15
II																																							
Batanes	354	248	0.29	0.31	0.40	0.38	0.36	0.27	0.24	0.05								0.12	0.86	0.56	0.28	0.60	0.71	0.48	0.49	0.33	0.41	0.57	0.31	0.27	0.00		0.10	0.47	0.38	0.02	0.32	0.38	9.96
Cagayan	117,372	121,715	#####	#####	#####	#####	#####	#####	#####	80.85	0.00							72.53	#####	#####	#####	#####	#####	#####	#####	88.84	#####	#####	61.20	0.00	0.00	0.00	0.00	#####	#####	#####	47.69	#####	3,602.03
Isabela	191,547	183,667	#####	#####	#####	#####	#####	#####	#####	#####	0.00	40.29	0.30					2.95	#####	#####	#####	#####	98.90	#####	#####	#####	60.15	0.00	#####	0.00	0.00	0.00	#####	0.00	33.95	#####	42.24	#####	4,321.22
Nueva Vizcaya	39,717	39,717	57.96	59.05	63.76	61.51	59.47	44.10	47.01	25.06	4.78							9.55	68.99	74.66	9.25	16.50	30.36	16.76	7.51	27.44	16.47	12.71	0.00	0.00	17.27	0.00	0.00	56.54	72.17	36.04	0.00	7.12	902.04
Quirino	18,997	18,943	22.47	29.09	24.49	30.25	29.23	21.67	23.09	12.30	0.00							5.83	33.45	28.43	22.99	7.52	9.81	11.68	12.83	9.03	10.78	11.19	0.00	7.72	0.00	0.00	14.14	11.55	34.97	28.63	10.73	28.58	492.44
III																																							
Aurora	13,768	13,684	15.30	11.62	13.33	12.92	16.36	12.22	19.79	24.29	19.09	16.94	0.00	0.00				0.00	11.75	19.06	11.03	19.14	8.87	8.71	17.03	18.20	13.23	0.71	6.06	0.00	0.37	0.00				8.99	17.86	15.42	338.27
Bataan	9,478	9,541	13.56	13.83	14.92	14.32	13.83	10.24	10.86	5.78	1.10								0.00	4.21	7.40	7.98	6.52	4.95	5.68	12.06	10.51	4.19	4.46	3.16	5.93	0.00	1.66	9.95	9.43	13.87	11.31	9.66	231.38
Bulacan	38,493	27,079	38.10	38.84	41.91	40.31	25.95	28.83	30.64	16.32	0.00								15.52	33.37	19.50	27.71	0.00	20.89	27.70	10.21	21.11	58.38	14.92	11.42	0.00	3.73	0.00	12.06	44.62	16.52	18.12	37.94	654.64
Nueva Ecija	171,907	168,932	#####	#####	#####	#####	#####	#####	#####	#####	#####	35.62	52.79	10.01			20.46	4.40	#####	18.69	#####	#####	23.45	72.26	#####	#####	19.12	69.25	30.52	#####	21.22	0.00	#####	#####	#####	#####	#####	#####	3,940.22
Pampanga	40,368	43,869	61.91	63.11	68.10	65.58	63.33	46.89	49.98	26.63	5.07								5.14	31.28	51.65	29.03	25.42	19.23	4.20	16.19	40.17	20.29	10.61	26.85	14.54	20.46	29.20	55.97	72.34	60.64	51.60	61.56	1,096.96
Tarlac	97,693	85,956	#####	#####	#####	#####	#####	92.12	98.27	52.35	9.96								12.68	99.23	#####	#####	29.36	0.00	52.04	#####	89.62	38.69	8.15	17.99	40.76	15.25	40.47	#####	#####	#####	#####	89.42	2,284.45
Zambales	37,290	21,821	30.30	30.89	33.33	32.08	30.97	22.91	24.37	12.98	0.00								0.00	28.23	41.78	21.24	13.13	33.88	16.51	4.71	22.96	19.62	0.76	26.96	16.47	0.00	0.00	20.86	34.78	23.50	25.23	30.13	598.56
IV-A																																							
Batangas	5,975	7,427	7.78	7.89	11.63	11.15	10.77	7.97	8.46	4.51	0.86				1.60	7.89	10.43	5.26	3.51	7.02	0.24	7.62	3.96	3.59	2.15	0.34	0.00	0.00	0.00				0.00	6.29	7.15	9.20	1.62	10.50	159.39
Cavite	9,101	8,683	12.27	12.51	13.50	12.96	12.52	9.27	9.85	5.25	1.00				5.62	12.00	12.52	1.88	0.05	6.28	3.18	5.14	10.87	4.29	8.52	13.58	3.29	0.00	0.00				0.00	0.80	3.62	10.70	10.23	5.23	206.90
Laguna	16,962	16,933	26.76	27.28	29.44	28.24	27.28	20.20	21.46	11.43	0.00				10.46	10.96	19.81	12.62	19.75	10.93	11.16	13.11	10.79	12.24	9.69	0.82	0.00	0.00	0.00				0.00	0.00	14.23	5.03	5.83	26.65	386.14
Quezon	21,012	19,294	2.01	31.23	27.50	32.27	21.32	23.08	18.26	0.93	2.48				3.46	18.49	32.85	18.54	21.26	8.51	4.14	15.14	12.47	22.64	32.24	9.59	0.00	0.00	0.00				8.08	6.49	17.11	9.58	16.85	4.14	420.64
Rizal	6,651	6,590	9.19	2.36	6.86	9.69	9.36	6.93	7.35	0.00	0.75				0.00	3.09	9.82	5.26	1.46	1.78	3.61	5.23	4.64	3.62	3.61	0.00	1.67	0.00	0.00				0.00	5.53	3.95	8.19	4.68	9.36	128.01
IV-B																																							
Marinduque	1,824	1,792	1.87	0.99	2.99	3.11	2.21	2.49	3.47	3.35	3.37	2.32	0.45	0.23	1.07	3.29	4.68	1.66	1.27	1.81	0.85	2.94	1.95	2.13	1.82	1.00	0.30	0.00	0.06							1.47	0.42	3.77	57.33
Occidental Mindoro	46,643	39,054	54.95	56.01	60.44	57.90	55.93	41.41	43.83	23.35	4.44								0.00	35.08	65.27	22.28	29.62	0.00	2.53	30.95	31.66	15.26	4.81	44.41	0.00	9.70	11.25	11.09	71.11	56.31	29.60	44.51	913.71
Oriental Mindoro	42,499	36,974	52.47	50.65	60.49	62.83	61.99	50.26	70.14	55.25	44.43	46.97	1.92	4.59	29.91	17.46	44.82	24.45	11.63	27.86	7.34	31.78	22.20	21.68	11.42	24.71	0.00	4.65	0.00							8.78	38.58	42.30	931.54
Palawan	25,447	21,911	34.33	30.96	37.02	38.38	37.86	30.70	42.72	41.20	41.48	28.39	14.52	2.77	23.74	24.71	44.36	27.35	19.66	0.65	13.10	8.11	18.35	22.04	14.71	1.28	0.43	0.00	0.00							18.02	15.40	31.57	663.80
Romblon	4,535	4,796	6.07	6.73	8.04	8.34	8.23	6.67	9.31	8.98	9.04	6.20	3.17	0.61	4.24	8.19	11.63	6.50	6.98	3.17	3.53	3.13	2.37	0.98	3.12	3.46	1.54	0.00	0.00							2.40	5.59	10.10	158.31
V																																							
Albay	46,059	43,273	67.08	12.42	56.34	47.10	53.01	46.01	83.48	76.95	19.51	28.49	4.35		21.51	83.09	61.64	79.99	29.81	60.30	42.07	25.40	22.70	42.90	12.72	27.07	12.89	0.00	0.00							0.00	63.59	30.91	1,111.33
Camarines Norte	18,529	18,488	28.63	13.63	23.22	31.94	15.32	25.55	35.67	26.41	7.45	6.27	1.86		17.32	22.94	29.83	5.56	8.36	15.12	14.89	14.68	7.65	19.05	6.44	8.62	0.00	0.00	0.00							0.00	4.50	31.24	422.14
Camarines Sur	86,902	83,273	80.59	89.48	#####	#####	#####	#####	#####	#####	#####	54.95	0.00		57.86	#####	#####	#####	98.60	93.89	79.51	44.61	93.74	#####	51.59	41.36	0.00	0.00	0.00	0.00						0.00	36.88	#####	2,331.82
Catanduanes	3,080	3,138	4.88	0.78	5.25	4.12	2.44	4.36	6.06	2.34	4.30	2.07	0.32		0.00	5.56	5.79	4.25	3.05	4.24	3.61	0.83	2.54	3.03	1.62	4.67	1.24	0.00	0.11							0.00	2.19	3.36	82.98
Masbate	16,247	16,543	18.11	23.28	18.64	28.86	29.43	11.99	32.07	7.84	20.23	9.71	1.48		9.96	11.55	31.49	28.28	5.13	13.05	10.45	15.71	12.40	8.44	17.46	12.73	2.24	0.00	0.56							0.00	8.72	34.90	424.72
Sorsogon	12,511	12,453	2.64	17.43	17.00	16.70	22.04	7.48	24.08	8.50	17.10	8.21	0.00		1.10	7.43	26.41	16.09	6.74	7.83	3.82	10.40	10.76	6.13	14.48	6.10	0.07	0.00	0.43							0.00	9.79	26.19	294.94

VI																																							
	Aklan	8,881	8,049	11.92	11.55	11.33	7.39	3.43	0.28							4.17	16.48	15.08	9.60	9.38	4.11	7.66	4.47	7.57	4.87	8.83	4.89	3.72	0.00	0.33	0.00	4.45	9.84	2.68	3.16	5.20	5.08	11.21	4.82	193.49
	Antique	19,540	17,854	24.95	23.11	13.48	12.84	7.32	0.00	0.02						0.00	0.00	25.56	10.95	5.53	0.00	6.57	8.39	8.24	8.60	6.68	0.00	0.00	0.00	0.00	0.00	0.00	13.77	6.80	6.75	15.61	22.96	24.03	26.44	278.61
	Capiz	11,424	9,659	12.99	12.49	3.64	8.02	3.70	0.00							10.25	7.36	18.78	6.48	0.00	0.00	0.06	0.00	6.50	9.10	0.00	3.64	0.00	0.00	0.00	0.00	1.39	11.06	2.78	3.98	11.81	5.66	9.09	11.16	159.97
	Guimaras	904	719	1.14	0.71	1.08	0.71	0.33	0.00							0.23	0.65	1.80	0.90	0.59	0.29	0.17	0.30	0.50	0.64	0.61	0.86	0.00	0.00	0.00	0.00	0.00	1.03	0.57	0.45	0.00	1.11	0.48	1.23	16.37
	Iloilo	58,487	46,630	57.80	56.06	30.23	42.32	29.58	14.40	7.74	0.06					33.64	5.80	54.42	29.66	21.03	12.49	14.24	0.00	43.91	60.78	0.00	30.15	3.94	0.00	0.00	0.00	0.00	53.30	23.09	35.71	48.17	30.94	55.51	61.07	856.03
	Negros Occidental	69,807	49,293	72.40	94.99	93.97	60.70	6.69	2.37							18.13	#####	#####	93.51	37.10	86.82	50.82	62.57	85.48	86.88	44.97	54.68	0.77	0.00	0.00	12.53	33.01	43.77	23.18	85.83	91.30	95.87	92.50	63.04	1,740.23
VII																																							
	Bohol	24,910	22,321	29.38	27.01	14.92	16.17	19.37	9.62	17.68	0.00	0.00					0.00	10.25	0.00	0.00	29.82	26.30	17.52	32.94	32.87	11.97	28.41	12.53	6.31	21.45	0.00	0.00	21.72	19.85	24.94	30.18	22.76	38.66	36.95	559.58
	Cebu	6,949	6,029	10.37	10.18	6.00	7.25	4.21	0.00	0.00								4.63	4.00	11.17	9.14	10.39	2.84	5.23	4.30	8.74	10.52	9.90	0.00	0.00	0.00		3.37	9.35	8.77	5.94	4.00	9.25	8.43	167.99
	Negros Oriental	10,809	10,804	17.63	20.84	20.62	13.33	6.21	0.52							10.83	15.26	31.85	23.12	11.65	10.90	11.81	15.27	12.01	10.30	14.91	10.07	1.05	0.00	0.00	1.60	9.42	18.31	20.53	8.57	16.39	10.64	7.51	11.80	362.95
	Siquijor	665	321	0.38	0.33	0.39	0.34	0.31	0.13	0.03								0.72	1.21	0.86	0.34	0.39	0.70	0.89	1.10	0.63	1.16	0.90	0.28	0.03	0.00		0.29	0.32	0.40	0.23	0.05	0.47	0.54	13.44
VIII																																							
	Biliran	3,134	3,292	1.94	2.68	5.84	5.58	3.61	3.99	4.20	0.94	0.00						0.76	4.15	3.28	4.03	3.13	4.84	3.24	2.33	2.23	2.56	3.36	0.61	0.57				0.00	3.35	6.23	5.22	4.43	0.02	83.10
	Northern Leyte	45,904	46,973	75.58	77.05	35.77	42.54	14.47	14.19	0.00	0.00	0.00						21.83	18.53	76.75	58.21	65.13	14.53	18.60	30.22	56.87	64.22	67.93	0.78	23.61				35.44	10.63	32.48	22.92	62.90	29.86	971.03
	Southern Leyte	6,051	5,980	9.64	9.82	4.67	4.38	4.71	0.00	0.00	0.00	0.77	5.84	11.49	8.77	7.79	4.45	8.72	2.42	7.75	10.71	9.61	3.99	2.31										4.51	4.41	5.02	2.03	8.02	4.60	146.44
	Northern Samar	9,372	8,839	8.08	9.90	8.34	15.01	14.49	10.73	7.97	6.03	1.15	9.06	17.84	23.23	17.88	15.08	14.69	16.68	14.15	8.56	5.89	0.46	0.77										0.00	4.77	3.46	5.93	0.00	6.47	246.61
	Weatern Samar	6,251	6,571	0.32	10.76	4.33	11.11	10.73	7.94	4.65	2.45	0.85	6.04	11.88	12.91	11.88	1.16	6.44	5.84	2.51	4.94	2.69	3.26	5.46										0.00	3.25	8.57	2.32	5.72	4.46	152.49
	Eastern Samar	5,921	5,765	3.99	9.46	5.91	9.75	6.89	6.97	3.29	2.14	0.74	5.71	11.22	10.10	8.97	4.51	6.11	7.10	3.33	5.49	4.13	4.00	4.42										0.00	2.20	6.68	1.70	4.01	4.06	142.89
IX																																							
	Zamboanga del Norte	28,450	24,220	25.28	37.34	23.95	20.04	19.71	9.63	5.11	0.04		18.23	23.63	24.46	27.96	42.97	23.73	26.87	21.27	24.36	17.60	21.81	17.72	15.45	0.00	0.00	0.00			0.00	0.00	10.76	9.34	18.59	0.52	4.29	37.01	20.58	548.24
	Zamboanga del Sur	35,257	34,431	55.00	53.55	54.09	40.41	28.27	13.81	7.32	0.06		22.61	44.77	47.39	55.73	54.28	27.35	23.53	22.24	17.26	24.89	5.94	22.55	4.18	0.00	0.00	0.00			0.00	0.27	16.81	11.66	28.56	13.87	17.46	21.30	24.60	759.75
	Zamboanga Sibugay	12,675	12,101	12.12	14.42	11.79	14.33	10.03	4.90	2.59	0.02		8.14	6.71	6.57	7.02	13.00	11.64	11.96	8.28	10.08	5.43	8.41	6.80	7.72	0.00	0.00	0.00			0.16	0.00	6.02	7.83	10.17	1.34	5.24	18.78	12.19	243.67
X																																							
	Bukidnon	62,002	61,495	89.20	91.46	66.76	69.53	84.86	32.94	6.96	13.39	5.66	8.09			0.00	0.00	8.94	30.69	12.34	14.94	4.59	23.34	17.74	37.49	55.87	35.94	27.16	0.00	0.00	0.00	0.00	0.00	0.00	20.74	20.99	35.73	71.82	24.48	911.68
	Camiguin	633	455	0.30	0.32	0.30	0.32	0.74	0.55	0.58	0.31	0.06						0.67	0.77	0.81	0.37	0.52	0.97	0.58	0.69	0.70	0.88	0.74	0.61	0.57	0.00	0.00		0.00	0.65	0.43	0.72	0.21	0.73	15.08
	Lanao del Norte	12,223	10,003	10.78	7.85	8.00	8.76	5.53	7.53	0.00	10.40	5.64	0.00	0.02				4.02	4.24	2.96	12.45	5.09	3.89	8.96	14.41	9.42	10.92	1.68	2.48	0.00	0.00	0.00	0.00	1.36	0.00	12.57	11.72	12.90	7.18	190.76
	Misamis Occidental	8,003	8,048	12.83	13.08	14.12	13.48	13.02	7.29	10.16	5.41	1.03						3.03	8.31	9.81	4.40	4.55	3.74	2.82	5.54	3.42	8.31	6.82	6.47	0.00	0.00	0.00		0.00	0.95	7.02	2.54	0.68	1.24	170.09
	Misamis Oriental	9,512	10,240	13.19	8.28	9.17	6.08	9.12	7.50	12.95	0.00	0.00						3.74	4.18	12.28	8.78	7.07	5.84	11.95	9.52	3.44	10.32	6.28	6.56	5.65	0.00	0.00		4.42	11.21	15.66	8.01	8.48	16.21	225.89
XI																																							
	Compostela Valley	80,415	80,415	54.43	52.15	#####	0.00	#####	12.97	30.81	0.00	0.00						2.10	66.12	#####	62.34	42.47	56.19	32.03	62.31	52.32	78.32	73.09	59.14	33.37	0.00	0.00		0.00	22.58	71.92	#####	31.49	36.83	1,454.02
	Davao del Norte	24,378	24,378	10.25	12.43	16.65	17.59	30.05	29.35	30.96	16.49	0.00						0.00	9.26	18.43	10.43	13.02	19.18	23.43	21.09	28.85	20.64	18.19	3.16	0.00	0.00	0.00		0.00	8.81	15.51	2.95	23.35	29.66	429.73
	Davao del Sur	27,246	26,974	16.71	43.85	47.32	36.58	14.58	32.35	19.90	9.10	0.00						10.00	26.44	31.02	23.48	29.96	21.69	39.45	12.57	43.51	20.00	6.23	15.34	0.00	0.00	0.00		3.76	22.82	39.96	42.31	35.80	21.08	665.82
	Davao Oriental	14,819	14,925	23.73	24.19	26.10	24.93	15.81	17.83	18.71	0.00	1.90						6.08	17.22	15.56	10.23	7.96	12.51	13.54	12.56	15.99	18.77	5.00	1.51	0.00	0.00	0.00		0.00	7.63	8.64	2.70	6.85	10.79	326.74
XII																																							
	Sarangani	5,588	5,204	5.20	0.00	0.64	0.00	0.00		0.00	5.17	7.41	4.11	8.01	12.10	6.73	4.71	10.66	9.40	5.59	2.73	0.00	0.00	0.59	1.15	0.00		0.00	0.82	2.90	3.11	7.36	5.03	4.91	4.37	3.54	6.13	4.90	1.13	128.38
	South Cotabato	77,194	76,266	74.88	54.57	0.00	16.67	1.35		36.51	14.74	#####	56.26	#####	#####	#####	89.51	67.96	50.19	60.84	36.82	0.00	0.00	0.00	0.00	0.00		0.00	30.62	79.73	21.18	58.73	65.84	87.74	67.67	70.03	77.95	64.33	#####	1,799.20
	North Cotabato	116,810	116,299	#####	36.71	0.00	0.00	0.00		61.72	61.42	93.58	#####	#####	#####	#####	#####	#####	54.63	55.93	#####	34.29	0.00	0.99	0.00	0.00		0.00	41.47	82.00	24.55	#####	#####	#####	99.66	#####	81.90	#####	#####	2,792.46
	Sultan Kudarat	42,056	34,388	34.64	3.69	0.00	0.00	0.00		0.00	39.05	56.09	16.08	58.47	91.82	46.36	20.75	80.93	48.00	23.61	1.97	0.00	0.00	0.00	8.70	0.00		0.00	0.00	7.24	15.15	37.80	21.95	23.73	11.11	49.81	41.43	49.80	10.32	798.52
XIII (CARAGA)																																							
	Agusan del Norte	39,509	39,331	40.16	55.55	68.79	65.78	63.54	47.04	32.91	26.40	5.02						11.15	50.17	75.86	23.11	15.68	18.81	6.15	34.65	17.27	36.24	34.90	11.17	0.00	0.00	0.00		0.00	9.58	22.82	8.92	5.66	14.92	802.27
	Agusan del Sur	45,471	43,974	70.02	71.38	77.02	73.65	71.13	52.67	55.46	29.55	0.00						0.00	37.19	53.49	33.79	0.00	22.02	35.50	21.98	34.18	28.44	23.02	11.99	0.00	0.00	0.00		0.00	10.75	40.34	22.80	9.81	12.10	898.30
	Dinagat Islands	885	803	0.58	1.32	0.78	1.36	0.86	0.97	0.41	0.54	0.10						0.64	1.26	0.88	0.82	0.91	0.13	1.59	0.94	0.97	1.55	1.31	0.17	0.13	0.00	0.00		0.00	0.12	0.54	0.61	1.08	0.16	20.76
	Surigao del Norte	12,620	8,755	6.08	14.34	7.43	11.34	8.40	10.57	7.29	1.71	0.00						7.45	17.78	10.77	9.54	17.93	2.00	17.48	15.18	13.49	22.14	14.50	1.37	1.37	0.00	0.00		0.00	0.00	8.57	4.49	6.73	6.60	244.54
	Surigao del Sur	34,637	31,079	21.07	15.56	20.07	6.73	41.21	0.00	30.09	0.00	0.00						0.00	27.89	49.44	14.18	11.64	23.93	34.39	23.55	56.22	11.23	24.76	35.24	18.19	0.00	0.00		23.40	30.91	32.52	12.54	9.97	49.29	624.04
ARMM																																							
	Basilan	536	530	0.86	0.88	0.95	0.91	0.88	0.65	0.68	0.36	0.07						0.03	0.09	0.10	0.04	0.04	0.03	0.04	0.06	0.07	0.05	0.03	0.00	0.00	0.00	0.00		0.15	0.39	0.34	0.59	0.53	0.19	9.01
	Lanao del Sur	40,451	37,652	36.61	8.03	0.00	0.00	0.00		1.91	1.28	0.30	0.40	4.55	5.65	4.49	2.19	3.02	0.17	2.09	1.31	0.00	0.00	0.00	0.00	0.00		0.00	0.00	5.70	0.00	18.27	16.92	18.41	8.90	18.24	22.92	30.90	49.28	261.54
	Maguindanao	91,439	88,500	90.84	30.07	0.00	0.00	0.00		4.37	4.43	3.66	5.27	13.20	14.78	10.72	8.90	6.02	3.32	3.22	6.75	4.49	0.00	0.94	0.00	0.00		0.00	27.41	55.45	0.00	79.17	69.86	86.26	56.51	67.14	46.94	77.42	#####	898.64
	Sulu	1,737	1,737	2.83	2.88	3.11	2.03	2.86	2.12	1.72	1.19	0.23						0.11	0.18	0.39	0.16	0.11	0.27	0.16	0.17	0.28	0.22	0.26	0.23	0.16	0.00	0.00		1.31	0.98	1.74	2.76	2.39	0.49	31.31
	Tawi-Tawi	745	942	1.19	1.56	1.69	1.24	1.55	0.77	0.70	0.64	0.12						0.06	0.11	0.17	0.11	0.02	0.11	0.09	0.08	0.12	0.13	0.11	0.10	0.07	0.01	0.00		0.71	0.37	1.36	1.07	1.30	0.42	15.97
																																							55,069
	Nos of Days			10	10	11	10	10	8	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	10	10	11	10	10	10	10	10	11	10	10	10	10	10	11	

Source: JICA Survey Team

Table F 25 Irrigation Areas of WRR by Water Sources in 2020

Region/ Province	Area Rate	All Systems				By Surface Water				By Ground Water				(SW)/(All Systems)				(GW)/(All Systems)			
		ISA	FUSA	Irrigated Area (ha)		ISA	FUSA	Irrigated Area (ha)		ISA	FUSA	Irrigated Area (ha)		ISA	FUSA	Irrigated Area (ha)		ISA	FUSA	Irrigated Area (ha)	
		(ha)	(ha)	Wet	Dry	(ha)	(ha)	Wet	Dry	(ha)	(ha)	Wet	Dry	(ha)	(ha)	Wet	Dry	(ha)	(ha)	Wet	Dry
WRR-I		**114,021**	**99,891**	**78,965**	**57,834**	**108,801**	**96,036**	**75,410**	**55,254**	**5,220**	**3,855**	**3,555**	**2,580**	0.954	0.961	0.955	0.955	0.046	0.039	0.045	0.045
Abra	0.991	19,652	18,678	10,726	10,219	19,485	18,604	10,660	10,189	166	74	65	30	0.992	0.996	0.994	0.997	0.008	0.004	0.006	0.003
Apayao	0.003	32	30	25	25	30	28	23	23	2	2	2	2	0.938	0.941	0.929	0.928	0.062	0.059	0.071	0.072
Benguet	0.467	7,365	7,115	5,753	5,654	7,290	7,044	5,705	5,609	75	71	48	45	0.990	0.990	0.992	0.992	0.010	0.010	0.008	0.008
Kalinga	0.006	164	150	131	124	162	148	129	123	2	2	2	2	0.987	0.986	0.988	0.987	0.013	0.014	0.012	0.013
Mt. Province	0.140	1,839	1,802	1,340	1,305	1,837	1,799	1,338	1,303	3	3	2	2	0.999	0.999	0.998	0.998	0.001	0.001	0.002	0.002
Ilocos Norte	0.984	44,482	35,241	29,437	19,687	44,462	35,241	29,437	19,660	20	0	0	27	1.000	1.000	1.000	0.999	0.000	0.000	0.000	0.001
Ilocos Sur	1.000	24,647	22,722	19,455	11,561	22,924	21,610	18,391	11,017	1,723	1,112	1,064	544	0.930	0.951	0.945	0.953	0.070	0.049	0.055	0.047
La Union	0.947	15,840	14,153	12,098	9,260	12,611	11,562	9,726	7,331	3,229	2,591	2,372	1,929	0.796	0.817	0.804	0.792	0.204	0.183	0.196	0.208
WRR-II		**368,402**	**341,535**	**297,631**	**293,155**	**331,045**	**304,160**	**262,798**	**258,294**	**37,357**	**37,374**	**34,833**	**34,861**	0.899	0.891	0.883	0.881	0.101	0.109	0.117	0.119
Abra	0.009	178	170	97	93	177	169	97	93	2	1	1	0	0.992	0.996	0.994	0.997	0.008	0.004	0.006	0.003
Apayao	0.997	10,587	10,053	8,311	8,239	9,931	9,463	7,721	7,649	656	590	590	590	0.938	0.941	0.929	0.928	0.062	0.059	0.071	0.072
Benguet	0.007	110	107	86	85	109	106	86	84	1	1	1	1	0.990	0.990	0.992	0.992	0.010	0.010	0.008	0.008
Ifugao	0.993	15,682	14,603	10,385	9,321	15,642	14,562	10,344	9,281	41	41	41	41	0.997	0.997	0.996	0.996	0.003	0.003	0.004	0.004
Kalinga	0.994	27,178	24,852	21,704	20,583	26,834	24,508	21,436	20,309	344	344	268	273	0.987	0.986	0.988	0.987	0.013	0.014	0.012	0.013
Mt. Province	0.858	11,272	11,042	8,214	7,997	11,255	11,026	8,201	7,984	16	16	14	14	0.999	0.999	0.998	0.998	0.001	0.001	0.002	0.002
Ilocos Norte	0.016	723	573	479	320	723	573	479	320	0	0	0	0	1.000	1.000	1.000	0.999	0.000	0.000	0.000	0.001
Batanes	1.000	359	354	9	0	327	327	0	0	32	27	9	0	0.911	0.924	0.000	0.000	0.089	0.076	1.000	0.000
Cagayan	1.000	109,309	104,146	86,769	89,980	73,305	68,053	53,027	56,206	36,004	36,093	33,742	33,774	0.671	0.653	0.611	0.625	0.329	0.347	0.389	0.375
Isabela	1.000	146,370	130,973	120,983	116,006	146,270	130,873	120,903	115,926	100	100	80	80	0.999	0.999	0.999	0.999	0.001	0.001	0.001	0.001
Nueva Vizcaya	0.873	29,135	28,102	26,388	26,388	29,135	28,102	26,388	26,388	0	0	0	0	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000
Quirino	0.997	12,694	11,814	9,926	9,898	12,546	11,667	9,851	9,823	148	148	75	75	0.988	0.988	0.992	0.992	0.012	0.012	0.008	0.008
Aurora	0.410	4,006	3,968	3,529	3,508	4,006	3,968	3,529	3,508	0	0	0	0	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000
Nueva Ecija	0.005	799	778	750	737	785	764	737	724	14	14	13	13	0.983	0.982	0.983	0.983	0.017	0.018	0.017	0.017
WRR-III		**485,133**	**446,640**	**367,173**	**324,876**	**444,962**	**408,006**	**336,589**	**299,365**	**40,171**	**38,634**	**30,584**	**25,512**	0.917	0.914	0.917	0.921	0.083	0.086	0.083	0.079
Benguet	0.526	8,296	8,014	6,480	6,368	8,211	7,934	6,426	6,317	85	80	54	50	0.990	0.990	0.992	0.992	0.010	0.010	0.008	0.008
Ifugao	0.007	111	103	73	66	110	103	73	65	0	0	0	0	0.997	0.997	0.996	0.996	0.003	0.003	0.004	0.004
Mt. Province	0.002	26	26	19	19	26	26	19	19	0	0	0	0	0.999	0.999	0.998	0.998	0.001	0.001	0.002	0.002
La Union	0.053	887	792	677	518	706	647	544	410	181	145	133	108	0.796	0.817	0.804	0.792	0.204	0.183	0.196	0.208
Pangasinan	1.000	130,778	116,583	94,232	66,881	107,369	93,917	74,705	51,273	23,409	22,666	19,527	15,608	0.821	0.806	0.793	0.767	0.179	0.194	0.207	0.233
Nueva Vizcaya	0.127	4,238	4,088	3,839	3,839	4,238	4,088	3,839	3,839	0	0	0	0	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000
Quirino	0.003	38	36	30	30	38	35	30	30	0	0	0	0	0.988	0.988	0.992	0.992	0.012	0.012	0.008	0.008
Aurora	0.548	5,354	5,303	4,717	4,688	5,354	5,303	4,717	4,688	0	0	0	0	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000
Bataan	1.000	12,677	11,188	7,263	7,311	11,659	10,251	7,083	7,128	1,018	937	180	183	0.920	0.916	0.975	0.975	0.080	0.084	0.025	0.025
Bulacan	0.978	37,565	31,017	24,893	17,512	35,973	29,573	23,716	16,581	1,592	1,445	1,178	931	0.958	0.953	0.953	0.947	0.042	0.047	0.047	0.053
Nueva Ecija	0.994	158,837	154,715	149,100	146,520	156,074	151,953	146,511	143,973	2,763	2,762	2,589	2,547	0.983	0.982	0.983	0.983	0.017	0.018	0.017	0.017
Pampanga	1.000	55,774	49,551	34,225	37,193	52,756	46,692	31,873	35,244	3,018	2,859	2,352	1,949	0.946	0.942	0.931	0.948	0.054	0.058	0.069	0.052
Tarlac	1.000	52,029	48,658	32,361	28,473	46,688	43,673	28,961	25,156	5,341	4,985	3,400	3,317	0.897	0.898	0.895	0.884	0.103	0.102	0.105	0.116
Zambales	1.000	18,396	16,453	9,170	5,366	15,637	13,703	8,002	4,551	2,759	2,750	1,168	815	0.850	0.833	0.873	0.848	0.150	0.167	0.127	0.152
Rizal	0.021	128	113	94	93	124	109	91	91	4	4	3	3	0.968	0.964	0.969	0.969	0.032	0.036	0.031	0.031

WRR-IV		**174,051**	**143,895**	**118,930**	**106,843**	**163,853**	**134,390**	**111,807**	**100,988**	**10,198**	**9,505**	**7,123**	**5,856**	0.941	0.934	0.940	0.945	0.059	0.066	0.060	0.055
Aurora	0.042	410	406	362	359	410	406	362	359	0	0	0	0	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000
Bulacan	0.022	845	698	560	394	809	665	533	373	36	32	26	21	0.958	0.953	0.953	0.947	0.042	0.047	0.047	0.053
Nueva Ecija	0.001	160	156	150	147	157	153	147	145	3	3	3	3	0.983	0.982	0.983	0.983	0.017	0.018	0.017	0.017
Batangas	1.000	5,508	4,699	2,431	3,022	5,154	4,426	2,276	2,877	354	273	155	145	0.936	0.942	0.936	0.952	0.064	0.058	0.064	0.048
Cavite	1.000	15,256	7,203	3,376	3,221	14,885	6,869	3,268	3,179	371	334	108	42	0.976	0.954	0.968	0.987	0.024	0.046	0.032	0.013
Laguna	1.000	17,077	13,045	11,059	11,040	16,397	12,483	10,852	10,794	680	562	207	246	0.960	0.957	0.981	0.978	0.040	0.043	0.019	0.022
Quezon	0.947	19,329	17,410	14,610	13,416	18,150	16,231	13,819	12,635	1,179	1,179	792	781	0.939	0.932	0.946	0.942	0.061	0.068	0.054	0.058
Rizal	0.979	5,947	5,275	4,393	4,353	5,757	5,085	4,259	4,219	190	190	134	133	0.968	0.964	0.969	0.969	0.032	0.036	0.031	0.031
Marinduque	1.000	2,083	2,023	1,670	1,641	1,756	1,717	1,457	1,433	327	306	213	208	0.843	0.849	0.872	0.873	0.157	0.151	0.128	0.127
Occidental Mindoro	1.000	33,920	30,777	27,011	22,616	29,946	27,099	23,333	19,806	3,974	3,678	3,678	2,810	0.883	0.880	0.864	0.876	0.117	0.120	0.136	0.124
Oriental Mindoro	1.000	37,154	30,914	25,876	22,512	35,345	29,217	25,008	21,668	1,809	1,697	868	844	0.951	0.945	0.966	0.963	0.049	0.055	0.034	0.037
Palawan	1.000	32,901	27,858	24,878	21,421	32,034	26,997	24,017	20,876	867	861	861	545	0.974	0.969	0.965	0.975	0.026	0.031	0.035	0.025
Romblon	1.000	3,460	3,432	2,554	2,701	3,052	3,042	2,476	2,623	408	390	78	78	0.882	0.886	0.969	0.971	0.118	0.114	0.031	0.029
WRR-V		**144,352**	**119,264**	**79,256**	**76,402**	**113,653**	**111,829**	**77,633**	**74,915**	**30,699**	**7,435**	**1,622**	**1,487**	0.787	0.938	0.980	0.981	0.213	0.062	0.020	0.019
Quezon	0.053	1,082	974	818	751	1,016	908	773	707	66	66	44	44	0.939	0.932	0.946	0.942	0.061	0.068	0.054	0.058
Albay	1.000	31,749	30,429	23,045	21,651	30,541	29,647	22,729	21,335	1,208	782	316	316	0.962	0.974	0.986	0.985	0.038	0.026	0.014	0.015
Camarines Norte	1.000	9,695	9,236	6,725	6,710	8,649	8,383	6,561	6,546	1,046	853	164	164	0.892	0.908	0.976	0.976	0.108	0.092	0.024	0.024
Camarines Sur	1.000	77,665	55,218	34,313	32,880	52,588	52,417	33,230	31,932	25,077	2,801	1,083	948	0.677	0.949	0.968	0.971	0.323	0.051	0.032	0.029
Catanduanes	1.000	3,211	3,113	1,805	1,839	2,965	2,876	1,790	1,824	246	237	15	15	0.923	0.924	0.992	0.992	0.077	0.076	0.008	0.008
Masbate	1.000	6,848	6,582	3,456	3,519	6,656	6,396	3,456	3,519	192	186	0	0	0.972	0.972	1.000	1.000	0.028	0.028	0.000	0.000
Sorsogon	1.000	14,102	13,712	9,094	9,052	11,238	11,202	9,094	9,052	2,864	2,510	0	0	0.797	0.817	1.000	1.000	0.203	0.183	0.000	0.000
WRR-VI		**128,660**	**114,054**	**82,952**	**67,495**	**115,060**	**104,172**	**81,041**	**66,729**	**13,600**	**9,883**	**1,911**	**766**	0.894	0.913	0.977	0.989	0.106	0.087	0.023	0.011
Aklan	1.000	10,344	9,958	7,989	7,241	9,676	9,300	7,869	7,121	668	658	120	120	0.935	0.934	0.985	0.983	0.065	0.066	0.015	0.017
Antique	1.000	16,760	15,724	13,493	12,329	16,257	15,285	13,122	12,282	503	439	371	47	0.970	0.972	0.973	0.996	0.030	0.028	0.027	0.004
Capiz	1.000	15,355	12,402	8,462	7,155	9,250	8,693	7,760	6,589	6,105	3,709	702	566	0.602	0.701	0.917	0.921	0.398	0.299	0.083	0.079
Guimaras	1.000	1,165	955	695	553	906	738	591	520	259	217	104	33	0.778	0.773	0.850	0.940	0.222	0.227	0.150	0.060
Iloilo	1.000	45,076	37,158	28,412	22,652	39,078	32,365	27,798	22,652	5,998	4,793	614	0	0.867	0.871	0.978	1.000	0.133	0.129	0.022	0.000
Negros Occidental	0.924	36,526	35,094	21,554	15,220	36,459	35,028	21,554	15,220	67	67	0	0	0.998	0.998	1.000	1.000	0.002	0.002	0.000	0.000
Negros Oriental	0.231	3,434	2,763	2,346	2,345	3,434	2,763	2,346	2,345	0	0	0	0	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000
WRR-VII		**49,927**	**44,202**	**35,332**	**31,805**	**48,790**	**43,219**	**34,389**	**31,110**	**1,137**	**982**	**943**	**695**	0.977	0.978	0.973	0.978	0.023	0.022	0.027	0.022
Negros Occidental	0.076	3,004	2,887	1,773	1,252	2,999	2,881	1,773	1,252	5	5	0	0	0.998	0.998	1.000	1.000	0.002	0.002	0.000	0.000
Bohol	1.000	25,254	23,904	18,677	16,736	25,234	23,904	18,677	16,736	20	0	0	0	0.999	1.000	1.000	1.000	0.001	0.000	0.000	0.000
Cebu	1.000	9,504	7,634	6,742	5,850	8,392	6,657	5,799	5,155	1,112	977	943	695	0.883	0.872	0.860	0.881	0.117	0.128	0.140	0.119
Negros Oriental	0.769	11,431	9,197	7,812	7,808	11,431	9,197	7,812	7,808	0	0	0	0	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000
Siquijor	1.000	734	580	329	159	734	580	329	159	0	0	0	0	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000
WRR-VIII		**71,851**	**70,446**	**50,180**	**50,912**	**70,912**	**69,507**	**50,160**	**50,886**	**939**	**939**	**20**	**26**	0.987	0.987	1.000	0.999	0.013	0.013	0.000	0.001
Biliran	1.000	4,182	3,780	1,986	2,086	4,177	3,775	1,986	2,086	5	5	0	0	0.999	0.999	1.000	1.000	0.001	0.001	0.000	0.000
Northern Leyte	1.000	41,716	41,312	33,696	34,481	41,546	41,142	33,696	34,481	170	170	0	0	0.996	0.996	1.000	1.000	0.004	0.004	0.000	0.000
Southern Leyte	1.000	7,165	7,077	5,424	5,361	7,109	7,021	5,424	5,361	56	56	0	0	0.992	0.992	1.000	1.000	0.008	0.008	0.000	0.000
Northern Samar	1.000	5,523	5,509	2,548	2,403	5,351	5,337	2,548	2,403	172	172	0	0	0.969	0.969	1.000	1.000	0.031	0.031	0.000	0.000
Weatern Samar	1.000	6,391	5,894	2,931	3,081	6,345	5,848	2,911	3,055	46	46	20	26	0.993	0.992	0.993	0.992	0.007	0.008	0.007	0.008
Eastern Samar	1.000	6,874	6,874	3,595	3,500	6,384	6,384	3,595	3,500	490	490	0	0	0.929	0.929	1.000	1.000	0.071	0.071	0.000	0.000
WRR-IX		**62,027**	**54,068**	**41,348**	**39,926**	**61,086**	**53,639**	**41,211**	**39,795**	**941**	**429**	**137**	**131**	0.985	0.992	0.997	0.997	0.015	0.008	0.003	0.003
Zamboanga del Norte	1.000	7,548	7,071	3,833	3,263	7,397	6,920	3,833	3,263	151	151	0	0	0.980	0.979	1.000	1.000	0.020	0.021	0.000	0.000
Zamboanga del Sur	1.000	29,248	24,444	21,772	21,262	28,958	24,300	21,712	21,202	290	144	60	60	0.990	0.994	0.997	0.997	0.010	0.006	0.003	0.003
Zamboanga Sibugay	1.000	10,784	10,061	8,529	8,143	10,719	9,996	8,464	8,084	65	65	65	59	0.994	0.994	0.992	0.993	0.006	0.006	0.008	0.007
Misamis Occidental	1.000	9,536	8,830	6,766	6,804	9,536	8,830	6,766	6,804	0	0	0	0	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000
Basilan	1.000	708	627	256	253	685	604	256	253	23	23	0	0	0.968	0.963	1.000	1.000	0.032	0.037	0.000	0.000
Sulu	1.000	2,526	2,043	158	158	2,220	1,997	146	146	306	46	12	12	0.879	0.977	0.924	0.924	0.121	0.023	0.076	0.076
Tawi-Tawi	1.000	1,677	992	34	43	1,571	992	34	43	106	0	0	0	0.937	1.000	1.000	1.000	0.063	0.000	0.000	0.000

WRR-X		**85,238**	**73,118**	**52,347**	**49,702**	**84,155**	**72,039**	**52,191**	**49,627**	**1,084**	**1,079**	**155**	**76**	0.987	0.985	0.997	0.998	0.013	0.015	0.003	0.002
Bukidnon	0.348	14,521	11,621	9,478	9,400	14,521	11,621	9,478	9,400	0	0	0	0	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000
Camiguin	1.000	755	640	356	256	755	640	356	256	0	0	0	0	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000
Lanao del Norte	0.082	1,106	1,072	783	640	1,098	1,064	781	639	8	8	1	1	0.993	0.993	0.998	0.998	0.007	0.007	0.002	0.002
Misamis Oriental	0.999	7,530	4,502	2,466	2,654	7,500	4,473	2,436	2,624	30	30	30	30	0.996	0.993	0.988	0.989	0.004	0.007	0.012	0.011
Compostela Valley	0.523	7,764	7,698	5,869	5,869	7,764	7,698	5,869	5,869	0	0	0	0	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000
Davao del Norte	0.007	205	194	152	152	205	194	152	152	0	0	0	0	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000
Davao Oriental	0.051	449	447	312	315	449	447	312	315	0	0	0	0	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000
Agusan del Norte	0.973	16,962	13,740	9,943	9,898	16,962	13,740	9,943	9,898	0	0	0	0	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000
Agusan del Sur	0.889	25,326	23,106	15,425	14,917	24,340	22,120	15,302	14,873	986	986	123	44	0.961	0.957	0.992	0.997	0.039	0.043	0.008	0.003
Dinagat Islands	1.000	1,084	993	583	529	1,084	993	583	529	0	0	0	0	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000
Surigao del Norte	1.000	7,815	7,450	5,858	4,064	7,761	7,396	5,858	4,064	54	54	0	0	0.993	0.993	1.000	1.000	0.007	0.007	0.000	0.000
Surigao del Sur	0.104	1,720	1,654	1,123	1,007	1,714	1,653	1,121	1,007	6	2	2	0	0.996	0.999	0.999	1.000	0.004	0.001	0.001	0.000
WRR-XI		**104,352**	**98,378**	**77,429**	**75,502**	**104,077**	**98,143**	**77,304**	**75,401**	**275**	**235**	**125**	**102**	0.997	0.998	0.998	0.999	0.003	0.002	0.002	0.001
Bukidnon	0.046	1,919	1,536	1,253	1,243	1,919	1,536	1,253	1,243	0	0	0	0	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000
Compostela Valley	0.477	7,082	7,021	5,352	5,352	7,082	7,021	5,352	5,352	0	0	0	0	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000
Davao del Norte	0.989	28,990	27,475	21,499	21,499	28,990	27,475	21,499	21,499	0	0	0	0	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000
Davao del Sur	0.998	17,439	16,943	13,904	13,765	17,439	16,943	13,904	13,765	0	0	0	0	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000
Davao Oriental	0.949	8,357	8,319	5,812	5,853	8,357	8,319	5,812	5,853	0	0	0	0	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000
Sarangani	0.869	6,145	5,516	4,980	4,638	6,086	5,458	4,922	4,580	58	58	58	58	0.991	0.989	0.988	0.987	0.009	0.011	0.012	0.013
South Cotabato	0.340	12,266	10,571	9,594	9,479	12,263	10,568	9,591	9,476	3	3	3	3	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000
North Cotabato	0.038	1,725	1,680	1,564	1,557	1,705	1,659	1,547	1,540	21	21	17	17	0.988	0.988	0.989	0.989	0.012	0.012	0.011	0.011
Sultan Kudarat	0.052	2,035	1,849	1,630	1,333	2,017	1,831	1,612	1,315	18	18	18	18	0.991	0.990	0.989	0.987	0.009	0.010	0.011	0.013
Agusan del Norte	0.027	471	381	276	275	471	381	276	275	0	0	0	0	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000
Agusan del Sur	0.109	3,105	2,833	1,891	1,829	2,984	2,712	1,876	1,824	121	121	15	5	0.961	0.957	0.992	0.997	0.039	0.043	0.008	0.003
Surigao del Sur	0.896	14,818	14,253	9,673	8,680	14,764	14,239	9,660	8,680	54	13	13	0	0.996	0.999	0.999	1.000	0.004	0.001	0.001	0.000
WRR-XII		**187,266**	**172,690**	**142,697**	**133,963**	**186,238**	**171,680**	**141,862**	**133,128**	**1,028**	**1,010**	**835**	**835**	0.995	0.994	0.994	0.994	0.005	0.006	0.006	0.006
Bukidnon	0.606	25,287	20,237	16,504	16,369	25,287	20,237	16,504	16,369	0	0	0	0	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000
Lanao del Norte	0.918	12,383	12,002	8,761	7,170	12,297	11,916	8,748	7,156	86	86	14	14	0.993	0.993	0.998	0.998	0.007	0.007	0.002	0.002
Misamis Oriental	0.001	8	5	2	3	8	4	2	3	0	0	0	0	0.996	0.993	0.988	0.989	0.004	0.007	0.012	0.011
Davao del Norte	0.004	117	111	87	87	117	111	87	87	0	0	0	0	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000
Davao del Sur	0.002	35	34	28	28	35	34	28	28	0	0	0	0	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000
Sarangani	0.131	926	832	751	699	918	823	742	690	9	9	9	9	0.991	0.989	0.988	0.987	0.009	0.011	0.012	0.013
South Cotabato	0.660	23,811	20,521	18,625	18,401	23,804	20,514	18,618	18,394	7	7	7	7	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000
North Cotabato	0.962	43,682	42,532	39,587	39,414	43,158	42,009	39,165	38,992	523	523	422	422	0.988	0.988	0.989	0.989	0.012	0.012	0.011	0.011
Sultan Kudarat	0.948	37,100	33,703	29,712	24,294	36,773	33,376	29,385	23,967	327	327	327	327	0.991	0.990	0.989	0.987	0.009	0.010	0.011	0.013
Agusan del Sur	0.002	57	52	35	34	55	50	34	33	2	2	0	0	0.961	0.957	0.992	0.997	0.039	0.043	0.008	0.003
Lanao del Sur	1.000	11,865	11,501	5,925	5,515	11,865	11,501	5,925	5,515	0	0	0	0	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000
Maguindanao	1.000	31,996	31,161	22,679	21,950	31,922	31,105	22,623	21,894	74	56	56	56	0.998	0.998	0.998	0.997	0.002	0.002	0.002	0.003
Total	80.000	**1,975,280**	**1,778,181**	**1,424,239**	**1,308,417**	**1,832,631**	**1,666,821**	**1,342,395**	**1,235,492**	**142,649**	**111,360**	**81,844**	**72,925**	0.928	0.937	0.943	0.944	0.072	0.063	0.057	0.056

Source: JICA Survey Team

Table F 26 Irrigation Water Demands of All Water Systems by WRR in 2020

(Unit: MCM)

Region/	Area	Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			Annual
Province	Rate	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
WRR-I																																						**1,448**
Abra	0.991	15.52	15.62	16.43	14.99	14.47	10.85	9.10	1.75								11.34	21.72	11.87	3.42	1.89	4.06	3.20	2.50	2.21	3.25	9.50	13.37	2.23	0.00		9.52	18.78	15.00	12.29	1.71	15.73	262.32
Apayao	0.003	0.02	0.02	0.02	0.03	0.03	0.02	0.02	0.01	0.00							0.00	0.03	0.04	0.02	0.02	0.02	0.01	0.01	0.00	0.00	0.01	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.02	0.02	0.44
Benguet	0.467	6.30	6.34	6.71	6.00	5.82	4.39	3.51	0.68				0.96	8.45	1.81	0.00	0.03	0.85	2.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00						4.98	9.54	0.00	4.94	5.27	2.27	81.46
Kalinga	0.006	0.16	0.16	0.17	0.17	0.16	0.12	0.10	0.02								0.06	0.23	0.08	0.03	0.03	0.09	0.03	0.08	0.04	0.07	0.00	0.08	0.09	0.00		0.11	0.22	0.18	0.14	0.15	0.17	2.95
Mt. Province	0.140	1.19	1.15	0.00	0.55	0.04								1.83	1.49	0.04	0.73	0.18	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.80	2.17	0.00	0.00	0.00	0.68	0.05	0.38	1.25	12.97
Ilocos Norte	0.984	27.28	27.81	30.01	28.91	25.73	14.65	11.75	2.03									13.98	37.03	37.36	42.68	20.02	16.98	17.31	31.65	2.33	18.39	4.97	0.00	0.00	0.00	15.53	28.56	12.62	28.19	2.97	27.48	526.21
Ilocos Sur	1.000	15.85	16.15	17.44	16.74	14.90	8.49	6.77	1.17									0.00	14.84	7.46	19.16	7.52	11.68	11.62	28.52	11.76	8.74	17.53	0.00	8.76	1.03	0.00	16.68	20.87	16.46	13.48	16.01	329.63
La Union	0.947	12.60	12.84	13.86	13.29	11.84	6.74	5.38	0.93									0.55	6.35	14.60	6.96	6.89	3.45	8.04	6.15	8.03	0.38	8.69	11.08	0.00	0.00	7.27	13.32	16.65	13.11	10.71	12.72	232.43
WRR-II																																						**7,190**
Abra	0.009	0.14	0.14	0.15	0.14	0.13	0.10	0.08	0.02								0.10	0.20	0.11	0.03	0.02	0.04	0.03	0.02	0.02	0.03	0.09	0.12	0.02	0.00		0.09	0.17	0.14	0.11	0.02	0.14	2.38
Apayao	0.997	7.43	7.54	8.17	9.51	9.23	6.89	5.43	4.13	0.79							0.00	10.91	12.00	7.79	6.14	5.34	3.56	4.56	0.95	1.26	3.36	9.85	0.28	2.99	0.35	4.66	0.00	0.00	0.00	6.10	7.09	146.32
Benguet	0.007	0.09	0.10	0.10	0.09	0.09	0.07	0.05	0.01				0.01	0.13	0.03	0.00	0.00	0.01	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.07	0.14	0.00	0.07	0.08	0.03	1.22
Ifugao	0.993			8.64	11.14	9.32	5.62	8.31	8.94	7.58	12.14	6.89	6.42	9.86	5.38	1.57	0.00					1.12	16.27	0.00	0.00	0.00	0.00	3.23	0.00	7.93	7.27	0.00	2.57	0.00	0.00			140.19
Kalinga	0.994	26.79	26.94	28.48	27.69	26.81	20.16	16.11	3.11								10.52	38.05	12.52	5.44	4.92	15.25	5.74	13.41	7.00	11.54	0.00	13.44	14.26	0.00		18.94	37.10	29.27	22.46	24.16	28.33	488.44
Mt. Province	0.858	7.27	7.04	0.00	3.39	0.26								11.21	9.11	0.25	4.47	1.13	2.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		4.89	13.27	0.00	0.00	0.00	4.15	0.28	2.31	7.64	79.49
Ilocos Norte	0.016	0.44	0.45	0.49	0.47	0.42	0.24	0.19	0.03									0.23	0.60	0.61	0.69	0.33	0.28	0.28	0.51	0.04	0.30	0.08	0.00	0.00	0.00	0.25	0.46	0.21	0.46	0.05	0.45	8.56
Batanes	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00								0.00	0.02	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.15
Cagayan	1.000	94.39	115.43	152.90	146.99	115.76	105.20	112.17	59.77	0.00							53.62	154.07	156.03	125.15	123.66	107.41	84.93	94.04	65.67	100.96	128.21	45.24	0.00	0.00	0.00	0.00	130.90	168.18	74.17	35.25	112.76	2,662.86
Isabela	1.000	169.70	121.69	195.31	190.44	185.37	139.49	162.29	117.54	0.00	25.44	0.19					1.87	143.39	122.67	148.42	128.84	62.46	131.32	83.71	75.18	37.99	0.00	132.73	0.00	0.00	0.00	69.08	0.00	21.44	67.16	26.68	168.91	2,729.33
Nueva Vizcaya	0.873	38.51	39.23	42.36	40.87	39.51	29.30	31.23	16.65	3.17							6.35	45.84	49.61	6.14	10.96	20.17	11.13	4.99	18.23	10.95	8.44	0.00	0.00	11.48	0.00	0.00	37.57	47.95	23.94	0.00	4.73	599.32
Quirino	0.997	11.74	15.20	12.80	15.81	15.28	11.32	12.06	6.43	0.00							3.05	17.48	14.86	12.02	3.93	5.12	6.10	6.70	4.72	5.63	5.85	0.00	4.03	0.00	0.00	7.39	6.04	18.27	14.96	5.61	14.93	257.31
Aurora	0.410	1.79	1.54	1.63	1.62	2.31	1.61	2.73	3.81	2.70	2.18	0.00					1.19	4.99	2.89	0.93	4.12	1.60	1.23	3.08	3.18	2.10	0.00	0.57	0.00	0.00					2.75	5.19	1.68	57.41
Nueva Ecija	0.005	0.55	0.95	1.08	0.86	1.08	0.83	1.04	0.51	0.66	0.16	0.23	0.04			0.09	0.02	0.68	0.08	0.44	0.71	0.10	0.32	0.63	0.55	0.08	0.30	0.13	0.71	0.09	0.00	0.45	0.60	0.66	0.82	0.94	0.79	17.19
WRR-III																																						**7,955**
Benguet	0.526	7.10	7.14	7.56	6.76	6.56	4.95	3.96	0.77				1.08	9.52	2.04	0.00	0.04	0.96	2.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00						5.61	10.75	0.00	5.56	5.94	2.56	91.75
Ifugao	0.007			0.06	0.08	0.07	0.04	0.06	0.06	0.05	0.09	0.05	0.05	0.07	0.04	0.01	0.00					0.01	0.11	0.00	0.00	0.00	0.00	0.02	0.00	0.06	0.05	0.00	0.02	0.00	0.00			0.99
Mt. Province	0.002	0.02	0.02	0.00	0.01	0.00								0.03	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.01	0.03	0.00	0.00	0.00	0.01	0.00	0.01	0.02	0.19
La Union	0.053	0.71	0.72	0.78	0.74	0.66	0.38	0.30	0.05									0.03	0.36	0.82	0.39	0.39	0.19	0.45	0.34	0.45	0.02	0.49	0.62	0.00	0.00	0.41	0.75	0.93	0.73	0.60	0.71	13.01
Pangasinan	1.000	92.21	95.23	104.75	102.04	94.48	60.45	62.52	38.45	0.00	0.00							0.00	0.00	33.59	30.73	60.20	73.86	55.11	55.58	56.44	90.27	38.30	79.58	0.00	65.67	57.75	74.02	81.91	99.40	108.38	91.26	1,802.16
Nueva Vizcaya	0.127	5.60	5.71	6.16	5.95	5.75	4.26	4.54	2.42	0.46							0.92	6.67	7.22	0.89	1.60	2.93	1.62	0.73	2.65	1.59	1.23	0.00	0.00	1.67	0.00	0.00	5.47	6.98	3.48	0.00	0.69	87.19
Quirino	0.003	0.04	0.05	0.04	0.05	0.05	0.03	0.04	0.02	0.00							0.01	0.05	0.04	0.04	0.01	0.02	0.02	0.02	0.01	0.02	0.02	0.00	0.01	0.00	0.00	0.02	0.02	0.05	0.05	0.02	0.04	0.77
Aurora	0.548	2.39	2.06	2.18	2.16	3.08	2.15	3.64	5.09	3.61	2.91	0.00					1.59	6.67	3.87	1.24	5.50	2.14	1.64	4.12	4.26	2.81	0.00	0.76	0.00	0.00					3.67	6.94	2.24	76.74
Bataan	1.000	13.51	13.80	14.86	13.13	12.66	9.34	8.65	4.61	0.88								0.00	4.10	7.82	8.71	8.03	6.92	7.72	13.04	11.82	6.84	6.88	5.22	6.47	0.00	1.77	9.03	9.56	13.41	11.62	11.05	241.44
Bulacan	0.978	23.12	23.56	25.43	24.32	15.11	17.43	18.90	10.07	0.00								8.77	17.77	9.38	14.02	0.00	10.05	14.19	2.40	17.79	41.75	13.46	7.53	0.00	2.47	0.00	7.09	27.67	8.62	9.52	21.83	392.25
Nueva Ecija	0.994	108.40	189.31	215.38	171.02	215.14	165.92	206.55	101.16	132.12	30.90	45.79	8.68			17.75	3.81	134.50	16.21	88.30	140.36	20.34	62.67	124.72	108.60	16.59	60.06	26.47	141.60	18.40	0.00	90.35	118.46	131.01	163.14	186.68	157.07	3,417.46
Pampanga	1.000	56.25	57.37	61.88	64.08	61.80	45.63	42.38	22.57	4.30								3.69	24.51	40.13	20.19	16.39	7.70	0.00	3.26	28.37	11.71	3.75	17.47	8.68	15.40	24.82	47.63	61.63	53.06	45.50	54.35	904.51
Tarlac	1.000	40.79	41.60	44.87	45.57	43.96	32.47	30.94	16.48	3.14								3.72	31.44	36.15	34.47	6.82	0.00	10.03	35.43	27.94	11.10	1.03	2.56	11.15	3.79	13.48	41.59	52.34	40.62	32.97	29.04	725.51
Zambales	1.000	3.76	3.81	4.13	2.78	2.74	2.10	3.89	2.08	0.00								0.00	8.96	14.49	10.32	9.17	14.46	10.66	8.61	12.72	11.65	6.71	12.06	7.79	0.00	0.00	6.62	11.03	8.75	9.36	11.31	199.99
Rizal	0.021	0.10	0.00	0.06	0.11	0.10	0.08	0.08	0.00	0.01				0.00	0.03	0.12	0.04	0.00	0.00	0.02	0.04	0.03	0.00	0.01	0.00	0.00	0.00	0.00				0.00	0.07	0.03	0.09	0.03	0.09	1.13

WRR-IV																																					**2,597**
Aurora	0.042	0.18	0.16	0.17	0.17	0.24	0.17	0.28	0.39	0.28	0.22	0.00					0.12	0.51	0.30	0.10	0.42	0.16	0.13	0.32	0.33	0.21	0.00	0.06	0.00	0.00					0.28	0.53	0.17	5.88
Bulacan	0.022	0.52	0.53	0.57	0.55	0.34	0.39	0.43	0.23	0.00								0.20	0.40	0.21	0.32	0.00	0.23	0.32	0.05	0.40	0.94	0.30	0.17	0.00	0.06	0.00	0.16	0.62	0.19	0.21	0.49	8.82
Nueva Ecija	0.001	0.11	0.19	0.22	0.17	0.22	0.17	0.21	0.10	0.13	0.03	0.05	0.01			0.02	0.00	0.14	0.02	0.09	0.14	0.02	0.06	0.13	0.11	0.02	0.06	0.03	0.14	0.02	0.00	0.09	0.12	0.13	0.16	0.19	0.16	3.44
Batangas	1.000	2.52	2.55	4.13	4.22	4.08	3.03	3.12	1.67	0.32				0.63	3.30	4.21	1.60	0.75	2.24	0.00	2.71	1.00	0.97	0.34	0.00	0.00	0.00	0.00				0.00	2.55	2.78	3.43	0.07	3.81	56.04
Cavite	1.000	4.00	4.07	4.40	4.50	4.35	3.23	3.33	1.78	0.34				2.20	4.59	4.47	0.00	0.00	1.30	0.33	1.12	3.42	0.88	2.67	4.80	0.86	0.00	0.00				0.00	0.10	1.08	3.66	3.43	1.27	66.17
Laguna	1.000	13.70	13.95	15.07	15.42	14.92	11.08	11.41	6.09	0.00				7.20	6.74	12.12	5.65	10.61	3.73	4.89	6.23	4.30	5.97	4.24	0.00	0.00	0.00	0.00				0.00	0.00	7.69	1.06	1.43	13.94	197.44
Quezon	0.947	0.00	14.44	11.50	16.35	9.27	11.81	7.84	0.00	1.23				2.00	12.31	21.68	9.03	10.80	0.20	0.00	6.70	4.27	12.86	20.53	3.13	0.00	0.00	0.00				4.78	2.49	8.36	1.95	6.53	0.00	200.05
Rizal	0.979	4.65	0.00	2.80	4.92	4.78	3.57	3.65	0.00	0.37				0.00	1.28	5.38	2.01	0.00	0.00	0.79	1.94	1.36	0.19	0.29	0.00	0.00	0.00	0.00				0.00	3.21	1.60	4.11	1.50	4.40	52.79
Marinduque	1.000	1.39	1.03	2.85	2.92	2.15	2.25	3.09	2.97	3.03	1.63	0.00		1.76	4.53	3.72	1.10	1.31	1.78	0.85	2.82	1.74	1.88	1.60	0.89	0.00	0.00								1.86	1.59	3.02	53.76
Occidental Mindoro	1.000	31.82	32.44	35.00	33.53	32.39	23.98	25.38	13.52	2.57								0.00	20.31	37.80	12.90	17.15	0.00	1.46	17.92	18.33	8.83	2.79	25.72	0.00	5.62	6.52	6.42	41.18	32.61	17.14	25.78	529.13
Oriental Mindoro	1.000	25.46	27.50	32.27	25.10	25.23	19.44	23.15	14.95	8.73	14.27	2.21		26.72	27.53	20.79	24.67	24.96	36.08	32.45	48.37	41.02	19.84	13.23	21.93	0.00	0.00								14.24	49.83	46.42	666.38
Palawan	1.000	29.35	31.92	37.69	38.52	38.77	29.61	40.57	39.08	39.86	21.28	3.25		34.84	46.63	34.87	20.56	21.37	2.44	13.86	9.77	17.36	20.50	13.32	0.90	0.00	0.00								24.37	30.90	25.25	666.84
Romblon	1.000	2.89	4.00	4.72	4.82	4.86	3.71	5.09	4.90	5.00	2.68	0.41		3.58	6.92	5.68	3.02	4.15	1.97	2.10	1.95	1.27	0.45	1.65	1.91	0.18	0.00								2.20	5.14	4.97	90.23
WRR-V																																					**1,964**
Quezon	0.053	0.00	0.81	0.64	0.91	0.52	0.66	0.44	0.00	0.07				0.11	0.69	1.21	0.51	0.60	0.01	0.00	0.38	0.24	0.72	1.15	0.18	0.00	0.00	0.00				0.27	0.14	0.47	0.11	0.37	0.00	11.20
Albay	1.000	29.29	7.86	29.70	24.56	27.02	22.62	40.58	36.74	3.33	3.27			10.76	41.57	30.84	40.02	14.92	30.17	21.05	12.71	11.36	21.47	6.36	13.55	6.45	0.00	0.00							0.00	47.76	9.75	543.70
Camarines Norte	1.000	9.07	5.45	8.89	11.90	5.72	9.15	12.58	9.04	0.71	0.00			6.29	8.33	10.83	2.02	3.03	5.49	5.41	5.33	2.78	6.91	2.34	3.13	0.00	0.00	0.00							2.52	6.57	9.56	153.03
Camarines Sur	1.000	33.70	48.90	59.97	57.22	67.26	51.28	61.40	55.60	35.14	4.68			23.19	44.87	46.51	48.96	44.34	42.96	21.29	6.86	25.18	44.64	10.10	6.15	0.00	0.00	0.00	0.00						0.29	37.62	27.59	905.67
Catanduanes	1.000	2.50	0.60	3.20	2.50	1.47	2.52	3.45	1.22	1.97	0.28			0.00	3.26	3.39	2.49	1.79	2.48	2.11	0.49	1.49	1.78	0.95	2.73	0.72	0.00	0.06							0.16	2.64	1.48	47.74
Masbate	1.000	3.16	5.22	4.21	6.30	6.34	2.48	6.63	1.38	3.37	0.47			2.12	2.46	6.70	6.01	1.09	2.78	2.22	3.34	2.64	1.80	3.71	2.71	0.48	0.00	0.12							1.28	4.46	6.50	89.99
Sorsogon	1.000	0.14	13.36	12.99	12.56	16.23	5.27	17.00	5.44	9.73	1.37			0.80	5.40	19.20	11.70	4.90	5.69	2.78	7.56	7.82	4.46	10.53	4.44	0.05	0.00	0.31							2.66	13.79	16.65	212.80
WRR-VI																																					**1,834**
Aklan	1.000	9.20	8.94	8.83	5.37	2.50	0.21							3.49	14.46	11.24	6.03	5.58	0.00	4.33	1.33	3.90	1.62	5.75	1.91	2.21	0.00	0.27	0.00	2.88	6.70	1.14	1.51	3.31	2.97	9.04	2.52	127.24
Antique	1.000	19.71	18.24	10.90	9.36	5.34	0.00	0.02						0.00	0.00	18.69	8.02	16.29	0.01	6.48	7.97	8.01	8.07	6.47	0.00	0.00	0.00	0.00	0.00	0.00	9.76	6.49	6.81	13.57	19.05	19.97	21.97	241.19
Capiz	1.000	10.09	9.70	3.36	5.69	2.63	0.00							8.33	5.65	14.72	5.13	0.00	0.00	1.08	5.68	6.51	8.50	0.00	3.91	0.00	0.00	0.00	0.00	1.33	8.50	3.12	4.05	9.76	5.39	7.75	9.44	140.32
Guimaras	1.000	0.90	0.59	0.85	0.52	0.24	0.00							0.19	0.52	1.47	0.76	0.49	0.23	0.24	0.34	0.53	0.64	0.61	0.82	0.00	0.00	0.00	0.00	0.00	0.81	0.51	0.43	0.10	0.93	0.45	1.02	14.17
Iloilo	1.000	33.22	32.20	18.63	22.23	15.54	7.56	3.51	0.03					17.93	2.21	27.77	15.71	10.94	6.26	11.47	2.92	28.20	36.88	0.00	20.10	5.87	0.00	0.00	0.00	0.00	26.35	15.16	22.56	29.44	20.55	33.72	37.10	504.06
Negros Occidental	0.924	28.16	34.55	33.96	20.66	3.21	0.80							6.96	45.15	45.88	38.31	19.26	37.19	28.77	32.13	41.85	40.75	25.81	28.75	7.00	0.00	0.00	4.63	12.52	18.07	13.29	32.28	34.73	36.47	34.98	27.54	733.66
Negros Oriental	0.231	3.83	4.52	4.48	2.89	1.35	0.11							0.24	0.33	6.91	5.02	2.53	2.37	2.56	3.32	2.61	2.24	3.24	2.19	0.23	0.00	0.00	0.03	2.05	3.97	4.46	1.86	3.56	2.31	1.63	2.56	73.38
WRR-VII																																					**795**
Negros Occidental	0.076	2.32	2.84	2.79	1.70	0.26	0.07							0.57	3.71	3.77	3.15	1.58	3.06	2.37	2.64	3.44	3.35	2.12	2.36	0.58	0.00	0.00	0.38	1.03	1.49	1.09	2.65	2.86	3.00	2.88	2.27	60.34
Bohol	1.000	15.67	13.67	4.16	5.21	9.00	3.83	10.23	0.00	0.00					0.00	9.23	0.00	0.00	19.44	15.71	8.34	19.01	21.35	5.56	17.65	5.38	1.53	13.70	0.00	0.00	14.79	13.19	16.18	19.24	12.76	23.83	21.59	320.24
Cebu	1.000	10.07	9.88	5.82	7.04	4.08	0.00	0.00								4.49	3.88	10.83	8.87	10.08	2.75	5.08	4.18	8.48	10.20	9.61	0.00	0.00	0.00		3.27	9.07	8.51	5.76	3.88	8.98	8.18	163.00
Negros Oriental	0.769	12.74	15.06	14.90	9.63	4.48	0.38							0.78	1.10	23.02	16.71	8.42	7.88	8.53	11.04	8.68	7.44	10.78	7.27	0.76	0.00	0.00	0.12	6.81	13.23	14.84	6.19	11.84	7.69	5.43	8.53	244.27
Siquijor	1.000	0.19	0.16	0.19	0.17	0.15	0.06	0.02								0.36	0.60	0.43	0.17	0.19	0.35	0.44	0.55	0.31	0.57	0.44	0.14	0.01	0.00		0.14	0.16	0.20	0.12	0.03	0.23	0.27	6.65
WRR-VIII																																					**1,124**
Biliran	1.000	1.23	1.70	3.70	3.54	2.29	2.53	2.66	0.60	0.00						0.48	2.63	2.08	2.55	1.98	3.07	2.06	1.47	1.41	1.62	2.13	0.38	0.36	0.00	0.00		0.00	2.12	3.95	3.31	2.81	0.01	52.66
Northern Leyte	1.000	55.48	56.56	26.26	31.23	10.62	10.41	0.00	0.00	0.00						16.02	13.60	56.34	42.73	47.81	10.66	13.66	22.19	41.75	47.14	49.86	0.57	17.33	0.00	0.00		26.02	7.80	23.85	16.82	46.17	21.92	712.79
Southern Leyte	1.000	8.64	8.81	4.19	3.93	4.22	0.00	0.00	0.00	0.69	5.24	10.30	7.87	6.98	3.99	7.82	2.17	6.95	9.60	8.61	3.58	2.07	0.48	0.10	0.00							4.05	3.95	4.50	1.82	7.19	4.12	131.85
Northern Samar	1.000	2.20	2.69	2.27	4.08	3.94	2.92	2.17	1.64	0.31	2.46	4.85	6.32	4.86	4.10	3.99	4.54	3.85	2.33	1.60	0.13	0.21	0.16	0.01	0.00							0.00	1.30	0.94	1.61	0.00	1.76	67.21
Weatern Samar	1.000	0.15	5.05	2.03	5.21	5.03	3.72	2.18	1.15	0.40	2.83	5.57	6.05	5.57	0.54	3.02	2.74	1.18	2.32	1.26	1.53	2.56	0.00	0.00	0.00							0.00	1.53	4.02	1.09	2.68	2.09	71.49
Eastern Samar	1.000	2.42	5.74	3.59	5.92	4.18	4.23	2.00	1.30	0.45	3.47	6.81	6.13	5.45	2.74	3.71	4.31	2.02	3.33	2.51	2.43	2.68	0.95	0.00	0.00							0.00	1.34	4.05	1.03	2.43	2.46	87.71
WRR-IX																																					**881**
Zamboanga del Norte	1.000	3.41	5.03	3.23	2.70	2.66	1.30	0.69	0.01		2.46	3.18	3.30	3.77	5.79	3.20	3.62	2.87	3.28	2.37	2.94	2.39	2.08	0.00	0.00	0.00			0.00	0.00	1.45	1.26	2.50	0.07	0.58	4.99	2.77	73.86
Zamboanga del Sur	1.000	39.67	38.57	38.86	27.62	19.32	9.43	5.08	0.04		14.88	28.97	30.47	34.24	32.61	14.32	10.99	9.96	6.88	11.76	0.19	10.44	1.73	0.00	0.00	0.00			0.00	2.54	12.92	9.95	19.83	8.97	13.06	15.58	17.85	486.73
Zamboanga Sibugay	1.000	8.15	9.70	7.93	9.64	6.75	3.30	1.74	0.01		5.48	4.51	4.42	4.72	8.75	7.83	8.05	5.57	6.78	3.65	5.66	4.58	5.20	0.00	0.00	0.00			0.11	0.00	4.05	5.27	6.85	0.90	3.53	12.64	8.20	163.97
Misamis Occidental	1.000	10.85	11.06	11.94	11.40	11.01	6.16	8.59	4.58							2.56	7.02	8.29	3.72	3.84	3.17	2.39	4.68	2.89	7.03	5.76	5.47	0.00	0.00	0.00		0.00	0.80	5.93	2.15	0.58	1.05	142.92
Basilan	1.000	0.41	0.42	0.45	0.43	0.42	0.31	0.33	0.17	0.03						0.12	0.45	0.46	0.20	0.19	0.15	0.17	0.28	0.33	0.26	0.16	0.01	0.01	0.00	0.00		0.07	0.19	0.16	0.28	0.25	0.09	6.83
Sulu	1.000	0.26	0.26	0.28	0.18	0.26	0.19	0.16	0.11	0.02						0.10	0.16	0.35	0.15	0.10	0.24	0.15	0.15	0.26	0.20	0.23	0.21	0.14	0.00	0.00		0.12	0.09	0.16	0.25	0.22	0.04	5.04
Tawi-Tawi	1.000	0.05	0.07	0.08	0.06	0.07	0.03	0.03	0.03	0.01						0.03	0.05	0.08	0.05	0.01	0.05	0.04	0.04	0.06	0.06	0.05	0.04	0.03	0.00	0.00		0.03	0.02	0.06	0.05	0.06	0.02	1.26

WRR-X																																							**995**
Bukidnon	0.348	12.12	12.42	8.50	8.04	10.68	3.55	0.00	0.21	0.00	0.86			0.00	0.00	0.02	3.34	0.12	0.06	0.00	2.06	0.97	4.09	6.91	3.81	3.28	0.00	0.00	0.00	0.00	0.00	0.00	2.86	2.79	4.80	10.18	2.79	104.45
Camiguin	1.000	0.17	0.18	0.17	0.18	0.42	0.31	0.32	0.17	0.03						0.37	0.43	0.46	0.21	0.29	0.55	0.33	0.39	0.39	0.50	0.42	0.34	0.32	0.00	0.00		0.00	0.36	0.24	0.40	0.12	0.41	8.48
Lanao del Norte	0.082	0.69	0.50	0.51	0.56	0.35	0.48	0.00	0.67	0.36	0.00	0.00				0.26	0.27	0.19	0.80	0.33	0.25	0.57	0.92	0.60	0.70	0.11	0.16	0.00	0.00	0.00	0.00	0.09	0.00	0.80	0.75	0.83	0.46	12.21
Misamis Oriental	0.999	3.42	2.15	2.38	1.58	2.36	1.94	3.36	0.00	0.00						0.97	1.08	3.18	2.28	1.83	1.51	3.10	2.47	0.89	2.67	1.63	1.70	1.46	0.00	0.00		1.15	2.90	4.06	2.08	2.20	4.20	58.55
Compostela Valley	0.523	3.97	3.81	10.02	0.00	9.25	0.95	2.25	0.00	0.00						0.15	4.83	9.70	4.55	3.10	4.10	2.34	4.55	3.82	5.72	5.33	4.32	2.44	0.00	0.00		0.00	1.65	5.25	9.05	2.30	2.69	106.11
Davao del Norte	0.007	0.17	0.19	0.24	0.13	0.21	0.21	0.24	0.15	0.00						0.04	0.12	0.03	0.00	0.03	0.06	0.08	0.08	0.13	0.07	0.09	0.00	0.00	0.00				0.02	0.15	0.10	0.22	0.27	3.01
Davao Oriental	0.051	0.50	0.51	0.55	0.53	0.33	0.38	0.39	0.00	0.04						0.13	0.36	0.33	0.22	0.17	0.26	0.29	0.26	0.34	0.40	0.11	0.03	0.00	0.00	0.00		0.00	0.16	0.18	0.06	0.14	0.23	6.89
Agusan del Norte	0.973	9.90	14.08	17.87	16.78	16.10	12.43	12.45	9.97	1.90						8.23	21.53	14.71	3.34	4.71	5.37	2.01	8.93	4.14	8.66	8.39	2.31	0.00	0.00				0.00	8.85	3.64	1.04	3.31	220.64
Agusan del Sur	0.889	23.45	24.37	26.97	25.32	24.30	18.76	25.10	15.04	0.00						3.54	26.43	11.34	7.63	0.62	8.46	12.75	7.78	11.27	8.93	7.19	3.28	0.00	0.00				0.00	18.37	9.83	2.75	3.43	326.94
Dinagat Islands	1.000	0.38	0.87	0.51	0.90	0.56	0.64	0.27	0.36	0.07						0.42	0.83	0.58	0.54	0.60	0.09	1.05	0.62	0.64	1.02	0.87	0.11	0.09	0.00	0.00		0.00	0.08	0.36	0.40	0.71	0.11	13.67
Surigao del Norte	1.000	2.82	6.66	3.45	5.26	3.90	4.91	3.38	0.79	0.00						3.46	8.25	5.00	4.43	8.32	0.93	8.11	7.05	6.26	10.28	6.73	0.63	0.64	0.00	0.00		0.00	0.00	3.98	2.09	3.12	3.06	113.51
Surigao del Sur	0.104	0.68	0.50	0.65	0.22	1.34	0.00	0.98	0.00	0.00						0.00	0.90	1.60	0.46	0.38	0.78	1.11	0.76	1.82	0.36	0.80	1.14	0.59	0.00	0.00		0.76	1.00	1.05	0.41	0.32	1.60	20.23
WRR-XI																																							**1,686**
Bukidnon	0.046	1.60	1.64	1.12	1.06	1.41	0.47	0.00	0.03	0.00	0.11			0.00	0.00	0.00	0.44	0.02	0.01	0.00	0.27	0.13	0.54	0.91	0.50	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.37	0.63	1.35	0.37	13.81
Compostela Valley	0.477	3.62	3.47	9.14	0.00	8.44	0.86	2.05	0.00	0.00						0.14	4.40	8.85	4.15	2.83	3.74	2.13	4.15	3.48	5.21	4.86	3.94	2.22	0.00	0.00		0.00	1.50	4.79	8.26	2.10	2.45	96.78
Davao del Norte	0.989	23.49	26.89	33.32	18.71	29.31	29.13	34.37	20.60	0.00						5.26	17.02	3.79	0.00	4.49	8.77	10.61	11.27	17.66	9.58	13.41	0.17	0.00	0.00				2.33	21.02	14.65	30.43	38.40	424.68
Davao del Sur	0.998	8.53	22.38	24.15	18.67	7.44	16.51	10.15	4.64	0.00						5.10	13.49	15.83	11.98	15.29	11.07	20.13	6.42	22.21	10.21	3.18	7.83	0.00	0.00	0.00		1.92	11.65	20.39	21.59	18.27	10.76	339.78
Davao Oriental	0.949	9.31	9.49	10.24	9.78	6.20	6.99	7.34	0.00	0.74						2.39	6.75	6.10	4.01	3.12	4.91	5.31	4.93	6.27	7.36	1.96	0.59	0.00	0.00	0.00		0.00	2.99	3.39	1.06	2.68	4.23	128.14
Sarangani	0.869	4.63	0.00	0.57	0.00	0.00		0.00	4.60	6.60	3.66	7.14	10.78	6.00	4.20	9.50	8.37	4.98	2.43	0.00	0.00	0.53	1.02	0.00		0.00	0.73	2.59	2.77	6.56	4.48	4.38	3.89	3.16	5.47	4.37	1.01	114.42
South Cotabato	0.340	11.52	8.38	0.00	2.36	0.19		4.41	1.91	12.41	6.61	16.76	19.68	14.46	12.73	10.47	8.99	10.12	6.80	0.52	0.00	0.00	0.00	0.00		0.00	4.54	11.05	4.55	9.65	11.56	14.81	12.71	13.20	14.08	12.26	16.24	272.95
North Cotabato	0.038	2.09	0.74	0.00	0.00	0.00		0.79	0.79	1.21	2.19	3.04	2.50	2.13	1.63	2.02	1.12	1.11	1.94	0.83	0.00	0.20	0.00	0.00		0.00	0.66	1.28	0.62	1.92	2.09	2.25	1.97	2.34	1.76	2.29	2.95	44.48
Sultan Kudarat	0.052	1.34	0.14	0.00	0.00	0.00		0.00	1.51	2.17	0.62	2.27	3.56	1.80	0.80	3.14	1.86	0.92	0.08	0.00	0.00	0.00	0.34	0.00		0.00	0.00	0.28	0.59	1.46	0.85	0.92	0.43	1.93	1.61	1.93	0.40	30.94
Agusan del Norte	0.027	0.27	0.39	0.50	0.47	0.45	0.34	0.35	0.28	0.05						0.23	0.60	0.41	0.09	0.13	0.15	0.06	0.25	0.11	0.24	0.23	0.06	0.00	0.00				0.00	0.25	0.10	0.03	0.09	6.12
Agusan del Sur	0.109	2.87	2.99	3.31	3.11	2.98	2.30	3.08	1.84	0.00						0.43	3.24	1.39	0.94	0.08	1.04	1.56	0.95	1.38	1.10	0.88	0.40	0.00	0.00				0.00	2.25	1.21	0.34	0.42	40.09
Surigao del Sur	0.896	5.88	4.35	5.61	1.88	11.51	0.00	8.40	0.00	0.00						0.00	7.79	13.81	3.96	3.25	6.68	9.60	6.58	15.70	3.14	6.92	9.84	5.08	0.00	0.00		6.54	8.63	9.08	3.50	2.79	13.77	174.28
WRR-XII																																							**3,057**
Bukidnon	0.606	21.11	21.62	14.80	14.00	18.60	6.19	0.00	0.36	0.00	1.50			0.00	0.00	0.03	5.81	0.21	0.10	0.00	3.58	1.69	7.12	12.03	6.64	5.71	0.00	0.00	0.00	0.00	0.00	0.00	4.97	4.85	8.35	17.73	4.87	181.88
Lanao del Norte	0.918	7.73	5.63	5.73	6.28	3.96	5.40	0.00	7.45	4.04	0.00	0.01				2.88	3.04	2.12	8.92	3.65	2.79	6.42	10.33	6.75	7.83	1.21	1.78	0.00	0.00	0.00	0.00	0.97	0.00	9.01	8.40	9.25	5.15	136.74
Misamis Oriental	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.06
Davao del Norte	0.004	0.10	0.11	0.13	0.08	0.12	0.12	0.14	0.08	0.00						0.02	0.07	0.02	0.00	0.02	0.04	0.04	0.05	0.07	0.04	0.05	0.00	0.00	0.00				0.01	0.08	0.06	0.12	0.16	1.72
Davao del Sur	0.002	0.02	0.04	0.05	0.04	0.01	0.03	0.02	0.01	0.00						0.01	0.03	0.03	0.02	0.03	0.02	0.04	0.01	0.04	0.02	0.01	0.02	0.00	0.00	0.00		0.00	0.02	0.04	0.04	0.04	0.02	0.68
Sarangani	0.131	0.70	0.00	0.09	0.00	0.00		0.00	0.69	1.00	0.55	1.08	1.63	0.90	0.63	1.43	1.26	0.75	0.37	0.00	0.00	0.08	0.15	0.00		0.00	0.11	0.39	0.42	0.99	0.68	0.66	0.59	0.48	0.82	0.66	0.15	17.25
South Cotabato	0.660	22.37	16.26	0.00	4.58	0.37		8.55	3.70	24.10	12.83	32.53	38.20	28.06	24.70	20.32	17.45	19.64	13.21	1.00	0.00	0.00	0.00	0.00		0.00	8.81	21.44	8.82	18.73	22.43	28.76	24.66	25.63	27.33	23.80	31.53	529.84
North Cotabato	0.962	52.99	18.79	0.00	0.00	0.00		20.12	20.11	30.67	55.45	77.06	63.21	54.00	41.32	51.01	28.23	28.16	49.08	21.08	0.00	5.19	0.00	0.00		0.00	16.83	32.50	15.57	48.56	52.94	56.95	49.97	59.18	44.58	57.93	74.58	1,126.08
Sultan Kudarat	0.948	24.48	2.61	0.00	0.00	0.00		0.00	27.59	39.62	11.36	41.31	64.87	32.76	14.66	57.18	33.91	16.68	1.39	0.00	0.00	0.00	6.15	0.00		0.00	0.00	5.11	10.71	26.70	15.51	16.76	7.85	35.19	29.27	35.19	7.29	564.14
Agusan del Sur	0.002	0.05	0.05	0.06	0.06	0.05	0.04	0.06	0.03	0.00						0.01	0.06	0.03	0.02	0.00	0.02	0.03	0.02	0.03	0.02	0.02	0.01	0.00	0.00				0.00	0.04	0.02	0.01	0.01	0.74
Lanao del Sur	1.000	5.36	1.18	0.00	0.00	0.00		2.79	1.87	0.44	0.59	6.67	8.27	6.58	3.21	4.42	0.25	3.06	1.93	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.84	0.00	2.68	2.48	2.70	1.30	2.67	3.36	4.53	7.22	74.37
Maguindanao	1.000	22.53	7.46	0.00	0.00	0.00		10.85	10.98	9.08	13.06	32.75	36.66	26.59	22.08	14.94	8.22	7.99	16.74	11.14	0.00	2.32	0.00	0.00		0.00	6.80	13.75	0.00	19.64	17.33	21.39	14.02	16.65	11.64	19.20	30.13	423.95
Total	80.000																																						**31,526**

Source: JICA Survey Team

Table F 27 Irrigation Water Demands of Surface Water Systems by WRR in 2020

(Unit: MCM)

Region/	Area	Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			Annual
Province	Rate	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
WRR-I																																						**1,382**
Abra	0.991	15.47	15.57	16.38	14.94	14.43	10.82	9.08	1.74								11.27	21.58	11.80	3.40	1.88	4.04	3.18	2.48	2.19	3.23	9.44	13.29	2.22	0.00		9.49	18.72	14.96	12.26	1.71	15.68	261.27
Apayao	0.003	0.02	0.02	0.02	0.03	0.03	0.02	0.02	0.01	0.00							0.00	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.01	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.02	0.02	0.41
Benguet	0.467	6.25	6.29	6.66	5.95	5.78	4.36	3.49	0.68				0.95	8.38	1.79	0.00	0.03	0.84	2.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00						4.95	9.47	0.00	4.90	5.23	2.25	80.81
Kalinga	0.006	0.16	0.16	0.17	0.16	0.16	0.12	0.10	0.02								0.06	0.23	0.07	0.03	0.03	0.09	0.03	0.08	0.04	0.07	0.00	0.08	0.09	0.00		0.11	0.22	0.17	0.13	0.14	0.17	2.91
Mt. Province	0.140	1.18	1.15	0.00	0.55	0.04								1.83	1.48	0.04	0.73	0.18	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.80	2.16	0.00	0.00	0.00	0.68	0.05	0.38	1.25	12.95
Ilocos Norte	0.984	27.25	27.77	29.97	28.87	25.69	14.63	11.73	2.03									13.98	37.03	37.36	42.68	20.02	16.98	17.31	31.65	2.33	18.39	4.97	0.00	0.00	0.00	15.51	28.52	12.60	28.15	2.96	27.44	525.83
Ilocos Sur	1.000	15.10	15.39	16.62	15.95	14.20	8.09	6.45	1.12									0.00	14.03	7.06	18.11	7.11	11.04	10.98	26.96	11.12	8.26	16.57	0.00	8.28	0.98	0.00	15.89	19.89	15.69	12.84	15.26	312.99
La Union	0.947	9.97	10.16	10.97	10.53	9.37	5.34	4.26	0.74									0.44	5.11	11.74	5.59	5.54	2.77	6.46	4.95	6.46	0.31	6.98	8.90	0.00	0.00	5.75	10.54	13.18	10.38	8.48	10.07	185.00
WRR-II																																						**6,152**
Abra	0.009	0.14	0.14	0.15	0.14	0.13	0.10	0.08	0.02								0.10	0.20	0.11	0.03	0.02	0.04	0.03	0.02	0.02	0.03	0.09	0.12	0.02	0.00		0.09	0.17	0.14	0.11	0.02	0.14	2.37
Apayao	0.997	6.90	7.00	7.59	8.83	8.57	6.40	5.04	3.84	0.73							0.00	10.13	11.15	7.24	5.71	4.96	3.30	4.24	0.89	1.17	3.13	9.15	0.26	2.78	0.33	4.33	0.00	0.00	0.00	5.66	6.58	135.88
Benguet	0.007	0.09	0.09	0.10	0.09	0.09	0.07	0.05	0.01				0.01	0.13	0.03	0.00	0.00	0.01	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.07	0.14	0.00	0.07	0.08	0.03	1.21
Ifugao	0.993			8.60	11.10	9.28	5.60	8.27	8.90	7.55	12.08	6.86	6.39	9.81	5.36	1.57	0.00					1.11	16.21	0.00	0.00	0.00	0.00	3.22	0.00	7.90	7.25	0.00	2.56	0.00	0.00			139.60
Kalinga	0.994	26.44	26.59	28.10	27.32	26.45	19.89	15.90	3.07								10.39	37.58	12.36	5.37	4.86	15.06	5.67	13.25	6.91	11.40	0.00	13.27	14.08	0.00		18.68	36.61	28.88	22.17	23.83	27.95	482.09
Mt. Province	0.858	7.25	7.02	0.00	3.38	0.26								11.19	9.10	0.25	4.46	1.13	2.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		4.88	13.25	0.00	0.00	0.00	4.15	0.28	2.30	7.63	79.35
Ilocos Norte	0.016	0.44	0.45	0.49	0.47	0.42	0.24	0.19	0.03									0.23	0.60	0.61	0.69	0.33	0.28	0.28	0.51	0.04	0.30	0.08	0.00	0.00	0.00	0.25	0.46	0.20	0.46	0.05	0.45	8.55
Batanes	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00								0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cagayan	1.000	58.96	72.10	95.51	91.81	72.31	65.71	70.07	37.33	0.00							32.77	94.15	95.35	76.48	75.57	65.64	51.90	57.47	40.14	61.70	78.35	27.65	0.00	0.00	0.00	0.00	81.77	105.05	46.33	22.02	70.44	1,646.60
Isabela	1.000	169.58	121.61	195.17	190.31	185.24	139.40	162.18	117.46	0.00	25.43	0.19					1.86	143.30	122.59	148.32	128.75	62.42	131.23	83.66	75.13	37.96	0.00	132.64	0.00	0.00	0.00	69.03	0.00	21.43	67.12	26.66	168.79	2,727.48
Nueva Vizcaya	0.873	38.51	39.23	42.36	40.87	39.51	29.30	31.23	16.65	3.17							6.35	45.84	49.61	6.14	10.96	20.17	11.13	4.99	18.23	10.95	8.44	0.00	0.00	11.48	0.00	0.00	37.57	47.95	23.94	0.00	4.73	599.32
Quirino	0.997	11.65	15.08	12.70	15.69	15.16	11.24	11.97	6.38	0.00							3.02	17.35	14.74	11.92	3.90	5.09	6.06	6.65	4.68	5.59	5.80	0.00	4.00	0.00	0.00	7.33	5.99	18.14	14.85	5.57	14.82	255.37
Aurora	0.410	1.79	1.54	1.63	1.62	2.31	1.61	2.73	3.81	2.70	2.18	0.00					1.19	4.99	2.89	0.93	4.12	1.60	1.23	3.08	3.18	2.10	0.00	0.57	0.00	0.00					2.75	5.19	1.68	57.41
Nueva Ecija	0.005	0.54	0.94	1.06	0.85	1.06	0.82	1.02	0.50	0.65	0.15	0.23	0.04			0.09	0.02	0.66	0.08	0.44	0.69	0.10	0.31	0.62	0.54	0.08	0.30	0.13	0.70	0.09	0.00	0.45	0.59	0.65	0.81	0.92	0.78	16.89
WRR-III																																						**7,302**
Benguet	0.526	7.04	7.08	7.50	6.71	6.51	4.91	3.93	0.76				1.08	9.44	2.02	0.00	0.03	0.95	2.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00						5.57	10.66	0.00	5.52	5.89	2.54	91.02
Ifugao	0.007			0.06	0.08	0.07	0.04	0.06	0.06	0.05	0.09	0.05	0.05	0.07	0.04	0.01	0.00					0.01	0.11	0.00	0.00	0.00	0.00	0.02	0.00	0.06	0.05	0.00	0.02	0.00	0.00			0.98
Mt. Province	0.002	0.02	0.02	0.00	0.01	0.00								0.03	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.01	0.03	0.00	0.00	0.00	0.01	0.00	0.01	0.02	0.18
La Union	0.053	0.56	0.57	0.61	0.59	0.52	0.30	0.24	0.04									0.02	0.29	0.66	0.31	0.31	0.16	0.36	0.28	0.36	0.02	0.39	0.50	0.00	0.00	0.32	0.59	0.74	0.58	0.47	0.56	10.35
Pangasinan	1.000	70.69	73.00	80.30	78.22	72.43	46.34	47.93	29.48	0.00	0.00							0.00	0.00	26.63	24.36	47.72	58.55	43.69	44.06	44.74	71.57	30.36	63.09	0.00	52.06	44.27	56.74	62.80	76.20	83.09	69.96	1,398.31
Nueva Vizcaya	0.127	5.60	5.71	6.16	5.95	5.75	4.26	4.54	2.42	0.46							0.92	6.67	7.22	0.89	1.60	2.93	1.62	0.73	2.65	1.59	1.23	0.00	0.00	1.67	0.00	0.00	5.47	6.98	3.48	0.00	0.69	87.19
Quirino	0.003	0.04	0.05	0.04	0.05	0.05	0.03	0.04	0.02	0.00							0.01	0.05	0.04	0.04	0.01	0.02	0.02	0.02	0.01	0.02	0.02	0.00	0.01	0.00	0.00	0.02	0.02	0.05	0.04	0.02	0.04	0.77
Aurora	0.548	2.39	2.06	2.18	2.16	3.08	2.15	3.64	5.09	3.61	2.91	0.00					1.59	6.67	3.87	1.24	5.50	2.14	1.64	4.12	4.26	2.81	0.00	0.76	0.00	0.00					3.67	6.94	2.24	76.74
Bataan	1.000	13.17	13.45	14.49	12.80	12.34	9.11	8.44	4.49	0.85								0.00	4.00	7.62	8.50	7.83	6.74	7.53	12.72	11.52	6.67	6.71	5.09	6.31	0.00	1.73	8.80	9.32	13.07	11.33	10.77	235.42
Bulacan	0.978	21.89	22.31	24.08	23.03	14.31	16.51	17.90	9.54	0.00								8.35	16.93	8.94	13.35	0.00	9.57	13.52	2.29	16.95	39.77	12.82	7.18	0.00	2.35	0.00	6.71	26.19	8.16	9.02	20.66	372.33
Nueva Ecija	0.994	106.52	186.02	211.64	168.05	211.40	163.04	202.96	99.40	129.82	30.36	44.99	8.53			17.44	3.75	132.16	15.93	86.77	137.92	19.98	61.58	122.55	106.71	16.30	59.02	26.01	139.14	18.08	0.00	88.78	116.40	128.73	160.30	183.44	154.34	3,358.08
Pampanga	1.000	53.31	54.37	58.64	60.72	58.56	43.23	40.16	21.39	4.07								3.44	22.82	37.37	18.80	15.27	7.17	0.00	3.04	26.42	10.91	3.50	16.27	8.08	14.34	23.52	45.14	58.40	50.28	43.12	51.51	853.83
Tarlac	1.000	36.04	36.76	39.65	40.26	38.84	28.69	27.34	14.56	2.77								3.33	28.13	32.35	30.85	6.10	0.00	8.98	31.71	25.00	9.94	0.93	2.29	9.98	3.39	11.91	36.75	46.24	35.89	29.13	25.66	643.45
Zambales	1.000	3.19	3.23	3.51	2.36	2.33	1.78	3.30	1.77	0.00								0.00	7.82	12.64	9.00	8.01	12.62	9.30	7.51	11.10	10.17	5.85	10.53	6.80	0.00	0.00	5.61	9.36	7.43	7.94	9.59	172.74
Rizal	0.021	0.10	0.00	0.06	0.10	0.10	0.07	0.08	0.00	0.01				0.00	0.03	0.11	0.04	0.00	0.00	0.02	0.04	0.03	0.00	0.01	0.00	0.00	0.00	0.00				0.00	0.07	0.03	0.09	0.03	0.09	1.10

WRR-IV																																						**2,455**
Aurora	0.042	0.18	0.16	0.17	0.17	0.24	0.17	0.28	0.39	0.28	0.22	0.00					0.12	0.51	0.30	0.10	0.42	0.16	0.13	0.32	0.33	0.21	0.00	0.06	0.00	0.00					0.28	0.53	0.17	5.88
Bulacan	0.022	0.49	0.50	0.54	0.52	0.32	0.37	0.40	0.21	0.00								0.19	0.38	0.20	0.30	0.00	0.22	0.30	0.05	0.38	0.89	0.29	0.16	0.00	0.05	0.00	0.15	0.59	0.18	0.20	0.46	8.38
Nueva Ecija	0.001	0.11	0.19	0.21	0.17	0.21	0.16	0.20	0.10	0.13	0.03	0.05	0.01			0.02	0.00	0.13	0.02	0.09	0.14	0.02	0.06	0.12	0.11	0.02	0.06	0.03	0.14	0.02	0.00	0.09	0.12	0.13	0.16	0.18	0.16	3.38
Batangas	1.000	2.40	2.43	3.93	4.02	3.89	2.89	2.97	1.59	0.30				0.59	3.09	3.94	1.50	0.70	2.10	0.00	2.54	0.93	0.91	0.32	0.00	0.00	0.00	0.00				0.00	2.43	2.65	3.27	0.06	3.63	53.07
Cavite	1.000	3.95	4.02	4.34	4.44	4.30	3.19	3.29	1.75	0.33				2.13	4.44	4.33	0.00	0.00	1.26	0.32	1.08	3.31	0.85	2.58	4.65	0.83	0.00	0.00				0.00	0.10	1.07	3.61	3.39	1.25	64.80
Laguna	1.000	13.40	13.64	14.74	15.07	14.59	10.83	11.16	5.95	0.00				7.06	6.61	11.89	5.55	10.42	3.66	4.80	6.11	4.22	5.86	4.16	0.00	0.00	0.00	0.00				0.00	0.00	7.52	1.03	1.40	13.63	193.30
Quezon	0.947	0.00	13.60	10.83	15.39	8.73	11.12	7.39	0.00	1.16				1.89	11.64	20.50	8.54	10.21	0.19	0.00	6.34	4.03	12.16	19.42	2.96	0.00	0.00	0.00				4.50	2.35	7.87	1.83	6.15	0.00	188.82
Rizal	0.979	4.51	0.00	2.71	4.77	4.63	3.46	3.54	0.00	0.36				0.00	1.24	5.22	1.94	0.00	0.00	0.77	1.88	1.32	0.18	0.28	0.00	0.00	0.00	0.00				0.00	3.12	1.55	3.98	1.45	4.27	51.18
Marinduque	1.000	1.21	0.90	2.49	2.55	1.88	1.96	2.70	2.60	2.65	1.42	0.00		1.53	3.95	3.24	0.96	1.14	1.55	0.74	2.46	1.52	1.64	1.39	0.78	0.00	0.00								1.63	1.39	2.64	46.92
Occidental Mindoro	1.000	27.87	28.41	30.65	29.36	28.36	21.00	22.23	11.84	2.25								0.00	17.55	32.65	11.15	14.82	0.00	1.26	15.48	15.84	7.63	2.41	22.22	0.00	4.85	5.71	5.62	36.07	28.56	15.01	22.57	461.37
Oriental Mindoro	1.000	24.51	26.47	31.06	24.16	24.28	18.71	22.28	14.39	8.40	13.74	2.12		25.82	26.61	20.09	23.85	24.12	34.87	31.36	46.74	39.64	19.17	12.78	21.19	0.00	0.00								13.71	47.96	44.68	642.73
Palawan	1.000	28.60	31.11	36.73	37.54	37.78	28.86	39.54	38.09	38.84	20.73	3.17		33.63	45.01	33.66	19.85	20.63	2.35	13.38	9.43	16.75	19.79	12.86	0.87	0.00	0.00								23.75	30.12	24.61	647.71
Romblon	1.000	2.80	3.88	4.58	4.68	4.72	3.60	4.94	4.76	4.86	2.60	0.40		3.47	6.71	5.51	2.93	4.03	1.91	2.03	1.89	1.23	0.43	1.60	1.85	0.18	0.00								2.14	4.99	4.83	87.57
WRR-V																																						**1,925**
Quezon	0.053	0.00	0.76	0.61	0.86	0.49	0.62	0.41	0.00	0.06				0.11	0.65	1.15	0.48	0.57	0.01	0.00	0.35	0.23	0.68	1.09	0.17	0.00	0.00	0.00				0.25	0.13	0.44	0.10	0.34	0.00	10.57
Albay	1.000	28.87	7.74	29.27	24.20	26.63	22.29	39.99	36.20	3.28	3.22			10.62	41.00	30.42	39.47	14.71	29.76	20.76	12.53	11.20	21.17	6.28	13.36	6.36	0.00	0.00							0.00	47.07	9.61	535.99
Camarines Norte	1.000	8.84	5.32	8.68	11.61	5.58	8.93	12.27	8.82	0.69	0.00			6.13	8.12	10.56	1.97	2.96	5.35	5.27	5.20	2.71	6.75	2.28	3.05	0.00	0.00	0.00							2.46	6.41	9.33	149.29
Camarines Sur	1.000	32.73	47.49	58.24	55.57	65.32	49.81	59.63	53.99	34.12	4.54			22.46	43.45	45.04	47.41	42.94	41.60	20.62	6.64	24.39	43.23	9.78	5.95	0.00	0.00	0.00	0.00						0.28	36.53	26.79	878.56
Catanduanes	1.000	2.47	0.59	3.18	2.48	1.46	2.50	3.42	1.21	1.96	0.28			0.00	3.23	3.36	2.47	1.77	2.46	2.10	0.48	1.48	1.76	0.94	2.71	0.72	0.00	0.06							0.16	2.62	1.47	47.34
Masbate	1.000	3.16	5.22	4.21	6.30	6.34	2.48	6.63	1.38	3.37	0.47			2.12	2.46	6.70	6.01	1.09	2.78	2.22	3.34	2.64	1.80	3.71	2.71	0.48	0.00	0.12							1.28	4.46	6.50	89.99
Sorsogon	1.000	0.14	13.36	12.99	12.56	16.23	5.27	17.00	5.44	9.73	1.37			0.80	5.40	19.20	11.70	4.90	5.69	2.78	7.56	7.82	4.46	10.53	4.44	0.05	0.00	0.31							2.66	13.79	16.65	212.80
WRR-VI																																						**1,812**
Aklan	1.000	9.04	8.79	8.68	5.28	2.46	0.21							3.44	14.24	11.07	5.94	5.49	0.00	4.26	1.31	3.84	1.59	5.66	1.88	2.18	0.00	0.27	0.00	2.83	6.59	1.12	1.48	3.25	2.92	8.89	2.48	125.23
Antique	1.000	19.63	18.17	10.85	9.33	5.32	0.00	0.02						0.00	0.00	18.17	7.80	15.84	0.01	6.30	7.75	7.79	7.85	6.29	0.00	0.00	0.00	0.00	0.00	0.00	9.73	6.46	6.78	13.52	18.98	19.90	21.89	238.37
Capiz	1.000	9.29	8.93	3.10	5.24	2.42	0.00							7.64	5.18	13.50	4.71	0.00	0.00	0.99	5.21	5.97	7.80	0.00	3.58	0.00	0.00	0.00	0.00	1.22	7.83	2.87	3.73	8.99	4.97	7.14	8.69	128.99
Guimaras	1.000	0.85	0.55	0.80	0.49	0.22	0.00							0.16	0.44	1.25	0.64	0.42	0.19	0.20	0.29	0.45	0.54	0.52	0.70	0.00	0.00	0.00	0.00	0.00	0.76	0.48	0.40	0.10	0.87	0.42	0.96	12.71
Iloilo	1.000	33.22	32.20	18.63	22.23	15.54	7.56	3.51	0.03					17.54	2.16	27.17	15.37	10.70	6.12	11.22	2.86	27.59	36.09	0.00	19.66	5.74	0.00	0.00	0.00	0.00	26.35	15.16	22.56	29.44	20.55	33.72	37.10	500.04
Negros Occidental	0.924	28.16	34.55	33.96	20.66	3.21	0.80							6.96	45.15	45.88	38.31	19.26	37.19	28.77	32.13	41.85	40.75	25.81	28.75	7.00	0.00	0.00	4.63	12.52	18.07	13.29	32.28	34.73	36.47	34.98	27.54	733.66
Negros Oriental	0.231	3.83	4.52	4.48	2.89	1.35	0.11							0.24	0.33	6.91	5.02	2.53	2.37	2.56	3.32	2.61	2.24	3.24	2.19	0.23	0.00	0.00	0.03	2.05	3.97	4.46	1.86	3.56	2.31	1.63	2.56	73.38
WRR-VII																																						**773**
Negros Occidental	0.076	2.32	2.84	2.79	1.70	0.26	0.07							0.57	3.71	3.77	3.15	1.58	3.06	2.37	2.64	3.44	3.35	2.12	2.36	0.58	0.00	0.00	0.38	1.03	1.49	1.09	2.65	2.86	3.00	2.88	2.27	60.34
Bohol	1.000	15.67	13.67	4.16	5.21	9.00	3.83	10.23	0.00	0.00					0.00	9.23	0.00	0.00	19.44	15.71	8.34	19.01	21.35	5.56	17.65	5.38	1.53	13.70	0.00	0.00	14.79	13.19	16.18	19.24	12.76	23.83	21.59	320.24
Cebu	1.000	8.87	8.71	5.13	6.20	3.60	0.00	0.00								3.86	3.34	9.32	7.63	8.67	2.37	4.37	3.59	7.30	8.78	8.27	0.00	0.00	0.00		2.88	7.99	7.50	5.07	3.42	7.91	7.21	141.98
Negros Oriental	0.769	12.74	15.06	14.90	9.63	4.48	0.38							0.78	1.10	23.02	16.71	8.42	7.88	8.53	11.04	8.68	7.44	10.78	7.27	0.76	0.00	0.00	0.12	6.81	13.23	14.84	6.19	11.84	7.69	5.43	8.53	244.27
Siquijor	1.000	0.19	0.16	0.19	0.17	0.15	0.06	0.02								0.36	0.60	0.43	0.17	0.19	0.35	0.44	0.55	0.31	0.57	0.44	0.14	0.01	0.00		0.14	0.16	0.20	0.12	0.03	0.23	0.27	6.65
WRR-VIII																																						**1,123**
Biliran	1.000	1.23	1.70	3.70	3.54	2.29	2.53	2.66	0.60	0.00						0.48	2.63	2.08	2.55	1.98	3.07	2.06	1.47	1.41	1.62	2.13	0.38	0.36	0.00	0.00		0.00	2.12	3.95	3.31	2.81	0.01	52.66
Northern Leyte	1.000	55.48	56.56	26.26	31.23	10.62	10.41	0.00	0.00	0.00						16.02	13.60	56.34	42.73	47.81	10.66	13.66	22.19	41.75	47.14	49.86	0.57	17.33	0.00	0.00		26.02	7.80	23.85	16.82	46.17	21.92	712.79
Southern Leyte	1.000	8.64	8.81	4.19	3.93	4.22	0.00	0.00	0.00	0.69	5.24	10.30	7.87	6.98	3.99	7.82	2.17	6.95	9.60	8.61	3.58	2.07	0.48	0.10	0.00							4.05	3.95	4.50	1.82	7.19	4.12	131.85
Northern Samar	1.000	2.20	2.69	2.27	4.08	3.94	2.92	2.17	1.64	0.31	2.46	4.85	6.32	4.86	4.10	3.99	4.54	3.85	2.33	1.60	0.13	0.21	0.16	0.01	0.00							0.00	1.30	0.94	1.61	0.00	1.76	67.21
Weatern Samar	1.000	0.15	5.00	2.01	5.17	4.99	3.69	2.16	1.14	0.40	2.81	5.53	6.01	5.53	0.54	3.00	2.72	1.17	2.30	1.25	1.52	2.54	0.00	0.00	0.00							0.00	1.51	3.98	1.08	2.66	2.07	70.95
Eastern Samar	1.000	2.42	5.74	3.59	5.92	4.18	4.23	2.00	1.30	0.45	3.47	6.81	6.13	5.45	2.74	3.71	4.31	2.02	3.33	2.51	2.43	2.68	0.95	0.00	0.00							0.00	1.34	4.05	1.03	2.43	2.46	87.71
WRR-IX																																						**878**
Zamboanga del Norte	1.000	3.41	5.03	3.23	2.70	2.66	1.30	0.69	0.01		2.46	3.18	3.30	3.77	5.79	3.20	3.62	2.87	3.28	2.37	2.94	2.39	2.08	0.00	0.00	0.00			0.00	0.00	1.45	1.26	2.50	0.07	0.58	4.99	2.77	73.86
Zamboanga del Sur	1.000	39.56	38.46	38.75	27.54	19.26	9.40	5.07	0.04		14.84	28.89	30.39	34.15	32.52	14.28	10.96	9.93	6.86	11.73	0.19	10.41	1.72	0.00	0.00	0.00			0.00	2.53	12.89	9.92	19.77	8.94	13.02	15.53	17.80	485.37
Zamboanga Sibugay	1.000	8.09	9.63	7.87	9.57	6.70	3.27	1.73	0.01		5.44	4.48	4.38	4.69	8.68	7.77	7.98	5.53	6.73	3.63	5.61	4.54	5.16	0.00	0.00	0.00			0.11	0.00	4.02	5.23	6.80	0.89	3.50	12.54	8.14	162.75
Misamis Occidental	1.000	10.85	11.06	11.94	11.40	11.01	6.16	8.59	4.58							2.56	7.02	8.29	3.72	3.84	3.17	2.39	4.68	2.89	7.03	5.76	5.47	0.00	0.00	0.00		0.00	0.80	5.93	2.15	0.58	1.05	142.92
Basilan	1.000	0.41	0.42	0.45	0.43	0.42	0.31	0.33	0.17	0.03						0.12	0.45	0.46	0.20	0.19	0.15	0.17	0.28	0.33	0.26	0.16	0.01	0.01	0.00	0.00		0.07	0.19	0.16	0.28	0.25	0.09	6.83
Sulu	1.000	0.24	0.24	0.26	0.17	0.24	0.18	0.14	0.10	0.02						0.09	0.15	0.33	0.14	0.09	0.22	0.14	0.14	0.24	0.18	0.22	0.19	0.13	0.00	0.00		0.11	0.08	0.15	0.23	0.20	0.04	4.66
Tawi-Tawi	1.000	0.05	0.07	0.08	0.06	0.07	0.03	0.03	0.03	0.01						0.03	0.05	0.08	0.05	0.01	0.05	0.04	0.04	0.06	0.06	0.05	0.04	0.03	0.00	0.00		0.03	0.02	0.06	0.05	0.06	0.02	1.26

WRR-X																																					**992**
Bukidnon	0.348	12.12	12.42	8.50	8.04	10.68	3.55	0.00	0.21	0.00	0.86			0.00	0.00	0.02	3.34	0.12	0.06	0.00	2.06	0.97	4.09	6.91	3.81	3.28	0.00	0.00	0.00	0.00	0.00	0.00	2.86	2.79	4.80	10.18	2.79	104.45
Camiguin	1.000	0.17	0.18	0.17	0.18	0.42	0.31	0.32	0.17	0.03						0.37	0.43	0.46	0.21	0.29	0.55	0.33	0.39	0.39	0.50	0.42	0.34	0.32	0.00	0.00		0.00	0.36	0.24	0.40	0.12	0.41	8.48
Lanao del Norte	0.082	0.69	0.50	0.51	0.56	0.35	0.48	0.00	0.66	0.36	0.00	0.00				0.26	0.27	0.19	0.80	0.33	0.25	0.57	0.92	0.60	0.70	0.11	0.16	0.00	0.00	0.00	0.00	0.09	0.00	0.80	0.75	0.82	0.46	12.19
Misamis Oriental	0.999	3.38	2.12	2.35	1.56	2.34	1.92	3.32	0.00	0.00						0.96	1.07	3.14	2.25	1.81	1.49	3.06	2.44	0.88	2.64	1.61	1.68	1.45	0.00	0.00		1.13	2.87	4.01	2.05	2.17	4.15	57.87
Compostela Valley	0.523	3.97	3.81	10.02	0.00	9.25	0.95	2.25	0.00	0.00						0.15	4.83	9.70	4.55	3.10	4.10	2.34	4.55	3.82	5.72	5.33	4.32	2.44	0.00	0.00		0.00	1.65	5.25	9.05	2.30	2.69	106.11
Davao del Norte	0.007	0.17	0.19	0.24	0.13	0.21	0.21	0.24	0.15	0.00						0.04	0.12	0.03	0.00	0.03	0.06	0.08	0.08	0.13	0.07	0.09	0.00	0.00	0.00				0.02	0.15	0.10	0.22	0.27	3.01
Davao Oriental	0.051	0.50	0.51	0.55	0.53	0.33	0.38	0.39	0.00	0.04						0.13	0.36	0.33	0.22	0.17	0.26	0.29	0.26	0.34	0.40	0.11	0.03	0.00	0.00	0.00		0.00	0.16	0.18	0.06	0.14	0.23	6.89
Agusan del Norte	0.973	9.90	14.08	17.87	16.78	16.10	12.43	12.45	9.97	1.90						8.23	21.53	14.71	3.34	4.71	5.37	2.01	8.93	4.14	8.66	8.39	2.31	0.00	0.00				0.00	8.85	3.64	1.04	3.31	220.64
Agusan del Sur	0.889	23.38	24.30	26.89	25.25	24.23	18.70	25.03	14.99	0.00						3.51	26.22	11.25	7.57	0.62	8.40	12.65	7.72	11.18	8.86	7.14	3.26	0.00	0.00				0.00	18.31	9.80	2.74	3.42	325.42
Dinagat Islands	1.000	0.38	0.87	0.51	0.90	0.56	0.64	0.27	0.36	0.07						0.42	0.83	0.58	0.54	0.60	0.09	1.05	0.62	0.64	1.02	0.87	0.11	0.09	0.00	0.00		0.00	0.08	0.36	0.40	0.71	0.11	13.67
Surigao del Norte	1.000	2.82	6.66	3.45	5.26	3.90	4.91	3.38	0.79	0.00						3.46	8.25	5.00	4.43	8.32	0.93	8.11	7.05	6.26	10.28	6.73	0.63	0.64	0.00	0.00		0.00	0.00	3.98	2.09	3.12	3.06	113.51
Surigao del Sur	0.104	0.68	0.50	0.65	0.22	1.34	0.00	0.98	0.00	0.00						0.00	0.90	1.60	0.46	0.38	0.77	1.11	0.76	1.82	0.36	0.80	1.14	0.59	0.00	0.00		0.76	1.00	1.05	0.41	0.32	1.60	20.21
WRR-XI																																					**1,684**
Bukidnon	0.046	1.60	1.64	1.12	1.06	1.41	0.47	0.00	0.03	0.00	0.11			0.00	0.00	0.00	0.44	0.02	0.01	0.00	0.27	0.13	0.54	0.91	0.50	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.37	0.63	1.35	0.37	13.81
Compostela Valley	0.477	3.62	3.47	9.14	0.00	8.44	0.86	2.05	0.00	0.00						0.14	4.40	8.85	4.15	2.83	3.74	2.13	4.15	3.48	5.21	4.86	3.94	2.22	0.00	0.00		0.00	1.50	4.79	8.26	2.10	2.45	96.78
Davao del Norte	0.989	23.49	26.89	33.32	18.71	29.31	29.13	34.37	20.60	0.00						5.26	17.02	3.79	0.00	4.49	8.77	10.61	11.27	17.66	9.58	13.41	0.17	0.00	0.00				2.33	21.02	14.65	30.43	38.40	424.68
Davao del Sur	0.998	8.53	22.38	24.15	18.67	7.44	16.51	10.15	4.64	0.00						5.10	13.49	15.83	11.98	15.29	11.07	20.13	6.42	22.21	10.21	3.18	7.83	0.00	0.00	0.00		1.92	11.65	20.39	21.59	18.27	10.76	339.78
Davao Oriental	0.949	9.31	9.49	10.24	9.78	6.20	6.99	7.34	0.00	0.74						2.39	6.75	6.10	4.01	3.12	4.91	5.31	4.93	6.27	7.36	1.96	0.59	0.00	0.00	0.00		0.00	2.99	3.39	1.06	2.68	4.23	128.14
Sarangani	0.869	4.57	0.00	0.56	0.00	0.00		0.00	4.55	6.53	3.62	7.06	10.66	5.93	4.15	9.39	8.28	4.92	2.40	0.00	0.00	0.52	1.01	0.00		0.00	0.72	2.55	2.73	6.48	4.42	4.32	3.84	3.12	5.40	4.31	0.99	113.05
South Cotabato	0.340	11.52	8.38	0.00	2.36	0.19		4.40	1.91	12.41	6.61	16.75	19.67	14.45	12.72	10.46	8.99	10.12	6.80	0.52	0.00	0.00	0.00	0.00		0.00	4.54	11.04	4.54	9.65	11.55	14.81	12.70	13.20	14.07	12.26	16.24	272.85
North Cotabato	0.038	2.07	0.73	0.00	0.00	0.00		0.79	0.79	1.20	2.17	3.01	2.47	2.11	1.61	1.99	1.10	1.10	1.92	0.82	0.00	0.20	0.00	0.00		0.00	0.66	1.27	0.61	1.90	2.07	2.23	1.95	2.31	1.74	2.26	2.91	44.01
Sultan Kudarat	0.052	1.32	0.14	0.00	0.00	0.00		0.00	1.50	2.15	0.62	2.24	3.52	1.78	0.80	3.10	1.84	0.90	0.08	0.00	0.00	0.00	0.33	0.00		0.00	0.00	0.28	0.58	1.45	0.84	0.91	0.42	1.90	1.58	1.90	0.39	30.57
Agusan del Norte	0.027	0.27	0.39	0.50	0.47	0.45	0.34	0.35	0.28	0.05						0.23	0.60	0.41	0.09	0.13	0.15	0.06	0.25	0.11	0.24	0.23	0.06	0.00	0.00				0.00	0.25	0.10	0.03	0.09	6.12
Agusan del Sur	0.109	2.87	2.98	3.30	3.10	2.97	2.29	3.07	1.84	0.00						0.43	3.22	1.38	0.93	0.08	1.03	1.55	0.95	1.37	1.09	0.87	0.40	0.00	0.00				0.00	2.25	1.20	0.34	0.42	39.90
Surigao del Sur	0.896	5.88	4.35	5.61	1.88	11.51	0.00	8.40	0.00	0.00						0.00	7.78	13.79	3.95	3.25	6.67	9.59	6.57	15.68	3.13	6.91	9.83	5.07	0.00	0.00		6.54	8.63	9.08	3.50	2.79	13.77	174.15
WRR-XII																																					**3,037**
Bukidnon	0.606	21.11	21.62	14.80	14.00	18.60	6.19	0.00	0.36	0.00	1.50			0.00	0.00	0.03	5.81	0.21	0.10	0.00	3.58	1.69	7.12	12.03	6.64	5.71	0.00	0.00	0.00	0.00	0.00	0.00	4.97	4.85	8.35	17.73	4.87	181.88
Lanao del Norte	0.918	7.71	5.62	5.72	6.27	3.95	5.39	0.00	7.44	4.03	0.00	0.01				2.87	3.04	2.12	8.91	3.64	2.78	6.41	10.31	6.74	7.81	1.20	1.78	0.00	0.00	0.00	0.00	0.97	0.00	8.99	8.38	9.23	5.14	136.49
Misamis Oriental	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.06
Davao del Norte	0.004	0.10	0.11	0.13	0.08	0.12	0.12	0.14	0.08	0.00						0.02	0.07	0.02	0.00	0.02	0.04	0.04	0.05	0.07	0.04	0.05	0.00	0.00	0.00				0.01	0.08	0.06	0.12	0.16	1.72
Davao del Sur	0.002	0.02	0.04	0.05	0.04	0.01	0.03	0.02	0.01	0.00						0.01	0.03	0.03	0.02	0.03	0.02	0.04	0.01	0.04	0.02	0.01	0.02	0.00	0.00	0.00		0.00	0.02	0.04	0.04	0.04	0.02	0.68
Sarangani	0.131	0.69	0.00	0.08	0.00	0.00		0.00	0.69	0.98	0.55	1.06	1.61	0.89	0.63	1.41	1.25	0.74	0.36	0.00	0.00	0.08	0.15	0.00		0.00	0.11	0.38	0.41	0.98	0.67	0.65	0.58	0.47	0.81	0.65	0.15	17.04
South Cotabato	0.660	22.36	16.26	0.00	4.57	0.37		8.55	3.70	24.09	12.83	32.51	38.19	28.05	24.69	20.31	17.45	19.64	13.20	1.00	0.00	0.00	0.00	0.00		0.00	8.81	21.44	8.82	18.73	22.42	28.75	24.66	25.62	27.32	23.80	31.52	529.65
North Cotabato	0.962	52.43	18.59	0.00	0.00	0.00		19.91	19.89	30.35	54.86	76.24	62.54	53.43	40.88	50.47	27.93	27.86	48.55	20.86	0.00	5.13	0.00	0.00		0.00	16.65	32.15	15.41	48.04	52.37	56.34	49.43	58.55	44.11	57.31	73.78	1,114.04
Sultan Kudarat	0.948	24.15	2.57	0.00	0.00	0.00		0.00	27.28	39.19	11.23	40.85	64.16	32.40	14.50	56.55	33.54	16.50	1.38	0.00	0.00	0.00	6.08	0.00		0.00	0.00	5.05	10.56	26.34	15.30	16.54	7.74	34.72	28.88	34.71	7.19	557.40
Agusan del Sur	0.002	0.05	0.05	0.06	0.06	0.05	0.04	0.06	0.03	0.00						0.01	0.06	0.03	0.02	0.00	0.02	0.03	0.02	0.03	0.02	0.02	0.01	0.00	0.00				0.00	0.04	0.02	0.01	0.01	0.73
Lanao del Sur	1.000	5.36	1.18	0.00	0.00	0.00		2.79	1.87	0.44	0.59	6.67	8.27	6.58	3.21	4.42	0.25	3.06	1.93	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.84	0.00	2.68	2.48	2.70	1.30	2.67	3.36	4.53	7.22	74.37
Maguindanao	1.000	22.47	7.44	0.00	0.00	0.00		10.82	10.95	9.06	13.03	32.67	36.57	26.53	22.02	14.90	8.20	7.97	16.70	11.11	0.00	2.32	0.00	0.00		0.00	6.78	13.72	0.00	19.59	17.28	21.34	13.98	16.61	11.61	19.15	30.06	422.88
Total	80.000																																				**29,516**

Source: JICA Survey Team

Table F 28 Irrigation Water Demands of Groundwater Systems by WRR in 2020

(Unit: MCM)

Region/	Area	Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			Annual
Province	Rate	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
WRR-I																																						**66**
Abra	0.991	0.05	0.05	0.05	0.04	0.04	0.03	0.03	0.01								0.07	0.13	0.07	0.02	0.01	0.02	0.02	0.02	0.01	0.02	0.06	0.08	0.01	0.00		0.03	0.05	0.04	0.04	0.00	0.05	1.05
Apayao	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
Benguet	0.467	0.05	0.05	0.05	0.05	0.05	0.03	0.03	0.01				0.01	0.07	0.02	0.00	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.04	0.08	0.00	0.04	0.04	0.02	0.65
Kalinga	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00								0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.04
Mt. Province	0.140	0.00	0.00	0.00	0.00	0.00								0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Ilocos Norte	0.984	0.04	0.04	0.04	0.04	0.03	0.02	0.02	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.04	0.02	0.04	0.00	0.04	0.38
Ilocos Sur	1.000	0.75	0.76	0.82	0.79	0.70	0.40	0.32	0.06									0.00	0.81	0.41	1.05	0.41	0.64	0.64	1.56	0.64	0.48	0.96	0.00	0.48	0.06	0.00	0.78	0.98	0.77	0.63	0.75	16.65
La Union	0.947	2.62	2.67	2.89	2.77	2.47	1.40	1.12	0.19									0.11	1.25	2.86	1.36	1.35	0.68	1.58	1.21	1.57	0.08	1.70	2.17	0.00	0.00	1.51	2.77	3.47	2.73	2.23	2.65	47.43
WRR-II																																						**1,038**
Abra	0.009	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00								0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.01
Apayao	0.997	0.53	0.54	0.59	0.68	0.66	0.49	0.39	0.30	0.06							0.00	0.77	0.85	0.55	0.44	0.38	0.25	0.32	0.07	0.09	0.24	0.70	0.02	0.21	0.03	0.33	0.00	0.00	0.00	0.44	0.51	10.44
Benguet	0.007	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.01
Ifugao	0.993			0.04	0.05	0.04	0.02	0.04	0.04	0.03	0.05	0.03	0.03	0.04	0.02	0.01	0.00					0.00	0.06	0.00	0.00	0.00	0.00	0.01	0.00	0.03	0.03	0.00	0.01	0.00	0.00			0.60
Kalinga	0.994	0.36	0.36	0.38	0.37	0.36	0.27	0.21	0.04								0.13	0.47	0.15	0.07	0.06	0.19	0.07	0.17	0.09	0.14	0.00	0.17	0.18	0.00		0.25	0.49	0.39	0.30	0.32	0.38	6.35
Mt. Province	0.858	0.01	0.01	0.00	0.01	0.00								0.02	0.02	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.01	0.02	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.14
Ilocos Norte	0.016	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Batanes	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00								0.00	0.02	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.15
Cagayan	1.000	35.43	43.33	57.39	55.17	43.45	39.49	42.10	22.43	0.00							20.85	59.91	60.67	48.67	48.09	41.77	33.03	36.57	25.54	39.26	49.86	17.59	0.00	0.00	0.00	0.00	49.13	63.13	27.84	13.23	42.33	1,016.26
Isabela	1.000	0.12	0.08	0.13	0.13	0.13	0.10	0.11	0.08	0.00	0.02	0.00					0.00	0.09	0.08	0.10	0.09	0.04	0.09	0.06	0.05	0.03	0.00	0.09	0.00	0.00	0.00	0.05	0.00	0.01	0.05	0.02	0.12	1.85
Nueva Vizcaya	0.873	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quirino	0.997	0.09	0.11	0.10	0.12	0.12	0.09	0.09	0.05	0.00							0.02	0.13	0.11	0.09	0.03	0.04	0.05	0.05	0.04	0.04	0.04	0.00	0.03	0.00	0.00	0.06	0.05	0.14	0.11	0.04	0.11	1.94
Aurora	0.410	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00
Nueva Ecija	0.005	0.01	0.02	0.02	0.01	0.02	0.01	0.02	0.01	0.01	0.00	0.00	0.00			0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.02	0.01	0.30
WRR-III																																						**653**
Benguet	0.526	0.06	0.06	0.06	0.05	0.05	0.04	0.03	0.01				0.01	0.08	0.02	0.00	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.04	0.09	0.00	0.04	0.05	0.02	0.73
Ifugao	0.007			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00
Mt. Province	0.002	0.00	0.00	0.00	0.00	0.00								0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
La Union	0.053	0.15	0.15	0.16	0.16	0.14	0.08	0.06	0.01									0.01	0.07	0.16	0.08	0.08	0.04	0.09	0.07	0.09	0.00	0.10	0.12	0.00	0.00	0.08	0.16	0.19	0.15	0.12	0.15	2.65
Pangasinan	1.000	21.52	22.22	24.45	23.81	22.05	14.11	14.59	8.97	0.00	0.00							0.00	0.00	6.96	6.37	12.47	15.30	11.42	11.52	11.70	18.71	7.94	16.49	0.00	13.61	13.48	17.27	19.12	23.20	25.29	21.30	403.85
Nueva Vizcaya	0.127	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quirino	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Aurora	0.548	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00
Bataan	1.000	0.34	0.35	0.37	0.33	0.32	0.23	0.22	0.12	0.02								0.00	0.10	0.19	0.22	0.20	0.17	0.19	0.32	0.29	0.17	0.17	0.13	0.16	0.00	0.04	0.23	0.24	0.34	0.29	0.28	6.02
Bulacan	0.978	1.23	1.25	1.35	1.29	0.80	0.93	1.00	0.54	0.00								0.41	0.84	0.44	0.66	0.00	0.48	0.67	0.11	0.84	1.97	0.64	0.36	0.00	0.12	0.00	0.38	1.47	0.46	0.51	1.16	19.92
Nueva Ecija	0.994	1.88	3.29	3.74	2.97	3.74	2.88	3.59	1.76	2.30	0.54	0.80	0.15			0.31	0.07	2.34	0.28	1.53	2.44	0.35	1.09	2.17	1.89	0.29	1.04	0.46	2.46	0.32	0.00	1.57	2.06	2.28	2.84	3.24	2.73	59.38
Pampanga	1.000	2.95	3.01	3.24	3.36	3.24	2.39	2.22	1.18	0.23								0.25	1.68	2.76	1.39	1.13	0.53	0.00	0.22	1.95	0.81	0.26	1.20	0.60	1.06	1.30	2.50	3.23	2.78	2.38	2.85	50.68
Tarlac	1.000	4.75	4.85	5.23	5.31	5.12	3.78	3.60	1.92	0.37								0.39	3.30	3.80	3.62	0.72	0.00	1.05	3.72	2.94	1.17	0.11	0.27	1.17	0.40	1.57	4.85	6.10	4.73	3.84	3.38	82.05
Zambales	1.000	0.57	0.58	0.63	0.42	0.42	0.32	0.59	0.32	0.00								0.00	1.14	1.85	1.31	1.17	1.84	1.36	1.10	1.62	1.48	0.85	1.54	0.99	0.00	0.00	1.01	1.68	1.33	1.42	1.72	27.25
Rizal	0.021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.03

WRR-IV																																							**142**
Aurora	0.042	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00
Bulacan	0.022	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.01	0.00								0.01	0.02	0.01	0.01	0.00	0.01	0.02	0.00	0.02	0.04	0.01	0.01	0.00	0.00	0.00	0.01	0.03	0.01	0.01	0.03	0.45
Nueva Ecija	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
Batangas	1.000	0.12	0.12	0.20	0.20	0.20	0.15	0.15	0.08	0.02				0.04	0.21	0.27	0.10	0.05	0.14	0.00	0.17	0.06	0.06	0.02	0.00	0.00	0.00	0.00				0.00	0.12	0.13	0.16	0.00	0.18	2.97
Cavite	1.000	0.05	0.05	0.06	0.06	0.06	0.04	0.04	0.02	0.00				0.07	0.15	0.14	0.00	0.00	0.04	0.01	0.04	0.11	0.03	0.09	0.15	0.03	0.00	0.00				0.00	0.00	0.01	0.05	0.04	0.02	1.37
Laguna	1.000	0.31	0.31	0.34	0.34	0.33	0.25	0.25	0.14	0.00				0.13	0.13	0.23	0.11	0.20	0.07	0.09	0.12	0.08	0.11	0.08	0.00	0.00	0.00	0.00				0.00	0.00	0.17	0.02	0.03	0.31	4.14
Quezon	0.947	0.00	0.84	0.67	0.95	0.54	0.69	0.46	0.00	0.07				0.11	0.67	1.17	0.49	0.59	0.01	0.00	0.36	0.23	0.70	1.11	0.17	0.00	0.00	0.00				0.28	0.15	0.49	0.11	0.38	0.00	11.23
Rizal	0.979	0.14	0.00	0.09	0.15	0.15	0.11	0.11	0.00	0.01				0.00	0.04	0.16	0.06	0.00	0.00	0.02	0.06	0.04	0.01	0.01	0.00	0.00	0.00	0.00				0.00	0.10	0.05	0.13	0.05	0.13	1.61
Marinduque	1.000	0.18	0.13	0.36	0.37	0.27	0.28	0.39	0.38	0.38	0.21	0.00		0.22	0.58	0.47	0.14	0.17	0.23	0.11	0.36	0.22	0.24	0.20	0.11	0.00	0.00								0.24	0.20	0.38	6.83
Occidental Mindoro	1.000	3.95	4.03	4.35	4.17	4.02	2.98	3.15	1.68	0.32								0.00	2.77	5.15	1.76	2.34	0.00	0.20	2.44	2.50	1.20	0.38	3.50	0.00	0.77	0.81	0.80	5.12	4.05	2.13	3.20	67.76
Oriental Mindoro	1.000	0.95	1.03	1.21	0.94	0.95	0.73	0.87	0.56	0.33	0.54	0.08		0.90	0.92	0.70	0.83	0.84	1.21	1.09	1.62	1.38	0.67	0.44	0.74	0.00	0.00								0.53	1.87	1.74	23.65
Palawan	1.000	0.75	0.81	0.96	0.98	0.99	0.75	1.03	0.99	1.01	0.54	0.08		1.21	1.61	1.21	0.71	0.74	0.08	0.48	0.34	0.60	0.71	0.46	0.03	0.00	0.00								0.62	0.79	0.64	19.13
Romblon	1.000	0.08	0.12	0.14	0.14	0.14	0.11	0.15	0.14	0.14	0.08	0.01		0.11	0.21	0.17	0.09	0.13	0.06	0.06	0.06	0.04	0.01	0.05	0.06	0.01	0.00								0.06	0.15	0.14	2.66
WRR-V																																							**40**
Quezon	0.053	0.00	0.05	0.04	0.05	0.03	0.04	0.03	0.00	0.00				0.01	0.04	0.07	0.03	0.03	0.00	0.00	0.02	0.01	0.04	0.06	0.01	0.00	0.00	0.00				0.02	0.01	0.03	0.01	0.02	0.00	0.63
Albay	1.000	0.43	0.11	0.43	0.36	0.39	0.33	0.59	0.54	0.05	0.05			0.15	0.57	0.42	0.55	0.20	0.41	0.29	0.17	0.16	0.29	0.09	0.19	0.09	0.00	0.00							0.00	0.70	0.14	7.70
Camarines Norte	1.000	0.22	0.13	0.22	0.29	0.14	0.22	0.31	0.22	0.02	0.00			0.15	0.20	0.26	0.05	0.07	0.13	0.13	0.13	0.07	0.17	0.06	0.08	0.00	0.00	0.00							0.06	0.16	0.23	3.74
Camarines Sur	1.000	0.97	1.41	1.73	1.65	1.94	1.48	1.77	1.60	1.01	0.13			0.73	1.42	1.47	1.55	1.40	1.36	0.67	0.22	0.79	1.41	0.32	0.19	0.00	0.00	0.00	0.00						0.01	1.08	0.80	27.11
Catanduanes	1.000	0.02	0.00	0.03	0.02	0.01	0.02	0.03	0.01	0.02	0.00			0.00	0.03	0.03	0.02	0.01	0.02	0.02	0.00	0.01	0.01	0.01	0.02	0.01	0.00	0.00							0.00	0.02	0.01	0.39
Masbate	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00
Sorsogon	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00
WRR-VI																																							**22**
Aklan	1.000	0.15	0.15	0.15	0.09	0.04	0.00							0.05	0.22	0.17	0.09	0.08	0.00	0.07	0.02	0.06	0.02	0.09	0.03	0.03	0.00	0.00	0.00	0.05	0.11	0.02	0.02	0.05	0.05	0.15	0.04	2.01
Antique	1.000	0.08	0.07	0.04	0.04	0.02	0.00	0.00						0.00	0.00	0.51	0.22	0.45	0.00	0.18	0.22	0.22	0.22	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.02	0.03	0.05	0.07	0.08	0.08	2.81
Capiz	1.000	0.80	0.77	0.27	0.45	0.21	0.00							0.69	0.47	1.22	0.43	0.00	0.00	0.09	0.47	0.54	0.71	0.00	0.32	0.00	0.00	0.00	0.00	0.11	0.67	0.25	0.32	0.77	0.43	0.61	0.75	11.33
Guimaras	1.000	0.05	0.03	0.05	0.03	0.01	0.00							0.03	0.08	0.22	0.11	0.07	0.03	0.04	0.05	0.08	0.10	0.09	0.12	0.00	0.00	0.00	0.00	0.00	0.05	0.03	0.03	0.01	0.06	0.03	0.06	1.46
Iloilo	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					0.39	0.05	0.60	0.34	0.24	0.14	0.25	0.06	0.61	0.80	0.00	0.43	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.03
Negros Occidental	0.924	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Negros Oriental	0.231	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WRR-VII																																							**21**
Negros Occidental	0.076	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bohol	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cebu	1.000	1.20	1.17	0.69	0.84	0.49	0.00	0.00								0.63	0.54	1.52	1.24	1.41	0.39	0.71	0.58	1.19	1.43	1.34	0.00	0.00	0.00		0.39	1.08	1.01	0.68	0.46	1.07	0.97	21.02
Negros Oriental	0.769	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siquijor	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00								0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WRR-VIII																																							**1**
Biliran	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Northern Leyte	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Southern Leyte	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00
Northern Samar	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00
Weatern Samar	1.000	0.00	0.04	0.02	0.04	0.04	0.03	0.02	0.01	0.00	0.02	0.04	0.04	0.04	0.00	0.02	0.02	0.01	0.02	0.01	0.01	0.02	0.00	0.00	0.00							0.00	0.01	0.03	0.01	0.02	0.02	0.55
Eastern Samar	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00
WRR-IX																																							**3**
Zamboanga del Norte	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zamboanga del Sur	1.000	0.11	0.11	0.11	0.08	0.05	0.03	0.01	0.00		0.04	0.08	0.08	0.09	0.09	0.04	0.03	0.03	0.02	0.03	0.00	0.03	0.00	0.00	0.00	0.00			0.00	0.01	0.04	0.03	0.06	0.03	0.04	0.04	0.05	1.36
Zamboanga Sibugay	1.000	0.06	0.07	0.06	0.07	0.05	0.02	0.01	0.00		0.04	0.03	0.03	0.04	0.07	0.06	0.06	0.04	0.05	0.03	0.04	0.03	0.04	0.00	0.00	0.00			0.00	0.00	0.03	0.04	0.05	0.01	0.03	0.09	0.06	1.22
Misamis Occidental	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Basilan	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulu	1.000	0.02	0.02	0.02	0.01	0.02	0.01	0.01	0.01	0.00						0.01	0.01	0.03	0.01	0.01	0.02	0.01	0.01	0.02	0.02	0.02	0.02	0.01	0.00	0.00		0.01	0.01	0.01	0.02	0.02	0.00	0.38
Tawi-Tawi	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00

WRR-X																																							**2**
Bukidnon	0.348	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Camiguin	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lanao del Norte	0.082	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Misamis Oriental	0.999	0.04	0.02	0.03	0.02	0.03	0.02	0.04	0.00	0.00						0.01	0.01	0.04	0.03	0.02	0.02	0.04	0.03	0.01	0.03	0.02	0.02	0.02	0.00	0.00		0.01	0.03	0.05	0.02	0.02	0.05	0.68
Compostela Valley	0.523	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Norte	0.007	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00
Davao Oriental	0.051	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agusan del Norte	0.973	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00
Agusan del Sur	0.889	0.07	0.07	0.08	0.08	0.07	0.06	0.07	0.04	0.00						0.03	0.21	0.09	0.06	0.00	0.07	0.10	0.06	0.09	0.07	0.06	0.03	0.00	0.00				0.00	0.05	0.03	0.01	0.01	1.52
Dinagat Islands	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Surigao del Norte	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Surigao del Sur	0.104	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.01
WRR-XI																																							**3**
Bukidnon	0.046	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Compostela Valley	0.477	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Norte	0.989	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00
Davao del Sur	0.998	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao Oriental	0.949	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sarangani	0.869	0.06	0.00	0.01	0.00	0.00		0.00	0.05	0.08	0.04	0.08	0.13	0.07	0.05	0.11	0.10	0.06	0.03	0.00	0.00	0.01	0.01	0.00		0.00	0.01	0.03	0.03	0.08	0.06	0.05	0.05	0.04	0.07	0.05	0.01	1.38
South Cotabato	0.340	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.10
North Cotabato	0.038	0.02	0.01	0.00	0.00	0.00		0.01	0.01	0.01	0.02	0.03	0.03	0.02	0.02	0.02	0.01	0.01	0.02	0.01	0.00	0.00	0.00	0.00		0.00	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.03	0.48
Sultan Kudarat	0.052	0.02	0.00	0.00	0.00	0.00		0.00	0.02	0.02	0.01	0.02	0.04	0.02	0.01	0.03	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.01	0.02	0.01	0.01	0.01	0.03	0.02	0.03	0.01	0.37
Agusan del Norte	0.027	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00
Agusan del Sur	0.109	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00						0.00	0.03	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00				0.00	0.01	0.00	0.00	0.00	0.19
Surigao del Sur	0.896	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.01	0.02	0.01	0.00	0.01	0.01	0.01	0.02	0.00	0.01	0.01	0.01	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.13
WRR-XII																																							**20**
Bukidnon	0.606	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lanao del Norte	0.918	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.00	0.00				0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.01	0.24
Misamis Oriental	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Norte	0.004	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00
Davao del Sur	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sarangani	0.131	0.01	0.00	0.00	0.00	0.00		0.00	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.21
South Cotabato	0.660	0.01	0.01	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.19
North Cotabato	0.962	0.57	0.20	0.00	0.00	0.00		0.21	0.21	0.33	0.59	0.82	0.67	0.58	0.44	0.54	0.30	0.30	0.52	0.22	0.00	0.06	0.00	0.00		0.00	0.18	0.35	0.17	0.52	0.57	0.61	0.54	0.63	0.48	0.62	0.80	12.04
Sultan Kudarat	0.948	0.33	0.04	0.00	0.00	0.00		0.00	0.30	0.44	0.13	0.45	0.71	0.36	0.16	0.63	0.37	0.18	0.02	0.00	0.00	0.00	0.07	0.00		0.00	0.00	0.07	0.14	0.36	0.21	0.23	0.11	0.47	0.39	0.47	0.10	6.74
Agusan del Sur	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00
Lanao del Sur	1.000	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maguindanao	1.000	0.06	0.02	0.00	0.00	0.00		0.03	0.03	0.02	0.03	0.08	0.09	0.07	0.05	0.04	0.02	0.02	0.04	0.03	0.00	0.01	0.00	0.00		0.00	0.02	0.04	0.00	0.05	0.04	0.05	0.04	0.04	0.03	0.05	0.08	1.06
Total	80.000																																						**2,010**

Source: JICA Survey Team

Table F 29 Irrigation Areas of All Systems by WRR in 2030, 2040 & 2050 (Based on NIMP 2020-2030)

Region/ Province	Area Rate	2030				2040				2050			
		ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry
WRR-I		**136,308**	**122,178**	**120,786**	**86,916**	**146,932**	**132,802**	**131,731**	**94,034**	**151,926**	**137,796**	**136,874**	**97,378**
Abra	0.991	19,652	18,678	16,260	15,493	19,652	18,678	16,260	15,493	19,652	18,678	16,260	15,493
Apayao	0.003	32	30	26	26	32	30	26	26	32	30	26	26
Benguet	0.467	7,365	7,115	6,100	5,995	7,365	7,115	6,100	5,995	7,365	7,115	6,100	5,995
Kalinga	0.006	173	159	139	132	178	163	143	135	180	166	144	137
Mt. Province	0.140	1,839	1,802	1,552	1,511	1,839	1,802	1,552	1,511	1,839	1,802	1,552	1,511
Ilocos Norte	0.984	53,695	44,454	45,286	30,286	58,087	48,846	49,760	33,278	60,151	50,910	51,863	34,685
Ilocos Sur	1.000	34,166	32,241	34,380	20,430	38,704	36,779	39,219	23,305	40,837	38,912	41,493	24,657
La Union	0.947	19,386	17,698	17,043	13,045	21,076	19,389	18,670	14,290	21,871	20,183	19,435	14,876
WRR-II		**445,499**	**418,631**	**358,541**	**353,133**	**482,253**	**455,385**	**389,971**	**384,184**	**499,526**	**472,658**	**404,742**	**398,777**
Abra	0.009	178	170	148	141	178	170	148	141	178	170	148	141
Apayao	0.997	10,587	10,053	8,582	8,508	10,587	10,053	8,582	8,508	10,587	10,053	8,582	8,508
Benguet	0.007	110	107	91	90	110	107	91	90	110	107	91	90
Ifugao	0.993	15,682	14,603	13,082	11,743	15,682	14,603	13,082	11,743	15,682	14,603	13,082	11,743
Kalinga	0.994	28,688	26,362	23,002	21,814	29,408	27,082	23,630	22,409	29,746	27,420	23,925	22,689
Mt. Province	0.858	11,272	11,042	9,512	9,260	11,272	11,042	9,512	9,260	11,272	11,042	9,512	9,260
Ilocos Norte	0.016	873	723	736	492	945	794	809	541	978	828	843	564
Batanes	1.000	359	354	354	248	359	354	354	248	359	354	354	248
Cagayan	1.000	137,132	131,968	110,135	114,210	150,395	145,231	121,204	125,689	156,628	151,464	126,406	131,083
Isabela	1.000	188,709	173,312	150,409	144,222	208,894	193,497	167,926	161,018	218,379	202,982	176,159	168,912
Nueva Vizcaya	0.873	29,134	28,102	23,887	23,887	29,134	28,102	23,887	23,887	29,134	28,102	23,887	23,887
Quirino	0.997	14,669	13,790	11,738	11,705	15,611	14,732	12,540	12,504	16,054	15,175	12,916	12,880
Aurora	0.410	7,148	7,110	6,062	6,025	8,646	8,608	7,339	7,294	9,350	9,312	7,939	7,890
Nueva Ecija	0.005	957	936	803	789	1,032	1,011	867	852	1,068	1,047	898	882
WRR-III		**628,836**	**590,343**	**539,636**	**463,947**	**697,342**	**658,849**	**602,916**	**517,126**	**729,538**	**691,045**	**632,657**	**542,119**
Benguet	0.526	8,296	8,014	6,871	6,752	8,296	8,014	6,871	6,752	8,296	8,014	6,871	6,752
Ifugao	0.007	111	103	92	83	111	103	92	83	111	103	92	83
Mt. Province	0.002	26	26	22	22	26	26	22	22	26	26	22	22
La Union	0.053	1,085	991	954	730	1,180	1,085	1,045	800	1,224	1,130	1,088	833
Pangasinan	1.000	170,588	156,393	155,501	110,367	189,566	175,371	174,372	123,760	198,486	184,291	183,240	130,054
Nueva Vizcaya	0.127	4,238	4,088	3,475	3,475	4,238	4,088	3,475	3,475	4,238	4,088	3,475	3,475
Quirino	0.003	44	41	35	35	47	44	38	38	48	46	39	39
Aurora	0.548	9,554	9,503	8,102	8,052	11,556	11,505	9,809	9,749	12,497	12,446	10,612	10,546
Bataan	1.000	17,595	16,106	13,645	13,735	19,939	18,450	15,631	15,734	21,041	19,552	16,564	16,674
Bulacan	0.978	43,497	36,950	36,874	25,941	46,326	39,778	39,696	27,926	47,655	41,107	41,023	28,859
Nueva Ecija	0.994	190,238	186,116	159,579	156,818	205,207	201,085	172,414	169,430	212,242	208,120	178,446	175,358
Pampanga	1.000	71,694	65,471	53,338	57,963	79,284	73,061	59,521	64,683	82,851	76,628	62,427	67,841
Tarlac	1.000	81,226	77,855	70,406	61,947	95,144	91,773	82,993	73,022	101,685	98,314	88,908	78,226
Zambales	1.000	30,517	28,574	30,644	17,932	36,295	34,352	36,841	21,558	39,011	37,068	39,753	23,262
Rizal	0.021	128	113	97	96	128	113	97	96	128	113	97	96
WRR-IV		**238,822**	**208,667**	**185,559**	**169,174**	**269,700**	**239,544**	**212,696**	**194,529**	**284,211**	**254,056**	**225,450**	**206,445**
Aurora	0.042	732	728	621	617	886	882	752	747	958	954	813	808
Bulacan	0.022	978	831	829	584	1,042	895	893	628	1,072	925	923	649
Nueva Ecija	0.001	191	187	161	158	206	202	173	170	214	209	180	176
Batangas	1.000	5,508	4,699	3,561	4,427	5,508	4,699	3,561	4,427	5,508	4,699	3,561	4,427
Cavite	1.000	25,321	17,268	15,023	14,333	30,120	22,067	19,197	18,316	32,375	24,322	21,159	20,188
Laguna	1.000	27,365	23,333	19,850	19,816	32,270	28,238	24,023	23,982	34,575	30,543	25,984	25,939
Quezon	0.947	61,991	60,071	53,236	48,885	82,328	80,409	71,259	65,435	91,886	89,967	79,730	73,213
Rizal	0.979	5,947	5,275	4,504	4,463	5,947	5,275	4,504	4,463	5,947	5,275	4,504	4,463
Marinduque	1.000	2,083	2,023	1,735	1,704	2,083	2,023	1,735	1,704	2,083	2,023	1,735	1,704
Occidental Mindoro	1.000	35,189	32,046	29,652	24,827	35,795	32,652	30,212	25,296	36,079	32,936	30,475	25,516
Oriental Mindoro	1.000	37,154	30,914	28,104	24,450	37,154	30,914	28,104	24,450	37,154	30,914	28,104	24,450
Palawan	1.000	32,901	27,858	25,447	21,911	32,901	27,858	25,447	21,911	32,901	27,858	25,447	21,911
Romblon	1.000	3,460	3,432	2,836	2,999	3,460	3,432	2,836	2,999	3,460	3,432	2,836	2,999
WRR-V		**219,654**	**194,567**	**167,538**	**163,226**	**255,552**	**230,465**	**198,219**	**193,571**	**272,423**	**247,336**	**212,639**	**207,832**
Quezon	0.053	3,469	3,362	2,979	2,736	4,608	4,500	3,988	3,662	5,143	5,035	4,462	4,097
Albay	1.000	37,009	35,689	31,282	29,390	39,517	38,197	33,480	31,455	40,696	39,376	34,513	32,425
Camarines Norte	1.000	9,695	9,236	7,859	7,842	9,695	9,236	7,859	7,842	9,695	9,236	7,859	7,842
Camarines Sur	1.000	99,264	76,817	66,687	63,902	109,561	87,114	75,626	72,467	114,400	91,953	79,827	76,493
Catanduanes	1.000	3,211	3,113	2,621	2,671	3,211	3,113	2,621	2,671	3,211	3,113	2,621	2,671
Masbate	1.000	43,696	43,430	36,582	37,249	61,263	60,997	51,379	52,315	69,518	69,252	58,333	59,396
Sorsogon	1.000	23,309	22,919	19,526	19,436	27,698	27,308	23,266	23,158	29,761	29,371	25,023	24,908
WRR-VI		**196,269**	**181,663**	**172,838**	**135,989**	**228,499**	**213,894**	**203,919**	**159,700**	**243,647**	**229,041**	**218,527**	**170,844**
Aklan	1.000	10,867	10,481	9,347	8,471	11,117	10,731	9,569	8,673	11,234	10,848	9,674	8,768
Antique	1.000	16,908	15,872	14,100	12,883	16,979	15,943	14,162	12,941	17,012	15,976	14,192	12,967
Capiz	1.000	25,348	22,395	20,629	17,442	30,112	27,159	25,017	21,153	32,350	29,397	27,079	22,897
Guimaras	1.000	1,165	955	904	719	1,165	955	904	719	1,165	955	904	719
Iloilo	1.000	64,467	56,549	53,489	42,645	73,712	65,794	62,233	49,616	78,056	70,138	66,342	52,893
Negros Occidental	0.924	71,581	70,150	69,897	49,357	88,292	86,861	86,549	61,115	96,146	94,715	94,374	66,641
Negros Oriental	0.231	5,932	5,261	4,473	4,471	7,123	6,452	5,486	5,483	7,683	7,012	5,962	5,959
WRR-VII		**79,398**	**73,672**	**66,066**	**59,177**	**93,447**	**87,721**	**78,616**	**70,511**	**100,050**	**94,324**	**84,514**	**75,837**
Negros Occidental	0.076	5,888	5,770	5,749	4,060	7,262	7,144	7,119	5,027	7,908	7,790	7,762	5,481
Bohol	1.000	43,524	42,174	37,813	33,883	52,234	50,884	45,622	40,881	56,327	54,977	49,292	44,169
Cebu	1.000	9,504	7,634	6,949	6,029	9,504	7,634	6,949	6,029	9,504	7,634	6,949	6,029
Negros Oriental	0.769	19,748	17,514	14,891	14,883	23,713	21,479	18,262	18,253	25,576	23,343	19,846	19,836
Siquijor	1.000	734	580	665	321	734	580	665	321	734	580	665	321

WRR-VIII		**123,727**	**122,322**	**102,954**	**104,994**	**148,458**	**147,053**	**123,659**	**126,331**	**160,081**	**158,676**	**133,390**	**136,359**
Biliran	1.000	4,594	4,192	3,476	3,651	4,790	4,388	3,638	3,822	4,883	4,481	3,715	3,902
Northern Leyte	1.000	76,717	76,313	64,120	65,613	93,403	92,999	78,139	79,960	101,245	100,841	84,728	86,702
Southern Leyte	1.000	8,607	8,519	7,284	7,199	9,295	9,207	7,872	7,780	9,618	9,530	8,148	8,053
Northern Samar	1.000	5,523	5,509	4,820	4,546	5,523	5,509	4,820	4,546	5,523	5,509	4,820	4,546
Weatern Samar	1.000	21,412	20,915	17,334	18,221	28,572	28,075	23,269	24,459	31,938	31,441	26,058	27,391
Eastern Samar	1.000	6,874	6,874	5,921	5,765	6,874	6,874	5,921	5,765	6,874	6,874	5,921	5,765
WRR-IX		**95,955**	**87,996**	**75,956**	**73,637**	**112,129**	**104,170**	**89,870**	**87,218**	**119,730**	**111,771**	**96,409**	**93,601**
Zamboanga del Norte	1.000	7,548	7,071	6,493	5,528	7,548	7,071	6,493	5,528	7,548	7,071	6,493	5,528
Zamboanga del Sur	1.000	39,123	34,319	29,517	28,826	43,831	39,027	33,566	32,780	46,044	41,240	35,469	34,638
Zamboanga Sibugay	1.000	24,687	23,964	20,841	19,897	31,314	30,591	26,605	25,401	34,429	33,706	29,314	27,987
Misamis Occidental	1.000	19,686	18,980	16,088	16,178	24,524	23,818	20,189	20,302	26,798	26,092	22,116	22,240
Basilan	1.000	708	627	536	530	708	627	536	530	708	627	536	530
Sulu	1.000	2,526	2,043	1,737	1,737	2,526	2,043	1,737	1,737	2,526	2,043	1,737	1,737
Tawi-Tawi	1.000	1,677	992	745	942	1,677	992	745	942	1,677	992	745	942
WRR-X		**142,451**	**130,331**	**112,687**	**108,876**	**169,725**	**157,605**	**135,970**	**131,959**	**182,543**	**170,423**	**146,913**	**142,807**
Bukidnon	0.348	23,464	20,564	17,552	17,408	27,728	24,828	21,190	21,017	29,731	26,831	22,900	22,713
Camiguin	1.000	755	640	633	455	755	640	633	455	755	640	633	455
Lanao del Norte	0.082	2,248	2,214	2,070	1,694	2,792	2,758	2,578	2,110	3,048	3,014	2,818	2,306
Misamis Oriental	0.999	17,138	14,110	11,551	12,436	21,719	18,691	15,301	16,473	23,871	20,843	17,063	18,370
Compostela Valley	0.523	13,582	13,515	11,488	11,488	16,355	16,288	13,845	13,845	17,658	17,592	14,953	14,953
Davao del Norte	0.007	342	331	281	281	407	396	337	337	437	427	363	363
Davao Oriental	0.051	995	993	841	847	1,255	1,253	1,061	1,069	1,377	1,375	1,164	1,173
Agusan del Norte	0.973	25,867	22,645	19,292	19,205	30,113	26,890	22,908	22,805	32,108	28,885	24,608	24,497
Agusan del Sur	0.889	45,762	43,542	37,630	36,391	55,504	53,284	46,049	44,534	60,083	57,863	50,006	48,360
Dinagat Islands	1.000	1,084	993	885	803	1,084	993	885	803	1,084	993	885	803
Surigao del Norte	1.000	7,815	7,450	7,477	5,188	7,815	7,450	7,477	5,188	7,815	7,450	7,477	5,188
Surigao del Sur	0.104	3,399	3,334	2,987	2,680	4,200	4,134	3,705	3,324	4,576	4,511	4,042	3,626
WRR-XI		**183,039**	**177,065**	**152,476**	**148,534**	**220,550**	**214,576**	**184,762**	**180,018**	**238,180**	**232,206**	**199,935**	**194,815**
Bukidnon	0.046	3,102	2,718	2,320	2,301	3,665	3,282	2,801	2,778	3,930	3,547	3,027	3,002
Compostela Valley	0.477	12,387	12,327	10,478	10,478	14,916	14,856	12,627	12,627	16,105	16,044	13,638	13,638
Davao del Norte	0.989	48,275	46,760	39,746	39,746	57,468	55,954	47,561	47,561	61,789	60,275	51,233	51,233
Davao del Sur	0.998	34,734	34,238	29,248	28,957	42,979	42,483	36,292	35,930	46,854	46,358	39,602	39,207
Davao Oriental	0.949	18,508	18,470	15,643	15,756	23,347	23,309	19,742	19,884	25,621	25,583	21,668	21,824
Sarangani	0.869	6,145	5,516	4,856	4,522	6,145	5,516	4,856	4,522	6,145	5,516	4,856	4,522
South Cotabato	0.340	18,645	16,950	14,495	14,320	21,686	19,991	17,095	16,889	23,115	21,420	18,317	18,097
North Cotabato	0.038	2,937	2,891	2,463	2,452	3,514	3,468	2,955	2,942	3,785	3,740	3,186	3,172
Sultan Kudarat	0.052	2,691	2,505	2,343	1,916	3,004	2,818	2,636	2,155	3,152	2,965	2,773	2,268
Agusan del Norte	0.027	718	628	535	533	836	746	636	633	891	802	683	680
Agusan del Sur	0.109	5,611	5,339	4,614	4,462	6,805	6,533	5,646	5,460	7,367	7,095	6,131	5,929
Surigao del Sur	0.896	29,287	28,722	25,735	23,092	36,185	35,619	31,916	28,637	39,427	38,861	34,820	31,244
WRR-XII		**309,956**	**295,380**	**258,952**	**243,195**	**368,445**	**353,869**	**310,060**	**291,517**	**395,934**	**381,358**	**334,080**	**314,228**
Bukidnon	0.606	40,860	35,810	30,564	30,314	48,284	43,234	36,900	36,598	51,773	46,724	39,878	39,552
Lanao del Norte	0.918	25,164	24,783	23,170	18,960	31,256	30,876	28,866	23,622	34,120	33,739	31,544	25,813
Misamis Oriental	0.001	17	14	12	12	22	19	15	16	24	21	17	18
Davao del Norte	0.004	195	189	161	161	232	226	192	192	250	244	207	207
Davao del Sur	0.002	70	69	59	58	86	85	73	72	94	93	79	79
Sarangani	0.131	926	832	732	682	926	832	732	682	926	832	732	682
South Cotabato	0.660	36,193	32,903	28,136	27,798	42,096	38,806	33,184	32,785	44,870	41,580	35,556	35,129
North Cotabato	0.962	74,341	73,191	62,349	62,076	88,956	87,807	74,799	74,472	95,825	94,676	80,651	80,298
Sultan Kudarat	0.948	49,068	45,671	42,715	34,926	54,773	51,377	48,051	39,289	57,455	54,058	50,559	41,340
Agusan del Sur	0.002	103	98	85	82	125	120	104	100	135	130	112	109
Lanao del Sur	1.000	17,653	17,289	15,222	14,169	20,412	20,048	17,652	16,430	21,709	21,345	18,794	17,493
Maguindanao	1.000	65,367	64,532	55,748	53,956	81,275	80,440	69,491	67,257	88,752	87,917	75,950	73,509
Total	80.000	**2,799,914**	**2,602,815**	**2,313,988**	**2,110,798**	**3,193,033**	**2,995,934**	**2,662,389**	**2,430,698**	**3,377,788**	**3,180,689**	**2,826,128**	**2,581,043**

Source: JICA Survey Team

Table F 30 Irrigation Areas of Surface Water Systems by WRR in 2030, 2040 & 2050 (Based on NIMP 2020-2030)

Region/	Area	2030				2040				2050			
Province	Rate	ISA	FUSA	Irrigated Area (ha)		ISA	FUSA	Irrigated Area (ha)		ISA	FUSA	Irrigated Area (ha)	
		(ha)	(ha)	Wet	Dry	(ha)	(ha)	Wet	Dry	(ha)	(ha)	Wet	Dry
WRR-I		**129,695**	**117,208**	**115,408**	**83,098**	**139,656**	**127,301**	**125,768**	**89,816**	**144,337**	**132,044**	**130,638**	**92,974**
Abra	0.991	19,485	18,604	16,161	15,448	19,485	18,604	16,161	15,448	19,485	18,604	16,161	15,448
Apayao	0.003	30	28	24	24	30	28	24	24	30	28	24	24
Benguet	0.467	7,290	7,044	6,049	5,947	7,290	7,044	6,049	5,947	7,290	7,044	6,049	5,947
Kalinga	0.006	171	157	137	130	175	161	141	133	177	163	143	135
Mt. Province	0.140	1,837	1,799	1,549	1,508	1,837	1,799	1,549	1,508	1,837	1,799	1,549	1,508
Ilocos Norte	0.984	53,671	44,454	45,286	30,245	58,061	48,846	49,760	33,233	60,125	50,910	51,863	34,638
Ilocos Sur	1.000	31,778	30,663	32,499	19,469	35,998	34,979	37,074	22,209	37,982	37,007	39,224	23,497
La Union	0.947	15,434	14,458	13,701	10,327	16,780	15,839	15,009	11,313	17,412	16,488	15,624	11,777
WRR-II		**398,904**	**371,534**	**314,194**	**308,846**	**431,253**	**403,653**	**341,293**	**335,562**	**446,457**	**418,748**	**354,029**	**348,118**
Abra	0.009	177	169	147	140	177	169	147	140	177	169	147	140
Apayao	0.997	9,931	9,463	7,972	7,898	9,931	9,463	7,972	7,898	9,931	9,463	7,972	7,898
Benguet	0.007	109	106	91	89	109	106	91	89	109	106	91	89
Ifugao	0.993	15,642	14,562	13,031	11,691	15,642	14,562	13,031	11,691	15,642	14,562	13,031	11,691
Kalinga	0.994	28,325	25,997	22,717	21,524	29,036	26,707	23,338	22,112	29,370	27,041	23,629	22,388
Mt. Province	0.858	11,255	11,026	9,496	9,245	11,255	11,026	9,496	9,245	11,255	11,026	9,496	9,245
Ilocos Norte	0.016	873	723	736	492	944	794	809	540	978	828	843	563
Batanes	1.000	327	327	0	0	327	327	0	0	327	327	0	0
Cagayan	1.000	91,964	86,233	67,306	71,342	100,858	94,899	74,071	78,512	105,038	98,973	77,250	81,881
Isabela	1.000	188,581	173,180	150,310	144,122	208,751	193,349	167,815	160,907	218,230	202,828	176,042	168,795
Nueva Vizcaya	0.873	29,134	28,102	23,887	23,887	29,134	28,102	23,887	23,887	29,134	28,102	23,887	23,887
Quirino	0.997	14,499	13,618	11,650	11,617	15,430	14,548	12,445	12,410	15,867	14,985	12,819	12,783
Aurora	0.410	7,148	7,110	6,062	6,025	8,646	8,608	7,339	7,294	9,350	9,312	7,939	7,890
Nueva Ecija	0.005	940	919	789	775	1,014	993	852	837	1,049	1,028	882	867
WRR-III		**574,630**	**536,748**	**487,344**	**420,555**	**636,445**	**598,122**	**543,755**	**468,027**	**665,496**	**626,966**	**570,266**	**490,337**
Benguet	0.526	8,211	7,934	6,814	6,699	8,211	7,934	6,814	6,699	8,211	7,934	6,814	6,699
Ifugao	0.007	110	103	92	82	110	103	92	82	110	103	92	82
Mt. Province	0.002	26	26	22	22	26	26	22	22	26	26	22	22
La Union	0.053	864	809	767	578	939	886	840	633	974	923	874	659
Pangasinan	1.000	140,053	125,987	123,278	84,611	155,634	141,276	138,238	94,878	162,957	148,461	145,268	99,704
Nueva Vizcaya	0.127	4,238	4,088	3,475	3,475	4,238	4,088	3,475	3,475	4,238	4,088	3,475	3,475
Quirino	0.003	44	41	35	35	46	44	37	37	48	45	39	38
Aurora	0.548	9,554	9,503	8,102	8,052	11,556	11,505	9,809	9,749	12,497	12,446	10,612	10,546
Bataan	1.000	16,182	14,757	13,307	13,391	18,338	16,905	15,243	15,340	19,351	17,914	16,154	16,256
Bulacan	0.978	41,654	35,229	35,130	24,561	44,362	37,925	37,819	26,441	45,635	39,193	39,082	27,325
Nueva Ecija	0.994	186,928	182,793	156,808	154,092	201,637	197,495	169,420	166,486	208,550	204,405	175,347	172,310
Pampanga	1.000	67,815	61,694	49,672	54,926	74,994	68,845	55,431	61,293	78,368	72,207	58,137	64,286
Tarlac	1.000	72,887	69,878	63,009	54,730	85,377	82,371	74,273	64,515	91,247	88,242	79,567	69,113
Zambales	1.000	25,940	23,798	26,741	15,208	30,852	28,611	32,148	18,284	33,160	30,872	34,690	19,729
Rizal	0.021	124	109	94	93	124	109	94	93	124	109	94	93
WRR-IV		**225,213**	**195,204**	**175,246**	**160,455**	**254,464**	**224,195**	**201,116**	**184,640**	**268,212**	**237,820**	**213,274**	**196,007**
Aurora	0.042	732	728	621	617	886	882	752	747	958	954	813	808
Bulacan	0.022	937	792	790	553	998	853	851	595	1,027	882	879	615
Nueva Ecija	0.001	188	184	158	155	203	199	170	167	210	206	176	173
Batangas	1.000	5,154	4,426	3,334	4,215	5,154	4,426	3,334	4,215	5,154	4,426	3,334	4,215
Cavite	1.000	24,705	16,468	14,542	14,146	29,387	21,043	18,583	18,077	31,587	23,194	20,482	19,924
Laguna	1.000	26,276	22,328	19,479	19,375	30,985	27,021	23,573	23,447	33,198	29,227	25,497	25,361
Quezon	0.947	58,209	56,003	50,351	46,038	77,306	74,963	67,398	61,625	86,281	83,874	75,410	68,950
Rizal	0.979	5,757	5,085	4,367	4,327	5,757	5,085	4,367	4,327	5,757	5,085	4,367	4,327
Marinduque	1.000	1,756	1,717	1,513	1,488	1,756	1,717	1,513	1,488	1,756	1,717	1,513	1,488
Occidental Mindoro	1.000	31,067	28,217	25,614	21,742	31,601	28,750	26,098	22,153	31,852	29,000	26,325	22,346
Oriental Mindoro	1.000	35,345	29,217	27,161	23,533	35,345	29,217	27,161	23,533	35,345	29,217	27,161	23,533
Palawan	1.000	32,034	26,997	24,567	21,354	32,034	26,997	24,567	21,354	32,034	26,997	24,567	21,354
Romblon	1.000	3,052	3,042	2,749	2,912	3,052	3,042	2,749	2,912	3,052	3,042	2,749	2,912
WRR-V		**178,732**	**183,013**	**164,629**	**160,581**	**209,757**	**216,947**	**194,944**	**190,596**	**224,338**	**232,895**	**209,191**	**204,701**
Quezon	0.053	3,258	3,134	2,818	2,577	4,327	4,195	3,772	3,449	4,829	4,694	4,220	3,859
Albay	1.000	35,601	34,772	30,853	28,961	38,014	37,216	33,021	30,996	39,147	38,364	34,040	31,952
Camarines Norte	1.000	8,649	8,383	7,668	7,650	8,649	8,383	7,668	7,650	8,649	8,383	7,668	7,650
Camarines Sur	1.000	67,213	72,920	64,582	62,059	74,185	82,695	73,239	70,378	77,462	87,288	77,307	74,288
Catanduanes	1.000	2,965	2,876	2,600	2,649	2,965	2,876	2,600	2,649	2,965	2,876	2,600	2,649
Masbate	1.000	42,471	42,203	36,582	37,249	59,545	59,273	51,379	52,315	67,569	67,295	58,333	59,396
Sorsogon	1.000	18,575	18,724	19,526	19,436	22,073	22,309	23,266	23,158	23,717	23,995	25,023	24,908
WRR-VI		**176,014**	**166,186**	**169,308**	**134,377**	**205,071**	**195,749**	**199,831**	**157,791**	**218,728**	**209,643**	**214,176**	**168,795**
Aklan	1.000	10,165	9,789	9,206	8,331	10,399	10,022	9,425	8,529	10,508	10,131	9,528	8,623
Antique	1.000	16,401	15,429	13,712	12,834	16,469	15,498	13,773	12,891	16,501	15,530	13,802	12,918
Capiz	1.000	15,270	15,697	18,917	16,063	18,139	19,036	22,941	19,479	19,488	20,606	24,833	21,085
Guimaras	1.000	906	738	769	676	906	738	769	676	906	738	769	676
Iloilo	1.000	55,889	49,255	52,333	42,645	63,903	57,307	60,888	49,616	67,670	61,091	64,909	52,893
Negros Occidental	0.924	71,450	70,017	69,897	49,357	88,131	86,696	86,549	61,115	95,971	94,535	94,374	66,641
Negros Oriental	0.231	5,932	5,261	4,473	4,471	7,123	6,452	5,486	5,483	7,683	7,012	5,962	5,959
WRR-VII		**78,241**	**72,684**	**65,094**	**58,460**	**92,280**	**86,731**	**77,644**	**69,794**	**98,879**	**93,332**	**83,542**	**75,121**
Negros Occidental	0.076	5,877	5,759	5,749	4,060	7,249	7,131	7,119	5,027	7,894	7,776	7,762	5,481
Bohol	1.000	43,490	42,174	37,813	33,883	52,193	50,884	45,622	40,881	56,283	54,977	49,292	44,169
Cebu	1.000	8,392	6,657	5,977	5,313	8,392	6,657	5,977	5,313	8,392	6,657	5,977	5,313
Negros Oriental	0.769	19,748	17,514	14,891	14,883	23,713	21,479	18,262	18,253	25,576	23,343	19,846	19,836
Siquijor	1.000	734	580	665	321	734	580	665	321	734	580	665	321

WRR-VIII		**122,526**	**121,110**	**102,836**	**104,841**	**147,131**	**145,710**	**123,500**	**126,125**	**158,695**	**157,272**	**133,212**	**136,128**
Biliran	1.000	4,588	4,186	3,476	3,651	4,784	4,382	3,638	3,822	4,877	4,475	3,715	3,902
Northern Leyte	1.000	76,405	75,999	64,120	65,613	93,023	92,617	78,139	79,960	100,833	100,426	84,728	86,702
Southern Leyte	1.000	8,540	8,452	7,284	7,199	9,222	9,134	7,872	7,780	9,543	9,455	8,148	8,053
Northern Samar	1.000	5,351	5,337	4,820	4,546	5,351	5,337	4,820	4,546	5,351	5,337	4,820	4,546
Weatern Samar	1.000	21,258	20,751	17,216	18,067	28,367	27,856	23,110	24,253	31,708	31,195	25,880	27,160
Eastern Samar	1.000	6,384	6,384	5,921	5,765	6,384	6,384	5,921	5,765	6,384	6,384	5,921	5,765
WRR-IX		**94,832**	**87,419**	**75,584**	**73,279**	**110,919**	**103,522**	**89,443**	**86,810**	**118,480**	**111,090**	**95,956**	**93,169**
Zamboanga del Norte	1.000	7,397	6,920	6,493	5,528	7,397	6,920	6,493	5,528	7,397	6,920	6,493	5,528
Zamboanga del Sur	1.000	38,736	34,117	29,436	28,744	43,397	38,797	33,474	32,688	45,587	40,997	35,372	34,541
Zamboanga Sibugay	1.000	24,538	23,809	20,682	19,753	31,126	30,394	26,402	25,217	34,222	33,488	29,090	27,784
Misamis Occidental	1.000	19,686	18,980	16,088	16,178	24,524	23,818	20,189	20,302	26,798	26,092	22,116	22,240
Basilan	1.000	685	604	536	530	685	604	536	530	685	604	536	530
Sulu	1.000	2,220	1,997	1,605	1,605	2,220	1,997	1,605	1,605	2,220	1,997	1,605	1,605
Tawi-Tawi	1.000	1,571	992	745	942	1,571	992	745	942	1,571	992	745	942
WRR-X		**140,519**	**128,306**	**112,239**	**108,624**	**167,389**	**155,129**	**135,409**	**131,636**	**180,018**	**167,736**	**146,297**	**142,451**
Bukidnon	0.348	23,464	20,564	17,552	17,408	27,728	24,828	21,190	21,017	29,731	26,831	22,900	22,713
Camiguin	1.000	755	640	633	455	755	640	633	455	755	640	633	455
Lanao del Norte	0.082	2,232	2,198	2,066	1,690	2,773	2,738	2,574	2,106	3,027	2,992	2,813	2,301
Misamis Oriental	0.999	17,070	14,016	11,411	12,296	21,632	18,566	15,115	16,287	23,776	20,704	16,856	18,163
Compostela Valley	0.523	13,582	13,515	11,488	11,488	16,355	16,288	13,845	13,845	17,658	17,592	14,953	14,953
Davao del Norte	0.007	342	331	281	281	407	396	337	337	437	427	363	363
Davao Oriental	0.051	995	993	841	847	1,255	1,253	1,061	1,069	1,377	1,375	1,164	1,173
Agusan del Norte	0.973	25,867	22,645	19,292	19,205	30,113	26,890	22,908	22,805	32,108	28,885	24,608	24,497
Agusan del Sur	0.889	43,980	41,684	37,331	36,283	53,343	51,011	45,683	44,401	57,744	55,394	49,608	48,216
Dinagat Islands	1.000	1,084	993	885	803	1,084	993	885	803	1,084	993	885	803
Surigao del Norte	1.000	7,761	7,396	7,477	5,188	7,761	7,396	7,477	5,188	7,761	7,396	7,477	5,188
Surigao del Sur	0.104	3,387	3,331	2,983	2,680	4,185	4,130	3,699	3,324	4,560	4,506	4,036	3,626
WRR-XI		**182,592**	**176,686**	**152,290**	**148,407**	**220,021**	**214,129**	**184,549**	**179,879**	**237,612**	**231,727**	**199,710**	**194,670**
Bukidnon	0.046	3,102	2,718	2,320	2,301	3,665	3,282	2,801	2,778	3,930	3,547	3,027	3,002
Compostela Valley	0.477	12,387	12,327	10,478	10,478	14,916	14,856	12,627	12,627	16,105	16,044	13,638	13,638
Davao del Norte	0.989	48,275	46,760	39,746	39,746	57,468	55,954	47,561	47,561	61,789	60,275	51,233	51,233
Davao del Sur	0.998	34,734	34,238	29,248	28,957	42,979	42,483	36,292	35,930	46,854	46,358	39,602	39,207
Davao Oriental	0.949	18,508	18,470	15,643	15,756	23,347	23,309	19,742	19,884	25,621	25,583	21,668	21,824
Sarangani	0.869	6,086	5,458	4,799	4,465	6,086	5,458	4,799	4,465	6,086	5,458	4,799	4,465
South Cotabato	0.340	18,640	16,944	14,489	14,315	21,680	19,984	17,089	16,883	23,108	21,413	18,310	18,090
North Cotabato	0.038	2,901	2,856	2,437	2,426	3,472	3,426	2,923	2,910	3,740	3,694	3,152	3,138
Sultan Kudarat	0.052	2,668	2,481	2,317	1,890	2,978	2,791	2,607	2,126	3,124	2,936	2,743	2,237
Agusan del Norte	0.027	718	628	535	533	836	746	636	633	891	802	683	680
Agusan del Sur	0.109	5,392	5,111	4,577	4,449	6,540	6,254	5,601	5,444	7,080	6,792	6,082	5,912
Surigao del Sur	0.896	29,181	28,695	25,700	23,092	36,054	35,586	31,871	28,637	39,283	38,824	34,772	31,244
WRR-XII		**308,284**	**293,719**	**257,623**	**241,866**	**366,466**	**351,897**	**308,495**	**289,953**	**393,809**	**379,240**	**332,404**	**312,552**
Bukidnon	0.606	40,860	35,810	30,564	30,314	48,284	43,234	36,900	36,598	51,773	46,724	39,878	39,552
Lanao del Norte	0.918	24,988	24,605	23,134	18,924	31,039	30,654	28,821	23,577	33,882	33,496	31,494	25,763
Misamis Oriental	0.001	17	14	11	12	22	19	15	16	24	21	17	18
Davao del Norte	0.004	195	189	161	161	232	226	192	192	250	244	207	207
Davao del Sur	0.002	70	69	59	58	86	85	73	72	94	93	79	79
Sarangani	0.131	918	823	723	673	918	823	723	673	918	823	723	673
South Cotabato	0.660	36,183	32,892	28,126	27,788	42,084	38,793	33,172	32,774	44,857	41,566	35,544	35,117
North Cotabato	0.962	73,450	72,290	61,684	61,411	87,891	86,726	74,001	73,674	94,677	93,511	79,790	79,438
Sultan Kudarat	0.948	48,635	45,228	42,245	34,456	54,291	50,878	47,522	38,760	56,948	53,534	50,002	40,783
Agusan del Sur	0.002	99	94	84	82	120	115	103	100	130	125	112	108
Lanao del Sur	1.000	17,653	17,289	15,222	14,169	20,412	20,048	17,652	16,430	21,709	21,345	18,794	17,493
Maguindanao	1.000	65,216	64,416	55,610	53,818	81,087	80,296	69,319	67,086	88,546	87,759	75,762	73,321
Total	80.000	**2,610,181**	**2,449,817**	**2,191,795**	**2,003,390**	**2,980,854**	**2,823,087**	**2,525,746**	**2,310,628**	**3,155,060**	**2,998,513**	**2,682,694**	**2,455,022**

Source: JICA Survey Team

Table F 31 Irrigation Areas of Groundwater Systems by WRR in 2030, 2040 & 2050 (Based on NIMP 2020-2030)

Region/ Province	Area Rate	2030				2040				2050			
		ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry
WRR-I		**6,613**	**4,970**	**5,378**	**3,818**	**7,277**	**5,501**	**5,962**	**4,217**	**7,589**	**5,751**	**6,237**	**4,405**
Abra	0.991	166	74	99	45	166	74	99	45	166	74	99	45
Apayao	0.003	2	2	2	2	2	2	2	2	2	2	2	2
Benguet	0.467	75	71	51	48	75	71	51	48	75	71	51	48
Kalinga	0.006	2	2	2	2	2	2	2	2	2	2	2	2
Mt. Province	0.140	3	3	3	3	3	3	3	3	3	3	3	3
Ilocos Norte	0.984	24	0	0	41	26	0	0	45	27	0	0	47
Ilocos Sur	1.000	2,388	1,578	1,880	961	2,706	1,800	2,145	1,097	2,855	1,904	2,269	1,160
La Union	0.947	3,952	3,240	3,342	2,718	4,297	3,550	3,661	2,977	4,459	3,695	3,811	3,099
WRR-II		**46,595**	**47,097**	**44,347**	**44,286**	**50,999**	**51,732**	**48,678**	**48,622**	**53,069**	**53,910**	**50,713**	**50,659**
Abra	0.009	2	1	1	0	2	1	1	0	2	1	1	0
Apayao	0.997	656	590	609	609	656	590	609	609	656	590	609	609
Benguet	0.007	1	1	1	1	1	1	1	1	1	1	1	1
Ifugao	0.993	41	41	51	51	41	41	51	51	41	41	51	51
Kalinga	0.994	363	365	284	290	372	375	292	298	376	379	296	301
Mt. Province	0.858	16	16	16	16	16	16	16	16	16	16	16	16
Ilocos Norte	0.016	0	0	0	1	0	0	0	1	0	0	0	1
Batanes	1.000	32	27	354	248	32	27	354	248	32	27	354	248
Cagayan	1.000	45,168	45,735	42,828	42,869	49,537	50,331	47,133	47,177	51,590	52,492	49,156	49,202
Isabela	1.000	129	132	99	99	143	148	111	111	149	155	116	116
Nueva Vizcaya	0.873	0	0	0	0	0	0	0	0	0	0	0	0
Quirino	0.997	171	172	88	88	181	184	94	94	187	190	97	97
Aurora	0.410	0	0	0	0	0	0	0	0	0	0	0	0
Nueva Ecija	0.005	17	17	14	14	18	18	15	15	19	19	16	15
WRR-III		**54,206**	**53,594**	**52,291**	**43,392**	**60,897**	**60,726**	**59,162**	**49,100**	**64,042**	**64,078**	**62,391**	**51,782**
Benguet	0.526	85	80	57	54	85	80	57	54	85	80	57	54
Ifugao	0.007	0	0	0	0	0	0	0	0	0	0	0	0
Mt. Province	0.002	0	0	0	0	0	0	0	0	0	0	0	0
La Union	0.053	221	181	187	152	240	199	205	167	250	207	213	173
Pangasinan	1.000	30,535	30,406	32,223	25,756	33,932	34,096	36,134	28,882	35,529	35,830	37,971	30,351
Nueva Vizcaya	0.127	0	0	0	0	0	0	0	0	0	0	0	0
Quirino	0.003	1	1	0	0	1	1	0	0	1	1	0	0
Aurora	0.548	0	0	0	0	0	0	0	0	0	0	0	0
Bataan	1.000	1,413	1,349	338	344	1,601	1,545	387	394	1,690	1,637	411	417
Bulacan	0.978	1,844	1,721	1,744	1,379	1,963	1,852	1,878	1,485	2,020	1,914	1,940	1,534
Nueva Ecija	0.994	3,310	3,323	2,771	2,726	3,570	3,590	2,994	2,945	3,692	3,716	3,099	3,048
Pampanga	1.000	3,879	3,778	3,665	3,037	4,290	4,215	4,090	3,390	4,483	4,421	4,290	3,555
Tarlac	1.000	8,338	7,976	7,397	7,217	9,767	9,402	8,720	8,507	10,438	10,072	9,341	9,113
Zambales	1.000	4,577	4,776	3,903	2,724	5,444	5,742	4,692	3,274	5,851	6,196	5,063	3,533
Rizal	0.021	4	4	3	3	4	4	3	3	4	4	3	3
WRR-IV		**13,609**	**13,463**	**10,312**	**8,719**	**15,235**	**15,349**	**11,580**	**9,889**	**16,000**	**16,236**	**12,176**	**10,438**
Aurora	0.042	0	0	0	0	0	0	0	0	0	0	0	0
Bulacan	0.022	41	39	39	31	44	42	42	33	45	43	44	35
Nueva Ecija	0.001	3	3	3	3	4	4	3	3	4	4	3	3
Batangas	1.000	354	273	227	212	354	273	227	212	354	273	227	212
Cavite	1.000	616	801	481	187	732	1,023	614	239	787	1,128	677	263
Laguna	1.000	1,090	1,005	372	442	1,285	1,217	450	534	1,377	1,316	486	578
Quezon	0.947	3,781	4,068	2,885	2,847	5,022	5,445	3,861	3,811	5,605	6,093	4,320	4,263
Rizal	0.979	190	190	138	137	190	190	138	137	190	190	138	137
Marinduque	1.000	327	306	221	216	327	306	221	216	327	306	221	216
Occidental Mindoro	1.000	4,123	3,830	4,038	3,085	4,194	3,902	4,114	3,143	4,227	3,936	4,150	3,170
Oriental Mindoro	1.000	1,809	1,697	943	917	1,809	1,697	943	917	1,809	1,697	943	917
Palawan	1.000	867	861	881	557	867	861	881	557	867	861	881	557
Romblon	1.000	408	390	87	87	408	390	87	87	408	390	87	87
WRR-V		**40,922**	**11,554**	**2,909**	**2,644**	**45,795**	**13,518**	**3,276**	**2,975**	**48,086**	**14,441**	**3,448**	**3,131**
Quezon	0.053	212	228	161	159	281	305	216	213	314	341	242	239
Albay	1.000	1,408	917	429	429	1,504	982	459	459	1,548	1,012	473	473
Camarines Norte	1.000	1,046	853	192	192	1,046	853	192	192	1,046	853	192	192
Camarines Sur	1.000	32,051	3,897	2,105	1,842	35,376	4,419	2,387	2,089	36,938	4,664	2,520	2,205
Catanduanes	1.000	246	237	22	22	246	237	22	22	246	237	22	22
Masbate	1.000	1,225	1,227	0	0	1,718	1,724	0	0	1,949	1,957	0	0
Sorsogon	1.000	4,734	4,195	0	0	5,625	4,999	0	0	6,044	5,376	0	0
WRR-VI		**20,255**	**15,477**	**3,531**	**1,612**	**23,428**	**18,145**	**4,089**	**1,909**	**24,919**	**19,398**	**4,351**	**2,049**
Aklan	1.000	702	693	140	140	718	709	144	144	725	717	145	145
Antique	1.000	507	443	388	49	510	445	389	49	511	446	390	49
Capiz	1.000	10,078	6,697	1,711	1,380	11,972	8,122	2,075	1,673	12,862	8,792	2,246	1,811
Guimaras	1.000	259	217	135	43	259	217	135	43	259	217	135	43
Iloilo	1.000	8,578	7,294	1,156	0	9,808	8,487	1,345	0	10,386	9,047	1,434	0
Negros Occidental	0.924	130	133	0	0	161	165	0	0	175	180	0	0
Negros Oriental	0.231	0	0	0	0	0	0	0	0	0	0	0	0

WRR-VII		**1,157**	**988**	**972**	**716**	**1,167**	**991**	**972**	**716**	**1,171**	**992**	**972**	**716**
Negros Occidental	0.076	11	11	0	0	13	14	0	0	14	15	0	0
Bohol	1.000	34	0	0	0	41	0	0	0	45	0	0	0
Cebu	1.000	1,112	977	972	716	1,112	977	972	716	1,112	977	972	716
Negros Oriental	0.769	0	0	0	0	0	0	0	0	0	0	0	0
Siquijor	1.000	0	0	0	0	0	0	0	0	0	0	0	0
WRR-VIII		**1,202**	**1,212**	**118**	**154**	**1,327**	**1,342**	**159**	**206**	**1,385**	**1,404**	**178**	**231**
Biliran	1.000	5	6	0	0	6	6	0	0	6	6	0	0
Northern Leyte	1.000	313	314	0	0	381	383	0	0	413	415	0	0
Southern Leyte	1.000	67	67	0	0	73	73	0	0	75	75	0	0
Northern Samar	1.000	172	172	0	0	172	172	0	0	172	172	0	0
Weatern Samar	1.000	154	163	118	154	206	219	159	206	230	245	178	231
Eastern Samar	1.000	490	490	0	0	490	490	0	0	490	490	0	0
WRR-IX		**1,123**	**577**	**372**	**357**	**1,209**	**648**	**427**	**408**	**1,250**	**681**	**453**	**432**
Zamboanga del Norte	1.000	151	151	0	0	151	151	0	0	151	151	0	0
Zamboanga del Sur	1.000	388	202	81	81	435	230	93	93	457	243	98	98
Zamboanga Sibugay	1.000	149	155	159	144	189	198	203	184	208	218	223	203
Misamis Occidental	1.000	0	0	0	0	0	0	0	0	0	0	0	0
Basilan	1.000	23	23	0	0	23	23	0	0	23	23	0	0
Sulu	1.000	306	46	132	132	306	46	132	132	306	46	132	132
Tawi-Tawi	1.000	106	0	0	0	106	0	0	0	106	0	0	0
WRR-X		**1,932**	**2,025**	**447**	**252**	**2,336**	**2,476**	**561**	**323**	**2,526**	**2,688**	**615**	**356**
Bukidnon	0.348	0	0	0	0	0	0	0	0	0	0	0	0
Camiguin	1.000	0	0	0	0	0	0	0	0	0	0	0	0
Lanao del Norte	0.082	16	16	3	3	19	20	4	4	21	22	4	4
Misamis Oriental	0.999	68	94	140	140	86	124	186	186	95	139	207	207
Compostela Valley	0.523	0	0	0	0	0	0	0	0	0	0	0	0
Davao del Norte	0.007	0	0	0	0	0	0	0	0	0	0	0	0
Davao Oriental	0.051	0	0	0	0	0	0	0	0	0	0	0	0
Agusan del Norte	0.973	0	0	0	0	0	0	0	0	0	0	0	0
Agusan del Sur	0.889	1,781	1,858	299	108	2,161	2,274	366	133	2,339	2,469	398	144
Dinagat Islands	1.000	0	0	0	0	0	0	0	0	0	0	0	0
Surigao del Norte	1.000	54	54	0	0	54	54	0	0	54	54	0	0
Surigao del Sur	0.104	12	3	4	0	15	4	5	0	17	4	6	0
WRR-XI		**447**	**378**	**186**	**127**	**529**	**447**	**213**	**140**	**568**	**479**	**225**	**145**
Bukidnon	0.046	0	0	0	0	0	0	0	0	0	0	0	0
Compostela Valley	0.477	0	0	0	0	0	0	0	0	0	0	0	0
Davao del Norte	0.989	0	0	0	0	0	0	0	0	0	0	0	0
Davao del Sur	0.998	0	0	0	0	0	0	0	0	0	0	0	0
Davao Oriental	0.949	0	0	0	0	0	0	0	0	0	0	0	0
Sarangani	0.869	58	58	57	57	58	58	57	57	58	58	57	57
South Cotabato	0.340	5	5	5	5	6	6	6	6	6	7	6	6
North Cotabato	0.038	35	36	26	26	42	43	32	32	45	46	34	34
Sultan Kudarat	0.052	24	24	26	26	26	27	29	29	28	29	31	31
Agusan del Norte	0.027	0	0	0	0	0	0	0	0	0	0	0	0
Agusan del Sur	0.109	218	228	37	13	265	279	45	16	287	303	49	18
Surigao del Sur	0.896	106	27	36	0	131	34	44	0	143	37	48	0
WRR-XII		**1,673**	**1,662**	**1,329**	**1,328**	**1,980**	**1,972**	**1,565**	**1,565**	**2,124**	**2,118**	**1,676**	**1,676**
Bukidnon	0.606	0	0	0	0	0	0	0	0	0	0	0	0
Lanao del Norte	0.918	175	178	36	36	218	222	45	45	238	243	50	50
Misamis Oriental	0.001	0	0	0	0	0	0	0	0	0	0	0	0
Davao del Norte	0.004	0	0	0	0	0	0	0	0	0	0	0	0
Davao del Sur	0.002	0	0	0	0	0	0	0	0	0	0	0	0
Sarangani	0.131	9	9	9	9	9	9	9	9	9	9	9	9
South Cotabato	0.660	10	11	10	10	12	12	12	12	12	13	13	13
North Cotabato	0.962	891	901	665	665	1,066	1,080	798	798	1,148	1,165	860	860
Sultan Kudarat	0.948	433	443	470	470	483	499	529	529	507	525	557	557
Agusan del Sur	0.002	4	4	1	0	5	5	1	0	5	6	1	0
Lanao del Sur	1.000	0	0	0	0	0	0	0	0	0	0	0	0
Maguindanao	1.000	151	116	138	138	188	145	172	172	205	158	188	188
Total	80.000	**189,733**	**152,998**	**122,192**	**107,407**	**212,179**	**172,847**	**136,643**	**120,070**	**222,728**	**182,176**	**143,434**	**126,021**

Source: JICA Survey Team

Table F 32 Irrigation Water Demands of All Systems by WRR in 2030
(Based on Irrigated Areas Projected under NIMP 2020-2030)

(Unit: MCM)

Region/	Area	Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			Annual
Province	Rate	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
WRR-I																																						**2,258**
Abra	0.991	20.91	21.31	23.01	22.18	21.43	15.88	16.90	9.01	0.00							8.23	16.08	21.36	11.54	2.67	5.95	7.44	6.85	7.28	7.69	16.06	21.00	7.97	0.00	0.00	9.04	17.96	23.56	20.27	1.28	20.94	383.81
Apayao	0.003	0.04	0.04	0.04	0.04	0.04	0.03	0.02	0.02	0.00							0.00	0.03	0.04	0.03	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.03	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.03	0.04	0.63
Benguet	0.467	7.98	8.13	8.78	8.45	8.17	6.05	6.43	3.43	0.65			0.00	5.53	5.89	3.98	3.02	4.23	3.22	3.10	2.00	1.29	2.45	1.92	0.00	0.00	0.00					3.48	6.90	1.57	7.76	6.72	4.19	125.32
Kalinga	0.006	0.20	0.20	0.22	0.21	0.20	0.15	0.16	0.08	0.02							0.00	0.11	0.13	0.09	0.03	0.10	0.05	0.10	0.07	0.09	0.00	0.10	0.13	0.00	0.00	0.09	0.17	0.23	0.19	0.17	0.20	3.46
Mt. Province	0.140	1.76	1.70	0.25	1.19	0.68	0.04							1.40	0.82	1.80	1.98	1.01	1.41	1.01	0.00	0.17	0.10	0.74	0.65	0.20	0.00	0.00	0.48	1.91	1.03	0.03	0.00	1.11	0.53	0.91	1.91	24.84
Ilocos Norte	0.984	41.97	42.78	46.17	44.47	39.58	22.53	18.07	3.13									21.50	56.97	57.47	65.66	30.79	26.13	26.63	48.69	3.59	28.29	7.65	0.00	0.00	0.00	23.89	43.93	19.41	43.37	4.56	42.28	809.51
Ilocos Sur	1.000	28.01	28.55	30.81	29.58	26.34	15.00	11.96	2.07									0.00	26.23	13.19	33.85	13.29	20.64	20.53	50.40	20.79	15.44	30.98	0.00	15.48	1.83	0.00	29.47	36.88	29.09	23.82	28.30	582.51
La Union	0.947	17.75	18.09	19.52	18.73	16.68	9.50	7.58	1.31									0.78	8.95	20.57	9.80	9.71	4.86	11.32	8.67	11.32	0.54	12.24	15.60	0.00	0.00	10.24	18.76	23.46	18.47	15.09	17.93	327.43
WRR-II																																						**9,018**
Abra	0.009	0.19	0.19	0.21	0.20	0.19	0.14	0.15	0.08	0.00							0.07	0.15	0.19	0.10	0.02	0.05	0.07	0.06	0.07	0.07	0.15	0.19	0.07	0.00	0.00	0.08	0.16	0.21	0.18	0.01	0.19	3.49
Apayao	0.997	12.56	12.79	13.81	13.33	12.89	9.56	7.75	5.45	1.04							0.00	10.42	11.65	8.90	7.48	7.16	6.43	7.44	4.33	3.57	5.40	11.13	2.40	3.80	0.45	5.56	0.00	0.00	0.00	10.59	12.61	208.50
Benguet	0.007	0.12	0.12	0.13	0.13	0.12	0.09	0.10	0.05	0.01			0.00	0.08	0.09	0.06	0.05	0.06	0.05	0.05	0.03	0.02	0.04	0.03	0.00	0.00	0.00					0.05	0.10	0.02	0.12	0.10	0.06	1.88
Ifugao	0.993			8.78	11.04	20.60	13.70	17.65	19.23	19.20	22.70	16.05	15.40	18.34	11.48	7.82	0.00	0.00				0.00	12.47	8.01	3.41	0.89	0.00	6.01	0.39	12.68	12.27	1.56	7.94	0.00	0.00	0.00		267.64
Kalinga	0.994	32.44	33.03	35.68	34.40	33.29	24.73	26.32	14.04	2.68							0.22	18.27	20.85	15.61	5.62	16.05	8.61	16.38	11.40	14.72	0.00	16.05	21.05	0.00		14.32	28.44	37.30	31.92	27.60	32.75	573.75
Mt. Province	0.858	10.80	10.42	1.52	7.28	4.16	0.26							8.58	5.04	11.03	12.14	6.18	8.65	6.16	0.00	1.06	0.63	4.52	4.00	1.23	0.00	0.00	2.94	11.73	6.31	0.20	0.00	6.81	3.26	5.60	11.73	152.24
Ilocos Norte	0.016	0.68	0.70	0.75	0.72	0.64	0.37	0.29	0.05									0.35	0.93	0.93	1.07	0.50	0.42	0.43	0.79	0.06	0.46	0.12	0.00	0.00	0.00	0.39	0.71	0.32	0.71	0.07	0.69	13.16
Batanes	1.000	0.29	0.31	0.40	0.38	0.36	0.27	0.24	0.05								0.12	0.86	0.56	0.28	0.60	0.71	0.48	0.49	0.33	0.41	0.57	0.31	0.27	0.00	0.00	0.10	0.47	0.38	0.02	0.32	0.38	9.96
Cagayan	1.000	#####	#####	#####	#####	#####	#####	#####	75.86	0.00							68.06	#####	#####	#####	#####	#####	#####	#####	83.36	#####	#####	57.43	0.00	0.00	0.00	0.00	#####	#####	94.15	44.75	#####	3,379.93
Isabela	1.000	#####	#####	#####	#####	#####	#####	#####	#####	0.00	31.63	0.24					2.32	#####	#####	#####	#####	77.66	#####	#####	93.47	47.23	0.00	#####	0.00	0.00	0.00	85.88	0.00	26.66	83.50	33.17	#####	3,393.17
Nueva Vizcaya	0.873	34.86	35.51	38.34	36.99	35.77	26.53	28.27	15.07	2.87							5.74	41.49	44.90	5.56	9.92	18.26	10.08	4.52	16.50	9.91	7.64	0.00	0.00	10.39	0.00	0.00	34.01	43.41	21.67	0.00	4.28	542.50
Quirino	0.997	13.88	17.97	15.13	18.69	18.06	13.39	14.27	7.60	0.00							3.60	20.67	17.57	14.21	4.65	6.06	7.22	7.93	5.58	6.66	6.91	0.00	4.77	0.00	0.00	8.73	7.14	21.61	17.69	6.63	17.66	304.28
Aurora	0.410	6.74	5.12	5.87	5.69	7.20	5.38	8.71	10.69	8.41	7.46	0.00	0.00				0.00	5.17	8.39	4.85	8.43	3.91	3.84	7.50	8.01	5.83	0.31	2.67	0.00	0.16	0.00				3.96	7.86	6.79	148.93
Nueva Ecija	0.005	0.58	1.02	1.16	0.92	1.16	0.89	1.11	0.54	0.71	0.17	0.25	0.05			0.10	0.02	0.72	0.09	0.48	0.76	0.11	0.34	0.67	0.58	0.09	0.32	0.14	0.76	0.10	0.00	0.49	0.64	0.71	0.88	1.01	0.85	18.40
WRR-III																																						**11,622**
Benguet	0.526	8.99	9.16	9.89	9.52	9.20	6.82	7.24	3.86	0.74			0.00	6.22	6.63	4.48	3.40	4.77	3.63	3.49	2.25	1.46	2.76	2.16	0.00	0.00	0.00					3.92	7.77	1.77	8.74	7.57	4.72	141.16
Ifugao	0.007			0.06	0.08	0.15	0.10	0.12	0.14	0.14	0.16	0.11	0.11	0.13	0.08	0.06	0.00	0.00				0.00	0.09	0.06	0.02	0.01	0.00	0.04	0.00	0.09	0.09	0.01	0.06	0.00	0.00	0.00		1.89
Mt. Province	0.002	0.03	0.02	0.00	0.02	0.01	0.00							0.02	0.01	0.03	0.03	0.01	0.02	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.03	0.01	0.00	0.00	0.02	0.01	0.01	0.03	0.35
La Union	0.053	0.99	1.01	1.09	1.05	0.93	0.53	0.42	0.07									0.04	0.50	1.15	0.55	0.54	0.27	0.63	0.49	0.63	0.03	0.68	0.87	0.00	0.00	0.57	1.05	1.31	1.03	0.84	1.00	18.33
Pangasinan	1.000	#####	#####	#####	#####	#####	99.75	#####	63.45	0.00	0.00							0.00	0.00	55.43	50.70	99.34	#####	90.94	91.72	93.13	#####	63.20	#####	0.00	#####	95.29	#####	#####	#####	#####	#####	2,973.92
Nueva Vizcaya	0.127	5.07	5.17	5.58	5.38	5.20	3.86	4.11	2.19	0.42							0.84	6.04	6.53	0.81	1.44	2.66	1.47	0.66	2.40	1.44	1.11	0.00	0.00	1.51	0.00	0.00	4.95	6.31	3.15	0.00	0.62	78.92
Quirino	0.003	0.04	0.05	0.05	0.06	0.05	0.04	0.04	0.02	0.00							0.01	0.06	0.05	0.04	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.01	0.00	0.00	0.03	0.02	0.07	0.05	0.02	0.05	0.92
Aurora	0.548	9.00	6.84	7.84	7.61	9.63	7.19	11.64	14.29	11.24	9.97	0.00	0.00				0.00	6.91	11.22	6.49	11.26	5.22	5.13	10.02	10.71	7.79	0.42	3.56	0.00	0.22	0.00				5.29	10.51	9.08	199.06
Bataan	1.000	19.53	19.91	21.48	20.62	19.91	14.74	15.63	8.33	1.58								0.00	6.06	10.65	11.48	9.39	7.12	8.18	17.37	15.14	6.03	6.43	4.55	8.53	0.00	2.39	14.33	13.58	19.96	16.28	13.90	333.08
Bulacan	0.978	36.50	37.20	40.15	38.62	24.86	27.62	29.35	15.64	0.00								14.87	31.97	18.68	26.55	0.00	20.01	26.54	9.78	20.22	55.93	14.29	10.94	0.00	3.58	0.00	11.55	42.74	15.83	17.36	36.35	627.11
Nueva Ecija	0.994	#####	#####	#####	#####	#####	#####	#####	#####	#####	33.07	49.00	9.29			19.00	4.08	#####	17.35	94.51	#####	21.76	67.08	#####	#####	17.75	64.29	28.33	#####	19.70	0.00	96.70	#####	#####	#####	#####	#####	3,657.66
Pampanga	1.000	81.80	83.38	89.97	86.64	83.68	61.95	66.04	35.18	6.69								6.80	41.32	68.24	38.35	33.59	25.41	5.55	21.39	53.07	26.81	14.02	35.48	19.21	27.03	38.58	73.95	95.58	80.12	68.18	81.34	1,449.40
Tarlac	1.000	87.55	89.25	96.30	92.85	89.67	66.39	70.82	37.73	7.18								9.14	71.52	83.20	80.50	21.16	0.00	37.51	94.74	64.59	27.88	5.87	12.96	29.38	10.99	29.17	90.06	#####	89.52	72.87	64.45	1,646.37
Zambales	1.000	24.90	25.39	27.39	26.36	25.45	18.83	20.02	10.66	0.00								0.00	23.20	34.34	17.45	10.79	27.84	13.57	3.87	18.87	16.12	0.62	22.16	13.54	0.00	0.00	17.14	28.58	19.31	20.73	24.76	491.89
Rizal	0.021	0.13	0.03	0.10	0.14	0.14	0.10	0.11	0.00	0.01				0.00	0.04	0.14	0.08	0.02	0.03	0.05	0.08	0.07	0.05	0.05	0.00	0.02	0.00	0.00				0.00	0.08	0.06	0.12	0.07	0.14	1.86

WRR-IV																																						**4,088**
Aurora	0.042	0.69	0.52	0.60	0.58	0.74	0.55	0.89	1.10	0.86	0.76	0.00	0.00				0.00	0.53	0.86	0.50	0.86	0.40	0.39	0.77	0.82	0.60	0.03	0.27	0.00	0.02	0.00				0.41	0.81	0.70	15.26
Bulacan	0.022	0.82	0.84	0.90	0.87	0.56	0.62	0.66	0.35	0.00								0.33	0.72	0.42	0.60	0.00	0.45	0.60	0.22	0.45	1.26	0.32	0.25	0.00	0.08	0.00	0.26	0.96	0.36	0.39	0.82	14.11
Nueva Ecija	0.001	0.12	0.20	0.23	0.18	0.23	0.18	0.22	0.11	0.14	0.03	0.05	0.01			0.02	0.00	0.14	0.02	0.10	0.15	0.02	0.07	0.13	0.12	0.02	0.06	0.03	0.15	0.02	0.00	0.10	0.13	0.14	0.18	0.20	0.17	3.68
Batangas	1.000	4.64	4.70	6.93	6.64	6.42	4.75	5.04	2.69	0.51				0.95	4.71	6.21	3.14	2.09	4.19	0.14	4.54	2.36	2.14	1.28	0.20	0.00	0.00	0.00				0.00	3.75	4.26	5.48	0.97	6.26	95.01
Cavite	1.000	20.26	20.65	22.28	21.40	20.66	15.30	16.26	8.66	1.65				9.27	19.81	20.66	3.10	0.09	10.37	5.25	8.48	17.94	7.09	14.06	22.41	5.42	0.00	0.00				0.00	1.33	5.98	17.66	16.89	8.63	341.53
Laguna	1.000	31.32	31.92	34.45	33.05	31.92	23.64	25.11	13.38	0.00				12.24	12.82	23.18	14.77	23.11	12.79	13.06	15.34	12.62	14.33	11.34	0.95	0.00	0.00	0.00				0.00	0.00	16.65	5.89	6.83	31.19	451.88
Quezon	0.947	5.09	79.11	69.68	81.76	54.02	58.47	46.26	2.35	6.28				8.76	46.86	83.22	46.98	53.87	21.56	10.49	38.36	31.59	57.35	81.69	24.31	0.00	0.00	0.00				20.46	16.45	43.36	24.27	42.69	10.48	1,065.76
Rizal	0.979	6.22	1.60	4.65	6.56	6.34	4.69	4.98	0.00	0.51				0.00	2.09	6.65	3.56	0.99	1.21	2.45	3.55	3.14	2.45	2.45	0.00	1.13	0.00	0.00				0.00	3.74	2.67	5.55	3.17	6.34	86.70
Marinduque	1.000	1.78	0.94	2.85	2.96	2.10	2.37	3.30	3.18	3.20	2.20	0.43	0.22	1.01	3.13	4.45	1.58	1.21	1.72	0.81	2.80	1.85	2.03	1.73	0.95	0.29	0.00	0.06							1.40	0.40	3.58	54.52
Occidental Mindoro	1.000	34.93	35.61	38.42	36.81	35.55	26.33	27.87	14.85	2.83								0.00	22.30	41.49	14.16	18.83	0.00	1.61	19.67	20.13	9.70	3.06	28.23	0.00	6.17	7.15	7.05	45.21	35.80	18.82	28.30	580.86
Oriental Mindoro	1.000	34.70	33.49	40.00	41.54	40.99	33.24	46.38	36.54	29.38	31.06	1.27	3.03	19.78	11.55	29.64	16.17	7.69	18.43	4.85	21.01	14.68	14.34	7.55	16.34	0.00	3.08	0.00							5.80	25.51	27.97	616.00
Palawan	1.000	34.33	30.96	37.02	38.38	37.86	30.70	42.72	41.20	41.48	28.39	14.52	2.77	23.74	24.71	44.36	27.35	19.66	0.65	13.10	8.11	18.35	22.04	14.71	1.28	0.43	0.00	0.00							18.02	15.40	31.57	663.80
Romblon	1.000	3.80	4.21	5.03	5.22	5.15	4.17	5.82	5.61	5.65	3.88	1.98	0.38	2.65	5.12	7.27	4.06	4.36	1.98	2.21	1.96	1.48	0.61	1.95	2.16	0.96	0.00	0.00							1.50	3.50	6.31	98.98
WRR-V																																						**4,270**
Quezon	0.053	0.29	4.43	3.90	4.58	3.02	3.27	2.59	0.13	0.35				0.49	2.62	4.66	2.63	3.01	1.21	0.59	2.15	1.77	3.21	4.57	1.36	0.00	0.00	0.00				1.15	0.92	2.43	1.36	2.39	0.59	59.65
Albay	1.000	45.56	8.44	38.26	31.99	36.00	31.25	56.70	52.27	13.25	19.35	2.95		14.61	56.43	41.86	54.33	20.25	40.95	28.57	17.25	15.42	29.14	8.64	18.39	8.75	0.00	0.00							0.00	43.19	20.99	754.79
Camarines Norte	1.000	12.14	5.78	9.85	13.55	6.50	10.84	15.13	11.20	3.16	2.66	0.79		7.35	9.73	12.65	2.36	3.54	6.41	6.32	6.23	3.25	8.08	2.73	3.65	0.00	0.00	0.00							0.00	1.91	13.25	179.05
Camarines Sur	1.000	61.84	68.66	85.99	91.91	#####	88.44	#####	#####	87.53	42.17	0.00		44.40	85.15	86.59	86.79	75.66	72.05	61.01	34.23	71.94	#####	39.59	31.74	0.00	0.00	0.00	0.00						0.00	28.30	88.26	1,789.39
Catanduanes	1.000	4.15	0.67	4.46	3.50	2.08	3.71	5.16	1.99	3.66	1.76	0.27		0.00	4.73	4.93	3.62	2.60	3.61	3.07	0.71	2.16	2.58	1.38	3.97	1.05	0.00	0.09							0.00	1.87	2.86	70.62
Masbate	1.000	40.77	52.41	41.97	64.97	66.27	26.99	72.20	17.66	45.56	21.87	3.34		22.43	26.02	70.89	63.67	11.55	29.38	23.54	35.38	27.92	19.01	39.30	28.67	5.04	0.00	1.27							0.00	19.63	78.59	956.32
Sorsogon	1.000	4.12	27.20	26.53	26.06	34.39	11.67	37.58	13.26	26.68	12.81	0.00		1.72	11.59	41.22	25.12	10.52	12.22	5.96	16.23	16.79	9.57	22.60	9.53	0.10	0.00	0.67							0.00	15.27	40.88	460.32
WRR-VI																																						**3,385**
Aklan	1.000	12.55	12.16	11.92	7.77	3.61	0.30							4.39	17.35	15.87	10.10	9.87	4.33	8.07	4.71	7.97	5.12	9.30	5.14	3.91	0.00	0.35	0.00	4.68	10.35	2.82	3.32	5.48	5.34	11.79	5.07	203.64
Antique	1.000	18.00	16.68	9.73	9.26	5.28	0.00	0.02						0.00	0.00	18.44	7.90	3.99	0.00	4.74	6.06	5.95	6.21	4.82	0.00	0.00	0.00	0.00	0.00	0.00	9.94	4.91	4.87	11.26	16.56	17.34	19.08	201.04
Capiz	1.000	23.46	22.56	6.57	14.49	6.69	0.00							18.51	13.29	33.92	11.71	0.00	0.00	0.11	0.00	11.73	16.44	0.00	6.58	0.00	0.00	0.00	0.00	2.51	19.97	5.02	7.19	21.33	10.22	16.41	20.14	288.86
Guimaras	1.000	1.14	0.71	1.08	0.71	0.33	0.00							0.23	0.65	1.80	0.90	0.59	0.29	0.17	0.30	0.50	0.64	0.61	0.86	0.00	0.00	0.00	0.00	0.00	1.03	0.57	0.45	0.00	1.11	0.48	1.23	16.37
Iloilo	1.000	52.86	51.27	27.65	38.70	27.05	13.17	7.08	0.05					30.76	5.30	49.77	27.12	19.24	11.42	13.02	0.00	40.16	55.59	0.00	27.57	3.60	0.00	0.00	0.00	0.00	48.74	21.12	32.66	44.05	28.30	50.76	55.85	782.87
Negros Occidental	0.924	72.49	95.11	94.10	60.78	6.70	2.37							18.15	#####	#####	93.63	37.14	86.93	50.88	62.65	85.59	86.99	45.03	54.75	0.77	0.00	0.00	12.54	33.05	43.83	23.21	85.94	91.42	95.99	92.62	63.12	1,742.46
Negros Oriental	0.231	7.29	8.63	8.53	5.52	2.57	0.21							4.48	6.31	13.18	9.57	4.82	4.51	4.89	6.32	4.97	4.26	6.17	4.17	0.43	0.00	0.00	0.66	3.90	7.58	8.50	3.55	6.78	4.40	3.11	4.88	150.19
WRR-VII																																						**1,674**
Negros Occidental	0.076	5.96	7.82	7.74	5.00	0.55	0.19							1.49	10.28	10.01	7.70	3.06	7.15	4.19	5.15	7.04	7.16	3.70	4.50	0.06	0.00	0.00	1.03	2.72	3.60	1.91	7.07	7.52	7.90	7.62	5.19	143.32
Bohol	1.000	44.60	41.00	22.66	24.54	29.41	14.60	26.84	0.00	0.00					0.00	15.57	0.00	0.00	45.27	39.92	26.60	50.00	49.90	18.17	43.13	19.02	9.58	32.56	0.00	0.00	32.98	30.14	37.86	45.81	34.56	58.69	56.09	849.45
Cebu	1.000	10.37	10.18	6.00	7.25	4.21	0.00	0.00								4.63	4.00	11.17	9.14	10.39	2.84	5.23	4.30	8.74	10.52	9.90	0.00	0.00	0.00		3.37	9.35	8.77	5.94	4.00	9.25	8.43	167.99
Negros Oriental	0.769	24.28	28.71	28.41	18.37	8.55	0.72							14.93	21.02	43.88	31.84	16.04	15.01	16.26	21.04	16.55	14.19	20.54	13.87	1.45	0.00	0.00	2.21	12.98	25.22	28.28	11.81	22.58	14.66	10.35	16.25	499.99
Siquijor	1.000	0.38	0.33	0.39	0.34	0.31	0.13	0.03								0.72	1.21	0.86	0.34	0.39	0.70	0.89	1.10	0.63	1.16	0.90	0.28	0.03	0.00		0.29	0.32	0.40	0.23	0.05	0.47	0.54	13.44
WRR-VIII																																						**2,320**
Biliran	1.000	2.15	2.97	6.48	6.19	4.01	4.42	4.66	1.05	0.00						0.84	4.60	3.64	4.46	3.47	5.37	3.60	2.58	2.47	2.84	3.73	0.67	0.63				0.00	3.71	6.91	5.79	4.91	0.02	92.16
Northern Leyte	1.000	#####	#####	49.96	59.42	20.21	19.82	0.00	0.00	0.00						30.49	25.88	#####	81.31	90.98	20.29	25.99	42.22	79.44	89.70	94.88	1.09	32.99				49.51	14.84	45.38	32.01	87.86	41.70	1,356.36
Southern Leyte	1.000	11.60	11.83	5.62	5.28	5.67	0.00	0.00	0.00	0.93	7.03	13.83	10.56	9.38	5.35	10.50	2.91	9.33	12.90	11.56	4.80	2.78	0.65									5.43	5.31	6.04	2.45	9.65	5.54	176.93
Northern Samar	1.000	4.15	5.09	4.29	7.72	7.45	5.52	4.10	3.10	0.59	4.66	9.18	11.95	9.19	7.76	7.55	8.58	7.28	4.40	3.03	0.24	0.39	0.30									0.00	2.45	1.78	3.05	0.00	3.33	127.12
Weatern Samar	1.000	0.88	29.84	12.01	30.81	29.75	22.03	12.89	6.80	2.36	16.75	32.95	35.80	32.94	3.20	17.87	16.20	6.95	13.71	7.47	9.04	15.13	0.00									0.00	9.02	23.76	6.43	15.86	12.37	422.82
Eastern Samar	1.000	3.99	9.46	5.91	9.75	6.89	6.97	3.29	2.14	0.74	5.71	11.22	10.10	8.97	4.51	6.11	7.10	3.33	5.49	4.13	4.00	4.42	1.56									0.00	2.20	6.68	1.70	4.01	4.06	144.45
WRR-IX																																						**1,560**
Zamboanga del Norte	1.000	5.77	8.52	5.47	4.57	4.50	2.20	1.17	0.01		4.16	5.39	5.58	6.38	9.81	5.42	6.13	4.85	5.56	4.02	4.98	4.05	3.53	0.00	0.00	0.00			0.00	0.00	2.46	2.13	4.24	0.12	0.98	8.45	4.70	125.12
Zamboanga del Sur	1.000	46.04	44.83	45.28	33.83	23.67	11.56	6.13	0.05		18.93	37.48	39.67	46.65	45.45	22.90	19.70	18.62	14.45	20.84	4.98	18.88	3.50	0.00	0.00	0.00			0.00	0.22	14.07	9.76	23.91	11.61	14.62	17.83	20.59	636.06
Zamboanga Sibugay	1.000	19.92	23.71	19.38	23.56	16.49	8.05	4.26	0.03		13.39	11.03	10.79	11.54	21.37	19.14	19.66	13.62	16.58	8.93	13.82	11.18	12.70	0.00	0.00	0.00			0.26	0.00	9.89	12.88	16.73	2.20	8.61	30.87	20.04	400.65
Misamis Occidental	1.000	25.80	26.30	28.38	27.09	26.17	14.66	20.43	10.88	2.07						6.10	16.70	19.72	8.84	9.14	7.53	5.67	11.14	6.88	16.70	13.71	13.01	0.00	0.00	0.00		0.00	1.91	14.11	5.11	1.37	2.49	341.90
Basilan	1.000	0.86	0.88	0.95	0.91	0.88	0.65	0.68	0.36	0.07						0.03	0.09	0.10	0.04	0.04	0.03	0.04	0.06	0.07	0.05	0.03	0.00	0.00	0.00	0.00		0.15	0.39	0.34	0.59	0.53	0.19	9.01
Sulu	1.000	2.83	2.88	3.11	2.03	2.86	2.12	1.72	1.19	0.23						0.11	0.18	0.39	0.16	0.11	0.27	0.16	0.17	0.28	0.22	0.26	0.23	0.16	0.00	0.00		1.31	0.98	1.74	2.76	2.39	0.49	31.31
Tawi-Tawi	1.000	1.19	1.56	1.69	1.24	1.55	0.77	0.70	0.64	0.12						0.06	0.11	0.17	0.11	0.02	0.11	0.09	0.08	0.12	0.13	0.11	0.10	0.07	0.01	0.00		0.71	0.37	1.36	1.07	1.30	0.42	15.97

WRR-X																																								**2,166**
Bukidnon	0.348	25.25	25.89	18.90	19.68	24.02	9.33	1.97	3.79	1.60	2.29			0.00	0.00	2.53	8.69	3.49	4.23	1.30	6.61	5.02	10.61	15.81	10.17	7.69	0.00	0.00	0.00	0.00	0.00	0.00	5.87	5.94	10.12	20.33	6.93	258.08
Camiguin	1.000	0.30	0.32	0.30	0.32	0.74	0.55	0.58	0.31	0.06						0.67	0.77	0.81	0.37	0.52	0.97	0.58	0.69	0.70	0.88	0.74	0.61	0.57	0.00	0.00		0.00	0.65	0.43	0.72	0.21	0.73	15.08
Lanao del Norte	0.082	1.83	1.33	1.35	1.48	0.94	1.28	0.00	1.76	0.95	0.00	0.00				0.68	0.72	0.50	2.11	0.86	0.66	1.52	2.44	1.59	1.85	0.28	0.42	0.00	0.00	0.00	0.00	0.23	0.00	2.13	1.98	2.19	1.22	32.30
Misamis Oriental	0.999	16.02	10.06	11.14	7.38	11.08	9.11	15.72	0.00	0.00						4.54	5.07	14.91	10.66	8.58	7.09	14.52	11.56	4.17	12.53	7.63	7.97	6.86	0.00	0.00		5.37	13.61	19.01	9.73	10.30	19.69	274.32
Compostela Valley	0.523	7.78	7.45	19.61	0.00	18.11	1.85	4.40	0.00	0.00						0.30	9.45	19.00	8.91	6.07	8.03	4.58	8.90	7.47	11.19	10.44	8.45	4.77	0.00	0.00		0.00	3.23	10.27	17.72	4.50	5.26	207.72
Davao del Norte	0.007	0.12	0.14	0.19	0.20	0.35	0.34	0.36	0.19	0.00						0.00	0.11	0.21	0.12	0.15	0.22	0.27	0.24	0.33	0.24	0.21	0.04	0.00	0.00	0.00		0.00	0.10	0.18	0.03	0.27	0.34	4.96
Davao Oriental	0.051	1.35	1.37	1.48	1.41	0.90	1.01	1.06	0.00	0.11						0.35	0.98	0.88	0.58	0.45	0.71	0.77	0.71	0.91	1.06	0.28	0.09	0.00	0.00	0.00		0.00	0.43	0.49	0.15	0.39	0.61	18.54
Agusan del Norte	0.973	19.61	27.13	33.59	32.12	31.02	22.97	16.07	12.89	2.45						5.44	24.50	37.04	11.28	7.66	9.18	3.00	16.92	8.43	17.69	17.04	5.45	0.00	0.00	0.00		0.00	4.68	11.14	4.36	2.76	7.29	391.74
Agusan del Sur	0.889	57.95	59.07	63.74	60.95	58.87	43.59	45.90	24.45	0.00						0.00	30.77	44.27	27.97	0.00	18.23	29.38	18.19	28.29	23.54	19.05	9.92	0.00	0.00	0.00		0.00	8.90	33.38	18.87	8.12	10.02	743.40
Dinagat Islands	1.000	0.58	1.32	0.78	1.36	0.86	0.97	0.41	0.54	0.10						0.64	1.26	0.88	0.82	0.91	0.13	1.59	0.94	0.97	1.55	1.31	0.17	0.13	0.00	0.00		0.00	0.12	0.54	0.61	1.08	0.16	20.76
Surigao del Norte	1.000	3.60	8.50	4.40	6.72	4.98	6.26	4.32	1.01	0.00						4.42	10.54	6.38	5.65	10.62	1.18	10.36	8.99	7.99	13.12	8.59	0.81	0.81	0.00	0.00		0.00	0.00	5.08	2.66	3.99	3.91	144.89
Surigao del Sur	0.104	1.82	1.34	1.73	0.58	3.55	0.00	2.59	0.00	0.00						0.00	2.41	4.26	1.22	1.00	2.06	2.97	2.03	4.85	0.97	2.14	3.04	1.57	0.00	0.00		2.02	2.67	2.80	1.08	0.86	4.25	53.82
WRR-XI																																								**3,102**
Bukidnon	0.046	3.34	3.42	2.50	2.60	3.18	1.23	0.26	0.50	0.21	0.30			0.00	0.00	0.33	1.15	0.46	0.56	0.17	0.87	0.66	1.40	2.09	1.34	1.02	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.79	1.34	2.69	0.92	34.11
Compostela Valley	0.477	7.09	6.79	17.89	0.00	16.51	1.69	4.01	0.00	0.00						0.27	8.62	17.32	8.12	5.53	7.32	4.17	8.12	6.82	10.20	9.52	7.71	4.35	0.00	0.00		0.00	2.94	9.37	16.16	4.10	4.80	189.45
Davao del Norte	0.989	16.71	20.27	27.14	28.68	48.99	47.86	50.48	26.89	0.00						0.00	15.10	30.05	17.00	21.23	31.27	38.20	34.38	47.03	33.66	29.66	5.16	0.00	0.00	0.00		0.00	14.36	25.29	4.81	38.07	48.35	700.65
Davao del Sur	0.998	17.94	47.07	50.79	39.27	15.65	34.73	21.36	9.77	0.00						10.74	28.38	33.30	25.21	32.17	23.28	42.35	13.50	46.71	21.47	6.68	16.46	0.00	0.00	0.00		4.04	24.50	42.90	45.42	38.43	22.63	714.76
Davao Oriental	0.949	25.05	25.54	27.56	26.32	16.69	18.82	19.76	0.00	2.00						6.42	18.18	16.43	10.80	8.40	13.20	14.29	13.26	16.88	19.81	5.27	1.59	0.00	0.00	0.00		0.00	8.06	9.12	2.85	7.23	11.39	344.92
Sarangani	0.869	4.52	0.00	0.56	0.00	0.00		0.00	4.49	6.44	3.57	6.96	10.51	5.85	4.09	9.26	8.17	4.86	2.37	0.00	0.00	0.51	1.00	0.00		0.00	0.71	2.52	2.70	6.40	4.37	4.27	3.80	3.08	5.33	4.26	0.98	111.56
South Cotabato	0.340	14.06	10.25	0.00	3.13	0.25		6.86	2.77	19.10	10.56	26.58	31.23	19.73	16.81	12.76	9.42	11.42	6.91	0.00	0.00	0.00	0.00	0.00		0.00	5.75	14.97	3.98	11.03	12.36	16.47	12.71	13.15	14.64	12.08	18.85	337.83
North Cotabato	0.038	2.82	0.77	0.00	0.00	0.00		1.30	1.30	1.97	3.70	5.14	4.28	3.11	2.26	2.83	1.15	1.18	2.64	0.72	0.00	0.02	0.00	0.00		0.00	0.87	1.73	0.52	2.50	2.53	2.62	2.10	2.64	1.73	2.64	3.80	58.88
Sultan Kudarat	0.052	1.93	0.21	0.00	0.00	0.00		0.00	2.18	3.12	0.90	3.26	5.12	2.58	1.16	4.51	2.67	1.32	0.11	0.00	0.00	0.00	0.48	0.00		0.00	0.00	0.40	0.84	2.11	1.22	1.32	0.62	2.77	2.31	2.77	0.57	44.49
Agusan del Norte	0.027	0.54	0.75	0.93	0.89	0.86	0.64	0.45	0.36	0.07						0.15	0.68	1.03	0.31	0.21	0.25	0.08	0.47	0.23	0.49	0.47	0.15	0.00	0.00	0.00		0.00	0.13	0.31	0.12	0.08	0.20	10.87
Agusan del Sur	0.109	7.10	7.24	7.82	7.47	7.22	5.34	5.63	3.00	0.00						0.00	3.77	5.43	3.43	0.00	2.23	3.60	2.23	3.47	2.89	2.34	1.22	0.00	0.00	0.00		0.00	1.09	4.09	2.31	1.00	1.23	91.15
Surigao del Sur	0.896	15.66	11.56	14.91	5.00	30.62	0.00	22.36	0.00	0.00						0.00	20.72	36.74	10.54	8.65	17.78	25.55	17.50	41.77	8.35	18.40	26.19	13.52	0.00	0.00		17.39	22.97	24.16	9.32	7.41	36.62	463.66
WRR-XII																																								**4,438**
Bukidnon	0.606	43.97	45.09	32.91	34.28	41.83	16.24	3.43	6.60	2.79	3.99			0.00	0.00	4.41	15.13	6.08	7.36	2.26	11.51	8.75	18.48	27.54	17.72	13.39	0.00	0.00	0.00	0.00	0.00	0.00	10.22	10.35	17.62	35.40	12.07	449.41
Lanao del Norte	0.918	20.43	14.88	15.16	16.60	10.48	14.28	0.00	19.71	10.69	0.00	0.03				7.61	8.05	5.62	23.60	9.65	7.37	16.99	27.31	17.85	20.70	3.19	4.71	0.00	0.00	0.00	0.00	2.57	0.00	23.82	22.22	24.46	13.62	361.61
Misamis Oriental	0.001	0.02	0.01	0.01	0.01	0.01	0.01	0.02	0.00	0.00						0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.00	0.00		0.01	0.01	0.02	0.01	0.01	0.02	0.27
Davao del Norte	0.004	0.07	0.08	0.11	0.12	0.20	0.19	0.20	0.11	0.00						0.00	0.06	0.12	0.07	0.09	0.13	0.15	0.14	0.19	0.14	0.12	0.02	0.00	0.00	0.00		0.00	0.06	0.10	0.02	0.15	0.20	2.83
Davao del Sur	0.002	0.04	0.09	0.10	0.08	0.03	0.07	0.04	0.02	0.00						0.02	0.06	0.07	0.05	0.06	0.05	0.08	0.03	0.09	0.04	0.01	0.03	0.00	0.00	0.00		0.01	0.05	0.09	0.09	0.08	0.05	1.43
Sarangani	0.131	0.68	0.00	0.08	0.00	0.00		0.00	0.68	0.97	0.54	1.05	1.58	0.88	0.62	1.40	1.23	0.73	0.36	0.00	0.00	0.08	0.15	0.00		0.00	0.11	0.38	0.41	0.96	0.66	0.64	0.57	0.46	0.80	0.64	0.15	16.82
South Cotabato	0.660	27.29	19.89	0.00	6.08	0.49		13.31	5.37	37.08	20.51	51.59	60.63	38.30	32.62	24.77	18.29	22.18	13.42	0.00	0.00	0.00	0.00	0.00		0.00	11.16	29.06	7.72	21.41	24.00	31.98	24.66	25.53	28.41	23.45	36.59	655.79
North Cotabato	0.962	71.36	19.60	0.00	0.00	0.00		32.94	32.79	49.95	93.74	#####	#####	78.76	57.30	71.60	29.16	29.85	66.74	18.30	0.00	0.53	0.00	0.00		0.00	22.13	43.77	13.11	63.38	64.06	66.44	53.19	66.96	43.72	66.78	96.08	1,490.51
Sultan Kudarat	0.948	35.19	3.75	0.00	0.00	0.00		0.00	39.66	56.97	16.33	59.38	93.26	47.09	21.07	82.20	48.75	23.98	2.00	0.00	0.00	0.00	8.84	0.00		0.00	0.00	7.35	15.39	38.39	22.29	24.10	11.29	50.59	42.08	50.59	10.48	811.02
Agusan del Sur	0.002	0.13	0.13	0.14	0.14	0.13	0.10	0.10	0.06	0.00						0.00	0.07	0.10	0.06	0.00	0.04	0.07	0.04	0.06	0.05	0.04	0.02	0.00	0.00	0.00		0.00	0.02	0.08	0.04	0.02	0.02	1.67
Lanao del Sur	1.000	13.78	3.02	0.00	0.00	0.00		0.72	0.48	0.11	0.15	1.71	2.13	1.69	0.82	1.14	0.06	0.79	0.49	0.00	0.00	0.00	0.00	0.00		0.00	0.00	2.15	0.00	6.88	6.37	6.93	3.35	6.87	8.62	11.63	18.54	98.42
Maguindanao	1.000	55.38	18.33	0.00	0.00	0.00		2.67	2.70	2.23	3.21	8.05	9.01	6.54	5.43	3.67	2.02	1.96	4.11	2.74	0.00	0.57	0.00	0.00		0.00	16.71	33.80	0.00	48.27	42.59	52.59	34.45	40.94	28.62	47.20	74.07	547.87
Total	80.000																																							**49,901**

Source: JICA Survey Team

Table F 33 Irrigation Water Demands of Surface Water Systems by WRR in 2030
(Based on Irrigated Areas Projected under NIMP 2020-2030)

Region/	Area	Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			Annual
Province	Rate	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
WRR-I																																						**2,158**
Abra	0.991	20.85	21.25	22.94	22.12	21.37	15.84	16.86	8.98	0.00							8.18	15.98	21.23	11.47	2.65	5.91	7.40	6.81	7.24	7.65	15.96	20.87	7.92	0.00	0.00	9.01	17.91	23.49	20.21	1.28	20.88	382.25
Apayao	0.003	0.04	0.04	0.04	0.04	0.04	0.03	0.02	0.02	0.00							0.00	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.03	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.03	0.04	0.58
Benguet	0.467	7.92	8.07	8.71	8.38	8.10	6.00	6.38	3.40	0.65			0.00	5.48	5.84	3.95	3.00	4.20	3.19	3.07	1.98	1.28	2.43	1.90	0.00	0.00	0.00					3.45	6.85	1.56	7.70	6.66	4.16	124.31
Kalinga	0.006	0.19	0.20	0.21	0.20	0.20	0.15	0.16	0.08	0.02							0.00	0.11	0.12	0.09	0.03	0.10	0.05	0.10	0.07	0.09	0.00	0.10	0.13	0.00	0.00	0.09	0.17	0.22	0.19	0.16	0.20	3.42
Mt. Province	0.140	1.76	1.70	0.25	1.19	0.68	0.04							1.40	0.82	1.80	1.98	1.01	1.41	1.00	0.00	0.17	0.10	0.74	0.65	0.20	0.00	0.00	0.48	1.91	1.03	0.03	0.00	1.11	0.53	0.91	1.91	24.80
Ilocos Norte	0.984	41.91	42.72	46.11	44.41	39.52	22.50	18.04	3.12									21.50	56.97	57.47	65.66	30.79	26.13	26.63	48.69	3.59	28.29	7.65	0.00	0.00	0.00	23.86	43.87	19.38	43.31	4.56	42.22	808.92
Ilocos Sur	1.000	26.69	27.20	29.36	28.19	25.10	14.29	11.40	1.97									0.00	24.80	12.47	32.00	12.56	19.51	19.40	47.64	19.65	14.60	29.28	0.00	14.64	1.73	0.00	28.08	35.14	27.72	22.70	26.96	553.09
La Union	0.947	14.05	14.32	15.45	14.83	13.20	7.52	6.00	1.04									0.63	7.19	16.53	7.88	7.80	3.90	9.10	6.97	9.10	0.43	9.84	12.54	0.00	0.00	8.10	14.85	18.57	14.62	11.95	14.19	260.62
WRR-II																																						**7,689**
Abra	0.009	0.19	0.19	0.21	0.20	0.19	0.14	0.15	0.08	0.00							0.07	0.15	0.19	0.10	0.02	0.05	0.07	0.06	0.07	0.07	0.14	0.19	0.07	0.00	0.00	0.08	0.16	0.21	0.18	0.01	0.19	3.47
Apayao	0.997	11.66	11.88	12.82	12.38	11.96	8.87	7.19	5.06	0.96							0.00	9.68	10.82	8.27	6.95	6.65	5.97	6.91	4.03	3.31	5.02	10.34	2.23	3.53	0.42	5.16	0.00	0.00	0.00	9.83	11.70	193.62
Benguet	0.007	0.12	0.12	0.13	0.13	0.12	0.09	0.10	0.05	0.01			0.00	0.08	0.09	0.06	0.04	0.06	0.05	0.05	0.03	0.02	0.04	0.03	0.00	0.00	0.00					0.05	0.10	0.02	0.12	0.10	0.06	1.86
Ifugao	0.993			8.74	10.99	20.51	13.64	17.58	19.15	19.12	22.60	15.98	15.33	18.26	11.43	7.79	0.00	0.00				0.00	12.42	7.98	3.40	0.89	0.00	5.99	0.39	12.63	12.22	1.56	7.91	0.00	0.00	0.00		266.50
Kalinga	0.994	32.01	32.59	35.21	33.94	32.84	24.40	25.97	13.85	2.65							0.22	18.05	20.60	15.41	5.56	15.85	8.50	16.18	11.25	14.53	0.00	15.85	20.79	0.00		14.12	28.06	36.80	31.50	27.23	32.31	566.29
Mt. Province	0.858	10.78	10.41	1.51	7.27	4.15	0.26							8.57	5.03	11.01	12.12	6.17	8.63	6.15	0.00	1.06	0.63	4.51	3.99	1.23	0.00	0.00	2.93	11.71	6.30	0.20	0.00	6.79	3.25	5.59	11.71	151.98
Ilocos Norte	0.016	0.68	0.69	0.75	0.72	0.64	0.37	0.29	0.05									0.35	0.93	0.93	1.07	0.50	0.42	0.43	0.79	0.06	0.46	0.12	0.00	0.00	0.00	0.39	0.71	0.32	0.70	0.07	0.69	13.15
Batanes	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00								0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cagayan	1.000	74.83	91.52	#####	#####	91.79	83.41	88.93	47.39	0.00							41.59	#####	#####	97.08	95.93	83.32	65.88	72.94	50.94	78.31	99.45	35.10	0.00	0.00	0.00	0.00	#####	#####	58.81	27.95	89.40	2,090.01
Isabela	1.000	#####	#####	#####	#####	#####	#####	#####	#####	0.00	31.61	0.24					2.32	#####	#####	#####	#####	77.61	#####	#####	93.41	47.20	0.00	#####	0.00	0.00	0.00	85.82	0.00	26.64	83.44	33.14	#####	3,390.87
Nueva Vizcaya	0.873	34.86	35.51	38.34	36.99	35.77	26.53	28.27	15.07	2.87							5.74	41.49	44.90	5.56	9.92	18.26	10.08	4.52	16.50	9.91	7.64	0.00	0.00	10.39	0.00	0.00	34.01	43.41	21.67	0.00	4.28	542.50
Quirino	0.997	13.78	17.84	15.02	18.55	17.93	13.29	14.16	7.54	0.00							3.57	20.51	17.44	14.10	4.61	6.01	7.16	7.87	5.54	6.61	6.86	0.00	4.74	0.00	0.00	8.67	7.08	21.45	17.56	6.58	17.52	301.98
Aurora	0.410	6.74	5.12	5.87	5.69	7.20	5.38	8.71	10.69	8.41	7.46	0.00	0.00				0.00	5.17	8.39	4.85	8.43	3.91	3.84	7.50	8.01	5.83	0.31	2.67	0.00	0.16	0.00				3.96	7.86	6.79	148.93
Nueva Ecija	0.005	0.57	1.00	1.14	0.90	1.14	0.88	1.09	0.54	0.70	0.16	0.24	0.05			0.09	0.02	0.71	0.09	0.47	0.74	0.11	0.33	0.66	0.57	0.09	0.32	0.14	0.75	0.10	0.00	0.48	0.63	0.69	0.86	0.99	0.83	18.08
WRR-III																																						**10,509**
Benguet	0.526	8.92	9.08	9.81	9.44	9.12	6.76	7.19	3.83	0.73			0.00	6.17	6.57	4.44	3.38	4.73	3.60	3.46	2.24	1.44	2.73	2.15	0.00	0.00	0.00					3.89	7.71	1.76	8.67	7.51	4.68	140.02
Ifugao	0.007			0.06	0.08	0.14	0.10	0.12	0.13	0.13	0.16	0.11	0.11	0.13	0.08	0.05	0.00	0.00				0.00	0.09	0.06	0.02	0.01	0.00	0.04	0.00	0.09	0.09	0.01	0.06	0.00	0.00	0.00		1.88
Mt. Province	0.002	0.03	0.02	0.00	0.02	0.01	0.00							0.02	0.01	0.03	0.03	0.01	0.02	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.03	0.01	0.00	0.00	0.02	0.01	0.01	0.03	0.35
La Union	0.053	0.79	0.80	0.86	0.83	0.74	0.42	0.34	0.06									0.04	0.40	0.93	0.44	0.44	0.22	0.51	0.39	0.51	0.02	0.55	0.70	0.00	0.00	0.45	0.83	1.04	0.82	0.67	0.79	14.59
Pangasinan	1.000	#####	#####	#####	#####	#####	76.47	79.09	48.64	0.00	0.00							0.00	0.00	43.94	40.20	78.75	96.62	72.10	72.71	73.83	#####	50.11	#####	0.00	85.91	73.05	93.64	#####	#####	#####	#####	2,307.48
Nueva Vizcaya	0.127	5.07	5.17	5.58	5.38	5.20	3.86	4.11	2.19	0.42							0.84	6.04	6.53	0.81	1.44	2.66	1.47	0.66	2.40	1.44	1.11	0.00	0.00	1.51	0.00	0.00	4.95	6.31	3.15	0.00	0.62	78.92
Quirino	0.003	0.04	0.05	0.05	0.06	0.05	0.04	0.04	0.02	0.00							0.01	0.06	0.05	0.04	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.01	0.00	0.00	0.03	0.02	0.06	0.05	0.02	0.05	0.91
Aurora	0.548	9.00	6.84	7.84	7.61	9.63	7.19	11.64	14.29	11.24	9.97	0.00	0.00				0.00	6.91	11.22	6.49	11.26	5.22	5.13	10.02	10.71	7.79	0.42	3.56	0.00	0.22	0.00				5.29	10.51	9.08	199.06
Bataan	1.000	19.04	19.41	20.94	20.10	19.41	14.37	15.24	8.12	1.54								0.00	5.91	10.38	11.20	9.15	6.95	7.98	16.94	14.76	5.88	6.27	4.44	8.32	0.00	2.33	13.97	13.24	19.46	15.87	13.55	324.77
Bulacan	0.978	34.56	35.23	38.01	36.56	23.54	26.15	27.79	14.81	0.00								14.17	30.45	17.80	25.29	0.00	19.06	25.28	9.32	19.26	53.28	13.61	10.42	0.00	3.41	0.00	10.94	40.47	14.99	16.43	34.41	595.25
Nueva Ecija	0.994	#####	#####	#####	#####	#####	#####	#####	#####	#####	32.49	48.15	9.13			18.67	4.01	#####	17.04	92.87	#####	21.39	65.91	#####	#####	17.44	63.17	27.84	#####	19.36	0.00	95.02	#####	#####	#####	#####	#####	3,594.10
Pampanga	1.000	77.51	79.01	85.26	82.10	79.30	58.71	62.58	33.34	6.34								6.33	38.48	63.55	35.72	31.28	23.67	5.17	19.92	49.43	24.97	13.05	33.04	17.89	25.17	36.56	70.08	90.57	75.92	64.61	77.08	1,366.66
Tarlac	1.000	77.35	78.85	85.08	82.03	79.23	58.65	62.57	33.33	6.34								8.18	64.00	74.46	72.04	18.93	0.00	33.57	84.79	57.80	24.95	5.26	11.60	26.29	9.83	25.77	79.57	99.96	79.09	64.38	56.94	1,460.85
Zambales	1.000	21.12	21.53	23.23	22.36	21.59	15.97	16.98	9.04	0.00								0.00	20.25	29.96	15.23	9.41	24.30	11.84	3.38	16.46	14.07	0.54	19.34	11.81	0.00	0.00	14.54	24.24	16.38	17.58	21.00	422.14
Rizal	0.021	0.13	0.03	0.10	0.14	0.13	0.10	0.10	0.00	0.01				0.00	0.04	0.14	0.07	0.02	0.03	0.05	0.07	0.07	0.05	0.05	0.00	0.02	0.00	0.00				0.00	0.08	0.06	0.12	0.07	0.13	1.80

WRR-IV																																						**3,877**
Aurora	0.042	0.69	0.52	0.60	0.58	0.74	0.55	0.89	1.10	0.86	0.76	0.00	0.00				0.00	0.53	0.86	0.50	0.86	0.40	0.39	0.77	0.82	0.60	0.03	0.27	0.00	0.02	0.00				0.41	0.81	0.70	15.26
Bulacan	0.022	0.78	0.79	0.86	0.82	0.53	0.59	0.63	0.33	0.00								0.32	0.69	0.40	0.57	0.00	0.43	0.57	0.21	0.43	1.20	0.31	0.23	0.00	0.08	0.00	0.25	0.91	0.34	0.37	0.77	13.39
Nueva Ecija	0.001	0.11	0.20	0.23	0.18	0.23	0.18	0.22	0.11	0.14	0.03	0.05	0.01			0.02	0.00	0.14	0.02	0.09	0.15	0.02	0.07	0.13	0.11	0.02	0.06	0.03	0.15	0.02	0.00	0.10	0.13	0.14	0.17	0.20	0.17	3.62
Batangas	1.000	4.42	4.48	6.60	6.33	6.11	4.52	4.80	2.56	0.49				0.89	4.41	5.82	2.94	1.96	3.92	0.13	4.25	2.21	2.01	1.20	0.19	0.00	0.00	0.00				0.00	3.57	4.06	5.22	0.92	5.96	89.94
Cavite	1.000	19.99	20.38	21.99	21.12	20.40	15.10	16.04	8.55	1.63				8.97	19.18	20.00	3.00	0.09	10.03	5.08	8.21	17.37	6.86	13.61	21.69	5.25	0.00	0.00				0.00	1.31	5.91	17.43	16.67	8.51	334.35
Laguna	1.000	30.62	31.21	33.68	32.32	31.21	23.11	24.55	13.08	0.00				12.01	12.58	22.75	14.49	22.68	12.55	12.81	15.05	12.39	14.06	11.13	0.94	0.00	0.00	0.00				0.00	0.00	16.28	5.76	6.67	30.49	442.41
Quezon	0.947	4.80	74.51	65.63	77.00	50.87	55.07	43.56	2.21	5.91				8.29	44.32	78.71	44.43	50.95	20.39	9.92	36.28	29.87	54.24	77.26	22.99	0.00	0.00	0.00				19.27	15.49	40.83	22.86	40.20	9.87	1,005.74
Rizal	0.979	6.03	1.55	4.50	6.36	6.15	4.55	4.83	0.00	0.49				0.00	2.03	6.45	3.45	0.96	1.17	2.37	3.44	3.05	2.38	2.37	0.00	1.10	0.00	0.00				0.00	3.63	2.59	5.38	3.07	6.15	84.05
Marinduque	1.000	1.55	0.82	2.49	2.58	1.83	2.07	2.88	2.78	2.80	1.92	0.38	0.19	0.88	2.73	3.88	1.38	1.05	1.50	0.71	2.44	1.61	1.77	1.51	0.83	0.25	0.00	0.05							1.22	0.35	3.13	47.59
Occidental Mindoro	1.000	30.59	31.18	33.65	32.24	31.14	23.06	24.40	13.00	2.47								0.00	19.26	35.84	12.23	16.26	0.00	1.39	17.00	17.39	8.38	2.64	24.39	0.00	5.33	6.27	6.17	39.59	31.35	16.48	24.78	506.48
Oriental Mindoro	1.000	33.39	32.24	38.50	39.99	39.46	31.99	44.64	35.17	28.28	29.89	1.22	2.92	19.12	11.16	28.65	15.62	7.43	17.81	4.69	20.31	14.19	13.86	7.30	15.79	0.00	2.97	0.00							5.59	24.55	26.92	593.64
Palawan	1.000	33.46	30.17	36.08	37.40	36.90	29.92	41.64	40.15	40.42	27.66	14.15	2.70	22.92	23.85	42.82	26.41	18.98	0.63	12.65	7.83	17.71	21.28	14.20	1.23	0.42	0.00	0.00							17.56	15.01	30.77	644.91
Romblon	1.000	3.69	4.09	4.88	5.07	5.00	4.05	5.65	5.45	5.49	3.76	1.93	0.37	2.57	4.96	7.05	3.94	4.23	1.92	2.14	1.90	1.43	0.60	1.89	2.10	0.93	0.00	0.00							1.46	3.40	6.13	96.06
WRR-V																																						**4,197**
Quezon	0.053	0.27	4.17	3.67	4.31	2.85	3.08	2.44	0.12	0.33				0.46	2.48	4.41	2.49	2.85	1.14	0.56	2.03	1.67	3.04	4.32	1.29	0.00	0.00	0.00				1.08	0.87	2.29	1.28	2.25	0.55	56.29
Albay	1.000	44.89	8.31	37.70	31.52	35.48	30.79	55.87	51.50	13.06	19.07	2.91		14.41	55.66	41.29	53.58	19.97	40.39	28.18	17.01	15.20	28.74	8.52	18.14	8.63	0.00	0.00							0.00	42.56	20.69	744.09
Camarines Norte	1.000	11.85	5.64	9.61	13.22	6.34	10.57	14.76	10.93	3.08	2.59	0.77		7.17	9.49	12.35	2.30	3.46	6.26	6.16	6.07	3.17	7.88	2.66	3.57	0.00	0.00	0.00							0.00	1.86	12.93	174.68
Camarines Sur	1.000	60.06	66.68	83.51	89.26	#####	85.89	#####	#####	85.00	40.95	0.00		43.00	82.47	83.86	84.05	73.28	69.77	59.09	33.15	69.67	#####	38.34	30.73	0.00	0.00	0.00	0.00						0.00	27.48	85.72	1,735.62
Catanduanes	1.000	4.12	0.66	4.43	3.48	2.06	3.68	5.12	1.97	3.63	1.74	0.27		0.00	4.69	4.89	3.59	2.57	3.58	3.04	0.70	2.14	2.56	1.37	3.94	1.04	0.00	0.09							0.00	1.85	2.83	70.04
Masbate	1.000	40.77	52.41	41.97	64.97	66.27	26.99	72.20	17.66	45.56	21.87	3.34		22.43	26.02	70.89	63.67	11.55	29.38	23.54	35.38	27.92	19.01	39.30	28.67	5.04	0.00	1.27							0.00	19.63	78.59	956.32
Sorsogon	1.000	4.12	27.20	26.53	26.06	34.39	11.67	37.58	13.26	26.68	12.81	0.00		1.72	11.59	41.22	25.12	10.52	12.22	5.96	16.23	16.79	9.57	22.60	9.53	0.10	0.00	0.67							0.00	15.27	40.88	460.32
WRR-VI																																						**3,349**
Aklan	1.000	12.34	11.96	11.73	7.64	3.55	0.29							4.33	17.09	15.63	9.95	9.72	4.26	7.95	4.63	7.85	5.04	9.16	5.07	3.85	0.00	0.34	0.00	4.60	10.18	2.77	3.27	5.39	5.26	11.60	4.99	200.43
Antique	1.000	17.93	16.61	9.69	9.23	5.26	0.00	0.02						0.00	0.00	17.94	7.68	3.88	0.00	4.61	5.89	5.78	6.04	4.69	0.00	0.00	0.00	0.00	0.00	0.00	9.90	4.89	4.85	11.22	16.50	17.27	19.00	198.89
Capiz	1.000	21.60	20.77	6.05	13.34	6.16	0.00							16.97	12.19	31.10	10.74	0.00	0.00	0.10	0.00	10.76	15.07	0.00	6.04	0.00	0.00	0.00	0.00	2.31	18.39	4.63	6.62	19.64	9.41	15.11	18.55	265.57
Guimaras	1.000	1.07	0.67	1.01	0.66	0.31	0.00							0.20	0.55	1.53	0.77	0.50	0.24	0.14	0.25	0.43	0.55	0.52	0.73	0.00	0.00	0.00	0.00	0.00	0.97	0.54	0.42	0.00	1.05	0.45	1.15	14.71
Iloilo	1.000	52.86	51.27	27.65	38.70	27.05	13.17	7.08	0.05					30.10	5.19	48.69	26.54	18.82	11.17	12.74	0.00	39.29	54.39	0.00	26.97	3.52	0.00	0.00	0.00	0.00	48.74	21.12	32.66	44.05	28.30	50.76	55.85	776.75
Negros Occidental	0.924	72.49	95.11	94.10	60.78	6.70	2.37							18.15	#####	#####	93.63	37.14	86.93	50.88	62.65	85.59	86.99	45.03	54.75	0.77	0.00	0.00	12.54	33.05	43.83	23.21	85.94	91.42	95.99	92.62	63.12	1,742.46
Negros Oriental	0.231	7.29	8.63	8.53	5.52	2.57	0.21							4.48	6.31	13.18	9.57	4.82	4.51	4.89	6.32	4.97	4.26	6.17	4.17	0.43	0.00	0.00	0.66	3.90	7.58	8.50	3.55	6.78	4.40	3.11	4.88	150.19
WRR-VII																																						**1,653**
Negros Occidental	0.076	5.96	7.82	7.74	5.00	0.55	0.19							1.49	10.28	10.01	7.70	3.06	7.15	4.19	5.15	7.04	7.16	3.70	4.50	0.06	0.00	0.00	1.03	2.72	3.60	1.91	7.07	7.52	7.90	7.62	5.19	143.32
Bohol	1.000	44.60	41.00	22.66	24.54	29.41	14.60	26.84	0.00	0.00					0.00	15.57	0.00	0.00	45.27	39.92	26.60	50.00	49.90	18.17	43.13	19.02	9.58	32.56	0.00	0.00	32.98	30.14	37.86	45.81	34.56	58.69	56.09	849.45
Cebu	1.000	9.14	8.97	5.29	6.39	3.71	0.00	0.00								3.98	3.44	9.60	7.86	8.94	2.44	4.50	3.70	7.52	9.05	8.52	0.00	0.00	0.00		2.97	8.24	7.73	5.23	3.52	8.16	7.43	146.33
Negros Oriental	0.769	24.28	28.71	28.41	18.37	8.55	0.72							14.93	21.02	43.88	31.84	16.04	15.01	16.26	21.04	16.55	14.19	20.54	13.87	1.45	0.00	0.00	2.21	12.98	25.22	28.28	11.81	22.58	14.66	10.35	16.25	499.99
Siquijor	1.000	0.38	0.33	0.39	0.34	0.31	0.13	0.03								0.72	1.21	0.86	0.34	0.39	0.70	0.89	1.10	0.63	1.16	0.90	0.28	0.03	0.00		0.29	0.32	0.40	0.23	0.05	0.47	0.54	13.44
WRR-VIII																																						**2,317**
Biliran	1.000	2.15	2.97	6.48	6.19	4.01	4.42	4.66	1.05	0.00						0.84	4.60	3.64	4.46	3.47	5.37	3.60	2.58	2.47	2.84	3.73	0.67	0.63				0.00	3.71	6.91	5.79	4.91	0.02	92.16
Northern Leyte	1.000	#####	#####	49.96	59.42	20.21	19.82	0.00	0.00	0.00						30.49	25.88	#####	81.31	90.98	20.29	25.99	42.22	79.44	89.70	94.88	1.09	32.99				49.51	14.84	45.38	32.01	87.86	41.70	1,356.36
Southern Leyte	1.000	11.60	11.83	5.62	5.28	5.67	0.00	0.00	0.00	0.93	7.03	13.83	10.56	9.38	5.35	10.50	2.91	9.33	12.90	11.56	4.80	2.78	0.65									5.43	5.31	6.04	2.45	9.65	5.54	176.93
Northern Samar	1.000	4.15	5.09	4.29	7.72	7.45	5.52	4.10	3.10	0.59	4.66	9.18	11.95	9.19	7.76	7.55	8.58	7.28	4.40	3.03	0.24	0.39	0.30									0.00	2.45	1.78	3.05	0.00	3.33	127.12
Weatern Samar	1.000	0.87	29.59	11.90	30.55	29.50	21.84	12.78	6.75	2.34	16.63	32.73	35.56	32.71	3.18	17.74	16.09	6.91	13.61	7.42	8.98	15.03	0.00									0.00	8.94	23.56	6.37	15.73	12.27	419.59
Eastern Samar	1.000	3.99	9.46	5.91	9.75	6.89	6.97	3.29	2.14	0.74	5.71	11.22	10.10	8.97	4.51	6.11	7.10	3.33	5.49	4.13	4.00	4.42	1.56									0.00	2.20	6.68	1.70	4.01	4.06	144.45
WRR-IX																																						**1,553**
Zamboanga del Norte	1.000	5.77	8.52	5.47	4.57	4.50	2.20	1.17	0.01		4.16	5.39	5.58	6.38	9.81	5.42	6.13	4.85	5.56	4.02	4.98	4.05	3.53	0.00	0.00	0.00			0.00	0.00	2.46	2.13	4.24	0.12	0.98	8.45	4.70	125.12
Zamboanga del Sur	1.000	45.91	44.70	45.15	33.73	23.60	11.53	6.11	0.05		18.88	37.38	39.57	46.53	45.32	22.83	19.65	18.57	14.41	20.78	4.96	18.83	3.49	0.00	0.00	0.00			0.00	0.22	14.03	9.73	23.85	11.58	14.58	17.78	20.53	634.29
Zamboanga Sibugay	1.000	19.78	23.54	19.24	23.39	16.37	7.99	4.23	0.03		13.29	10.94	10.71	11.45	21.21	18.99	19.51	13.52	16.45	8.86	13.72	11.10	12.60	0.00	0.00	0.00			0.26	0.00	9.82	12.79	16.61	2.19	8.55	30.65	19.89	397.68
Misamis Occidental	1.000	25.80	26.30	28.38	27.09	26.17	14.66	20.43	10.88	2.07						6.10	16.70	19.72	8.84	9.14	7.53	5.67	11.14	6.88	16.70	13.71	13.01	0.00	0.00	0.00		0.00	1.91	14.11	5.11	1.37	2.49	341.90
Basilan	1.000	0.86	0.88	0.95	0.91	0.88	0.65	0.68	0.36	0.07						0.03	0.09	0.10	0.04	0.04	0.03	0.04	0.06	0.07	0.05	0.03	0.00	0.00	0.00	0.00		0.15	0.39	0.34	0.59	0.53	0.19	9.01
Sulu	1.000	2.61	2.66	2.87	1.87	2.64	1.96	1.59	1.10	0.21						0.10	0.16	0.36	0.15	0.10	0.25	0.15	0.15	0.26	0.20	0.24	0.21	0.14	0.00	0.00		1.21	0.90	1.61	2.55	2.21	0.45	28.94
Tawi-Tawi	1.000	1.19	1.56	1.69	1.24	1.55	0.77	0.70	0.64	0.12						0.06	0.11	0.17	0.11	0.02	0.11	0.09	0.08	0.12	0.13	0.11	0.10	0.07	0.01	0.00		0.71	0.37	1.36	1.07	1.30	0.42	15.97

WRR-X																																							**2,159**
Bukidnon	0.348	25.25	25.89	18.90	19.68	24.02	9.33	1.97	3.79	1.60	2.29			0.00	0.00	2.53	8.69	3.49	4.23	1.30	6.61	5.02	10.61	15.81	10.17	7.69	0.00	0.00	0.00	0.00	0.00	0.00	5.87	5.94	10.12	20.33	6.93	258.08
Camiguin	1.000	0.30	0.32	0.30	0.32	0.74	0.55	0.58	0.31	0.06						0.67	0.77	0.81	0.37	0.52	0.97	0.58	0.69	0.70	0.88	0.74	0.61	0.57	0.00	0.00		0.00	0.65	0.43	0.72	0.21	0.73	15.08
Lanao del Norte	0.082	1.82	1.33	1.35	1.48	0.93	1.27	0.00	1.76	0.95	0.00	0.00				0.68	0.72	0.50	2.10	0.86	0.66	1.51	2.44	1.59	1.85	0.28	0.42	0.00	0.00	0.00	0.00	0.23	0.00	2.12	1.98	2.18	1.21	32.24
Misamis Oriental	0.999	15.84	9.95	11.01	7.30	10.95	9.01	15.54	0.00	0.00						4.48	5.01	14.73	10.53	8.48	7.00	14.34	11.42	4.12	12.38	7.53	7.87	6.77	0.00	0.00		5.31	13.46	18.80	9.62	10.19	19.47	271.13
Compostela Valley	0.523	7.78	7.45	19.61	0.00	18.11	1.85	4.40	0.00	0.00						0.30	9.45	19.00	8.91	6.07	8.03	4.58	8.90	7.47	11.19	10.44	8.45	4.77	0.00	0.00		0.00	3.23	10.27	17.72	4.50	5.26	207.72
Davao del Norte	0.007	0.12	0.14	0.19	0.20	0.35	0.34	0.36	0.19	0.00						0.00	0.11	0.21	0.12	0.15	0.22	0.27	0.24	0.33	0.24	0.21	0.04	0.00	0.00	0.00		0.00	0.10	0.18	0.03	0.27	0.34	4.96
Davao Oriental	0.051	1.35	1.37	1.48	1.41	0.90	1.01	1.06	0.00	0.11						0.35	0.98	0.88	0.58	0.45	0.71	0.77	0.71	0.91	1.06	0.28	0.09	0.00	0.00	0.00		0.00	0.43	0.49	0.15	0.39	0.61	18.54
Agusan del Norte	0.973	19.61	27.13	33.59	32.12	31.02	22.97	16.07	12.89	2.45						5.44	24.50	37.04	11.28	7.66	9.18	3.00	16.92	8.43	17.69	17.04	5.45	0.00	0.00	0.00		0.00	4.68	11.14	4.36	2.76	7.29	391.74
Agusan del Sur	0.889	57.77	58.90	63.55	60.77	58.69	43.46	45.76	24.38	0.00						0.00	30.53	43.91	27.74	0.00	18.08	29.15	18.04	28.06	23.35	18.90	9.84	0.00	0.00	0.00		0.00	8.87	33.28	18.81	8.10	9.99	739.94
Dinagat Islands	1.000	0.58	1.32	0.78	1.36	0.86	0.97	0.41	0.54	0.10						0.64	1.26	0.88	0.82	0.91	0.13	1.59	0.94	0.97	1.55	1.31	0.17	0.13	0.00	0.00		0.00	0.12	0.54	0.61	1.08	0.16	20.76
Surigao del Norte	1.000	3.60	8.50	4.40	6.72	4.98	6.26	4.32	1.01	0.00						4.42	10.54	6.38	5.65	10.62	1.18	10.36	8.99	7.99	13.12	8.59	0.81	0.81	0.00	0.00		0.00	0.00	5.08	2.66	3.99	3.91	144.89
Surigao del Sur	0.104	1.82	1.34	1.73	0.58	3.55	0.00	2.59	0.00	0.00						0.00	2.40	4.26	1.22	1.00	2.06	2.96	2.03	4.84	0.97	2.13	3.04	1.57	0.00	0.00		2.02	2.67	2.80	1.08	0.86	4.25	53.78
WRR-XI																																							**3,099**
Bukidnon	0.046	3.34	3.42	2.50	2.60	3.18	1.23	0.26	0.50	0.21	0.30			0.00	0.00	0.33	1.15	0.46	0.56	0.17	0.87	0.66	1.40	2.09	1.34	1.02	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.79	1.34	2.69	0.92	34.11
Compostela Valley	0.477	7.09	6.79	17.89	0.00	16.51	1.69	4.01	0.00	0.00						0.27	8.62	17.32	8.12	5.53	7.32	4.17	8.12	6.82	10.20	9.52	7.71	4.35	0.00	0.00		0.00	2.94	9.37	16.16	4.10	4.80	189.45
Davao del Norte	0.989	16.71	20.27	27.14	28.68	48.99	47.86	50.48	26.89	0.00						0.00	15.10	30.05	17.00	21.23	31.27	38.20	34.38	47.03	33.66	29.66	5.16	0.00	0.00	0.00		0.00	14.36	25.29	4.81	38.07	48.35	700.65
Davao del Sur	0.998	17.94	47.07	50.79	39.27	15.65	34.73	21.36	9.77	0.00						10.74	28.38	33.30	25.21	32.17	23.28	42.35	13.50	46.71	21.47	6.68	16.46	0.00	0.00	0.00		4.04	24.50	42.90	45.42	38.43	22.63	714.76
Davao Oriental	0.949	25.05	25.54	27.56	26.32	16.69	18.82	19.76	0.00	2.00						6.42	18.18	16.43	10.80	8.40	13.20	14.29	13.26	16.88	19.81	5.27	1.59	0.00	0.00	0.00		0.00	8.06	9.12	2.85	7.23	11.39	344.92
Sarangani	0.869	4.46	0.00	0.55	0.00	0.00		0.00	4.44	6.36	3.53	6.88	10.39	5.78	4.04	9.15	8.07	4.80	2.34	0.00	0.00	0.51	0.98	0.00		0.00	0.70	2.49	2.66	6.32	4.31	4.22	3.75	3.04	5.26	4.20	0.97	110.22
South Cotabato	0.340	14.06	10.24	0.00	3.13	0.25		6.85	2.77	19.10	10.56	26.57	31.22	19.72	16.80	12.76	9.42	11.42	6.91	0.00	0.00	0.00	0.00	0.00		0.00	5.75	14.97	3.98	11.02	12.36	16.47	12.70	13.14	14.63	12.07	18.84	337.71
North Cotabato	0.038	2.79	0.77	0.00	0.00	0.00		1.29	1.28	1.95	3.66	5.08	4.23	3.08	2.24	2.80	1.14	1.17	2.61	0.72	0.00	0.02	0.00	0.00		0.00	0.86	1.71	0.51	2.48	2.50	2.60	2.08	2.62	1.71	2.61	3.75	58.25
Sultan Kudarat	0.052	1.90	0.20	0.00	0.00	0.00		0.00	2.15	3.09	0.89	3.22	5.06	2.55	1.14	4.46	2.64	1.30	0.11	0.00	0.00	0.00	0.48	0.00		0.00	0.00	0.40	0.83	2.08	1.21	1.30	0.61	2.74	2.28	2.74	0.57	43.95
Agusan del Norte	0.027	0.54	0.75	0.93	0.89	0.86	0.64	0.45	0.36	0.07						0.15	0.68	1.03	0.31	0.21	0.25	0.08	0.47	0.23	0.49	0.47	0.15	0.00	0.00	0.00		0.00	0.13	0.31	0.12	0.08	0.20	10.87
Agusan del Sur	0.109	7.08	7.22	7.79	7.45	7.20	5.33	5.61	2.99	0.00						0.00	3.74	5.38	3.40	0.00	2.22	3.57	2.21	3.44	2.86	2.32	1.21	0.00	0.00	0.00		0.00	1.09	4.08	2.31	0.99	1.22	90.72
Surigao del Sur	0.896	15.66	11.56	14.91	5.00	30.62	0.00	22.36	0.00	0.00						0.00	20.69	36.68	10.52	8.64	17.76	25.51	17.47	41.71	8.34	18.37	26.15	13.50	0.00	0.00		17.39	22.97	24.16	9.32	7.41	36.62	463.32
WRR-XII																																							**4,410**
Bukidnon	0.606	43.97	45.09	32.91	34.28	41.83	16.24	3.43	6.60	2.79	3.99			0.00	0.00	4.41	15.13	6.08	7.36	2.26	11.51	8.75	18.48	27.54	17.72	13.39	0.00	0.00	0.00	0.00	0.00	0.00	10.22	10.35	17.62	35.40	12.07	449.41
Lanao del Norte	0.918	20.39	14.85	15.13	16.57	10.46	14.25	0.00	19.67	10.67	0.00	0.03				7.60	8.03	5.61	23.56	9.64	7.36	16.96	27.27	17.83	20.66	3.18	4.70	0.00	0.00	0.00	0.00	2.57	0.00	23.78	22.17	24.41	13.59	360.96
Misamis Oriental	0.001	0.02	0.01	0.01	0.01	0.01	0.01	0.02	0.00	0.00						0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.00	0.00		0.01	0.01	0.02	0.01	0.01	0.02	0.27
Davao del Norte	0.004	0.07	0.08	0.11	0.12	0.20	0.19	0.20	0.11	0.00						0.00	0.06	0.12	0.07	0.09	0.13	0.15	0.14	0.19	0.14	0.12	0.02	0.00	0.00	0.00		0.00	0.06	0.10	0.02	0.15	0.20	2.83
Davao del Sur	0.002	0.04	0.09	0.10	0.08	0.03	0.07	0.04	0.02	0.00						0.02	0.06	0.07	0.05	0.06	0.05	0.08	0.03	0.09	0.04	0.01	0.03	0.00	0.00	0.00		0.01	0.05	0.09	0.09	0.08	0.05	1.43
Sarangani	0.131	0.67	0.00	0.08	0.00	0.00		0.00	0.67	0.96	0.53	1.04	1.57	0.87	0.61	1.38	1.22	0.72	0.35	0.00	0.00	0.08	0.15	0.00		0.00	0.11	0.38	0.40	0.95	0.65	0.64	0.57	0.46	0.79	0.63	0.15	16.62
South Cotabato	0.660	27.28	19.88	0.00	6.08	0.49		13.30	5.37	37.07	20.50	51.57	60.61	38.28	32.61	24.76	18.29	22.17	13.41	0.00	0.00	0.00	0.00	0.00		0.00	11.16	29.05	7.72	21.40	23.99	31.97	24.66	25.52	28.40	23.44	36.58	655.56
North Cotabato	0.962	70.60	19.39	0.00	0.00	0.00		32.59	32.44	49.41	92.74	#####	#####	77.92	56.69	70.84	28.85	29.53	66.03	18.11	0.00	0.52	0.00	0.00		0.00	21.90	43.30	12.97	62.70	63.37	65.72	52.62	66.24	43.25	66.06	95.05	1,474.57
Sultan Kudarat	0.948	34.71	3.70	0.00	0.00	0.00		0.00	39.23	56.34	16.15	58.73	92.24	46.57	20.84	81.30	48.21	23.72	1.98	0.00	0.00	0.00	8.74	0.00		0.00	0.00	7.25	15.18	37.87	21.99	23.77	11.13	49.91	41.52	49.90	10.34	801.33
Agusan del Sur	0.002	0.13	0.13	0.14	0.14	0.13	0.10	0.10	0.05	0.00						0.00	0.07	0.10	0.06	0.00	0.04	0.07	0.04	0.06	0.05	0.04	0.02	0.00	0.00	0.00		0.00	0.02	0.07	0.04	0.02	0.02	1.66
Lanao del Sur	1.000	13.78	3.02	0.00	0.00	0.00		0.72	0.48	0.11	0.15	1.71	2.13	1.69	0.82	1.14	0.06	0.79	0.49	0.00	0.00	0.00	0.00	0.00		0.00	0.00	2.15	0.00	6.88	6.37	6.93	3.35	6.87	8.62	11.63	18.54	98.42
Maguindanao	1.000	55.24	18.28	0.00	0.00	0.00		2.66	2.69	2.23	3.20	8.03	8.99	6.52	5.41	3.66	2.02	1.96	4.10	2.73	0.00	0.57	0.00	0.00		0.00	16.67	33.72	0.00	48.14	42.48	52.46	34.36	40.83	28.54	47.08	73.88	546.48
Total	80.000																																						**46,969**

Source: JICA Survey Team

Table F 34 Irrigation Water Demands of Groundwater Systems by WRR in 2030
(Based on Irrigated Areas Projected under NIMP 2020-2030)

(Unit: MCM)

Region/	Area	Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			Annual
Province	Rate	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
WRR-I																																						**100**
Abra	0.991	0.06	0.06	0.07	0.06	0.06	0.05	0.05	0.03	0.00							0.05	0.10	0.13	0.07	0.02	0.04	0.05	0.04	0.04	0.05	0.10	0.13	0.05	0.00	0.00	0.03	0.05	0.07	0.06	0.00	0.06	1.56
Apayao	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Benguet	0.467	0.06	0.06	0.07	0.07	0.06	0.05	0.05	0.03	0.01			0.00	0.05	0.05	0.03	0.03	0.04	0.03	0.03	0.02	0.01	0.02	0.02	0.00	0.00	0.00					0.03	0.05	0.01	0.06	0.05	0.03	1.01
Kalinga	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
Mt. Province	0.140	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Ilocos Norte	0.984	0.06	0.06	0.06	0.06	0.05	0.03	0.02	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.06	0.03	0.06	0.01	0.06	0.59
Ilocos Sur	1.000	1.32	1.34	1.45	1.39	1.24	0.71	0.56	0.10									0.00	1.43	0.72	1.85	0.73	1.13	1.12	2.76	1.14	0.84	1.69	0.00	0.85	0.10	0.00	1.39	1.74	1.37	1.12	1.33	29.42
La Union	0.947	3.70	3.77	4.07	3.90	3.47	1.98	1.58	0.27									0.15	1.75	4.03	1.92	1.90	0.95	2.22	1.70	2.22	0.11	2.40	3.06	0.00	0.00	2.13	3.91	4.89	3.85	3.14	3.73	66.81
WRR-II																																						**1,329**
Abra	0.009	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Apayao	0.997	0.90	0.92	0.99	0.96	0.92	0.68	0.56	0.39	0.07							0.00	0.74	0.83	0.63	0.53	0.51	0.46	0.53	0.31	0.25	0.38	0.79	0.17	0.27	0.03	0.40	0.00	0.00	0.00	0.76	0.90	14.88
Benguet	0.007	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	0.00	0.02
Ifugao	0.993			0.04	0.05	0.09	0.06	0.08	0.08	0.08	0.10	0.07	0.07	0.08	0.05	0.03	0.00	0.00				0.00	0.05	0.03	0.01	0.00	0.00	0.02	0.00	0.05	0.05	0.01	0.03	0.00	0.00	0.00		1.14
Kalinga	0.994	0.43	0.44	0.47	0.46	0.44	0.33	0.35	0.19	0.04							0.00	0.23	0.26	0.19	0.07	0.20	0.11	0.20	0.14	0.18	0.00	0.20	0.26	0.00		0.19	0.38	0.50	0.42	0.37	0.43	7.47
Mt. Province	0.858	0.02	0.02	0.00	0.01	0.01	0.00							0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.02	0.01	0.00	0.00	0.01	0.01	0.01	0.02	0.26
Ilocos Norte	0.016	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Batanes	1.000	0.29	0.31	0.40	0.38	0.36	0.27	0.24	0.05								0.12	0.86	0.56	0.28	0.60	0.71	0.48	0.49	0.33	0.41	0.57	0.31	0.27	0.00	0.00	0.10	0.47	0.38	0.02	0.32	0.38	9.96
Cagayan	1.000	44.97	54.99	72.85	70.03	55.15	50.12	53.44	28.47	0.00							26.47	76.05	77.01	61.77	61.04	53.02	41.92	46.42	32.42	49.83	63.28	22.33	0.00	0.00	0.00	0.00	62.37	80.13	35.34	16.80	53.72	1,289.92
Isabela	1.000	0.15	0.10	0.17	0.16	0.16	0.12	0.14	0.10	0.00	0.02	0.00					0.00	0.12	0.10	0.12	0.11	0.05	0.11	0.07	0.06	0.03	0.00	0.11	0.00	0.00	0.00	0.06	0.00	0.02	0.06	0.02	0.14	2.30
Nueva Vizcaya	0.873	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quirino	0.997	0.10	0.14	0.11	0.14	0.14	0.10	0.11	0.06	0.00							0.03	0.16	0.13	0.11	0.04	0.05	0.05	0.06	0.04	0.05	0.05	0.00	0.04	0.00	0.00	0.07	0.05	0.16	0.13	0.05	0.13	2.30
Aurora	0.410	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00
Nueva Ecija	0.005	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.00	0.00	0.00			0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.01	0.32
WRR-III																																						**1,113**
Benguet	0.526	0.07	0.07	0.08	0.08	0.07	0.05	0.06	0.03	0.01			0.00	0.05	0.06	0.04	0.03	0.04	0.03	0.03	0.02	0.01	0.02	0.02	0.00	0.00	0.00					0.03	0.06	0.01	0.07	0.06	0.04	1.14
Ifugao	0.007			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.01
Mt. Province	0.002	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
La Union	0.053	0.21	0.21	0.23	0.22	0.19	0.11	0.09	0.02									0.01	0.10	0.23	0.11	0.11	0.05	0.12	0.10	0.12	0.01	0.13	0.17	0.00	0.00	0.12	0.22	0.27	0.22	0.18	0.21	3.74
Pangasinan	1.000	35.51	36.67	40.34	39.29	36.39	23.28	24.08	14.81	0.00	0.00							0.00	0.00	11.49	10.51	20.58	25.26	18.85	19.01	19.30	30.87	13.10	27.21	0.00	22.46	22.24	28.50	31.54	38.28	41.74	35.15	666.44
Nueva Vizcaya	0.127	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quirino	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Aurora	0.548	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00
Bataan	1.000	0.49	0.50	0.54	0.52	0.50	0.37	0.39	0.21	0.04								0.00	0.15	0.26	0.28	0.23	0.18	0.20	0.43	0.38	0.15	0.16	0.11	0.21	0.00	0.06	0.36	0.34	0.50	0.41	0.35	8.31
Bulacan	0.978	1.94	1.98	2.13	2.05	1.32	1.47	1.56	0.83	0.00								0.70	1.51	0.88	1.26	0.00	0.95	1.26	0.46	0.96	2.65	0.68	0.52	0.00	0.17	0.00	0.61	2.27	0.84	0.92	1.93	31.86
Nueva Ecija	0.994	2.02	3.52	4.01	3.18	4.00	3.09	3.84	1.88	2.46	0.57	0.85	0.16			0.33	0.07	2.50	0.30	1.64	2.61	0.38	1.16	2.32	2.02	0.31	1.12	0.49	2.63	0.34	0.00	1.68	2.20	2.44	3.03	3.47	2.92	63.56
Pampanga	1.000	4.29	4.37	4.71	4.54	4.39	3.25	3.46	1.84	0.35								0.47	2.84	4.69	2.64	2.31	1.75	0.38	1.47	3.65	1.84	0.96	2.44	1.32	1.86	2.02	3.88	5.01	4.20	3.57	4.26	82.75
Tarlac	1.000	10.20	10.40	11.22	10.82	10.45	7.73	8.25	4.40	0.84								0.96	7.51	8.74	8.46	2.22	0.00	3.94	9.95	6.79	2.93	0.62	1.36	3.09	1.15	3.40	10.49	13.18	10.43	8.49	7.51	185.51
Zambales	1.000	3.78	3.86	4.16	4.00	3.87	2.86	3.04	1.62	0.00								0.00	2.96	4.37	2.22	1.37	3.55	1.73	0.49	2.40	2.05	0.08	2.82	1.72	0.00	0.00	2.60	4.34	2.93	3.15	3.76	69.75
Rizal	0.021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.06

WRR-IV																																							**211**
Aurora	0.042	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00
Bulacan	0.022	0.04	0.04	0.05	0.05	0.03	0.03	0.04	0.02	0.00								0.02	0.03	0.02	0.03	0.00	0.02	0.03	0.01	0.02	0.06	0.02	0.01	0.00	0.00	0.00	0.01	0.05	0.02	0.02	0.04	0.72
Nueva Ecija	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
Batangas	1.000	0.22	0.23	0.33	0.32	0.31	0.23	0.24	0.13	0.02				0.06	0.30	0.40	0.20	0.13	0.27	0.01	0.29	0.15	0.14	0.08	0.01	0.00	0.00	0.00				0.00	0.18	0.20	0.26	0.05	0.30	5.06
Cavite	1.000	0.26	0.27	0.29	0.28	0.27	0.20	0.21	0.11	0.02				0.30	0.63	0.66	0.10	0.00	0.33	0.17	0.27	0.57	0.23	0.45	0.72	0.17	0.00	0.00				0.00	0.02	0.08	0.23	0.22	0.11	7.18
Laguna	1.000	0.70	0.71	0.77	0.74	0.71	0.53	0.56	0.30	0.00				0.23	0.24	0.43	0.28	0.43	0.24	0.24	0.29	0.24	0.27	0.21	0.02	0.00	0.00	0.00				0.00	0.00	0.37	0.13	0.15	0.69	9.48
Quezon	0.947	0.30	4.61	4.06	4.76	3.15	3.41	2.69	0.14	0.37				0.47	2.54	4.51	2.55	2.92	1.17	0.57	2.08	1.71	3.11	4.43	1.32	0.00	0.00	0.00				1.19	0.96	2.52	1.41	2.49	0.61	60.02
Rizal	0.979	0.19	0.05	0.14	0.20	0.19	0.14	0.15	0.00	0.02				0.00	0.06	0.20	0.11	0.03	0.04	0.07	0.11	0.10	0.07	0.07	0.00	0.03	0.00	0.00				0.00	0.11	0.08	0.17	0.10	0.19	2.65
Marinduque	1.000	0.23	0.12	0.36	0.37	0.27	0.30	0.42	0.40	0.41	0.28	0.05	0.03	0.13	0.40	0.57	0.20	0.15	0.22	0.10	0.36	0.24	0.26	0.22	0.12	0.04	0.00	0.01							0.18	0.05	0.45	6.93
Occidental Mindoro	1.000	4.34	4.42	4.77	4.57	4.42	3.27	3.46	1.84	0.35								0.00	3.04	5.65	1.93	2.56	0.00	0.22	2.68	2.74	1.32	0.42	3.84	0.00	0.84	0.89	0.88	5.62	4.45	2.34	3.52	74.38
Oriental Mindoro	1.000	1.30	1.26	1.50	1.56	1.54	1.25	1.74	1.37	1.10	1.16	0.05	0.11	0.66	0.39	0.99	0.54	0.26	0.62	0.16	0.70	0.49	0.48	0.25	0.55	0.00	0.10	0.00							0.22	0.96	1.05	22.36
Palawan	1.000	0.87	0.79	0.94	0.98	0.96	0.78	1.09	1.05	1.06	0.72	0.37	0.07	0.82	0.86	1.54	0.95	0.68	0.02	0.45	0.28	0.63	0.76	0.51	0.04	0.01	0.00	0.00							0.46	0.39	0.80	18.89
Romblon	1.000	0.11	0.12	0.15	0.15	0.15	0.12	0.17	0.16	0.16	0.11	0.06	0.01	0.08	0.16	0.22	0.12	0.13	0.06	0.07	0.06	0.05	0.02	0.06	0.07	0.03	0.00	0.00							0.04	0.10	0.18	2.92
WRR-V																																							**73**
Quezon	0.053	0.02	0.26	0.23	0.27	0.18	0.19	0.15	0.01	0.02				0.03	0.14	0.25	0.14	0.16	0.07	0.03	0.12	0.10	0.17	0.25	0.07	0.00	0.00	0.00				0.07	0.05	0.14	0.08	0.14	0.03	3.36
Albay	1.000	0.66	0.12	0.56	0.47	0.53	0.46	0.83	0.76	0.19	0.28	0.04		0.20	0.77	0.57	0.74	0.28	0.56	0.39	0.24	0.21	0.40	0.12	0.25	0.12	0.00	0.00							0.00	0.63	0.31	10.70
Camarines Norte	1.000	0.30	0.14	0.24	0.33	0.16	0.26	0.37	0.27	0.08	0.06	0.02		0.18	0.24	0.31	0.06	0.09	0.16	0.15	0.15	0.08	0.20	0.07	0.09	0.00	0.00	0.00							0.00	0.05	0.32	4.37
Camarines Sur	1.000	1.78	1.98	2.48	2.65	3.25	2.55	3.55	3.28	2.52	1.22	0.00		1.40	2.69	2.73	2.74	2.39	2.27	1.93	1.08	2.27	3.39	1.25	1.00	0.00	0.00	0.00	0.00						0.00	0.82	2.54	53.77
Catanduanes	1.000	0.03	0.01	0.04	0.03	0.02	0.03	0.04	0.02	0.03	0.01	0.00		0.00	0.04	0.04	0.03	0.02	0.03	0.03	0.01	0.02	0.02	0.01	0.03	0.01	0.00	0.00							0.00	0.02	0.02	0.58
Masbate	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00
Sorsogon	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00
WRR-VI																																							**36**
Aklan	1.000	0.21	0.20	0.20	0.13	0.06	0.00							0.07	0.26	0.24	0.15	0.15	0.07	0.12	0.07	0.12	0.08	0.14	0.08	0.06	0.00	0.01	0.00	0.08	0.17	0.05	0.06	0.09	0.09	0.20	0.08	3.21
Antique	1.000	0.07	0.06	0.04	0.04	0.02	0.00	0.00						0.00	0.00	0.51	0.22	0.11	0.00	0.13	0.17	0.16	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.02	0.02	0.04	0.06	0.07	0.07	2.14
Capiz	1.000	1.86	1.78	0.52	1.15	0.53	0.00							1.54	1.10	2.81	0.97	0.00	0.00	0.01	0.00	0.97	1.36	0.00	0.55	0.00	0.00	0.00	0.00	0.20	1.58	0.40	0.57	1.69	0.81	1.30	1.59	23.28
Guimaras	1.000	0.07	0.04	0.06	0.04	0.02	0.00							0.03	0.10	0.27	0.13	0.09	0.04	0.02	0.04	0.08	0.10	0.09	0.13	0.00	0.00	0.00	0.00	0.00	0.06	0.03	0.03	0.00	0.07	0.03	0.07	1.65
Iloilo	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					0.66	0.11	1.08	0.59	0.42	0.25	0.28	0.00	0.87	1.20	0.00	0.60	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.13
Negros Occidental	0.924	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Negros Oriental	0.231	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WRR-VII																																							**22**
Negros Occidental	0.076	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bohol	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cebu	1.000	1.23	1.21	0.71	0.86	0.50	0.00	0.00								0.65	0.56	1.56	1.28	1.45	0.40	0.73	0.60	1.22	1.47	1.39	0.00	0.00	0.00		0.40	1.11	1.04	0.71	0.47	1.10	1.00	21.66
Negros Oriental	0.769	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siquijor	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00								0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WRR-VIII																																							**3**
Biliran	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00
Northern Leyte	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00
Southern Leyte	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00
Northern Samar	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00
Weatern Samar	1.000	0.01	0.25	0.10	0.26	0.25	0.19	0.11	0.06	0.02	0.11	0.22	0.24	0.22	0.02	0.12	0.11	0.05	0.09	0.05	0.06	0.10	0.00									0.00	0.08	0.20	0.05	0.13	0.10	3.23
Eastern Samar	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00
WRR-IX																																							**7**
Zamboanga del Norte	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zamboanga del Sur	1.000	0.13	0.13	0.13	0.10	0.07	0.03	0.02	0.00		0.05	0.10	0.11	0.13	0.13	0.06	0.05	0.05	0.04	0.06	0.01	0.05	0.01	0.00	0.00	0.00			0.00	0.00	0.04	0.03	0.07	0.03	0.04	0.05	0.06	1.77
Zamboanga Sibugay	1.000	0.14	0.17	0.14	0.17	0.12	0.06	0.03	0.00		0.10	0.08	0.08	0.09	0.16	0.15	0.15	0.10	0.13	0.07	0.11	0.09	0.10	0.00	0.00	0.00			0.00	0.00	0.07	0.09	0.12	0.02	0.06	0.22	0.15	2.97
Misamis Occidental	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Basilan	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulu	1.000	0.21	0.22	0.24	0.15	0.22	0.16	0.13	0.09	0.02						0.01	0.01	0.03	0.01	0.01	0.02	0.01	0.01	0.02	0.02	0.02	0.02	0.01	0.00	0.00		0.10	0.07	0.13	0.21	0.18	0.04	2.38
Tawi-Tawi	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00

WRR-X																																								**7**
Bukidnon	0.348	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Camiguin	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lanao del Norte	0.082	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
Misamis Oriental	0.999	0.18	0.11	0.13	0.08	0.13	0.10	0.18	0.00	0.00						0.06	0.06	0.18	0.13	0.10	0.09	0.18	0.14	0.05	0.15	0.09	0.10	0.08	0.00	0.00		0.06	0.15	0.21	0.11	0.12	0.22	3.20
Compostela Valley	0.523	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Norte	0.007	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao Oriental	0.051	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agusan del Norte	0.973	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agusan del Sur	0.889	0.17	0.18	0.19	0.18	0.18	0.13	0.14	0.07	0.00						0.00	0.24	0.35	0.22	0.00	0.14	0.23	0.14	0.22	0.19	0.15	0.08	0.00	0.00	0.00		0.00	0.03	0.10	0.06	0.02	0.03	3.46
Dinagat Islands	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Surigao del Norte	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Surigao del Sur	0.104	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.04
WRR-XI																																								**3**
Bukidnon	0.046	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Compostela Valley	0.477	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Norte	0.989	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Sur	0.998	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao Oriental	0.949	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sarangani	0.869	0.06	0.00	0.01	0.00	0.00		0.00	0.05	0.08	0.04	0.08	0.12	0.07	0.05	0.11	0.10	0.06	0.03	0.00	0.00	0.01	0.01	0.00		0.00	0.01	0.03	0.03	0.08	0.05	0.05	0.05	0.04	0.07	0.05	0.01	1.34
South Cotabato	0.340	0.01	0.00	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.12
North Cotabato	0.038	0.03	0.01	0.00	0.00	0.00		0.01	0.01	0.02	0.04	0.05	0.05	0.03	0.02	0.03	0.01	0.01	0.03	0.01	0.00	0.00	0.00	0.00		0.00	0.01	0.02	0.01	0.03	0.03	0.03	0.02	0.03	0.02	0.03	0.04	0.63
Sultan Kudarat	0.052	0.03	0.00	0.00	0.00	0.00		0.00	0.02	0.03	0.01	0.04	0.06	0.03	0.01	0.05	0.03	0.01	0.00	0.00	0.00	0.00	0.01	0.00		0.00	0.00	0.01	0.01	0.03	0.02	0.02	0.01	0.04	0.03	0.04	0.01	0.53
Agusan del Norte	0.027	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agusan del Sur	0.109	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.00						0.00	0.03	0.04	0.03	0.00	0.02	0.03	0.02	0.03	0.02	0.02	0.01	0.00	0.00	0.00		0.00	0.00	0.01	0.01	0.00	0.00	0.42
Surigao del Sur	0.896	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.03	0.05	0.01	0.01	0.02	0.04	0.02	0.06	0.01	0.03	0.04	0.02	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.34
WRR-XII																																								**28**
Bukidnon	0.606	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lanao del Norte	0.918	0.04	0.03	0.03	0.03	0.02	0.03	0.00	0.04	0.02	0.00	0.00				0.01	0.01	0.01	0.04	0.02	0.01	0.03	0.04	0.03	0.03	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.04	0.05	0.03	0.64
Misamis Oriental	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Norte	0.004	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Sur	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sarangani	0.131	0.01	0.00	0.00	0.00	0.00		0.00	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.20
South Cotabato	0.660	0.01	0.01	0.00	0.00	0.00		0.00	0.00	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.23
North Cotabato	0.962	0.76	0.21	0.00	0.00	0.00		0.35	0.35	0.53	1.00	1.39	1.15	0.84	0.61	0.76	0.31	0.32	0.71	0.20	0.00	0.01	0.00	0.00		0.00	0.24	0.47	0.14	0.68	0.69	0.71	0.57	0.72	0.47	0.72	1.03	15.93
Sultan Kudarat	0.948	0.47	0.05	0.00	0.00	0.00		0.00	0.44	0.63	0.18	0.65	1.03	0.52	0.23	0.90	0.54	0.26	0.02	0.00	0.00	0.00	0.10	0.00		0.00	0.00	0.10	0.21	0.52	0.30	0.32	0.15	0.68	0.57	0.68	0.14	9.69
Agusan del Sur	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.01
Lanao del Sur	1.000	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maguindanao	1.000	0.14	0.05	0.00	0.00	0.00		0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00		0.00	0.04	0.09	0.00	0.12	0.11	0.13	0.09	0.10	0.07	0.12	0.19	1.39
Total	80.000																																							**2,931**

Source: JICA Survey Team

Table F 35 Irrigation Water Demands of All Systems by WRR in 2040
(Based on Irrigated Areas Projected under NIMP 2020-2030)

(Unit: MCM)

Region/	Area	Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			Annual
Province	Rate	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
WRR-I																																						**2,451**
Abra	0.991	20.91	21.31	23.01	22.18	21.43	15.88	16.90	9.01	0.00							8.23	16.08	21.36	11.54	2.67	5.95	7.44	6.85	7.28	7.69	16.06	21.00	7.97	0.00	0.00	9.04	17.96	23.56	20.27	1.28	20.94	383.81
Apayao	0.003	0.04	0.04	0.04	0.04	0.04	0.03	0.02	0.02	0.00							0.00	0.03	0.04	0.03	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.03	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.03	0.04	0.63
Benguet	0.467	7.98	8.13	8.78	8.45	8.17	6.05	6.43	3.43	0.65			0.00	5.53	5.89	3.98	3.02	4.23	3.22	3.10	2.00	1.29	2.45	1.92	0.00	0.00	0.00					3.48	6.90	1.57	7.76	6.72	4.19	125.32
Kalinga	0.006	0.20	0.20	0.22	0.21	0.21	0.15	0.16	0.09	0.02							0.00	0.11	0.13	0.10	0.03	0.10	0.05	0.10	0.07	0.09	0.00	0.10	0.13	0.00	0.00	0.09	0.18	0.23	0.20	0.17	0.20	3.56
Mt. Province	0.140	1.76	1.70	0.25	1.19	0.68	0.04							1.40	0.82	1.80	1.98	1.01	1.41	1.01	0.00	0.17	0.10	0.74	0.65	0.20	0.00	0.00	0.48	1.91	1.03	0.03	0.00	1.11	0.53	0.91	1.91	24.84
Ilocos Norte	0.984	46.12	47.01	50.73	48.86	43.49	24.76	19.85	3.44									23.63	62.60	63.14	72.15	33.84	28.71	29.26	53.50	3.95	31.09	8.40	0.00	0.00	0.00	26.25	48.27	21.33	47.66	5.01	46.45	889.49
Ilocos Sur	1.000	31.95	32.57	35.15	33.75	30.04	17.11	13.65	2.36									0.00	29.92	15.05	38.62	15.16	23.54	23.42	57.49	23.71	17.62	35.34	0.00	17.66	2.09	0.00	33.62	42.07	33.18	27.17	32.28	664.50
La Union	0.947	19.44	19.81	21.39	20.52	18.27	10.40	8.30	1.44									0.85	9.80	22.53	10.74	10.63	5.32	12.40	9.50	12.40	0.59	13.40	17.09	0.00	0.00	11.21	20.55	25.70	20.23	16.53	19.64	358.70
WRR-II																																						**9,823**
Abra	0.009	0.19	0.19	0.21	0.20	0.19	0.14	0.15	0.08	0.00							0.07	0.15	0.19	0.10	0.02	0.05	0.07	0.06	0.07	0.07	0.15	0.19	0.07	0.00	0.00	0.08	0.16	0.21	0.18	0.01	0.19	3.49
Apayao	0.997	12.56	12.79	13.81	13.33	12.89	9.56	7.75	5.45	1.04							0.00	10.42	11.65	8.90	7.48	7.16	6.43	7.44	4.33	3.57	5.40	11.13	2.40	3.80	0.45	5.56	0.00	0.00	0.00	10.59	12.61	208.50
Benguet	0.007	0.12	0.12	0.13	0.13	0.12	0.09	0.10	0.05	0.01			0.00	0.08	0.09	0.06	0.05	0.06	0.05	0.05	0.03	0.02	0.04	0.03	0.00	0.00	0.00					0.05	0.10	0.02	0.12	0.10	0.06	1.88
Ifugao	0.993			8.78	11.04	20.60	13.70	17.65	19.23	19.20	22.70	16.05	15.40	18.34	11.48	7.82	0.00	0.00				0.00	12.47	8.01	3.41	0.89	0.00	6.01	0.39	12.68	12.27	1.56	7.94	0.00	0.00	0.00		267.64
Kalinga	0.994	33.32	33.93	36.65	35.34	34.19	25.40	27.04	14.42	2.75							0.23	18.77	21.42	16.03	5.78	16.49	8.84	16.83	11.71	15.12	0.00	16.49	21.63	0.00		14.71	29.22	38.32	32.79	28.35	33.64	589.42
Mt. Province	0.858	10.80	10.42	1.52	7.28	4.16	0.26							8.58	5.04	11.03	12.14	6.18	8.65	6.16	0.00	1.06	0.63	4.52	4.00	1.23	0.00	0.00	2.94	11.73	6.31	0.20	0.00	6.81	3.26	5.60	11.73	152.24
Ilocos Norte	0.016	0.75	0.76	0.82	0.79	0.71	0.40	0.32	0.06									0.38	1.02	1.03	1.17	0.55	0.47	0.48	0.87	0.06	0.51	0.14	0.00	0.00	0.00	0.43	0.78	0.35	0.77	0.08	0.76	14.46
Batanes	1.000	0.29	0.31	0.40	0.38	0.36	0.27	0.24	0.05								0.12	0.86	0.56	0.28	0.60	0.71	0.48	0.49	0.33	0.41	0.57	0.31	0.27	0.00	0.00	0.10	0.47	0.38	0.02	0.32	0.38	9.96
Cagayan	1.000	#####	#####	#####	#####	#####	#####	#####	83.48	0.00							74.90	#####	#####	#####	#####	#####	#####	#####	91.74	#####	#####	63.20	0.00	0.00	0.00	0.00	#####	#####	#####	49.24	#####	3,719.63
Isabela	1.000	#####	#####	#####	#####	#####	#####	#####	#####	0.00	35.32	0.27					2.59	#####	#####	#####	#####	86.70	#####	#####	#####	52.73	0.00	#####	0.00	0.00	0.00	95.88	0.00	29.76	93.22	37.03	#####	3,788.34
Nueva Vizcaya	0.873	34.86	35.51	38.34	36.99	35.77	26.53	28.27	15.07	2.87							5.74	41.49	44.90	5.56	9.92	18.26	10.08	4.52	16.50	9.91	7.64	0.00	0.00	10.39	0.00	0.00	34.01	43.41	21.67	0.00	4.28	542.50
Quirino	0.997	14.83	19.20	16.17	19.97	19.30	14.30	15.24	8.12	0.00							3.85	22.08	18.77	15.18	4.96	6.47	7.71	8.47	5.96	7.11	7.38	0.00	5.10	0.00	0.00	9.33	7.63	23.09	18.90	7.08	18.86	325.06
Aurora	0.410	8.16	6.19	7.10	6.89	8.72	6.51	10.55	12.95	10.18	9.03	0.00	0.00				0.00	6.26	10.16	5.88	10.20	4.73	4.64	9.08	9.70	7.05	0.38	3.23	0.00	0.20	0.00				4.79	9.52	8.22	180.31
Nueva Ecija	0.005	0.63	1.10	1.25	0.99	1.25	0.97	1.20	0.59	0.77	0.18	0.27	0.05			0.10	0.02	0.78	0.09	0.51	0.82	0.12	0.36	0.73	0.63	0.10	0.35	0.15	0.82	0.11	0.00	0.53	0.69	0.76	0.95	1.09	0.91	19.88
WRR-III																																						**12,979**
Benguet	0.526	8.99	9.16	9.89	9.52	9.20	6.82	7.24	3.86	0.74			0.00	6.22	6.63	4.48	3.40	4.77	3.63	3.49	2.25	1.46	2.76	2.16	0.00	0.00	0.00					3.92	7.77	1.77	8.74	7.57	4.72	141.16
Ifugao	0.007			0.06	0.08	0.15	0.10	0.12	0.14	0.14	0.16	0.11	0.11	0.13	0.08	0.06	0.00	0.00				0.00	0.09	0.06	0.02	0.01	0.00	0.04	0.00	0.09	0.09	0.01	0.06	0.00	0.00	0.00		1.89
Mt. Province	0.002	0.03	0.02	0.00	0.02	0.01	0.00							0.02	0.01	0.03	0.03	0.01	0.02	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.03	0.01	0.00	0.00	0.02	0.01	0.01	0.03	0.35
La Union	0.053	1.09	1.11	1.20	1.15	1.02	0.58	0.46	0.08									0.05	0.55	1.26	0.60	0.60	0.30	0.69	0.53	0.69	0.03	0.75	0.96	0.00	0.00	0.63	1.15	1.44	1.13	0.93	1.10	20.08
Pangasinan	1.000	#####	#####	#####	#####	#####	#####	#####	71.15	0.00	0.00							0.00	0.00	62.16	56.86	#####	#####	#####	#####	#####	#####	70.87	#####	0.00	#####	#####	#####	#####	#####	#####	#####	3,334.80
Nueva Vizcaya	0.127	5.07	5.17	5.58	5.38	5.20	3.86	4.11	2.19	0.42							0.84	6.04	6.53	0.81	1.44	2.66	1.47	0.66	2.40	1.44	1.11	0.00	0.00	1.51	0.00	0.00	4.95	6.31	3.15	0.00	0.62	78.92
Quirino	0.003	0.04	0.06	0.05	0.06	0.06	0.04	0.05	0.02	0.00							0.01	0.07	0.06	0.05	0.01	0.02	0.02	0.03	0.02	0.02	0.02	0.00	0.02	0.00	0.00	0.03	0.02	0.07	0.06	0.02	0.06	0.98
Aurora	0.548	10.90	8.28	9.49	9.21	11.66	8.70	14.10	17.31	13.60	12.07	0.00	0.00				0.00	8.37	13.58	7.85	13.63	6.32	6.21	12.13	12.97	9.43	0.50	4.31	0.00	0.26	0.00				6.40	12.72	10.99	241.00
Bataan	1.000	22.37	22.80	24.61	23.62	22.81	16.88	17.91	9.54	1.82								0.00	6.94	12.20	13.15	10.75	8.16	9.37	19.89	17.34	6.91	7.36	5.22	9.78	0.00	2.74	16.41	15.56	22.87	18.65	15.93	381.56
Bulacan	0.978	39.29	40.05	43.22	41.57	26.76	29.73	31.60	16.83	0.00								16.01	34.41	20.11	28.58	0.00	21.54	28.57	10.53	21.77	60.21	15.38	11.78	0.00	3.85	0.00	12.44	46.01	17.04	18.68	39.13	675.10
Nueva Ecija	0.994	#####	#####	#####	#####	#####	#####	#####	#####	#####	35.73	52.95	10.04			20.52	4.41	#####	18.74	#####	#####	23.52	72.47	#####	#####	19.18	69.46	30.61	#####	21.28	0.00	#####	#####	#####	#####	#####	#####	3,951.84
Pampanga	1.000	91.28	93.05	#####	96.69	93.38	69.14	73.70	39.26	7.47								7.59	46.11	76.15	42.80	37.49	28.36	6.20	23.87	59.23	29.92	15.64	39.59	21.44	30.16	43.05	82.52	#####	89.41	76.09	90.77	1,617.42
Tarlac	1.000	#####	#####	#####	#####	#####	78.25	83.48	44.47	8.46								10.77	84.30	98.08	94.89	24.94	0.00	44.21	#####	76.14	32.87	6.92	15.28	34.63	12.95	34.38	#####	#####	#####	85.90	75.97	1,940.70
Zambales	1.000	29.93	30.52	32.92	31.69	30.60	22.64	24.07	12.82	0.00								0.00	27.89	41.28	20.98	12.97	33.47	16.32	4.65	22.68	19.38	0.75	26.64	16.28	0.00	0.00	20.60	34.36	23.21	24.92	29.77	591.36
Rizal	0.021	0.13	0.03	0.10	0.14	0.14	0.10	0.11	0.00	0.01				0.00	0.04	0.14	0.08	0.02	0.03	0.05	0.08	0.07	0.05	0.05	0.00	0.02	0.00	0.00				0.00	0.08	0.06	0.12	0.07	0.14	1.86

WRR-IV																																					**4,654**
Aurora	0.042	0.84	0.63	0.73	0.71	0.89	0.67	1.08	1.33	1.04	0.93	0.00	0.00				0.00	0.64	1.04	0.60	1.04	0.48	0.48	0.93	0.99	0.72	0.04	0.33	0.00	0.02	0.00				0.49	0.98	0.84	18.47
Bulacan	0.022	0.88	0.90	0.97	0.94	0.60	0.67	0.71	0.38	0.00								0.36	0.77	0.45	0.64	0.00	0.48	0.64	0.24	0.49	1.35	0.35	0.26	0.00	0.09	0.00	0.28	1.04	0.38	0.42	0.88	15.19
Nueva Ecija	0.001	0.13	0.22	0.25	0.20	0.25	0.19	0.24	0.12	0.15	0.04	0.05	0.01			0.02	0.00	0.16	0.02	0.10	0.16	0.02	0.07	0.15	0.13	0.02	0.07	0.03	0.16	0.02	0.00	0.11	0.14	0.15	0.19	0.22	0.18	3.98
Batangas	1.000	4.64	4.70	6.93	6.64	6.42	4.75	5.04	2.69	0.51				0.95	4.71	6.21	3.14	2.09	4.19	0.14	4.54	2.36	2.14	1.28	0.20	0.00	0.00	0.00				0.00	3.75	4.26	5.48	0.97	6.26	95.01
Cavite	1.000	25.89	26.39	28.47	27.34	26.41	19.55	20.77	11.07	2.11				11.85	25.31	26.40	3.96	0.11	13.25	6.71	10.83	22.93	9.05	17.97	28.64	6.93	0.00	0.00				0.00	1.69	7.65	22.57	21.58	11.02	436.43
Laguna	1.000	37.90	38.64	41.69	40.00	38.64	28.61	30.39	16.19	0.00				14.81	15.52	28.05	17.87	27.97	15.47	15.80	18.56	15.28	17.34	13.72	1.16	0.00	0.00	0.00				0.00	0.00	20.15	7.13	8.26	37.74	546.87
Quezon	0.947	6.82	#####	93.28	#####	72.31	78.27	61.92	3.14	8.41				11.73	62.72	#####	62.89	72.10	28.86	14.04	51.35	42.28	76.77	#####	32.53	0.00	0.00	0.00				27.39	22.02	58.03	32.48	57.14	14.03	1,426.58
Rizal	0.979	6.22	1.60	4.65	6.56	6.34	4.69	4.98	0.00	0.51				0.00	2.09	6.65	3.56	0.99	1.21	2.45	3.55	3.14	2.45	2.45	0.00	1.13	0.00	0.00				0.00	3.74	2.67	5.55	3.17	6.34	86.70
Marinduque	1.000	1.78	0.94	2.85	2.96	2.10	2.37	3.30	3.18	3.20	2.20	0.43	0.22	1.01	3.13	4.45	1.58	1.21	1.72	0.81	2.80	1.85	2.03	1.73	0.95	0.29	0.00	0.06							1.40	0.40	3.58	54.52
Occidental Mindoro	1.000	35.59	36.28	39.15	37.50	36.22	26.82	28.39	15.13	2.88								0.00	22.72	42.28	14.43	19.18	0.00	1.64	20.05	20.51	9.88	3.12	28.76	0.00	6.28	7.29	7.18	46.06	36.47	19.18	28.83	591.83
Oriental Mindoro	1.000	34.70	33.49	40.00	41.54	40.99	33.24	46.38	36.54	29.38	31.06	1.27	3.03	19.78	11.55	29.64	16.17	7.69	18.43	4.85	21.01	14.68	14.34	7.55	16.34	0.00	3.08	0.00							5.80	25.51	27.97	616.00
Palawan	1.000	34.33	30.96	37.02	38.38	37.86	30.70	42.72	41.20	41.48	28.39	14.52	2.77	23.74	24.71	44.36	27.35	19.66	0.65	13.10	8.11	18.35	22.04	14.71	1.28	0.43	0.00	0.00							18.02	15.40	31.57	663.80
Romblon	1.000	3.80	4.21	5.03	5.22	5.15	4.17	5.82	5.61	5.65	3.88	1.98	0.38	2.65	5.12	7.27	4.06	4.36	1.98	2.21	1.96	1.48	0.61	1.95	2.16	0.96	0.00	0.00							1.50	3.50	6.31	98.98
WRR-V																																					**5,058**
Quezon	0.053	0.38	5.93	5.22	6.12	4.05	4.38	3.47	0.18	0.47				0.66	3.51	6.23	3.52	4.04	1.62	0.79	2.87	2.37	4.30	6.12	1.82	0.00	0.00	0.00				1.53	1.23	3.25	1.82	3.20	0.79	79.84
Albay	1.000	48.76	9.03	40.95	34.23	38.53	33.44	60.68	55.94	14.18	20.71	3.16		15.64	60.40	44.81	58.14	21.67	43.83	30.58	18.46	16.50	31.19	9.25	19.68	9.37	0.00	0.00							0.00	46.22	22.47	807.82
Camarines Norte	1.000	12.14	5.78	9.85	13.55	6.50	10.84	15.13	11.20	3.16	2.66	0.79		7.35	9.73	12.65	2.36	3.54	6.41	6.32	6.23	3.25	8.08	2.73	3.65	0.00	0.00	0.00							0.00	1.91	13.25	179.05
Camarines Sur	1.000	70.13	77.87	97.51	#####	#####	#####	#####	#####	99.26	47.82	0.00		50.35	96.57	98.20	98.42	85.81	81.71	69.19	38.82	81.58	#####	44.90	35.99	0.00	0.00	0.00	0.00						0.00	32.09	#####	2,029.24
Catanduanes	1.000	4.15	0.67	4.46	3.50	2.08	3.71	5.16	1.99	3.66	1.76	0.27		0.00	4.73	4.93	3.62	2.60	3.61	3.07	0.71	2.16	2.58	1.38	3.97	1.05	0.00	0.09							0.00	1.87	2.86	70.62
Masbate	1.000	57.26	73.61	58.95	91.25	93.08	37.91	#####	24.80	63.99	30.72	4.69		31.50	36.54	99.57	89.42	16.22	41.27	33.06	49.69	39.21	26.70	55.20	40.27	7.08	0.00	1.78							0.00	27.57	#####	1,343.12
Sorsogon	1.000	4.91	32.40	31.61	31.06	40.98	13.90	44.78	15.81	31.79	15.27	0.00		2.04	13.81	49.12	29.93	12.54	14.56	7.10	19.33	20.01	11.40	26.93	11.35	0.12	0.00	0.80							0.00	18.20	48.70	548.47
WRR-VI																																					**4,030**
Aklan	1.000	12.85	12.45	12.21	7.96	3.69	0.31							4.50	17.76	16.25	10.34	10.10	4.43	8.26	4.82	8.16	5.24	9.52	5.27	4.01	0.00	0.36	0.00	4.79	10.60	2.89	3.40	5.61	5.47	12.08	5.19	208.49
Antique	1.000	18.08	16.75	9.77	9.31	5.30	0.00	0.02						0.00	0.00	18.52	7.93	4.01	0.00	4.77	6.08	5.97	6.24	4.84	0.00	0.00	0.00	0.00	0.00	0.00	9.98	4.93	4.89	11.31	16.64	17.42	19.16	201.93
Capiz	1.000	28.45	27.36	7.97	17.57	8.11	0.00							22.44	16.12	41.13	14.20	0.00	0.00	0.13	0.00	14.23	19.94	0.00	7.98	0.00	0.00	0.00	0.00	3.04	24.22	6.09	8.72	25.87	12.39	19.90	24.43	350.30
Guimaras	1.000	1.14	0.71	1.08	0.71	0.33	0.00							0.23	0.65	1.80	0.90	0.59	0.29	0.17	0.30	0.50	0.64	0.61	0.86	0.00	0.00	0.00	0.00	0.00	1.03	0.57	0.45	0.00	1.11	0.48	1.23	16.37
Iloilo	1.000	61.50	59.65	32.17	45.03	31.47	15.32	8.23	0.06					35.79	6.17	57.90	31.56	22.38	13.29	15.15	0.00	46.72	64.68	0.00	32.08	4.19	0.00	0.00	0.00	0.00	56.71	24.57	38.00	51.25	32.92	59.06	64.98	910.85
Negros Occidental	0.924	89.76	#####	#####	75.26	8.29	2.93							22.47	#####	#####	#####	45.99	#####	63.00	77.57	#####	#####	55.75	67.79	0.95	0.00	0.00	15.53	40.93	54.27	28.74	#####	#####	#####	#####	78.16	2,157.57
Negros Oriental	0.231	8.95	10.58	10.46	6.77	3.15	0.26							5.50	7.74	16.17	11.73	5.91	5.53	5.99	7.75	6.10	5.23	7.57	5.11	0.53	0.00	0.00	0.81	4.78	9.29	10.42	4.35	8.32	5.40	3.81	5.99	184.19
WRR-VII																																					**1,997**
Negros Occidental	0.076	7.38	9.69	9.58	6.19	0.68	0.24							1.85	12.73	12.40	9.54	3.78	8.85	5.18	6.38	8.72	8.86	4.59	5.58	0.08	0.00	0.00	1.28	3.37	4.46	2.36	8.75	9.31	9.78	9.43	6.43	177.46
Bohol	1.000	53.81	49.46	27.34	29.61	35.48	17.61	32.39	0.00	0.00					0.00	18.78	0.00	0.00	54.62	48.17	32.09	60.33	60.20	21.92	52.03	22.94	11.56	39.28	0.00	0.00	39.79	36.36	45.67	55.27	41.69	70.81	67.67	1,024.88
Cebu	1.000	10.37	10.18	6.00	7.25	4.21	0.00	0.00								4.63	4.00	11.17	9.14	10.39	2.84	5.23	4.30	8.74	10.52	9.90	0.00	0.00	0.00		3.37	9.35	8.77	5.94	4.00	9.25	8.43	167.99
Negros Oriental	0.769	29.78	35.21	34.84	22.52	10.48	0.88							18.30	25.78	53.81	39.05	19.67	18.41	19.95	25.80	20.30	17.40	25.19	17.01	1.78	0.00	0.00	2.71	15.92	30.93	34.69	14.48	27.69	17.97	12.69	19.93	613.18
Siquijor	1.000	0.38	0.33	0.39	0.34	0.31	0.13	0.03								0.72	1.21	0.86	0.34	0.39	0.70	0.89	1.10	0.63	1.16	0.90	0.28	0.03	0.00		0.29	0.32	0.40	0.23	0.05	0.47	0.54	13.44
WRR-VIII																																					**2,780**
Biliran	1.000	2.25	3.11	6.78	6.48	4.19	4.63	4.88	1.10	0.00						0.88	4.82	3.81	4.67	3.63	5.62	3.77	2.70	2.58	2.98	3.91	0.71	0.66				0.00	3.88	7.23	6.06	5.14	0.02	96.48
Northern Leyte	1.000	#####	#####	60.89	72.41	24.63	24.15	0.00	0.00	0.00						37.15	31.54	#####	99.09	#####	24.73	31.67	51.45	96.81	#####	#####	1.32	40.20				60.33	18.09	55.30	39.01	#####	50.82	1,652.92
Southern Leyte	1.000	12.54	12.78	6.07	5.70	6.13	0.00	0.00	0.00	1.01	7.60	14.95	11.41	10.14	5.78	11.34	3.15	10.08	13.94	12.50	5.19	3.00	0.70									5.87	5.74	6.53	2.64	10.43	5.99	191.21
Northern Samar	1.000	4.15	5.09	4.29	7.72	7.45	5.52	4.10	3.10	0.59	4.66	9.18	11.95	9.19	7.76	7.55	8.58	7.28	4.40	3.03	0.24	0.39	0.30									0.00	2.45	1.78	3.05	0.00	3.33	127.12
Weatern Samar	1.000	1.18	40.06	16.12	41.36	39.94	29.57	17.30	9.13	3.16	22.48	44.24	48.06	44.21	4.30	23.98	21.74	9.33	18.40	10.03	12.14	20.32	0.00									0.00	12.11	31.90	8.63	21.29	16.61	567.58
Eastern Samar	1.000	3.99	9.46	5.91	9.75	6.89	6.97	3.29	2.14	0.74	5.71	11.22	10.10	8.97	4.51	6.11	7.10	3.33	5.49	4.13	4.00	4.42	1.56									0.00	2.20	6.68	1.70	4.01	4.06	144.45
WRR-IX																																					**1,845**
Zamboanga del Norte	1.000	5.77	8.52	5.47	4.57	4.50	2.20	1.17	0.01		4.16	5.39	5.58	6.38	9.81	5.42	6.13	4.85	5.56	4.02	4.98	4.05	3.53	0.00	0.00	0.00			0.00	0.00	2.46	2.13	4.24	0.12	0.98	8.45	4.70	125.12
Zamboanga del Sur	1.000	52.36	50.98	51.49	38.47	26.92	13.15	6.97	0.05		21.53	42.62	45.12	53.05	51.68	26.04	22.41	21.18	16.43	23.70	5.66	21.47	3.98	0.00	0.00	0.00			0.00	0.25	16.00	11.10	27.19	13.20	16.62	20.28	23.42	723.32
Zamboanga Sibugay	1.000	25.43	30.27	24.74	30.08	21.05	10.28	5.44	0.04		17.09	14.08	13.78	14.73	27.29	24.43	25.10	17.39	21.16	11.40	17.65	14.27	16.21	0.00	0.00	0.00			0.33	0.00	12.63	16.45	21.35	2.81	11.00	39.41	25.58	511.46
Misamis Occidental	1.000	32.38	33.00	35.61	34.00	32.84	18.39	25.64	13.66	2.60						7.65	20.96	24.75	11.10	11.47	9.44	7.12	13.98	8.63	20.96	17.20	16.32	0.00	0.00	0.00		0.00	2.40	17.70	6.41	1.72	3.13	429.06
Basilan	1.000	0.86	0.88	0.95	0.91	0.88	0.65	0.68	0.36	0.07						0.03	0.09	0.10	0.04	0.04	0.03	0.04	0.06	0.07	0.05	0.03	0.00	0.00	0.00	0.00		0.15	0.39	0.34	0.59	0.53	0.19	9.01
Sulu	1.000	2.83	2.88	3.11	2.03	2.86	2.12	1.72	1.19	0.23						0.11	0.18	0.39	0.16	0.11	0.27	0.16	0.17	0.28	0.22	0.26	0.23	0.16	0.00	0.00		1.31	0.98	1.74	2.76	2.39	0.49	31.31
Tawi-Tawi	1.000	1.19	1.56	1.69	1.24	1.55	0.77	0.70	0.64	0.12						0.06	0.11	0.17	0.11	0.02	0.11	0.09	0.08	0.12	0.13	0.11	0.10	0.07	0.01	0.00		0.71	0.37	1.36	1.07	1.30	0.42	15.97

WRR-X																																								**2,617**
Bukidnon	0.348	30.49	31.26	22.82	23.76	29.00	11.26	2.38	4.57	1.93	2.77			0.00	0.00	3.06	10.49	4.22	5.10	1.57	7.98	6.06	12.81	19.09	12.28	9.28	0.00	0.00	0.00	0.00	0.00	0.00	7.09	7.18	12.21	24.55	8.37	311.58
Camiguin	1.000	0.30	0.32	0.30	0.32	0.74	0.55	0.58	0.31	0.06						0.67	0.77	0.81	0.37	0.52	0.97	0.58	0.69	0.70	0.88	0.74	0.61	0.57	0.00	0.00		0.00	0.65	0.43	0.72	0.21	0.73	15.08
Lanao del Norte	0.082	2.27	1.66	1.69	1.85	1.17	1.59	0.00	2.19	1.19	0.00	0.00				0.85	0.90	0.63	2.63	1.07	0.82	1.89	3.04	1.99	2.30	0.35	0.52	0.00	0.00	0.00	0.00	0.29	0.00	2.65	2.47	2.72	1.52	40.24
Misamis Oriental	0.999	21.22	13.33	14.76	9.78	14.67	12.07	20.82	0.00	0.00						6.01	6.72	19.75	14.13	11.37	9.39	19.23	15.32	5.53	16.60	10.10	10.56	9.08	0.00	0.00		7.11	18.03	25.19	12.89	13.65	26.08	363.37
Compostela Valley	0.523	9.37	8.98	23.64	0.00	21.82	2.23	5.30	0.00	0.00						0.36	11.38	22.89	10.73	7.31	9.67	5.51	10.73	9.01	13.48	12.58	10.18	5.74	0.00	0.00		0.00	3.89	12.38	21.36	5.42	6.34	250.34
Davao del Norte	0.007	0.14	0.17	0.23	0.24	0.41	0.41	0.43	0.23	0.00						0.00	0.13	0.25	0.14	0.18	0.26	0.32	0.29	0.40	0.29	0.25	0.04	0.00	0.00	0.00		0.00	0.12	0.21	0.04	0.32	0.41	5.93
Davao Oriental	0.051	1.70	1.73	1.87	1.78	1.13	1.28	1.34	0.00	0.14						0.44	1.23	1.11	0.73	0.57	0.90	0.97	0.90	1.14	1.34	0.36	0.11	0.00	0.00	0.00		0.00	0.55	0.62	0.19	0.49	0.77	23.39
Agusan del Norte	0.973	23.29	32.21	39.88	38.14	36.84	27.28	19.08	15.31	2.91						6.46	29.09	43.99	13.40	9.09	10.90	3.57	20.09	10.01	21.01	20.24	6.47	0.00	0.00	0.00		0.00	5.56	13.23	5.17	3.28	8.65	465.18
Agusan del Sur	0.889	70.91	72.29	78.00	74.58	72.04	53.34	56.17	29.93	0.00						0.00	37.66	54.17	34.22	0.00	22.30	35.95	22.26	34.62	28.81	23.32	12.14	0.00	0.00	0.00		0.00	10.89	40.85	23.09	9.94	12.26	909.73
Dinagat Islands	1.000	0.58	1.32	0.78	1.36	0.86	0.97	0.41	0.54	0.10						0.64	1.26	0.88	0.82	0.91	0.13	1.59	0.94	0.97	1.55	1.31	0.17	0.13	0.00	0.00		0.00	0.12	0.54	0.61	1.08	0.16	20.76
Surigao del Norte	1.000	3.60	8.50	4.40	6.72	4.98	6.26	4.32	1.01	0.00						4.42	10.54	6.38	5.65	10.62	1.18	10.36	8.99	7.99	13.12	8.59	0.81	0.81	0.00	0.00		0.00	0.00	5.08	2.66	3.99	3.91	144.89
Surigao del Sur	0.104	2.25	1.66	2.15	0.72	4.41	0.00	3.22	0.00	0.00						0.00	2.98	5.29	1.52	1.24	2.56	3.68	2.52	6.01	1.20	2.65	3.77	1.95	0.00	0.00		2.50	3.31	3.48	1.34	1.07	5.27	66.74
WRR-XI																																								**3,760**
Bukidnon	0.046	4.03	4.13	3.02	3.14	3.83	1.49	0.31	0.60	0.26	0.37			0.00	0.00	0.40	1.39	0.56	0.67	0.21	1.05	0.80	1.69	2.52	1.62	1.23	0.00	0.00	0.00	0.00	0.00	0.00	0.94	0.95	1.61	3.24	1.11	41.19
Compostela Valley	0.477	8.55	8.19	21.56	0.00	19.90	2.04	4.84	0.00	0.00						0.33	10.38	20.88	9.79	6.67	8.82	5.03	9.79	8.22	12.30	11.48	9.29	5.24	0.00	0.00		0.00	3.55	11.29	19.48	4.94	5.78	228.32
Davao del Norte	0.989	20.00	24.26	32.47	34.31	58.62	57.26	60.40	32.18	0.00						0.00	18.07	35.96	20.35	25.40	37.41	45.70	41.14	56.28	40.28	35.49	6.17	0.00	0.00	0.00		0.00	17.18	30.27	5.75	45.56	57.86	838.40
Davao del Sur	0.998	22.26	58.41	63.03	48.73	19.42	43.09	26.51	12.12	0.00						13.32	35.22	41.32	31.27	39.91	28.89	52.55	16.75	57.96	26.64	8.29	20.43	0.00	0.00	0.00		5.01	30.40	53.23	56.35	47.69	28.08	886.89
Davao Oriental	0.949	31.61	32.23	34.77	33.21	21.06	23.75	24.93	0.00	2.53						8.10	22.94	20.73	13.63	10.60	16.66	18.03	16.74	21.30	25.01	6.66	2.01	0.00	0.00	0.00		0.00	10.17	11.51	3.60	9.12	14.37	435.30
Sarangani	0.869	4.52	0.00	0.56	0.00	0.00		0.00	4.49	6.44	3.57	6.96	10.51	5.85	4.09	9.26	8.17	4.86	2.37	0.00	0.00	0.51	1.00	0.00		0.00	0.71	2.52	2.70	6.40	4.37	4.27	3.80	3.08	5.33	4.26	0.98	111.56
South Cotabato	0.340	16.58	12.09	0.00	3.69	0.30		8.08	3.26	22.53	12.46	31.35	36.84	23.27	19.82	15.05	11.11	13.47	8.15	0.00	0.00	0.00	0.00	0.00		0.00	6.78	17.66	4.69	13.01	14.58	19.43	14.99	15.51	17.26	14.25	22.23	398.44
North Cotabato	0.038	3.38	0.93	0.00	0.00	0.00		1.56	1.55	2.37	4.44	6.16	5.13	3.73	2.72	3.39	1.38	1.41	3.16	0.87	0.00	0.03	0.00	0.00		0.00	1.05	2.07	0.62	3.00	3.04	3.15	2.52	3.17	2.07	3.16	4.55	70.63
Sultan Kudarat	0.052	2.17	0.23	0.00	0.00	0.00		0.00	2.45	3.52	1.01	3.66	5.75	2.91	1.30	5.07	3.01	1.48	0.12	0.00	0.00	0.00	0.55	0.00		0.00	0.00	0.45	0.95	2.37	1.38	1.49	0.70	3.12	2.60	3.12	0.65	50.04
Agusan del Norte	0.027	0.65	0.89	1.11	1.06	1.02	0.76	0.53	0.42	0.08						0.18	0.81	1.22	0.37	0.25	0.30	0.10	0.56	0.28	0.58	0.56	0.18	0.00	0.00	0.00		0.00	0.15	0.37	0.14	0.09	0.24	12.91
Agusan del Sur	0.109	8.69	8.86	9.56	9.14	8.83	6.54	6.89	3.67	0.00						0.00	4.62	6.64	4.20	0.00	2.73	4.41	2.73	4.24	3.53	2.86	1.49	0.00	0.00	0.00		0.00	1.34	5.01	2.83	1.22	1.50	111.54
Surigao del Sur	0.896	19.42	14.34	18.49	6.20	37.97	0.00	27.72	0.00	0.00						0.00	25.70	45.56	13.07	10.73	22.05	31.68	21.70	51.80	10.35	22.82	32.47	16.76	0.00	0.00		21.56	28.48	29.97	11.56	9.19	45.42	575.01
WRR-XII																																								**5,288**
Bukidnon	0.606	53.09	54.43	39.73	41.38	50.51	19.61	4.14	7.97	3.37	4.82			0.00	0.00	5.32	18.27	7.35	8.89	2.73	13.89	10.56	22.31	33.25	21.39	16.17	0.00	0.00	0.00	0.00	0.00	0.00	12.34	12.49	21.27	42.74	14.57	542.58
Lanao del Norte	0.918	25.46	18.54	18.89	20.69	13.05	17.79	0.00	24.56	13.32	0.00	0.04				9.49	10.02	7.00	29.40	12.02	9.18	21.16	34.03	22.24	25.79	3.97	5.87	0.00	0.00	0.00	0.00	3.21	0.00	29.68	27.68	30.48	16.96	450.51
Misamis Oriental	0.001	0.02	0.01	0.01	0.01	0.01	0.01	0.02	0.00	0.00						0.01	0.01	0.02	0.01	0.01	0.01	0.02	0.02	0.01	0.02	0.01	0.01	0.01	0.00	0.00		0.01	0.02	0.03	0.01	0.01	0.03	0.36
Davao del Norte	0.004	0.08	0.10	0.13	0.14	0.24	0.23	0.24	0.13	0.00						0.00	0.07	0.15	0.08	0.10	0.15	0.18	0.17	0.23	0.16	0.14	0.02	0.00	0.00	0.00		0.00	0.07	0.12	0.02	0.18	0.23	3.39
Davao del Sur	0.002	0.04	0.12	0.13	0.10	0.04	0.09	0.05	0.02	0.00						0.03	0.07	0.08	0.06	0.08	0.06	0.11	0.03	0.12	0.05	0.02	0.04	0.00	0.00	0.00		0.01	0.06	0.11	0.11	0.10	0.06	1.78
Sarangani	0.131	0.68	0.00	0.08	0.00	0.00		0.00	0.68	0.97	0.54	1.05	1.58	0.88	0.62	1.40	1.23	0.73	0.36	0.00	0.00	0.08	0.15	0.00		0.00	0.11	0.38	0.41	0.96	0.66	0.64	0.57	0.46	0.80	0.64	0.15	16.82
South Cotabato	0.660	32.19	23.46	0.00	7.17	0.58		15.69	6.34	43.73	24.18	60.85	71.51	45.17	38.48	29.21	21.57	26.15	15.83	0.00	0.00	0.00	0.00	0.00		0.00	13.16	34.27	9.11	25.25	28.30	37.72	29.09	30.10	33.51	27.65	43.16	773.44
North Cotabato	0.962	85.61	23.51	0.00	0.00	0.00		39.52	39.33	59.92	#####	#####	#####	94.48	68.74	85.90	34.98	35.81	80.07	21.96	0.00	0.64	0.00	0.00		0.00	26.55	52.51	15.72	76.04	76.85	79.70	63.82	80.33	52.45	80.11	#####	1,788.15
Sultan Kudarat	0.948	39.58	4.22	0.00	0.00	0.00		0.00	44.62	64.08	18.37	66.80	#####	52.97	23.70	92.47	54.84	26.98	2.25	0.00	0.00	0.00	9.94	0.00		0.00	0.00	8.27	17.31	43.19	25.08	27.11	12.70	56.91	47.34	56.90	11.79	912.34
Agusan del Sur	0.002	0.16	0.16	0.18	0.17	0.16	0.12	0.13	0.07	0.00						0.00	0.08	0.12	0.08	0.00	0.05	0.08	0.05	0.08	0.06	0.05	0.03	0.00	0.00	0.00		0.00	0.02	0.09	0.05	0.02	0.03	2.05
Lanao del Sur	1.000	15.98	3.50	0.00	0.00	0.00		0.83	0.56	0.13	0.17	1.99	2.46	1.96	0.96	1.32	0.07	0.91	0.57	0.00	0.00	0.00	0.00	0.00		0.00	0.00	2.49	0.00	7.97	7.38	8.04	3.88	7.96	10.00	13.48	21.50	114.13
Maguindanao	1.000	69.03	22.85	0.00	0.00	0.00		3.32	3.37	2.78	4.00	10.03	11.23	8.15	6.76	4.58	2.52	2.45	5.13	3.41	0.00	0.71	0.00	0.00		0.00	20.83	42.14	0.00	60.17	53.09	65.56	42.94	51.03	35.67	58.84	92.33	682.94
Total	80.000																																							**57,283**

Source: JICA Survey Team

Table F 36 Irrigation Water Demands of Surface Water Systems by WRR in 2040
(Based on Irrigated Areas Projected under NIMP 2020-2030)

(Unit: MCM)

Region/	Area	Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			Annual
Province	Rate	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
WRR-I																																						**2,341**
Abra	0.991	20.85	21.25	22.94	22.12	21.37	15.84	16.86	8.98	0.00							8.18	15.98	21.23	11.47	2.65	5.91	7.40	6.81	7.24	7.65	15.96	20.87	7.92	0.00	0.00	9.01	17.91	23.49	20.21	1.28	20.88	382.25
Apayao	0.003	0.04	0.04	0.04	0.04	0.04	0.03	0.02	0.02	0.00							0.00	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.03	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.03	0.04	0.58
Benguet	0.467	7.92	8.07	8.71	8.38	8.10	6.00	6.38	3.40	0.65			0.00	5.48	5.84	3.95	3.00	4.20	3.19	3.07	1.98	1.28	2.43	1.90	0.00	0.00	0.00					3.45	6.85	1.56	7.70	6.66	4.16	124.31
Kalinga	0.006	0.20	0.20	0.22	0.21	0.20	0.15	0.16	0.09	0.02							0.00	0.11	0.13	0.10	0.03	0.10	0.05	0.10	0.07	0.09	0.00	0.10	0.13	0.00	0.00	0.09	0.17	0.23	0.20	0.17	0.20	3.51
Mt. Province	0.140	1.76	1.70	0.25	1.19	0.68	0.04							1.40	0.82	1.80	1.98	1.01	1.41	1.00	0.00	0.17	0.10	0.74	0.65	0.20	0.00	0.00	0.48	1.91	1.03	0.03	0.00	1.11	0.53	0.91	1.91	24.80
Ilocos Norte	0.984	46.06	46.94	50.66	48.80	43.43	24.73	19.83	3.43									23.63	62.60	63.14	72.15	33.84	28.71	29.26	53.50	3.95	31.09	8.40	0.00	0.00	0.00	26.22	48.21	21.30	47.59	5.01	46.39	888.85
Ilocos Sur	1.000	30.45	31.03	33.49	32.16	28.63	16.30	13.01	2.25									0.00	28.29	14.22	36.50	14.33	22.25	22.14	54.35	22.42	16.65	33.40	0.00	16.70	1.97	0.00	32.03	40.09	31.62	25.89	30.76	630.94
La Union	0.947	15.39	15.69	16.93	16.24	14.46	8.24	6.57	1.14									0.69	7.88	18.11	8.63	8.55	4.28	9.97	7.64	9.97	0.48	10.78	13.74	0.00	0.00	8.88	16.27	20.35	16.02	13.09	15.55	285.51
WRR-II																																						**8,364**
Abra	0.009	0.19	0.19	0.21	0.20	0.19	0.14	0.15	0.08	0.00							0.07	0.15	0.19	0.10	0.02	0.05	0.07	0.06	0.07	0.07	0.14	0.19	0.07	0.00	0.00	0.08	0.16	0.21	0.18	0.01	0.19	3.47
Apayao	0.997	11.66	11.88	12.82	12.38	11.96	8.87	7.19	5.06	0.96							0.00	9.68	10.82	8.27	6.95	6.65	5.97	6.91	4.03	3.31	5.02	10.34	2.23	3.53	0.42	5.16	0.00	0.00	0.00	9.83	11.70	193.62
Benguet	0.007	0.12	0.12	0.13	0.13	0.12	0.09	0.10	0.05	0.01			0.00	0.08	0.09	0.06	0.04	0.06	0.05	0.05	0.03	0.02	0.04	0.03	0.00	0.00	0.00					0.05	0.10	0.02	0.12	0.10	0.06	1.86
Ifugao	0.993			8.74	10.99	20.51	13.64	17.58	19.15	19.12	22.60	15.98	15.33	18.26	11.43	7.79	0.00	0.00				0.00	12.42	7.98	3.40	0.89	0.00	5.99	0.39	12.63	12.22	1.56	7.91	0.00	0.00	0.00		266.50
Kalinga	0.994	32.88	33.48	36.17	34.87	33.74	25.07	26.68	14.23	2.72							0.22	18.54	21.16	15.83	5.71	16.29	8.73	16.62	11.56	14.93	0.00	16.28	21.36	0.00		14.51	28.83	37.81	32.36	27.97	33.20	581.75
Mt. Province	0.858	10.78	10.41	1.51	7.27	4.15	0.26							8.57	5.03	11.01	12.12	6.17	8.63	6.15	0.00	1.06	0.63	4.51	3.99	1.23	0.00	0.00	2.93	11.71	6.30	0.20	0.00	6.79	3.25	5.59	11.71	151.98
Ilocos Norte	0.016	0.75	0.76	0.82	0.79	0.71	0.40	0.32	0.06									0.38	1.02	1.03	1.17	0.55	0.47	0.48	0.87	0.06	0.51	0.14	0.00	0.00	0.00	0.43	0.78	0.35	0.77	0.08	0.75	14.45
Batanes	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00								0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cagayan	1.000	82.36	#####	#####	#####	#####	91.79	97.87	52.15	0.00							45.77	#####	#####	#####	#####	91.69	72.50	80.28	56.06	86.18	#####	38.62	0.00	0.00	0.00	0.00	#####	#####	64.72	30.76	98.39	2,300.06
Isabela	1.000	#####	#####	#####	#####	#####	#####	#####	#####	0.00	35.29	0.27					2.59	#####	#####	#####	#####	86.64	#####	#####	#####	52.69	0.00	#####	0.00	0.00	0.00	95.81	0.00	29.74	93.16	37.00	#####	3,785.77
Nueva Vizcaya	0.873	34.86	35.51	38.34	36.99	35.77	26.53	28.27	15.07	2.87							5.74	41.49	44.90	5.56	9.92	18.26	10.08	4.52	16.50	9.91	7.64	0.00	0.00	10.39	0.00	0.00	34.01	43.41	21.67	0.00	4.28	542.50
Quirino	0.997	14.72	19.06	16.04	19.82	19.15	14.19	15.12	8.06	0.00							3.82	21.92	18.63	15.06	4.93	6.42	7.65	8.40	5.92	7.06	7.33	0.00	5.06	0.00	0.00	9.26	7.57	22.91	18.75	7.03	18.72	322.61
Aurora	0.410	8.16	6.19	7.10	6.89	8.72	6.51	10.55	12.95	10.18	9.03	0.00	0.00				0.00	6.26	10.16	5.88	10.20	4.73	4.64	9.08	9.70	7.05	0.38	3.23	0.00	0.20	0.00				4.79	9.52	8.22	180.31
Nueva Ecija	0.005	0.62	1.08	1.23	0.98	1.23	0.95	1.18	0.58	0.76	0.18	0.26	0.05			0.10	0.02	0.77	0.09	0.50	0.80	0.12	0.36	0.71	0.62	0.09	0.34	0.15	0.81	0.11	0.00	0.52	0.68	0.75	0.93	1.07	0.90	19.53
WRR-III																																						**11,719**
Benguet	0.526	8.92	9.08	9.81	9.44	9.12	6.76	7.19	3.83	0.73			0.00	6.17	6.57	4.44	3.38	4.73	3.60	3.46	2.24	1.44	2.73	2.15	0.00	0.00	0.00					3.89	7.71	1.76	8.67	7.51	4.68	140.02
Ifugao	0.007			0.06	0.08	0.14	0.10	0.12	0.13	0.13	0.16	0.11	0.11	0.13	0.08	0.05	0.00	0.00				0.00	0.09	0.06	0.02	0.01	0.00	0.04	0.00	0.09	0.09	0.01	0.06	0.00	0.00	0.00		1.88
Mt. Province	0.002	0.03	0.02	0.00	0.02	0.01	0.00							0.02	0.01	0.03	0.03	0.01	0.02	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.03	0.01	0.00	0.00	0.02	0.01	0.01	0.03	0.35
La Union	0.053	0.86	0.88	0.95	0.91	0.81	0.46	0.37	0.06									0.04	0.44	1.01	0.48	0.48	0.24	0.56	0.43	0.56	0.03	0.60	0.77	0.00	0.00	0.50	0.91	1.14	0.90	0.73	0.87	15.98
Pangasinan	1.000	#####	#####	#####	#####	#####	85.75	88.69	54.54	0.00	0.00							0.00	0.00	49.28	45.07	88.31	#####	80.85	81.54	82.79	#####	56.19	#####	0.00	96.33	81.92	#####	#####	#####	#####	#####	2,587.50
Nueva Vizcaya	0.127	5.07	5.17	5.58	5.38	5.20	3.86	4.11	2.19	0.42							0.84	6.04	6.53	0.81	1.44	2.66	1.47	0.66	2.40	1.44	1.11	0.00	0.00	1.51	0.00	0.00	4.95	6.31	3.15	0.00	0.62	78.92
Quirino	0.003	0.04	0.06	0.05	0.06	0.06	0.04	0.05	0.02	0.00							0.01	0.07	0.06	0.05	0.01	0.02	0.02	0.03	0.02	0.02	0.02	0.00	0.02	0.00	0.00	0.03	0.02	0.07	0.06	0.02	0.06	0.97
Aurora	0.548	10.90	8.28	9.49	9.21	11.66	8.70	14.10	17.31	13.60	12.07	0.00	0.00				0.00	8.37	13.58	7.85	13.63	6.32	6.21	12.13	12.97	9.43	0.50	4.31	0.00	0.26	0.00				6.40	12.72	10.99	241.00
Bataan	1.000	21.81	22.23	23.99	23.02	22.24	16.46	17.46	9.30	1.77								0.00	6.77	11.89	12.83	10.49	7.96	9.14	19.40	16.91	6.74	7.18	5.09	9.53	0.00	2.67	16.00	15.17	22.29	18.18	15.53	372.04
Bulacan	0.978	37.20	37.92	40.92	39.36	25.34	28.15	29.92	15.94	0.00								15.25	32.79	19.16	27.23	0.00	20.52	27.22	10.03	20.74	57.36	14.65	11.22	0.00	3.67	0.00	11.78	43.56	16.14	17.69	37.05	640.81
Nueva Ecija	0.994	#####	#####	#####	#####	#####	#####	#####	#####	#####	35.11	52.03	9.87			20.17	4.33	#####	18.42	#####	#####	23.11	71.21	#####	#####	18.85	68.25	30.08	#####	20.91	0.00	#####	#####	#####	#####	#####	#####	3,883.17
Pampanga	1.000	86.49	88.17	95.14	91.62	88.49	65.51	69.83	37.20	7.08								7.06	42.95	70.92	39.86	34.91	26.41	5.77	22.23	55.16	27.87	14.57	36.87	19.97	28.09	40.80	78.20	#####	84.72	72.10	86.01	1,525.08
Tarlac	1.000	91.18	92.95	#####	96.70	93.39	69.14	73.76	39.29	7.48								9.64	75.45	87.77	84.92	22.32	0.00	39.57	99.95	68.14	29.42	6.20	13.67	30.99	11.59	30.37	93.79	#####	93.23	75.89	67.12	1,722.02
Zambales	1.000	25.39	25.88	27.92	26.88	25.95	19.20	20.42	10.87	0.00								0.00	24.34	36.02	18.31	11.32	29.21	14.24	4.06	19.79	16.91	0.65	23.25	14.20	0.00	0.00	17.47	29.14	19.69	21.14	25.25	507.51
Rizal	0.021	0.13	0.03	0.10	0.14	0.13	0.10	0.10	0.00	0.01				0.00	0.04	0.14	0.07	0.02	0.03	0.05	0.07	0.07	0.05	0.05	0.00	0.02	0.00	0.00				0.00	0.08	0.06	0.12	0.07	0.13	1.80

WRR-IV																																						**4,418**
Aurora	0.042	0.84	0.63	0.73	0.71	0.89	0.67	1.08	1.33	1.04	0.93	0.00	0.00				0.00	0.64	1.04	0.60	1.04	0.48	0.48	0.93	0.99	0.72	0.04	0.33	0.00	0.02	0.00				0.49	0.98	0.84	18.47
Bulacan	0.022	0.84	0.85	0.92	0.89	0.57	0.63	0.67	0.36	0.00								0.34	0.74	0.43	0.61	0.00	0.46	0.61	0.23	0.47	1.29	0.33	0.25	0.00	0.08	0.00	0.26	0.98	0.36	0.40	0.83	14.41
Nueva Ecija	0.001	0.12	0.22	0.25	0.20	0.25	0.19	0.24	0.12	0.15	0.04	0.05	0.01			0.02	0.00	0.15	0.02	0.10	0.16	0.02	0.07	0.14	0.12	0.02	0.07	0.03	0.16	0.02	0.00	0.10	0.14	0.15	0.19	0.21	0.18	3.91
Batangas	1.000	4.42	4.48	6.60	6.33	6.11	4.52	4.80	2.56	0.49				0.89	4.41	5.82	2.94	1.96	3.92	0.13	4.25	2.21	2.01	1.20	0.19	0.00	0.00	0.00				0.00	3.57	4.06	5.22	0.92	5.96	89.94
Cavite	1.000	25.55	26.04	28.10	26.98	26.06	19.30	20.50	10.92	2.08				11.47	24.50	25.56	3.83	0.11	12.82	6.49	10.49	22.19	8.77	17.39	27.72	6.71	0.00	0.00				0.00	1.67	7.55	22.27	21.30	10.88	427.26
Laguna	1.000	37.06	37.77	40.76	39.11	37.77	27.97	29.71	15.83	0.00				14.53	15.23	27.53	17.53	27.45	15.18	15.50	18.21	14.99	17.01	13.47	1.13	0.00	0.00	0.00				0.00	0.00	19.70	6.97	8.08	36.90	535.40
Quezon	0.947	6.42	99.73	87.84	#####	68.10	73.71	58.31	2.96	7.92				11.10	59.32	#####	59.48	68.20	27.30	13.27	48.56	39.99	72.61	#####	30.77	0.00	0.00	0.00				25.79	20.74	54.65	30.59	53.81	13.22	1,346.24
Rizal	0.979	6.03	1.55	4.50	6.36	6.15	4.55	4.83	0.00	0.49				0.00	2.03	6.45	3.45	0.96	1.17	2.37	3.44	3.05	2.38	2.37	0.00	1.10	0.00	0.00				0.00	3.63	2.59	5.38	3.07	6.15	84.05
Marinduque	1.000	1.55	0.82	2.49	2.58	1.83	2.07	2.88	2.78	2.80	1.92	0.38	0.19	0.88	2.73	3.88	1.38	1.05	1.50	0.71	2.44	1.61	1.77	1.51	0.83	0.25	0.00	0.05							1.22	0.35	3.13	47.59
Occidental Mindoro	1.000	31.17	31.77	34.28	32.84	31.72	23.49	24.86	13.25	2.52								0.00	19.63	36.52	12.47	16.57	0.00	1.41	17.32	17.71	8.54	2.69	24.85	0.00	5.43	6.38	6.29	40.34	31.94	16.79	25.25	516.05
Oriental Mindoro	1.000	33.39	32.24	38.50	39.99	39.46	31.99	44.64	35.17	28.28	29.89	1.22	2.92	19.12	11.16	28.65	15.62	7.43	17.81	4.69	20.31	14.19	13.86	7.30	15.79	0.00	2.97	0.00							5.59	24.55	26.92	593.64
Palawan	1.000	33.46	30.17	36.08	37.40	36.90	29.92	41.64	40.15	40.42	27.66	14.15	2.70	22.92	23.85	42.82	26.41	18.98	0.63	12.65	7.83	17.71	21.28	14.20	1.23	0.42	0.00	0.00							17.56	15.01	30.77	644.91
Romblon	1.000	3.69	4.09	4.88	5.07	5.00	4.05	5.65	5.45	5.49	3.76	1.93	0.37	2.57	4.96	7.05	3.94	4.23	1.92	2.14	1.90	1.43	0.60	1.89	2.10	0.93	0.00	0.00							1.46	3.40	6.13	96.06
WRR-V																																						**4,976**
Quezon	0.053	0.36	5.58	4.92	5.77	3.81	4.13	3.26	0.17	0.44				0.62	3.32	5.90	3.33	3.82	1.53	0.74	2.72	2.24	4.06	5.79	1.72	0.00	0.00	0.00				1.44	1.16	3.06	1.71	3.01	0.74	75.34
Albay	1.000	48.05	8.90	40.35	33.74	37.97	32.95	59.80	55.12	13.98	20.41	3.12		15.42	59.57	44.19	57.35	21.37	43.23	30.16	18.21	16.27	30.76	9.12	19.41	9.24	0.00	0.00							0.00	45.55	22.14	796.37
Camarines Norte	1.000	11.85	5.64	9.61	13.22	6.34	10.57	14.76	10.93	3.08	2.59	0.77		7.17	9.49	12.35	2.30	3.46	6.26	6.16	6.07	3.17	7.88	2.66	3.57	0.00	0.00	0.00							0.00	1.86	12.93	174.68
Camarines Sur	1.000	68.11	75.62	94.70	#####	#####	97.41	#####	#####	96.40	46.44	0.00		48.76	93.52	95.10	95.32	83.10	79.13	67.01	37.60	79.01	#####	43.48	34.85	0.00	0.00	0.00	0.00						0.00	31.17	97.21	1,968.27
Catanduanes	1.000	4.12	0.66	4.43	3.48	2.06	3.68	5.12	1.97	3.63	1.74	0.27		0.00	4.69	4.89	3.59	2.57	3.58	3.04	0.70	2.14	2.56	1.37	3.94	1.04	0.00	0.09							0.00	1.85	2.83	70.04
Masbate	1.000	57.26	73.61	58.95	91.25	93.08	37.91	#####	24.80	63.99	30.72	4.69		31.50	36.54	99.57	89.42	16.22	41.27	33.06	49.69	39.21	26.70	55.20	40.27	7.08	0.00	1.78							0.00	27.57	#####	1,343.12
Sorsogon	1.000	4.91	32.40	31.61	31.06	40.98	13.90	44.78	15.81	31.79	15.27	0.00		2.04	13.81	49.12	29.93	12.54	14.56	7.10	19.33	20.01	11.40	26.93	11.35	0.12	0.00	0.80							0.00	18.20	48.70	548.47
WRR-VI																																						**3,987**
Aklan	1.000	12.64	12.24	12.00	7.83	3.63	0.30							4.43	17.49	16.00	10.19	9.95	4.37	8.13	4.74	8.04	5.16	9.38	5.19	3.95	0.00	0.35	0.00	4.71	10.42	2.84	3.34	5.52	5.38	11.88	5.10	205.20
Antique	1.000	18.01	16.69	9.73	9.27	5.28	0.00	0.02						0.00	0.00	18.02	7.72	3.90	0.00	4.63	5.92	5.81	6.06	4.71	0.00	0.00	0.00	0.00	0.00	0.00	9.94	4.91	4.87	11.27	16.58	17.35	19.09	199.78
Capiz	1.000	26.20	25.19	7.34	16.18	7.47	0.00							20.58	14.78	37.72	13.02	0.00	0.00	0.12	0.00	13.05	18.28	0.00	7.32	0.00	0.00	0.00	0.00	2.80	22.30	5.61	8.03	23.82	11.41	18.33	22.50	322.06
Guimaras	1.000	1.07	0.67	1.01	0.66	0.31	0.00							0.20	0.55	1.53	0.77	0.50	0.24	0.14	0.25	0.43	0.55	0.52	0.73	0.00	0.00	0.00	0.00	0.00	0.97	0.54	0.42	0.00	1.05	0.45	1.15	14.71
Iloilo	1.000	61.50	59.65	32.17	45.03	31.47	15.32	8.23	0.06					35.02	6.03	56.65	30.88	21.90	13.00	14.82	0.00	45.71	63.28	0.00	31.38	4.10	0.00	0.00	0.00	0.00	56.71	24.57	38.00	51.25	32.92	59.06	64.98	903.72
Negros Occidental	0.924	89.76	#####	#####	75.26	8.29	2.93							22.47	#####	#####	#####	45.99	#####	63.00	77.57	#####	#####	55.75	67.79	0.95	0.00	0.00	15.53	40.93	54.27	28.74	#####	#####	#####	#####	78.16	2,157.57
Negros Oriental	0.231	8.95	10.58	10.46	6.77	3.15	0.26							5.50	7.74	16.17	11.73	5.91	5.53	5.99	7.75	6.10	5.23	7.57	5.11	0.53	0.00	0.00	0.81	4.78	9.29	10.42	4.35	8.32	5.40	3.81	5.99	184.19
WRR-VII																																						**1,975**
Negros Occidental	0.076	7.38	9.69	9.58	6.19	0.68	0.24							1.85	12.73	12.40	9.54	3.78	8.85	5.18	6.38	8.72	8.86	4.59	5.58	0.08	0.00	0.00	1.28	3.37	4.46	2.36	8.75	9.31	9.78	9.43	6.43	177.46
Bohol	1.000	53.81	49.46	27.34	29.61	35.48	17.61	32.39	0.00	0.00					0.00	18.78	0.00	0.00	54.62	48.17	32.09	60.33	60.20	21.92	52.03	22.94	11.56	39.28	0.00	0.00	39.79	36.36	45.67	55.27	41.69	70.81	67.67	1,024.88
Cebu	1.000	9.14	8.97	5.29	6.39	3.71	0.00	0.00								3.98	3.44	9.60	7.86	8.94	2.44	4.50	3.70	7.52	9.05	8.52	0.00	0.00	0.00		2.97	8.24	7.73	5.23	3.52	8.16	7.43	146.33
Negros Oriental	0.769	29.78	35.21	34.84	22.52	10.48	0.88							18.30	25.78	53.81	39.05	19.67	18.41	19.95	25.80	20.30	17.40	25.19	17.01	1.78	0.00	0.00	2.71	15.92	30.93	34.69	14.48	27.69	17.97	12.69	19.93	613.18
Siquijor	1.000	0.38	0.33	0.39	0.34	0.31	0.13	0.03								0.72	1.21	0.86	0.34	0.39	0.70	0.89	1.10	0.63	1.16	0.90	0.28	0.03	0.00		0.29	0.32	0.40	0.23	0.05	0.47	0.54	13.44
WRR-VIII																																						**2,775**
Biliran	1.000	2.25	3.11	6.78	6.48	4.19	4.63	4.88	1.10	0.00						0.88	4.82	3.81	4.67	3.63	5.62	3.77	2.70	2.58	2.98	3.91	0.71	0.66				0.00	3.88	7.23	6.06	5.14	0.02	96.48
Northern Leyte	1.000	#####	#####	60.89	72.41	24.63	24.15	0.00	0.00	0.00						37.15	31.54	#####	99.09	#####	24.73	31.67	51.45	96.81	#####	#####	1.32	40.20				60.33	18.09	55.30	39.01	#####	50.82	1,652.92
Southern Leyte	1.000	12.54	12.78	6.07	5.70	6.13	0.00	0.00	0.00	1.01	7.60	14.95	11.41	10.14	5.78	11.34	3.15	10.08	13.94	12.50	5.19	3.00	0.70									5.87	5.74	6.53	2.64	10.43	5.99	191.21
Northern Samar	1.000	4.15	5.09	4.29	7.72	7.45	5.52	4.10	3.10	0.59	4.66	9.18	11.95	9.19	7.76	7.55	8.58	7.28	4.40	3.03	0.24	0.39	0.30									0.00	2.45	1.78	3.05	0.00	3.33	127.12
Weatern Samar	1.000	1.17	39.72	15.98	41.01	39.60	29.32	17.15	9.06	3.14	22.33	43.94	47.74	43.91	4.27	23.82	21.59	9.27	18.27	9.96	12.06	20.18	0.00									0.00	12.00	31.63	8.55	21.11	16.47	563.24
Eastern Samar	1.000	3.99	9.46	5.91	9.75	6.89	6.97	3.29	2.14	0.74	5.71	11.22	10.10	8.97	4.51	6.11	7.10	3.33	5.49	4.13	4.00	4.42	1.56									0.00	2.20	6.68	1.70	4.01	4.06	144.45
WRR-IX																																						**1,837**
Zamboanga del Norte	1.000	5.77	8.52	5.47	4.57	4.50	2.20	1.17	0.01		4.16	5.39	5.58	6.38	9.81	5.42	6.13	4.85	5.56	4.02	4.98	4.05	3.53	0.00	0.00	0.00			0.00	0.00	2.46	2.13	4.24	0.12	0.98	8.45	4.70	125.12
Zamboanga del Sur	1.000	52.21	50.83	51.35	38.36	26.84	13.11	6.95	0.05		21.47	42.50	44.99	52.91	51.54	25.96	22.34	21.12	16.39	23.63	5.64	21.41	3.97	0.00	0.00	0.00			0.00	0.25	15.96	11.07	27.12	13.17	16.57	20.22	23.35	721.30
Zamboanga Sibugay	1.000	25.25	30.05	24.56	29.86	20.90	10.20	5.40	0.04		16.96	13.97	13.67	14.62	27.08	24.24	24.91	17.25	21.00	11.31	17.51	14.17	16.09	0.00	0.00	0.00			0.33	0.00	12.54	16.33	21.20	2.79	10.92	39.13	25.40	507.67
Misamis Occidental	1.000	32.38	33.00	35.61	34.00	32.84	18.39	25.64	13.66	2.60						7.65	20.96	24.75	11.10	11.47	9.44	7.12	13.98	8.63	20.96	17.20	16.32	0.00	0.00	0.00		0.00	2.40	17.70	6.41	1.72	3.13	429.06
Basilan	1.000	0.86	0.88	0.95	0.91	0.88	0.65	0.68	0.36	0.07						0.03	0.09	0.10	0.04	0.04	0.03	0.04	0.06	0.07	0.05	0.03	0.00	0.00	0.00	0.00		0.15	0.39	0.34	0.59	0.53	0.19	9.01
Sulu	1.000	2.61	2.66	2.87	1.87	2.64	1.96	1.59	1.10	0.21						0.10	0.16	0.36	0.15	0.10	0.25	0.15	0.15	0.26	0.20	0.24	0.21	0.14	0.00	0.00		1.21	0.90	1.61	2.55	2.21	0.45	28.94
Tawi-Tawi	1.000	1.19	1.56	1.69	1.24	1.55	0.77	0.70	0.64	0.12						0.06	0.11	0.17	0.11	0.02	0.11	0.09	0.08	0.12	0.13	0.11	0.10	0.07	0.01	0.00		0.71	0.37	1.36	1.07	1.30	0.42	15.97

WRR-X																																							**2,609**
Bukidnon	0.348	30.49	31.26	22.82	23.76	29.00	11.26	2.38	4.57	1.93	2.77			0.00	0.00	3.06	10.49	4.22	5.10	1.57	7.98	6.06	12.81	19.09	12.28	9.28	0.00	0.00	0.00	0.00	0.00	0.00	7.09	7.18	12.21	24.55	8.37	311.58
Camiguin	1.000	0.30	0.32	0.30	0.32	0.74	0.55	0.58	0.31	0.06						0.67	0.77	0.81	0.37	0.52	0.97	0.58	0.69	0.70	0.88	0.74	0.61	0.57	0.00	0.00		0.00	0.65	0.43	0.72	0.21	0.73	15.08
Lanao del Norte	0.082	2.27	1.65	1.68	1.84	1.16	1.59	0.00	2.19	1.19	0.00	0.00				0.85	0.89	0.62	2.62	1.07	0.82	1.89	3.03	1.98	2.30	0.35	0.52	0.00	0.00	0.00	0.00	0.29	0.00	2.65	2.47	2.72	1.51	40.17
Misamis Oriental	0.999	20.98	13.18	14.59	9.67	14.51	11.93	20.59	0.00	0.00						5.94	6.64	19.51	13.95	11.23	9.28	19.00	15.13	5.46	16.39	9.98	10.43	8.97	0.00	0.00		7.03	17.82	24.90	12.74	13.49	25.79	359.14
Compostela Valley	0.523	9.37	8.98	23.64	0.00	21.82	2.23	5.30	0.00	0.00						0.36	11.38	22.89	10.73	7.31	9.67	5.51	10.73	9.01	13.48	12.58	10.18	5.74	0.00	0.00		0.00	3.89	12.38	21.36	5.42	6.34	250.34
Davao del Norte	0.007	0.14	0.17	0.23	0.24	0.41	0.41	0.43	0.23	0.00						0.00	0.13	0.25	0.14	0.18	0.26	0.32	0.29	0.40	0.29	0.25	0.04	0.00	0.00	0.00		0.00	0.12	0.21	0.04	0.32	0.41	5.93
Davao Oriental	0.051	1.70	1.73	1.87	1.78	1.13	1.28	1.34	0.00	0.14						0.44	1.23	1.11	0.73	0.57	0.90	0.97	0.90	1.14	1.34	0.36	0.11	0.00	0.00	0.00		0.00	0.55	0.62	0.19	0.49	0.77	23.39
Agusan del Norte	0.973	23.29	32.21	39.88	38.14	36.84	27.28	19.08	15.31	2.91						6.46	29.09	43.99	13.40	9.09	10.90	3.57	20.09	10.01	21.01	20.24	6.47	0.00	0.00	0.00		0.00	5.56	13.23	5.17	3.28	8.65	465.18
Agusan del Sur	0.889	70.70	72.07	77.77	74.36	71.82	53.18	56.00	29.84	0.00						0.00	37.36	53.74	33.95	0.00	22.13	35.67	22.08	34.34	28.58	23.13	12.05	0.00	0.00	0.00		0.00	10.86	40.73	23.02	9.91	12.22	905.50
Dinagat Islands	1.000	0.58	1.32	0.78	1.36	0.86	0.97	0.41	0.54	0.10						0.64	1.26	0.88	0.82	0.91	0.13	1.59	0.94	0.97	1.55	1.31	0.17	0.13	0.00	0.00		0.00	0.12	0.54	0.61	1.08	0.16	20.76
Surigao del Norte	1.000	3.60	8.50	4.40	6.72	4.98	6.26	4.32	1.01	0.00						4.42	10.54	6.38	5.65	10.62	1.18	10.36	8.99	7.99	13.12	8.59	0.81	0.81	0.00	0.00		0.00	0.00	5.08	2.66	3.99	3.91	144.89
Surigao del Sur	0.104	2.25	1.66	2.15	0.72	4.41	0.00	3.22	0.00	0.00						0.00	2.98	5.28	1.51	1.24	2.56	3.67	2.52	6.00	1.20	2.64	3.76	1.94	0.00	0.00		2.50	3.31	3.48	1.34	1.07	5.27	66.69
WRR-XI																																							**3,756**
Bukidnon	0.046	4.03	4.13	3.02	3.14	3.83	1.49	0.31	0.60	0.26	0.37			0.00	0.00	0.40	1.39	0.56	0.67	0.21	1.05	0.80	1.69	2.52	1.62	1.23	0.00	0.00	0.00	0.00	0.00	0.00	0.94	0.95	1.61	3.24	1.11	41.19
Compostela Valley	0.477	8.55	8.19	21.56	0.00	19.90	2.04	4.84	0.00	0.00						0.33	10.38	20.88	9.79	6.67	8.82	5.03	9.79	8.22	12.30	11.48	9.29	5.24	0.00	0.00		0.00	3.55	11.29	19.48	4.94	5.78	228.32
Davao del Norte	0.989	20.00	24.26	32.47	34.31	58.62	57.26	60.40	32.18	0.00						0.00	18.07	35.96	20.35	25.40	37.41	45.70	41.14	56.28	40.28	35.49	6.17	0.00	0.00	0.00		0.00	17.18	30.27	5.75	45.56	57.86	838.40
Davao del Sur	0.998	22.26	58.41	63.03	48.73	19.42	43.09	26.51	12.12	0.00						13.32	35.22	41.32	31.27	39.91	28.89	52.55	16.75	57.96	26.64	8.29	20.43	0.00	0.00	0.00		5.01	30.40	53.23	56.35	47.69	28.08	886.89
Davao Oriental	0.949	31.61	32.23	34.77	33.21	21.06	23.75	24.93	0.00	2.53						8.10	22.94	20.73	13.63	10.60	16.66	18.03	16.74	21.30	25.01	6.66	2.01	0.00	0.00	0.00		0.00	10.17	11.51	3.60	9.12	14.37	435.30
Sarangani	0.869	4.46	0.00	0.55	0.00	0.00		0.00	4.44	6.36	3.53	6.88	10.39	5.78	4.04	9.15	8.07	4.80	2.34	0.00	0.00	0.51	0.98	0.00		0.00	0.70	2.49	2.66	6.32	4.31	4.22	3.75	3.04	5.26	4.20	0.97	110.22
South Cotabato	0.340	16.58	12.08	0.00	3.69	0.30		8.08	3.26	22.52	12.45	31.33	36.82	23.26	19.81	15.04	11.11	13.47	8.15	0.00	0.00	0.00	0.00	0.00		0.00	6.78	17.65	4.69	13.00	14.57	19.42	14.98	15.50	17.26	14.24	22.22	398.30
North Cotabato	0.038	3.35	0.92	0.00	0.00	0.00		1.54	1.54	2.34	4.39	6.10	5.07	3.69	2.69	3.36	1.37	1.40	3.13	0.86	0.00	0.02	0.00	0.00		0.00	1.04	2.05	0.61	2.97	3.00	3.11	2.49	3.14	2.05	3.13	4.50	69.88
Sultan Kudarat	0.052	2.14	0.23	0.00	0.00	0.00		0.00	2.42	3.48	1.00	3.62	5.69	2.87	1.29	5.02	2.98	1.46	0.12	0.00	0.00	0.00	0.54	0.00		0.00	0.00	0.45	0.94	2.34	1.36	1.47	0.69	3.08	2.56	3.08	0.64	49.45
Agusan del Norte	0.027	0.65	0.89	1.11	1.06	1.02	0.76	0.53	0.42	0.08						0.18	0.81	1.22	0.37	0.25	0.30	0.10	0.56	0.28	0.58	0.56	0.18	0.00	0.00	0.00		0.00	0.15	0.37	0.14	0.09	0.24	12.91
Agusan del Sur	0.109	8.67	8.84	9.54	9.12	8.81	6.52	6.87	3.66	0.00						0.00	4.58	6.59	4.16	0.00	2.71	4.37	2.71	4.21	3.50	2.84	1.48	0.00	0.00	0.00		0.00	1.33	4.99	2.82	1.21	1.50	111.02
Surigao del Sur	0.896	19.42	14.34	18.49	6.20	37.97	0.00	27.72	0.00	0.00						0.00	25.66	45.49	13.05	10.71	22.02	31.64	21.67	51.73	10.34	22.78	32.43	16.74	0.00	0.00		21.56	28.48	29.97	11.56	9.19	45.42	574.59
WRR-XII																																							**5,255**
Bukidnon	0.606	53.09	54.43	39.73	41.38	50.51	19.61	4.14	7.97	3.37	4.82			0.00	0.00	5.32	18.27	7.35	8.89	2.73	13.89	10.56	22.31	33.25	21.39	16.17	0.00	0.00	0.00	0.00	0.00	0.00	12.34	12.49	21.27	42.74	14.57	542.58
Lanao del Norte	0.918	25.41	18.50	18.85	20.65	13.03	17.76	0.00	24.51	13.29	0.00	0.04				9.47	10.01	6.99	29.36	12.00	9.17	21.13	33.98	22.21	25.74	3.97	5.86	0.00	0.00	0.00	0.00	3.20	0.00	29.62	27.62	30.42	16.93	449.71
Misamis Oriental	0.001	0.02	0.01	0.01	0.01	0.01	0.01	0.02	0.00	0.00						0.01	0.01	0.02	0.01	0.01	0.01	0.02	0.02	0.01	0.02	0.01	0.01	0.01	0.00	0.00		0.01	0.02	0.02	0.01	0.01	0.03	0.36
Davao del Norte	0.004	0.08	0.10	0.13	0.14	0.24	0.23	0.24	0.13	0.00						0.00	0.07	0.15	0.08	0.10	0.15	0.18	0.17	0.23	0.16	0.14	0.02	0.00	0.00	0.00		0.00	0.07	0.12	0.02	0.18	0.23	3.39
Davao del Sur	0.002	0.04	0.12	0.13	0.10	0.04	0.09	0.05	0.02	0.00						0.03	0.07	0.08	0.06	0.08	0.06	0.11	0.03	0.12	0.05	0.02	0.04	0.00	0.00	0.00		0.01	0.06	0.11	0.11	0.10	0.06	1.78
Sarangani	0.131	0.67	0.00	0.08	0.00	0.00		0.00	0.67	0.96	0.53	1.04	1.57	0.87	0.61	1.38	1.22	0.72	0.35	0.00	0.00	0.08	0.15	0.00		0.00	0.11	0.38	0.40	0.95	0.65	0.64	0.57	0.46	0.79	0.63	0.15	16.62
South Cotabato	0.660	32.18	23.45	0.00	7.17	0.58		15.69	6.33	43.72	24.18	60.83	71.48	45.15	38.46	29.20	21.57	26.14	15.82	0.00	0.00	0.00	0.00	0.00		0.00	13.16	34.26	9.10	25.24	28.29	37.70	29.08	30.09	33.50	27.64	43.14	773.17
North Cotabato	0.962	84.70	23.26	0.00	0.00	0.00		39.10	38.91	59.28	#####	#####	#####	93.48	68.01	84.99	34.61	35.43	79.21	21.72	0.00	0.63	0.00	0.00		0.00	26.27	51.94	15.55	75.23	76.03	78.85	63.13	79.47	51.88	79.25	#####	1,769.04
Sultan Kudarat	0.948	39.05	4.16	0.00	0.00	0.00		0.00	44.13	63.38	18.16	66.06	#####	52.39	23.44	91.45	54.24	26.68	2.23	0.00	0.00	0.00	9.83	0.00		0.00	0.00	8.16	17.08	42.61	24.74	26.74	12.52	56.14	46.70	56.14	11.63	901.44
Agusan del Sur	0.002	0.16	0.16	0.17	0.17	0.16	0.12	0.13	0.07	0.00						0.00	0.08	0.12	0.08	0.00	0.05	0.08	0.05	0.08	0.06	0.05	0.03	0.00	0.00	0.00		0.00	0.02	0.09	0.05	0.02	0.03	2.04
Lanao del Sur	1.000	15.98	3.50	0.00	0.00	0.00		0.83	0.56	0.13	0.17	1.99	2.46	1.96	0.96	1.32	0.07	0.91	0.57	0.00	0.00	0.00	0.00	0.00		0.00	0.00	2.49	0.00	7.97	7.38	8.04	3.88	7.96	10.00	13.48	21.50	114.13
Maguindanao	1.000	68.86	22.79	0.00	0.00	0.00		3.32	3.36	2.77	3.99	10.01	11.20	8.13	6.75	4.57	2.51	2.44	5.12	3.40	0.00	0.71	0.00	0.00		0.00	20.78	42.03	0.00	60.01	52.96	65.39	42.84	50.90	35.58	58.69	92.10	681.20
Total	80.000																																						**54,014**

Source: JICA Survey Team

Table F 37 Irrigation Water Demands of Groundwater Systems by WRR in 2040
(Based on Irrigated Areas Projected under NIMP 2020-2030)

(Unit: MCM)

Region/	Area	Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			Annual
Province	Rate	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
WRR-I																																						**110**
Abra	0.991	0.06	0.06	0.07	0.06	0.06	0.05	0.05	0.03	0.00							0.05	0.10	0.13	0.07	0.02	0.04	0.05	0.04	0.04	0.05	0.10	0.13	0.05	0.00	0.00	0.03	0.05	0.07	0.06	0.00	0.06	1.56
Apayao	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Benguet	0.467	0.06	0.06	0.07	0.07	0.06	0.05	0.05	0.03	0.01			0.00	0.05	0.05	0.03	0.03	0.04	0.03	0.03	0.02	0.01	0.02	0.02	0.00	0.00	0.00					0.03	0.05	0.01	0.06	0.05	0.03	1.01
Kalinga	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
Mt. Province	0.140	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Ilocos Norte	0.984	0.06	0.06	0.07	0.07	0.06	0.03	0.03	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.07	0.03	0.06	0.01	0.06	0.65
Ilocos Sur	1.000	1.50	1.53	1.65	1.59	1.41	0.80	0.64	0.11									0.00	1.64	0.82	2.11	0.83	1.29	1.28	3.14	1.30	0.96	1.93	0.00	0.97	0.11	0.00	1.58	1.98	1.56	1.28	1.52	33.56
La Union	0.947	4.05	4.13	4.46	4.27	3.81	2.17	1.73	0.30									0.17	1.92	4.42	2.11	2.08	1.04	2.43	1.86	2.43	0.12	2.63	3.35	0.00	0.00	2.34	4.28	5.35	4.21	3.44	4.09	73.19
WRR-II																																						**1,459**
Abra	0.009	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Apayao	0.997	0.90	0.92	0.99	0.96	0.92	0.68	0.56	0.39	0.07							0.00	0.74	0.83	0.63	0.53	0.51	0.46	0.53	0.31	0.25	0.38	0.79	0.17	0.27	0.03	0.40	0.00	0.00	0.00	0.76	0.90	14.88
Benguet	0.007	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	0.00	0.02
Ifugao	0.993			0.04	0.05	0.09	0.06	0.08	0.08	0.08	0.10	0.07	0.07	0.08	0.05	0.03	0.00	0.00				0.00	0.05	0.03	0.01	0.00	0.00	0.02	0.00	0.05	0.05	0.01	0.03	0.00	0.00	0.00		1.14
Kalinga	0.994	0.44	0.45	0.49	0.47	0.45	0.34	0.36	0.19	0.04							0.00	0.23	0.26	0.20	0.07	0.20	0.11	0.21	0.14	0.19	0.00	0.20	0.27	0.00		0.20	0.39	0.51	0.44	0.38	0.45	7.67
Mt. Province	0.858	0.02	0.02	0.00	0.01	0.01	0.00							0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.02	0.01	0.00	0.00	0.01	0.01	0.01	0.02	0.26
Ilocos Norte	0.016	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Batanes	1.000	0.29	0.31	0.40	0.38	0.36	0.27	0.24	0.05								0.12	0.86	0.56	0.28	0.60	0.71	0.48	0.49	0.33	0.41	0.57	0.31	0.27	0.00	0.00	0.10	0.47	0.38	0.02	0.32	0.38	9.96
Cagayan	1.000	49.49	60.52	80.17	77.07	60.70	55.16	58.81	31.34	0.00							29.13	83.69	84.75	67.98	67.17	58.35	46.13	51.08	35.67	54.84	69.64	24.58	0.00	0.00	0.00	0.00	68.63	88.18	38.89	18.48	59.12	1,419.56
Isabela	1.000	0.16	0.12	0.19	0.18	0.18	0.13	0.16	0.11	0.00	0.02	0.00					0.00	0.13	0.11	0.14	0.12	0.06	0.12	0.08	0.07	0.03	0.00	0.12	0.00	0.00	0.00	0.07	0.00	0.02	0.06	0.03	0.16	2.57
Nueva Vizcaya	0.873	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quirino	0.997	0.11	0.15	0.12	0.15	0.15	0.11	0.12	0.06	0.00							0.03	0.17	0.14	0.11	0.04	0.05	0.06	0.06	0.04	0.05	0.06	0.00	0.04	0.00	0.00	0.07	0.06	0.17	0.14	0.05	0.14	2.45
Aurora	0.410	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00
Nueva Ecija	0.005	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.00	0.00	0.00			0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.02	0.35
WRR-III																																						**1,260**
Benguet	0.526	0.07	0.07	0.08	0.08	0.07	0.05	0.06	0.03	0.01			0.00	0.05	0.06	0.04	0.03	0.04	0.03	0.03	0.02	0.01	0.02	0.02	0.00	0.00	0.00					0.03	0.06	0.01	0.07	0.06	0.04	1.14
Ifugao	0.007			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.01
Mt. Province	0.002	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
La Union	0.053	0.23	0.23	0.25	0.24	0.21	0.12	0.10	0.02									0.01	0.11	0.25	0.12	0.12	0.06	0.14	0.10	0.14	0.01	0.15	0.19	0.00	0.00	0.13	0.24	0.30	0.24	0.19	0.23	4.10
Pangasinan	1.000	39.82	41.12	45.23	44.06	40.80	26.10	27.00	16.60	0.00	0.00							0.00	0.00	12.88	11.78	23.08	28.32	21.13	21.31	21.64	34.62	14.69	30.52	0.00	25.18	24.94	31.96	35.37	42.92	46.80	39.41	747.31
Nueva Vizcaya	0.127	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quirino	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Aurora	0.548	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00
Bataan	1.000	0.56	0.57	0.62	0.59	0.57	0.42	0.45	0.24	0.05								0.00	0.17	0.30	0.33	0.27	0.20	0.23	0.49	0.43	0.17	0.18	0.13	0.24	0.00	0.07	0.41	0.39	0.57	0.47	0.40	9.52
Bulacan	0.978	2.09	2.13	2.30	2.21	1.42	1.58	1.68	0.90	0.00								0.76	1.63	0.95	1.35	0.00	1.02	1.35	0.50	1.03	2.85	0.73	0.56	0.00	0.18	0.00	0.66	2.45	0.91	0.99	2.08	34.29
Nueva Ecija	0.994	2.18	3.80	4.33	3.44	4.32	3.33	4.15	2.03	2.66	0.62	0.92	0.17			0.36	0.08	2.70	0.33	1.77	2.82	0.41	1.26	2.50	2.18	0.33	1.21	0.53	2.84	0.37	0.00	1.82	2.38	2.63	3.28	3.75	3.16	68.67
Pampanga	1.000	4.78	4.88	5.26	5.07	4.89	3.62	3.86	2.06	0.39								0.52	3.17	5.23	2.94	2.58	1.95	0.43	1.64	4.07	2.06	1.08	2.72	1.47	2.07	2.26	4.32	5.59	4.69	3.99	4.76	92.34
Tarlac	1.000	12.02	12.26	13.22	12.75	12.31	9.12	9.73	5.18	0.99								1.13	8.86	10.30	9.97	2.62	0.00	4.65	11.73	8.00	3.45	0.73	1.61	3.64	1.36	4.01	12.37	15.54	12.29	10.01	8.85	218.68
Zambales	1.000	4.55	4.64	5.00	4.81	4.65	3.44	3.66	1.95	0.00								0.00	3.55	5.26	2.67	1.65	4.26	2.08	0.59	2.89	2.47	0.10	3.39	2.07	0.00	0.00	3.13	5.22	3.53	3.79	4.52	83.85
Rizal	0.021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.06

WRR-IV																																						**236**
Aurora	0.042	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00
Bulacan	0.022	0.05	0.05	0.05	0.05	0.03	0.04	0.04	0.02	0.00								0.02	0.04	0.02	0.03	0.00	0.02	0.03	0.01	0.02	0.06	0.02	0.01	0.00	0.00	0.00	0.01	0.06	0.02	0.02	0.05	0.77
Nueva Ecija	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07
Batangas	1.000	0.22	0.23	0.33	0.32	0.31	0.23	0.24	0.13	0.02				0.06	0.30	0.40	0.20	0.13	0.27	0.01	0.29	0.15	0.14	0.08	0.01	0.00	0.00	0.00				0.00	0.18	0.20	0.26	0.05	0.30	5.06
Cavite	1.000	0.34	0.34	0.37	0.36	0.34	0.25	0.27	0.14	0.03				0.38	0.81	0.84	0.13	0.00	0.42	0.21	0.35	0.73	0.29	0.57	0.92	0.22	0.00	0.00				0.00	0.02	0.10	0.29	0.28	0.14	9.18
Laguna	1.000	0.84	0.86	0.93	0.89	0.86	0.64	0.68	0.36	0.00				0.28	0.29	0.53	0.33	0.52	0.29	0.30	0.35	0.29	0.32	0.26	0.02	0.00	0.00	0.00				0.00	0.00	0.45	0.16	0.18	0.84	11.47
Quezon	0.947	0.40	6.17	5.43	6.37	4.21	4.56	3.61	0.18	0.49				0.64	3.40	6.04	3.41	3.91	1.56	0.76	2.78	2.29	4.16	5.93	1.76	0.00	0.00	0.00				1.59	1.28	3.38	1.89	3.33	0.82	80.34
Rizal	0.979	0.19	0.05	0.14	0.20	0.19	0.14	0.15	0.00	0.02				0.00	0.06	0.20	0.11	0.03	0.04	0.07	0.11	0.10	0.07	0.07	0.00	0.03	0.00	0.00				0.00	0.11	0.08	0.17	0.10	0.19	2.65
Marinduque	1.000	0.23	0.12	0.36	0.37	0.27	0.30	0.42	0.40	0.41	0.28	0.05	0.03	0.13	0.40	0.57	0.20	0.15	0.22	0.10	0.36	0.24	0.26	0.22	0.12	0.04	0.00	0.01							0.18	0.05	0.45	6.93
Occidental Mindoro	1.000	4.42	4.51	4.86	4.66	4.50	3.33	3.53	1.88	0.36								0.00	3.09	5.76	1.97	2.61	0.00	0.22	2.73	2.79	1.35	0.42	3.92	0.00	0.86	0.91	0.89	5.72	4.53	2.38	3.58	75.78
Oriental Mindoro	1.000	1.30	1.26	1.50	1.56	1.54	1.25	1.74	1.37	1.10	1.16	0.05	0.11	0.66	0.39	0.99	0.54	0.26	0.62	0.16	0.70	0.49	0.48	0.25	0.55	0.00	0.10	0.00							0.22	0.96	1.05	22.36
Palawan	1.000	0.87	0.79	0.94	0.98	0.96	0.78	1.09	1.05	1.06	0.72	0.37	0.07	0.82	0.86	1.54	0.95	0.68	0.02	0.45	0.28	0.63	0.76	0.51	0.04	0.01	0.00	0.00							0.46	0.39	0.80	18.89
Romblon	1.000	0.11	0.12	0.15	0.15	0.15	0.12	0.17	0.16	0.16	0.11	0.06	0.01	0.08	0.16	0.22	0.12	0.13	0.06	0.07	0.06	0.05	0.02	0.06	0.07	0.03	0.00	0.00							0.04	0.10	0.18	2.92
WRR-V																																						**82**
Quezon	0.053	0.02	0.35	0.30	0.36	0.24	0.26	0.20	0.01	0.03				0.04	0.19	0.34	0.19	0.22	0.09	0.04	0.16	0.13	0.23	0.33	0.10	0.00	0.00	0.00				0.09	0.07	0.19	0.11	0.19	0.05	4.50
Albay	1.000	0.71	0.13	0.60	0.50	0.56	0.49	0.89	0.82	0.21	0.30	0.05		0.21	0.83	0.61	0.80	0.30	0.60	0.42	0.25	0.23	0.43	0.13	0.27	0.13	0.00	0.00							0.00	0.67	0.33	11.46
Camarines Norte	1.000	0.30	0.14	0.24	0.33	0.16	0.26	0.37	0.27	0.08	0.06	0.02		0.18	0.24	0.31	0.06	0.09	0.16	0.15	0.15	0.08	0.20	0.07	0.09	0.00	0.00	0.00							0.00	0.05	0.32	4.37
Camarines Sur	1.000	2.02	2.25	2.81	3.01	3.69	2.89	4.03	3.72	2.86	1.38	0.00		1.59	3.05	3.10	3.11	2.71	2.58	2.18	1.23	2.57	3.85	1.42	1.14	0.00	0.00	0.00	0.00						0.00	0.93	2.89	60.97
Catanduanes	1.000	0.03	0.01	0.04	0.03	0.02	0.03	0.04	0.02	0.03	0.01	0.00		0.00	0.04	0.04	0.03	0.02	0.03	0.03	0.01	0.02	0.02	0.01	0.03	0.01	0.00	0.00							0.00	0.02	0.02	0.58
Masbate	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00
Sorsogon	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00
WRR-VI																																						**42**
Aklan	1.000	0.21	0.21	0.20	0.13	0.06	0.01							0.07	0.27	0.24	0.16	0.15	0.07	0.12	0.07	0.12	0.08	0.14	0.08	0.06	0.00	0.01	0.00	0.08	0.18	0.05	0.06	0.09	0.09	0.20	0.09	3.29
Antique	1.000	0.07	0.06	0.04	0.04	0.02	0.00	0.00						0.00	0.00	0.51	0.22	0.11	0.00	0.13	0.17	0.16	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.02	0.02	0.04	0.06	0.07	0.07	2.15
Capiz	1.000	2.25	2.16	0.63	1.39	0.64	0.00							1.86	1.34	3.41	1.18	0.00	0.00	0.01	0.00	1.18	1.65	0.00	0.66	0.00	0.00	0.00	0.00	0.24	1.92	0.48	0.69	2.05	0.98	1.57	1.93	28.24
Guimaras	1.000	0.07	0.04	0.06	0.04	0.02	0.00							0.03	0.10	0.27	0.13	0.09	0.04	0.02	0.04	0.08	0.10	0.09	0.13	0.00	0.00	0.00	0.00	0.00	0.06	0.03	0.03	0.00	0.07	0.03	0.07	1.65
Iloilo	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					0.77	0.13	1.25	0.68	0.48	0.29	0.33	0.00	1.01	1.40	0.00	0.69	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.13
Negros Occidental	0.924	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Negros Oriental	0.231	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WRR-VII																																						**22**
Negros Occidental	0.076	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bohol	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cebu	1.000	1.23	1.21	0.71	0.86	0.50	0.00	0.00								0.65	0.56	1.56	1.28	1.45	0.40	0.73	0.60	1.22	1.47	1.39	0.00	0.00	0.00		0.40	1.11	1.04	0.71	0.47	1.10	1.00	21.66
Negros Oriental	0.769	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siquijor	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00								0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WRR-VIII																																						**4**
Biliran	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00
Northern Leyte	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00
Southern Leyte	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00
Northern Samar	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00
Weatern Samar	1.000	0.01	0.34	0.14	0.35	0.34	0.25	0.15	0.08	0.03	0.15	0.30	0.33	0.30	0.03	0.16	0.15	0.06	0.13	0.07	0.08	0.14	0.00									0.00	0.10	0.27	0.07	0.18	0.14	4.34
Eastern Samar	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00
WRR-IX																																						**8**
Zamboanga del Norte	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zamboanga del Sur	1.000	0.15	0.14	0.15	0.11	0.08	0.04	0.02	0.00		0.06	0.12	0.12	0.15	0.14	0.07	0.06	0.06	0.05	0.07	0.02	0.06	0.01	0.00	0.00	0.00			0.00	0.00	0.05	0.03	0.08	0.04	0.05	0.06	0.07	2.02
Zamboanga Sibugay	1.000	0.18	0.22	0.18	0.22	0.15	0.07	0.04	0.00		0.13	0.11	0.11	0.11	0.21	0.19	0.19	0.13	0.16	0.09	0.13	0.11	0.12	0.00	0.00	0.00			0.00	0.00	0.09	0.12	0.15	0.02	0.08	0.29	0.19	3.79
Misamis Occidental	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Basilan	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulu	1.000	0.21	0.22	0.24	0.15	0.22	0.16	0.13	0.09	0.02						0.01	0.01	0.03	0.01	0.01	0.02	0.01	0.01	0.02	0.02	0.02	0.02	0.01	0.00	0.00		0.10	0.07	0.13	0.21	0.18	0.04	2.38
Tawi-Tawi	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00

WRR-X																																								**9**
Bukidnon	0.348	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Camiguin	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lanao del Norte	0.082	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.07
Misamis Oriental	0.999	0.24	0.15	0.17	0.11	0.17	0.14	0.24	0.00	0.00						0.07	0.08	0.24	0.17	0.14	0.11	0.23	0.19	0.07	0.20	0.12	0.13	0.11	0.00	0.00		0.08	0.20	0.28	0.15	0.15	0.29	4.24
Compostela Valley	0.523	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Norte	0.007	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao Oriental	0.051	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agusan del Norte	0.973	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agusan del Sur	0.889	0.21	0.22	0.23	0.22	0.21	0.16	0.17	0.09	0.00						0.00	0.30	0.43	0.27	0.00	0.18	0.29	0.18	0.28	0.23	0.19	0.10	0.00	0.00	0.00		0.00	0.03	0.12	0.07	0.03	0.04	4.23
Dinagat Islands	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Surigao del Norte	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Surigao del Sur	0.104	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.05
WRR-XI																																								**4**
Bukidnon	0.046	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Compostela Valley	0.477	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Norte	0.989	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Sur	0.998	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao Oriental	0.949	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sarangani	0.869	0.06	0.00	0.01	0.00	0.00		0.00	0.05	0.08	0.04	0.08	0.12	0.07	0.05	0.11	0.10	0.06	0.03	0.00	0.00	0.01	0.01	0.00		0.00	0.01	0.03	0.03	0.08	0.05	0.05	0.05	0.04	0.07	0.05	0.01	1.34
South Cotabato	0.340	0.01	0.00	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.14
North Cotabato	0.038	0.04	0.01	0.00	0.00	0.00		0.02	0.02	0.03	0.05	0.07	0.05	0.04	0.03	0.04	0.01	0.02	0.03	0.01	0.00	0.00	0.00	0.00		0.00	0.01	0.02	0.01	0.03	0.03	0.03	0.03	0.03	0.02	0.03	0.05	0.76
Sultan Kudarat	0.052	0.03	0.00	0.00	0.00	0.00		0.00	0.03	0.04	0.01	0.04	0.06	0.03	0.01	0.06	0.03	0.02	0.00	0.00	0.00	0.00	0.01	0.00		0.00	0.00	0.01	0.01	0.03	0.02	0.02	0.01	0.04	0.03	0.04	0.01	0.60
Agusan del Norte	0.027	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agusan del Sur	0.109	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.01	0.00						0.00	0.04	0.05	0.03	0.00	0.02	0.04	0.02	0.03	0.03	0.02	0.01	0.00	0.00	0.00		0.00	0.00	0.01	0.01	0.00	0.00	0.52
Surigao del Sur	0.896	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.04	0.06	0.02	0.01	0.03	0.04	0.03	0.07	0.01	0.03	0.05	0.02	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.42
WRR-XII																																								**33**
Bukidnon	0.606	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lanao del Norte	0.918	0.05	0.04	0.04	0.04	0.03	0.03	0.00	0.05	0.03	0.00	0.00				0.01	0.02	0.01	0.05	0.02	0.01	0.03	0.05	0.03	0.04	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.06	0.05	0.06	0.03	0.80
Misamis Oriental	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Norte	0.004	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Sur	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sarangani	0.131	0.01	0.00	0.00	0.00	0.00		0.00	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.20
South Cotabato	0.660	0.01	0.01	0.00	0.00	0.00		0.01	0.00	0.02	0.01	0.02	0.03	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.28
North Cotabato	0.962	0.92	0.25	0.00	0.00	0.00		0.42	0.42	0.64	1.20	1.66	1.39	1.01	0.73	0.92	0.37	0.38	0.85	0.23	0.00	0.01	0.00	0.00		0.00	0.28	0.56	0.17	0.81	0.82	0.85	0.68	0.86	0.56	0.86	1.24	19.11
Sultan Kudarat	0.948	0.53	0.06	0.00	0.00	0.00		0.00	0.49	0.71	0.20	0.74	1.15	0.58	0.26	1.02	0.60	0.30	0.02	0.00	0.00	0.00	0.11	0.00		0.00	0.00	0.11	0.23	0.58	0.34	0.36	0.17	0.77	0.64	0.77	0.16	10.90
Agusan del Sur	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.01
Lanao del Sur	1.000	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maguindanao	1.000	0.18	0.06	0.00	0.00	0.00		0.01	0.01	0.01	0.01	0.02	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00		0.00	0.05	0.11	0.00	0.15	0.14	0.17	0.11	0.13	0.09	0.15	0.24	1.74
Total	80.000																																							**3,269**

Source: JICA Survey Team

Table F 38 Irrigation Water Demands of All Systems by WRR in 2050
(Based on Irrigated Areas Projected under NIMP 2020-2030)

(Unit: MCM)

Region/	Area	Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			Annual
Province	Rate	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
WRR-I																																						**2,542**
Abra	0.991	20.91	21.31	23.01	22.18	21.43	15.88	16.90	9.01	0.00							8.23	16.08	21.36	11.54	2.67	5.95	7.44	6.85	7.28	7.69	16.06	21.00	7.97	0.00	0.00	9.04	17.96	23.56	20.27	1.28	20.94	383.81
Apayao	0.003	0.04	0.04	0.04	0.04	0.04	0.03	0.02	0.02	0.00							0.00	0.03	0.04	0.03	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.03	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.03	0.04	0.63
Benguet	0.467	7.98	8.13	8.78	8.45	8.17	6.05	6.43	3.43	0.65			0.00	5.53	5.89	3.98	3.02	4.23	3.22	3.10	2.00	1.29	2.45	1.92	0.00	0.00	0.00					3.48	6.90	1.57	7.76	6.72	4.19	125.32
Kalinga	0.006	0.20	0.21	0.22	0.22	0.21	0.16	0.17	0.09	0.02							0.00	0.11	0.13	0.10	0.04	0.10	0.05	0.10	0.07	0.09	0.00	0.10	0.13	0.00	0.00	0.09	0.18	0.23	0.20	0.17	0.21	3.60
Mt. Province	0.140	1.76	1.70	0.25	1.19	0.68	0.04							1.40	0.82	1.80	1.98	1.01	1.41	1.01	0.00	0.17	0.10	0.74	0.65	0.20	0.00	0.00	0.48	1.91	1.03	0.03	0.00	1.11	0.53	0.91	1.91	24.84
Ilocos Norte	0.984	48.07	48.99	52.87	50.93	45.33	25.81	20.69	3.58									24.63	65.24	65.81	75.20	35.27	29.92	30.50	55.76	4.11	32.40	8.76	0.00	0.00	0.00	27.36	50.31	22.23	49.67	5.22	48.42	927.08
Ilocos Sur	1.000	33.81	34.45	37.19	35.70	31.78	18.10	14.44	2.50									0.00	31.66	15.92	40.85	16.04	24.91	24.77	60.82	25.09	18.64	37.39	0.00	18.69	2.21	0.00	35.56	44.51	35.11	28.75	34.15	703.03
La Union	0.947	20.24	20.63	22.26	21.36	19.02	10.83	8.64	1.50									0.89	10.20	23.45	11.18	11.07	5.54	12.91	9.89	12.90	0.62	13.95	17.79	0.00	0.00	11.67	21.40	26.75	21.06	17.21	20.44	373.40
WRR-II																																						**10,202**
Abra	0.009	0.19	0.19	0.21	0.20	0.19	0.14	0.15	0.08	0.00							0.07	0.15	0.19	0.10	0.02	0.05	0.07	0.06	0.07	0.07	0.15	0.19	0.07	0.00	0.00	0.08	0.16	0.21	0.18	0.01	0.19	3.49
Apayao	0.997	12.56	12.79	13.81	13.33	12.89	9.56	7.75	5.45	1.04							0.00	10.42	11.65	8.90	7.48	7.16	6.43	7.44	4.33	3.57	5.40	11.13	2.40	3.80	0.45	5.56	0.00	0.00	0.00	10.59	12.61	208.50
Benguet	0.007	0.12	0.12	0.13	0.13	0.12	0.09	0.10	0.05	0.01			0.00	0.08	0.09	0.06	0.05	0.06	0.05	0.05	0.03	0.02	0.04	0.03	0.00	0.00	0.00					0.05	0.10	0.02	0.12	0.10	0.06	1.88
Ifugao	0.993			8.78	11.04	20.60	13.70	17.65	19.23	19.20	22.70	16.05	15.40	18.34	11.48	7.82	0.00	0.00				0.00	12.47	8.01	3.41	0.89	0.00	6.01	0.39	12.68	12.27	1.56	7.94	0.00	0.00	0.00		267.64
Kalinga	0.994	33.74	34.35	37.11	35.78	34.62	25.72	27.38	14.60	2.79							0.23	19.01	21.69	16.23	5.85	16.70	8.95	17.04	11.85	15.31	0.00	16.69	21.90	0.00		14.89	29.58	38.80	33.20	28.70	34.06	596.78
Mt. Province	0.858	10.80	10.42	1.52	7.28	4.16	0.26							8.58	5.04	11.03	12.14	6.18	8.65	6.16	0.00	1.06	0.63	4.52	4.00	1.23	0.00	0.00	2.94	11.73	6.31	0.20	0.00	6.81	3.26	5.60	11.73	152.24
Ilocos Norte	0.016	0.78	0.80	0.86	0.83	0.74	0.42	0.34	0.06									0.40	1.06	1.07	1.22	0.57	0.49	0.50	0.91	0.07	0.53	0.14	0.00	0.00	0.00	0.44	0.82	0.36	0.81	0.08	0.79	15.07
Batanes	1.000	0.29	0.31	0.40	0.38	0.36	0.27	0.24	0.05								0.12	0.86	0.56	0.28	0.60	0.71	0.48	0.49	0.33	0.41	0.57	0.31	0.27	0.00	0.00	0.10	0.47	0.38	0.02	0.32	0.38	9.96
Cagayan	1.000	137.50	168.16	222.75	214.13	168.65	153.25	163.41	87.07	0.00							78.11	224.45	227.30	182.32	180.15	156.48	123.72	136.99	95.67	147.08	186.78	65.91	0.00	0.00	0.00	0.00	190.70	245.01	108.06	51.36	164.27	3,879.27
Isabela	1.000	247.10	177.19	284.38	277.30	269.91	203.11	236.30	171.14	0.00	37.05	0.28					2.72	208.79	178.61	216.11	187.59	90.95	191.21	121.89	109.47	55.31	0.00	193.26	0.00	0.00	0.00	100.58	0.00	31.22	97.79	38.84	245.94	3,974.06
Nueva Vizcaya	0.873	34.86	35.51	38.34	36.99	35.77	26.53	28.27	15.07	2.87							5.74	41.49	44.90	5.56	9.92	18.26	10.08	4.52	16.50	9.91	7.64	0.00	0.00	10.39	0.00	0.00	34.01	43.41	21.67	0.00	4.28	542.50
Quirino	0.997	15.28	19.78	16.65	20.57	19.88	14.73	15.70	8.37	0.00							3.96	22.75	19.33	15.63	5.11	6.67	7.94	8.72	6.14	7.33	7.61	0.00	5.25	0.00	0.00	9.61	7.85	23.78	19.46	7.30	19.43	334.83
Aurora	0.410	8.82	6.70	7.68	7.45	9.43	7.04	11.41	14.01	11.01	9.77	0.00	0.00				0.00	6.77	10.99	6.36	11.04	5.12	5.02	9.82	10.49	7.63	0.41	3.49	0.00	0.21	0.00				5.18	10.30	8.89	195.06
Nueva Ecija	0.005	0.65	1.14	1.30	1.03	1.30	1.00	1.24	0.61	0.80	0.19	0.28	0.05			0.11	0.02	0.81	0.10	0.53	0.84	0.12	0.38	0.75	0.65	0.10	0.36	0.16	0.85	0.11	0.00	0.54	0.71	0.79	0.98	1.12	0.95	20.57
WRR-III																																						**13,617**
Benguet	0.526	8.99	9.16	9.89	9.52	9.20	6.82	7.24	3.86	0.74			0.00	6.22	6.63	4.48	3.40	4.77	3.63	3.49	2.25	1.46	2.76	2.16	0.00	0.00	0.00					3.92	7.77	1.77	8.74	7.57	4.72	141.16
Ifugao	0.007			0.06	0.08	0.15	0.10	0.12	0.14	0.14	0.16	0.11	0.11	0.13	0.08	0.06	0.00	0.00				0.00	0.09	0.06	0.02	0.01	0.00	0.04	0.00	0.09	0.09	0.01	0.06	0.00	0.00	0.00		1.89
Mt. Province	0.002	0.03	0.02	0.00	0.02	0.01	0.00							0.02	0.01	0.03	0.03	0.01	0.02	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.03	0.01	0.00	0.00	0.02	0.01	0.01	0.03	0.35
La Union	0.053	1.13	1.15	1.25	1.20	1.06	0.61	0.48	0.08									0.05	0.57	1.31	0.63	0.62	0.31	0.72	0.55	0.72	0.03	0.78	1.00	0.00	0.00	0.65	1.20	1.50	1.18	0.96	1.14	20.90
Pangasinan	1.000	179.31	185.17	203.69	198.41	183.73	117.54	121.57	74.76	0.00	0.00							0.00	0.00	65.32	59.75	117.06	143.62	107.17	108.08	109.75	175.54	74.48	154.76	0.00	127.69	112.29	143.93	159.28	193.29	210.76	177.46	3,504.41
Nueva Vizcaya	0.127	5.07	5.17	5.58	5.38	5.20	3.86	4.11	2.19	0.42							0.84	6.04	6.53	0.81	1.44	2.66	1.47	0.66	2.40	1.44	1.11	0.00	0.00	1.51	0.00	0.00	4.95	6.31	3.15	0.00	0.62	78.92
Quirino	0.003	0.05	0.06	0.05	0.06	0.06	0.04	0.05	0.03	0.00							0.01	0.07	0.06	0.05	0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.00	0.02	0.00	0.00	0.03	0.02	0.07	0.06	0.02	0.06	1.01
Aurora	0.548	11.79	8.96	10.27	9.96	12.61	9.41	15.25	18.72	14.72	13.06	0.00	0.00				0.00	9.05	14.69	8.50	14.75	6.84	6.71	13.12	14.03	10.20	0.54	4.67	0.00	0.28	0.00				6.93	13.76	11.89	260.71
Bataan	1.000	23.71	24.17	26.08	25.03	24.17	17.89	18.98	10.11	1.92								0.00	7.36	12.92	13.94	11.39	8.65	9.93	21.08	18.38	7.32	7.80	5.53	10.36	0.00	2.90	17.39	16.49	24.23	19.76	16.88	404.35
Bulacan	0.978	40.60	41.39	44.66	42.96	27.65	30.72	32.66	17.40	0.00								16.54	35.56	20.78	29.54	0.00	22.26	29.52	10.88	22.49	62.22	15.90	12.17	0.00	3.98	0.00	12.85	47.55	17.61	19.31	40.44	697.66
Nueva Ecija	0.994	129.74	226.57	257.78	204.68	257.48	198.58	247.20	121.07	158.12	36.98	54.80	10.39			21.24	4.56	160.97	19.40	105.68	167.98	24.34	75.01	149.27	129.97	19.85	71.89	31.68	169.47	22.03	0.00	108.13	141.78	156.80	195.25	223.43	187.98	4,090.10
Pampanga	1.000	95.73	97.59	105.31	101.41	97.94	72.51	77.29	41.18	7.83								7.96	48.37	79.87	44.89	39.32	29.75	6.50	25.04	62.12	31.38	16.41	41.53	22.49	31.64	45.15	86.55	111.87	93.77	79.80	95.20	1,696.39
Tarlac	1.000	110.55	112.70	121.61	117.25	113.24	83.83	89.43	47.64	9.06								11.54	90.31	105.07	101.65	26.72	0.00	47.36	119.64	81.56	35.21	7.42	16.37	37.10	13.87	36.83	113.72	142.87	113.05	92.02	81.38	2,079.03
Zambales	1.000	32.30	32.93	35.53	34.20	33.02	24.43	25.98	13.83	0.00								0.00	30.10	44.55	22.64	13.99	36.12	17.61	5.02	24.47	20.91	0.81	28.74	17.56	0.00	0.00	22.23	37.08	25.05	26.89	32.12	638.11
Rizal	0.021	0.13	0.03	0.10	0.14	0.14	0.10	0.11	0.00	0.01				0.00	0.04	0.14	0.08	0.02	0.03	0.05	0.08	0.07	0.05	0.05	0.00	0.02	0.00	0.00				0.00	0.08	0.06	0.12	0.07	0.14	1.86

WRR-IV																																						**4,920**
Aurora	0.042	0.90	0.69	0.79	0.76	0.97	0.72	1.17	1.43	1.13	1.00	0.00	0.00				0.00	0.69	1.13	0.65	1.13	0.52	0.51	1.01	1.08	0.78	0.04	0.36	0.00	0.02	0.00				0.53	1.05	0.91	19.98
Bulacan	0.022	0.91	0.93	1.00	0.97	0.62	0.69	0.73	0.39	0.00								0.37	0.80	0.47	0.66	0.00	0.50	0.66	0.24	0.51	1.40	0.36	0.27	0.00	0.09	0.00	0.29	1.07	0.40	0.43	0.91	15.69
Nueva Ecija	0.001	0.13	0.23	0.26	0.21	0.26	0.20	0.25	0.12	0.16	0.04	0.06	0.01			0.02	0.00	0.16	0.02	0.11	0.17	0.02	0.08	0.15	0.13	0.02	0.07	0.03	0.17	0.02	0.00	0.11	0.14	0.16	0.20	0.22	0.19	4.11
Batangas	1.000	4.64	4.70	6.93	6.64	6.42	4.75	5.04	2.69	0.51				0.95	4.71	6.21	3.14	2.09	4.19	0.14	4.54	2.36	2.14	1.28	0.20	0.00	0.00	0.00				0.00	3.75	4.26	5.48	0.97	6.26	95.01
Cavite	1.000	28.53	29.08	31.38	30.14	29.11	21.55	22.90	12.20	2.32				13.06	27.90	29.10	4.36	0.13	14.60	7.39	11.94	25.27	9.98	19.80	31.57	7.64	0.00	0.00				0.00	1.87	8.43	24.87	23.78	12.15	481.04
Laguna	1.000	40.99	41.79	45.09	43.26	41.79	30.94	32.87	17.51	0.00				16.02	16.78	30.34	19.33	30.26	16.74	17.09	20.08	16.53	18.75	14.84	1.25	0.00	0.00	0.00				0.00	0.00	21.79	7.71	8.93	40.83	591.51
Quezon	0.947	7.63	118.49	104.36	122.45	80.90	87.57	69.28	3.51	9.41				13.13	70.18	124.64	70.36	80.67	32.29	15.70	57.45	47.31	85.89	122.34	36.40	0.00	0.00	0.00				30.64	24.64	64.93	36.35	63.93	15.70	1,596.15
Rizal	0.979	6.22	1.60	4.65	6.56	6.34	4.69	4.98	0.00	0.51				0.00	2.09	6.65	3.56	0.99	1.21	2.45	3.55	3.14	2.45	2.45	0.00	1.13	0.00	0.00				0.00	3.74	2.67	5.55	3.17	6.34	86.70
Marinduque	1.000	1.78	0.94	2.85	2.96	2.10	2.37	3.30	3.18	3.20	2.20	0.43	0.22	1.01	3.13	4.45	1.58	1.21	1.72	0.81	2.80	1.85	2.03	1.73	0.95	0.29	0.00	0.06							1.40	0.40	3.58	54.52
Occidental Mindoro	1.000	35.90	36.60	39.49	37.83	36.54	27.06	28.64	15.26	2.90								0.00	22.92	42.65	14.56	19.35	0.00	1.65	20.22	20.68	9.97	3.14	29.02	0.00	6.34	7.35	7.24	46.46	36.79	19.34	29.08	596.99
Oriental Mindoro	1.000	34.70	33.49	40.00	41.54	40.99	33.24	46.38	36.54	29.38	31.06	1.27	3.03	19.78	11.55	29.64	16.17	7.69	18.43	4.85	21.01	14.68	14.34	7.55	16.34	0.00	3.08	0.00							5.80	25.51	27.97	616.00
Palawan	1.000	34.33	30.96	37.02	38.38	37.86	30.70	42.72	41.20	41.48	28.39	14.52	2.77	23.74	24.71	44.36	27.35	19.66	0.65	13.10	8.11	18.35	22.04	14.71	1.28	0.43	0.00	0.00							18.02	15.40	31.57	663.80
Romblon	1.000	3.80	4.21	5.03	5.22	5.15	4.17	5.82	5.61	5.65	3.88	1.98	0.38	2.65	5.12	7.27	4.06	4.36	1.98	2.21	1.96	1.48	0.61	1.95	2.16	0.96	0.00	0.00							1.50	3.50	6.31	98.98
WRR-V																																						**5,429**
Quezon	0.053	0.43	6.63	5.84	6.85	4.53	4.90	3.88	0.20	0.53				0.73	3.93	6.98	3.94	4.51	1.81	0.88	3.22	2.65	4.81	6.85	2.04	0.00	0.00	0.00				1.71	1.38	3.63	2.03	3.58	0.88	89.33
Albay	1.000	50.27	9.31	42.21	35.29	39.72	34.47	62.55	57.66	14.62	21.35	3.26		16.12	62.26	46.19	59.94	22.34	45.18	31.52	19.03	17.01	32.15	9.53	20.29	9.66	0.00	0.00							0.00	47.65	23.16	832.75
Camarines Norte	1.000	12.14	5.78	9.85	13.55	6.50	10.84	15.13	11.20	3.16	2.66	0.79		7.35	9.73	12.65	2.36	3.54	6.41	6.32	6.23	3.25	8.08	2.73	3.65	0.00	0.00	0.00							0.00	1.91	13.25	179.05
Camarines Sur	1.000	74.03	82.19	102.93	110.03	134.98	105.87	147.57	136.03	104.77	50.48	0.00		53.15	101.93	103.65	103.89	90.57	86.24	73.03	40.98	86.11	128.63	47.39	37.99	0.00	0.00	0.00	0.00						0.00	33.87	105.65	2,141.97
Catanduanes	1.000	4.15	0.67	4.46	3.50	2.08	3.71	5.16	1.99	3.66	1.76	0.27		0.00	4.73	4.93	3.62	2.60	3.61	3.07	0.71	2.16	2.58	1.38	3.97	1.05	0.00	0.09							0.00	1.87	2.86	70.62
Masbate	1.000	65.01	83.58	66.93	103.60	105.68	43.04	115.13	28.16	72.65	34.88	5.33		35.77	41.48	113.04	101.52	18.42	46.85	37.53	56.41	44.52	30.31	62.67	45.72	8.04	0.00	2.02							0.00	31.31	125.32	1,524.91
Sorsogon	1.000	5.29	34.85	34.00	33.40	44.07	14.95	48.17	17.00	34.19	16.42	0.00		2.20	14.85	52.83	32.19	13.48	15.66	7.64	20.79	21.52	12.26	28.96	12.21	0.13	0.00	0.86							0.00	19.57	52.38	589.90
WRR-VI																																						**4,332**
Aklan	1.000	12.99	12.58	12.34	8.05	3.73	0.31							4.55	17.96	16.43	10.45	10.21	4.48	8.35	4.87	8.25	5.30	9.62	5.32	4.05	0.00	0.36	0.00	4.85	10.72	2.92	3.44	5.67	5.53	12.21	5.25	210.77
Antique	1.000	18.12	16.79	9.79	9.33	5.32	0.00	0.02						0.00	0.00	18.56	7.95	4.02	0.00	4.78	6.10	5.99	6.25	4.85	0.00	0.00	0.00	0.00	0.00	0.00	10.00	4.94	4.90	11.33	16.67	17.45	19.20	202.35
Capiz	1.000	30.80	29.61	8.63	19.02	8.78	0.00							24.29	17.45	44.52	15.37	0.00	0.00	0.14	0.00	15.40	21.58	0.00	8.64	0.00	0.00	0.00	0.00	3.30	26.22	6.60	9.44	28.00	13.42	21.54	26.44	379.18
Guimaras	1.000	1.14	0.71	1.08	0.71	0.33	0.00							0.23	0.65	1.80	0.90	0.59	0.29	0.17	0.30	0.50	0.64	0.61	0.86	0.00	0.00	0.00	0.00	0.00	1.03	0.57	0.45	0.00	1.11	0.48	1.23	16.37
Iloilo	1.000	65.56	63.59	34.29	48.00	33.55	16.33	8.78	0.07					38.15	6.57	61.73	33.64	23.86	14.16	16.15	0.00	49.81	68.95	0.00	34.19	4.47	0.00	0.00	0.00	0.00	60.46	26.20	40.51	54.64	35.10	62.96	69.27	971.00
Negros Occidental	0.924	97.88	128.42	127.05	82.06	9.04	3.20							24.51	168.71	164.33	126.41	50.15	117.38	68.70	84.59	115.56	117.46	60.79	73.92	1.04	0.00	0.00	16.93	44.63	59.17	31.34	116.04	123.43	129.61	125.06	85.23	2,352.65
Negros Oriental	0.231	9.72	11.50	11.37	7.35	3.42	0.29							5.98	8.42	17.57	12.75	6.42	6.01	6.51	8.42	6.63	5.68	8.22	5.55	0.58	0.00	0.00	0.88	5.20	10.10	11.32	4.73	9.04	5.87	4.14	6.51	200.17
WRR-VII																																						**2,149**
Negros Occidental	0.076	8.05	10.56	10.45	6.75	0.74	0.26							2.02	13.88	13.52	10.40	4.13	9.65	5.65	6.96	9.51	9.66	5.00	6.08	0.09	0.00	0.00	1.39	3.67	4.87	2.58	9.54	10.15	10.66	10.29	7.01	193.51
Bohol	1.000	58.14	53.44	29.53	31.99	38.33	19.03	34.99	0.00	0.00					0.00	20.29	0.00	0.00	59.01	52.04	34.68	65.18	65.04	23.69	56.22	24.79	12.49	42.44	0.00	0.00	42.99	39.29	49.35	59.71	45.05	76.50	73.12	1,107.33
Cebu	1.000	10.37	10.18	6.00	7.25	4.21	0.00	0.00								4.63	4.00	11.17	9.14	10.39	2.84	5.23	4.30	8.74	10.52	9.90	0.00	0.00	0.00		3.37	9.35	8.77	5.94	4.00	9.25	8.43	167.99
Negros Oriental	0.769	32.36	38.27	37.86	24.48	11.39	0.95							19.89	28.02	58.48	42.44	21.38	20.01	21.68	28.04	22.06	18.91	27.38	18.48	1.93	0.00	0.00	2.95	17.30	33.61	37.70	15.74	30.09	19.53	13.80	21.66	666.37
Siquijor	1.000	0.38	0.33	0.39	0.34	0.31	0.13	0.03								0.72	1.21	0.86	0.34	0.39	0.70	0.89	1.10	0.63	1.16	0.90	0.28	0.03	0.00		0.29	0.32	0.40	0.23	0.05	0.47	0.54	13.44
WRR-VIII																																						**2,996**
Biliran	1.000	2.30	3.18	6.93	6.62	4.28	4.73	4.98	1.12	0.00						0.90	4.92	3.89	4.77	3.71	5.73	3.84	2.76	2.64	3.04	3.99	0.72	0.67				0.00	3.97	7.38	6.18	5.25	0.02	98.50
Northern Leyte	1.000	139.50	142.22	66.02	78.52	26.71	26.19	0.00	0.00	0.00						40.28	34.20	141.66	107.45	120.22	26.81	34.34	55.79	104.97	118.53	125.38	1.44	43.59				65.42	19.61	59.96	42.30	116.10	55.11	1,792.30
Southern Leyte	1.000	12.98	13.23	6.29	5.90	6.34	0.00	0.00	0.00	1.04	7.87	15.48	11.82	10.49	5.99	11.74	3.26	10.44	14.43	12.94	5.37	3.11	0.72									6.08	5.94	6.76	2.74	10.80	6.20	197.93
Northern Samar	1.000	4.15	5.09	4.29	7.72	7.45	5.52	4.10	3.10	0.59	4.66	9.18	11.95	9.19	7.76	7.55	8.58	7.28	4.40	3.03	0.24	0.39	0.30									0.00	2.45	1.78	3.05	0.00	3.33	127.12
Weatern Samar	1.000	1.32	44.86	18.05	46.31	44.73	33.11	19.37	10.23	3.54	25.18	49.54	53.82	49.51	4.82	26.86	24.35	10.45	20.60	11.23	13.60	22.75	0.00									0.00	13.56	35.72	9.66	23.84	18.60	635.62
Eastern Samar	1.000	3.99	9.46	5.91	9.75	6.89	6.97	3.29	2.14	0.74	5.71	11.22	10.10	8.97	4.51	6.11	7.10	3.33	5.49	4.13	4.00	4.42	1.56									0.00	2.20	6.68	1.70	4.01	4.06	144.45
WRR-IX																																						**1,979**
Zamboanga del Norte	1.000	5.77	8.52	5.47	4.57	4.50	2.20	1.17	0.01		4.16	5.39	5.58	6.38	9.81	5.42	6.13	4.85	5.56	4.02	4.98	4.05	3.53	0.00	0.00	0.00			0.00	0.00	2.46	2.13	4.24	0.12	0.98	8.45	4.70	125.12
Zamboanga del Sur	1.000	55.33	53.87	54.41	40.65	28.44	13.89	7.36	0.06		22.75	45.04	47.67	56.06	54.61	27.51	23.68	22.38	17.36	25.04	5.98	22.69	4.21	0.00	0.00	0.00			0.00	0.27	16.91	11.73	28.74	13.95	17.56	21.43	24.74	764.32
Zamboanga Sibugay	1.000	28.02	33.35	27.26	33.14	23.19	11.33	5.99	0.05		18.83	15.51	15.18	16.23	30.06	26.91	27.65	19.16	23.32	12.56	19.44	15.73	17.86	0.00	0.00	0.00			0.37	0.00	13.91	18.12	23.53	3.10	12.12	43.43	28.19	563.54
Misamis Occidental	1.000	35.47	36.16	39.01	37.25	35.98	20.15	28.08	14.96	2.85						8.38	22.96	27.11	12.16	12.56	10.35	7.80	15.31	9.46	22.96	18.84	17.88	0.00	0.00	0.00		0.00	2.63	19.39	7.02	1.88	3.43	470.02
Basilan	1.000	0.86	0.88	0.95	0.91	0.88	0.65	0.68	0.36	0.07						0.03	0.09	0.10	0.04	0.04	0.03	0.04	0.06	0.07	0.05	0.03	0.00	0.00	0.00	0.00		0.15	0.39	0.34	0.59	0.53	0.19	9.01
Sulu	1.000	2.83	2.88	3.11	2.03	2.86	2.12	1.72	1.19	0.23						0.11	0.18	0.39	0.16	0.11	0.27	0.16	0.17	0.28	0.22	0.26	0.23	0.16	0.00	0.00		1.31	0.98	1.74	2.76	2.39	0.49	31.31
Tawi-Tawi	1.000	1.19	1.56	1.69	1.24	1.55	0.77	0.70	0.64	0.12						0.06	0.11	0.17	0.11	0.02	0.11	0.09	0.08	0.12	0.13	0.11	0.10	0.07	0.01	0.00		0.71	0.37	1.36	1.07	1.30	0.42	15.97

WRR-X																																						**2,831**
Bukidnon	0.348	32.95	33.78	24.66	25.68	31.34	12.17	2.57	4.94	2.09	2.99			0.00	0.00	3.30	11.34	4.56	5.52	1.70	8.62	6.55	13.85	20.63	13.28	10.03	0.00	0.00	0.00	0.00	0.00	0.00	7.66	7.75	13.20	26.53	10.13	337.82
Camiguin	1.000	0.30	0.32	0.30	0.32	0.74	0.55	0.58	0.31	0.06						0.67	0.77	0.81	0.37	0.52	0.97	0.58	0.69	0.70	0.88	0.74	0.61	0.57	0.00	0.00		0.00	0.65	0.43	0.72	0.21	0.73	15.08
Lanao del Norte	0.082	2.48	1.81	1.84	2.02	1.27	1.74	0.00	2.40	1.30	0.00	0.00				0.93	0.98	0.68	2.87	1.17	0.90	2.07	3.32	2.17	2.52	0.39	0.57	0.00	0.00	0.00	0.00	0.31	0.00	2.90	2.70	2.97	1.66	43.97
Misamis Oriental	0.999	23.67	14.86	16.46	10.91	16.36	13.46	23.22	0.00	0.00						6.70	7.50	22.03	15.75	12.68	10.47	21.44	17.08	6.16	18.51	11.27	11.77	10.13	0.00	0.00		7.93	20.10	28.09	14.37	15.22	29.08	405.22
Compostela Valley	0.523	10.12	9.70	25.53	0.00	23.57	2.41	5.73	0.00	0.00						0.39	12.30	24.72	11.59	7.90	10.45	5.96	11.59	9.73	14.56	13.59	11.00	6.20	0.00	0.00		0.00	4.20	13.37	23.07	5.85	6.85	270.37
Davao del Norte	0.007	0.15	0.18	0.25	0.26	0.45	0.44	0.46	0.25	0.00						0.00	0.14	0.27	0.16	0.19	0.29	0.35	0.31	0.43	0.31	0.27	0.05	0.00	0.00	0.00		0.00	0.13	0.23	0.04	0.35	0.44	6.39
Davao Oriental	0.051	1.86	1.90	2.05	1.96	1.24	1.40	1.47	0.00	0.15						0.48	1.35	1.22	0.80	0.63	0.98	1.06	0.99	1.26	1.47	0.39	0.12	0.00	0.00	0.00		0.00	0.60	0.68	0.21	0.54	0.85	25.68
Agusan del Norte	0.973	25.02	34.60	42.84	40.97	39.57	29.30	20.50	16.44	3.13						6.94	31.25	47.25	14.39	9.77	11.71	3.83	21.58	10.76	22.57	21.74	6.96	0.00	0.00	0.00		0.00	5.97	14.22	5.56	3.53	9.29	499.69
Agusan del Sur	0.889	77.00	78.50	84.70	80.99	78.23	57.92	60.99	32.50	0.00						0.00	40.90	58.83	37.16	0.00	24.22	39.04	24.17	37.59	31.28	25.32	13.19	0.00	0.00	0.00		0.00	11.83	44.36	25.07	10.79	13.31	987.90
Dinagat Islands	1.000	0.58	1.32	0.78	1.36	0.86	0.97	0.41	0.54	0.10						0.64	1.26	0.88	0.82	0.91	0.13	1.59	0.94	0.97	1.55	1.31	0.17	0.13	0.00	0.00		0.00	0.12	0.54	0.61	1.08	0.16	20.76
Surigao del Norte	1.000	3.60	8.50	4.40	6.72	4.98	6.26	4.32	1.01	0.00						4.42	10.54	6.38	5.65	10.62	1.18	10.36	8.99	7.99	13.12	8.59	0.81	0.81	0.00	0.00		0.00	0.00	5.08	2.66	3.99	3.91	144.89
Surigao del Sur	0.104	2.46	1.82	2.34	0.78	4.81	0.00	3.51	0.00	0.00						0.00	3.25	5.77	1.65	1.36	2.79	4.01	2.75	6.56	1.31	2.89	4.11	2.12	0.00	0.00		2.73	3.61	3.79	1.46	1.16	5.75	72.82
WRR-XI																																						**4,069**
Bukidnon	0.046	4.35	4.47	3.26	3.39	4.14	1.61	0.34	0.65	0.28	0.40			0.00	0.00	0.44	1.50	0.60	0.73	0.22	1.14	0.87	1.83	2.73	1.75	1.33	0.00	0.00	0.00	0.00	0.00	0.00	1.01	1.02	1.74	3.51	1.19	44.51
Compostela Valley	0.477	9.23	8.84	23.28	0.00	21.49	2.20	5.23	0.00	0.00						0.36	11.21	22.55	10.57	7.20	9.53	5.43	10.57	8.87	13.28	12.39	10.03	5.66	0.00	0.00		0.00	3.83	12.20	21.04	5.34	6.25	246.59
Davao del Norte	0.989	21.55	26.13	34.98	36.96	63.15	61.69	65.07	34.67	0.00						0.00	19.47	38.73	21.92	27.36	40.30	49.23	44.32	60.62	43.39	38.23	6.65	0.00	0.00	0.00		0.00	18.51	32.61	6.19	49.08	62.33	903.14
Davao del Sur	0.998	24.30	63.74	68.77	53.17	21.20	47.02	28.92	13.23	0.00						14.54	38.43	45.09	34.13	43.55	31.52	57.34	18.27	63.25	29.07	9.05	22.29	0.00	0.00	0.00		5.47	33.17	58.08	61.49	52.04	30.64	967.78
Davao Oriental	0.949	34.70	35.37	38.17	36.45	23.11	26.07	27.37	0.00	2.78						8.89	25.18	22.76	14.96	11.64	18.29	19.79	18.37	23.38	27.45	7.31	2.21	0.00	0.00	0.00		0.00	11.16	12.63	3.95	10.01	15.77	477.77
Sarangani	0.869	4.52	0.00	0.56	0.00	0.00		0.00	4.49	6.44	3.57	6.96	10.51	5.85	4.09	9.26	8.17	4.86	2.37	0.00	0.00	0.51	1.00	0.00		0.00	0.71	2.52	2.70	6.40	4.37	4.27	3.80	3.08	5.33	4.26	0.98	111.56
South Cotabato	0.340	17.77	12.95	0.00	3.96	0.32		8.66	3.50	24.14	13.35	33.59	39.47	24.93	21.24	16.13	11.91	14.44	8.74	0.00	0.00	0.00	0.00	0.00		0.00	7.27	18.92	5.03	13.94	15.62	20.82	16.06	16.62	18.50	15.26	23.82	426.92
North Cotabato	0.038	3.65	1.00	0.00	0.00	0.00		1.68	1.68	2.55	4.79	6.64	5.53	4.02	2.93	3.66	1.49	1.53	3.41	0.94	0.00	0.03	0.00	0.00		0.00	1.13	2.24	0.67	3.24	3.27	3.39	2.72	3.42	2.23	3.41	4.91	76.16
Sultan Kudarat	0.052	2.28	0.24	0.00	0.00	0.00		0.00	2.58	3.70	1.06	3.86	6.06	3.06	1.37	5.34	3.17	1.56	0.13	0.00	0.00	0.00	0.57	0.00		0.00	0.00	0.48	1.00	2.49	1.45	1.56	0.73	3.28	2.73	3.28	0.68	52.66
Agusan del Norte	0.027	0.69	0.96	1.19	1.14	1.10	0.81	0.57	0.46	0.09						0.19	0.87	1.31	0.40	0.27	0.33	0.11	0.60	0.30	0.63	0.60	0.19	0.00	0.00	0.00		0.00	0.17	0.39	0.15	0.10	0.26	13.87
Agusan del Sur	0.109	9.44	9.62	10.39	9.93	9.59	7.10	7.48	3.98	0.00						0.00	5.01	7.21	4.56	0.00	2.97	4.79	2.96	4.61	3.84	3.10	1.62	0.00	0.00	0.00		0.00	1.45	5.44	3.07	1.32	1.63	121.13
Surigao del Sur	0.896	21.18	15.64	20.18	6.76	41.43	0.00	30.25	0.00	0.00						0.00	28.04	49.70	14.25	11.70	24.06	34.57	23.67	56.52	11.29	24.89	35.43	18.29	0.00	0.00		23.53	31.07	32.69	12.61	10.03	49.55	627.35
WRR-XII																																						**5,688**
Bukidnon	0.606	57.37	58.83	42.94	44.72	54.58	21.19	4.48	8.61	3.64	5.21			0.00	0.00	5.75	19.74	7.94	9.61	2.95	15.01	11.41	24.11	35.93	23.12	17.47	0.00	0.00	0.00	0.00	0.00	0.00	13.34	13.50	22.98	46.19	15.74	586.37
Lanao del Norte	0.918	27.82	20.26	20.64	22.61	14.26	19.44	0.00	26.83	14.55	0.00	0.04				10.37	10.95	7.65	32.13	13.14	10.03	23.12	37.19	24.31	28.18	4.34	6.41	0.00	0.00	0.00	0.00	3.51	0.00	32.43	30.24	33.30	18.54	492.29
Misamis Oriental	0.001	0.02	0.01	0.02	0.01	0.02	0.01	0.02	0.00	0.00						0.01	0.01	0.02	0.02	0.01	0.01	0.02	0.02	0.01	0.02	0.01	0.01	0.01	0.00	0.00		0.01	0.02	0.03	0.01	0.02	0.03	0.41
Davao del Norte	0.004	0.09	0.11	0.14	0.15	0.26	0.25	0.26	0.14	0.00						0.00	0.08	0.16	0.09	0.11	0.16	0.20	0.18	0.25	0.18	0.15	0.03	0.00	0.00	0.00		0.00	0.07	0.13	0.03	0.20	0.25	3.65
Davao del Sur	0.002	0.05	0.13	0.14	0.11	0.04	0.09	0.06	0.03	0.00						0.03	0.08	0.09	0.07	0.09	0.06	0.11	0.04	0.13	0.06	0.02	0.04	0.00	0.00	0.00		0.01	0.07	0.12	0.12	0.10	0.06	1.94
Sarangani	0.131	0.68	0.00	0.08	0.00	0.00		0.00	0.68	0.97	0.54	1.05	1.58	0.88	0.62	1.40	1.23	0.73	0.36	0.00	0.00	0.08	0.15	0.00		0.00	0.11	0.38	0.41	0.96	0.66	0.64	0.57	0.46	0.80	0.64	0.15	16.82
South Cotabato	0.660	34.49	25.14	0.00	7.68	0.62		16.82	6.79	46.86	25.91	65.20	76.62	48.40	41.23	31.30	23.12	28.02	16.96	0.00	0.00	0.00	0.00	0.00		0.00	14.10	36.72	9.76	27.05	30.33	40.41	31.17	32.26	35.90	29.63	46.24	828.73
North Cotabato	0.962	92.31	25.35	0.00	0.00	0.00		42.61	42.41	64.61	121.25	168.21	140.02	101.87	74.12	92.62	37.72	38.62	86.33	23.68	0.00	0.68	0.00	0.00		0.00	28.63	56.62	16.95	81.99	82.86	85.94	68.81	86.61	56.55	86.38	124.28	1,928.04
Sultan Kudarat	0.948	41.65	4.44	0.00	0.00	0.00		0.00	46.95	67.43	19.33	70.29	110.39	55.74	24.94	97.30	57.70	28.39	2.37	0.00	0.00	0.00	10.46	0.00		0.00	0.00	8.70	18.22	45.44	26.39	28.52	13.36	59.88	49.81	59.87	12.41	959.95
Agusan del Sur	0.002	0.17	0.18	0.19	0.18	0.18	0.13	0.14	0.07	0.00						0.00	0.09	0.13	0.08	0.00	0.05	0.09	0.05	0.08	0.07	0.06	0.03	0.00	0.00	0.00		0.00	0.03	0.10	0.06	0.02	0.03	2.22
Lanao del Sur	1.000	17.01	3.73	0.00	0.00	0.00		0.89	0.59	0.14	0.19	2.11	2.62	2.09	1.02	1.40	0.08	0.97	0.61	0.00	0.00	0.00	0.00	0.00		0.00	0.00	2.65	0.00	8.49	7.86	8.56	4.13	8.48	10.65	14.35	22.90	121.51
Maguindanao	1.000	75.45	24.97	0.00	0.00	0.00		3.63	3.68	3.04	4.38	10.97	12.28	8.91	7.39	5.00	2.75	2.68	5.61	3.73	0.00	0.78	0.00	0.00		0.00	22.77	46.05	0.00	65.76	58.03	71.65	46.94	55.77	38.99	64.31	100.91	746.41
Total	80.000																																					**60,754**

Source: JICA Survey Team

Table F 39 Irrigation Water Demands of Surface Water Systems by WRR in 2050
(Based on Irrigated Areas Projected under NIMP 2020-2030)

(Unit: MCM)

Region/	Area	Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			Annual
Province	Rate	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
WRR-I																																						**2,427**
Abra	0.991	20.85	21.25	22.94	22.12	21.37	15.84	16.86	8.98	0.00							8.18	15.98	21.23	11.47	2.65	5.91	7.40	6.81	7.24	7.65	15.96	20.87	7.92	0.00	0.00	9.01	17.91	23.49	20.21	1.28	20.88	382.25
Apayao	0.003	0.04	0.04	0.04	0.04	0.04	0.03	0.02	0.02	0.00							0.00	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.03	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.03	0.04	0.58
Benguet	0.467	7.92	8.07	8.71	8.38	8.10	6.00	6.38	3.40	0.65			0.00	5.48	5.84	3.95	3.00	4.20	3.19	3.07	1.98	1.28	2.43	1.90	0.00	0.00	0.00					3.45	6.85	1.56	7.70	6.66	4.16	124.31
Kalinga	0.006	0.20	0.20	0.22	0.21	0.21	0.15	0.16	0.09	0.02							0.00	0.11	0.13	0.10	0.03	0.10	0.05	0.10	0.07	0.09	0.00	0.10	0.13	0.00	0.00	0.09	0.18	0.23	0.20	0.17	0.20	3.56
Mt. Province	0.140	1.76	1.70	0.25	1.19	0.68	0.04							1.40	0.82	1.80	1.98	1.01	1.41	1.00	0.00	0.17	0.10	0.74	0.65	0.20	0.00	0.00	0.48	1.91	1.03	0.03	0.00	1.11	0.53	0.91	1.91	24.80
Ilocos Norte	0.984	48.00	48.93	52.80	50.86	45.27	25.77	20.67	3.58									24.63	65.24	65.81	75.20	35.27	29.92	30.50	55.76	4.11	32.40	8.76	0.00	0.00	0.00	27.32	50.24	22.20	49.60	5.22	48.35	926.41
Ilocos Sur	1.000	32.21	32.83	35.44	34.02	30.29	17.25	13.76	2.38									0.00	29.93	15.05	38.62	15.16	23.54	23.42	57.50	23.72	17.62	35.34	0.00	17.67	2.09	0.00	33.89	42.41	33.46	27.39	32.54	667.53
La Union	0.947	16.02	16.33	17.62	16.91	15.06	8.57	6.84	1.18									0.71	8.20	18.85	8.99	8.90	4.45	10.38	7.95	10.37	0.49	11.22	14.31	0.00	0.00	9.24	16.94	21.18	16.67	13.63	16.18	297.20
WRR-II																																						**8,682**
Abra	0.009	0.19	0.19	0.21	0.20	0.19	0.14	0.15	0.08	0.00							0.07	0.15	0.19	0.10	0.02	0.05	0.07	0.06	0.07	0.07	0.14	0.19	0.07	0.00	0.00	0.08	0.16	0.21	0.18	0.01	0.19	3.47
Apayao	0.997	11.66	11.88	12.82	12.38	11.96	8.87	7.19	5.06	0.96							0.00	9.68	10.82	8.27	6.95	6.65	5.97	6.91	4.03	3.31	5.02	10.34	2.23	3.53	0.42	5.16	0.00	0.00	0.00	9.83	11.70	193.62
Benguet	0.007	0.12	0.12	0.13	0.13	0.12	0.09	0.10	0.05	0.01			0.00	0.08	0.09	0.06	0.04	0.06	0.05	0.05	0.03	0.02	0.04	0.03	0.00	0.00	0.00					0.05	0.10	0.02	0.12	0.10	0.06	1.86
Ifugao	0.993			8.74	10.99	20.51	13.64	17.58	19.15	19.12	22.60	15.98	15.33	18.26	11.43	7.79	0.00	0.00				0.00	12.42	7.98	3.40	0.89	0.00	5.99	0.39	12.63	12.22	1.56	7.91	0.00	0.00	0.00		266.50
Kalinga	0.994	33.29	33.90	36.62	35.30	34.16	25.38	27.02	14.41	2.75							0.23	18.77	21.42	16.03	5.78	16.49	8.84	16.83	11.71	15.12	0.00	16.49	21.63	0.00		14.69	29.19	38.28	32.76	28.32	33.61	589.02
Mt. Province	0.858	10.78	10.41	1.51	7.27	4.15	0.26							8.57	5.03	11.01	12.12	6.17	8.63	6.15	0.00	1.06	0.63	4.51	3.99	1.23	0.00	0.00	2.93	11.71	6.30	0.20	0.00	6.79	3.25	5.59	11.71	151.98
Ilocos Norte	0.016	0.78	0.80	0.86	0.83	0.74	0.42	0.34	0.06									0.40	1.06	1.07	1.22	0.57	0.49	0.50	0.91	0.07	0.53	0.14	0.00	0.00	0.00	0.44	0.82	0.36	0.81	0.08	0.79	15.06
Batanes	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00								0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cagayan	1.000	85.89	#####	#####	#####	#####	95.73	#####	54.39	0.00							47.74	#####	#####	#####	#####	95.63	75.61	83.72	58.47	89.88	#####	40.28	0.00	0.00	0.00	0.00	#####	#####	67.50	32.08	#####	2,398.78
Isabela	1.000	#####	#####	#####	#####	#####	#####	#####	#####	0.00	37.02	0.28					2.72	#####	#####	#####	#####	90.89	#####	#####	#####	55.28	0.00	#####	0.00	0.00	0.00	#####	0.00	31.20	97.73	38.82	#####	3,971.37
Nueva Vizcaya	0.873	34.86	35.51	38.34	36.99	35.77	26.53	28.27	15.07	2.87							5.74	41.49	44.90	5.56	9.92	18.26	10.08	4.52	16.50	9.91	7.64	0.00	0.00	10.39	0.00	0.00	34.01	43.41	21.67	0.00	4.28	542.50
Quirino	0.997	15.16	19.63	16.53	20.41	19.73	14.62	15.58	8.30	0.00							3.93	22.57	19.19	15.52	5.07	6.62	7.88	8.66	6.10	7.27	7.55	0.00	5.21	0.00	0.00	9.54	7.80	23.60	19.32	7.24	19.28	332.30
Aurora	0.410	8.82	6.70	7.68	7.45	9.43	7.04	11.41	14.01	11.01	9.77	0.00	0.00				0.00	6.77	10.99	6.36	11.04	5.12	5.02	9.82	10.49	7.63	0.41	3.49	0.00	0.21	0.00				5.18	10.30	8.89	195.06
Nueva Ecija	0.005	0.64	1.12	1.27	1.01	1.27	0.98	1.22	0.60	0.78	0.18	0.27	0.05			0.10	0.02	0.80	0.10	0.52	0.83	0.12	0.37	0.74	0.64	0.10	0.36	0.16	0.84	0.11	0.00	0.53	0.70	0.78	0.97	1.10	0.93	20.22
WRR-III																																						**12,288**
Benguet	0.526	8.92	9.08	9.81	9.44	9.12	6.76	7.19	3.83	0.73			0.00	6.17	6.57	4.44	3.38	4.73	3.60	3.46	2.24	1.44	2.73	2.15	0.00	0.00	0.00					3.89	7.71	1.76	8.67	7.51	4.68	140.02
Ifugao	0.007			0.06	0.08	0.14	0.10	0.12	0.13	0.13	0.16	0.11	0.11	0.13	0.08	0.05	0.00	0.00				0.00	0.09	0.06	0.02	0.01	0.00	0.04	0.00	0.09	0.09	0.01	0.06	0.00	0.00	0.00		1.88
Mt. Province	0.002	0.03	0.02	0.00	0.02	0.01	0.00							0.02	0.01	0.03	0.03	0.01	0.02	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.03	0.01	0.00	0.00	0.02	0.01	0.01	0.03	0.35
La Union	0.053	0.90	0.91	0.99	0.95	0.84	0.48	0.38	0.07									0.04	0.46	1.06	0.50	0.50	0.25	0.58	0.44	0.58	0.03	0.63	0.80	0.00	0.00	0.52	0.95	1.19	0.93	0.76	0.91	16.63
Pangasinan	1.000	#####	#####	#####	#####	#####	90.11	93.20	57.32	0.00	0.00							0.00	0.00	51.78	47.37	92.80	#####	84.96	85.69	87.00	#####	59.05	#####	0.00	#####	86.09	#####	#####	#####	#####	#####	2,719.09
Nueva Vizcaya	0.127	5.07	5.17	5.58	5.38	5.20	3.86	4.11	2.19	0.42							0.84	6.04	6.53	0.81	1.44	2.66	1.47	0.66	2.40	1.44	1.11	0.00	0.00	1.51	0.00	0.00	4.95	6.31	3.15	0.00	0.62	78.92
Quirino	0.003	0.05	0.06	0.05	0.06	0.06	0.04	0.05	0.02	0.00							0.01	0.07	0.06	0.05	0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.00	0.02	0.00	0.00	0.03	0.02	0.07	0.06	0.02	0.06	1.00
Aurora	0.548	11.79	8.96	10.27	9.96	12.61	9.41	15.25	18.72	14.72	13.06	0.00	0.00				0.00	9.05	14.69	8.50	14.75	6.84	6.71	13.12	14.03	10.20	0.54	4.67	0.00	0.28	0.00				6.93	13.76	11.89	260.71
Bataan	1.000	23.11	23.56	25.42	24.40	23.56	17.44	18.50	9.86	1.88								0.00	7.17	12.60	13.59	11.11	8.43	9.68	20.56	17.92	7.14	7.61	5.39	10.10	0.00	2.83	16.96	16.07	23.63	19.26	16.46	394.26
Bulacan	0.978	38.44	39.19	42.29	40.68	26.18	29.09	30.92	16.47	0.00								15.76	33.88	19.80	28.14	0.00	21.21	28.12	10.37	21.43	59.27	15.14	11.60	0.00	3.79	0.00	12.17	45.02	16.67	18.28	38.29	662.22
Nueva Ecija	0.994	#####	#####	#####	#####	#####	#####	#####	#####	#####	36.34	53.85	10.21			20.87	4.49	#####	19.06	#####	#####	23.92	73.70	#####	#####	19.51	70.64	31.13	#####	21.64	0.00	#####	#####	#####	#####	#####	#####	4,019.03
Pampanga	1.000	90.72	92.48	99.79	96.09	92.81	68.71	73.24	39.02	7.42								7.41	45.04	74.38	41.80	36.61	27.70	6.05	23.32	57.85	29.23	15.28	38.67	20.94	29.46	42.79	82.02	#####	88.86	75.62	90.21	1,599.54
Tarlac	1.000	97.67	99.57	#####	#####	#####	74.07	79.01	42.09	8.01								10.33	80.82	94.03	90.97	23.91	0.00	42.39	#####	72.99	31.51	6.64	14.65	33.20	12.42	32.54	#####	#####	99.88	81.30	71.90	1,844.76
Zambales	1.000	27.39	27.93	30.13	29.01	28.00	20.72	22.03	11.73	0.00								0.00	26.27	38.87	19.76	12.21	31.52	15.36	4.38	21.36	18.25	0.70	25.08	15.32	0.00	0.00	18.86	31.45	21.24	22.81	27.24	547.63
Rizal	0.021	0.13	0.03	0.10	0.14	0.13	0.10	0.10	0.00	0.01				0.00	0.04	0.14	0.07	0.02	0.03	0.05	0.07	0.07	0.05	0.05	0.00	0.02	0.00	0.00				0.00	0.08	0.06	0.12	0.07	0.13	1.80

WRR-IV																																						**4,672**
Aurora	0.042	0.90	0.69	0.79	0.76	0.97	0.72	1.17	1.43	1.13	1.00	0.00	0.00				0.00	0.69	1.13	0.65	1.13	0.52	0.51	1.01	1.08	0.78	0.04	0.36	0.00	0.02	0.00				0.53	1.05	0.91	19.98
Bulacan	0.022	0.86	0.88	0.95	0.92	0.59	0.65	0.70	0.37	0.00								0.35	0.76	0.45	0.63	0.00	0.48	0.63	0.23	0.48	1.33	0.34	0.26	0.00	0.09	0.00	0.27	1.01	0.38	0.41	0.86	14.90
Nueva Ecija	0.001	0.13	0.22	0.25	0.20	0.25	0.20	0.24	0.12	0.16	0.04	0.05	0.01			0.02	0.00	0.16	0.02	0.10	0.17	0.02	0.07	0.15	0.13	0.02	0.07	0.03	0.17	0.02	0.00	0.11	0.14	0.16	0.19	0.22	0.19	4.04
Batangas	1.000	4.42	4.48	6.60	6.33	6.11	4.52	4.80	2.56	0.49				0.89	4.41	5.82	2.94	1.96	3.92	0.13	4.25	2.21	2.01	1.20	0.19	0.00	0.00	0.00				0.00	3.57	4.06	5.22	0.92	5.96	89.94
Cavite	1.000	28.16	28.71	30.97	29.74	28.73	21.27	22.60	12.04	2.29				12.64	27.01	28.17	4.22	0.12	14.13	7.16	11.56	24.46	9.66	19.17	30.56	7.39	0.00	0.00				0.00	1.84	8.32	24.55	23.47	11.99	470.92
Laguna	1.000	40.08	40.86	44.09	42.30	40.86	30.25	32.14	17.12	0.00				15.72	16.47	29.78	18.97	29.69	16.42	16.77	19.70	16.22	18.40	14.57	1.23	0.00	0.00	0.00				0.00	0.00	21.31	7.54	8.74	39.92	579.11
Quezon	0.947	7.19	#####	98.29	#####	76.19	82.47	65.25	3.31	8.86				12.42	66.37	#####	66.55	76.30	30.54	14.85	54.34	44.74	81.24	#####	34.43	0.00	0.00	0.00				28.86	23.20	61.15	34.23	60.21	14.79	1,506.26
Rizal	0.979	6.03	1.55	4.50	6.36	6.15	4.55	4.83	0.00	0.49				0.00	2.03	6.45	3.45	0.96	1.17	2.37	3.44	3.05	2.38	2.37	0.00	1.10	0.00	0.00				0.00	3.63	2.59	5.38	3.07	6.15	84.05
Marinduque	1.000	1.55	0.82	2.49	2.58	1.83	2.07	2.88	2.78	2.80	1.92	0.38	0.19	0.88	2.73	3.88	1.38	1.05	1.50	0.71	2.44	1.61	1.77	1.51	0.83	0.25	0.00	0.05							1.22	0.35	3.13	47.59
Occidental Mindoro	1.000	31.44	32.05	34.58	33.13	32.00	23.70	25.08	13.36	2.54								0.00	19.80	36.84	12.57	16.72	0.00	1.43	17.47	17.87	8.61	2.71	25.06	0.00	5.48	6.44	6.34	40.69	32.22	16.94	25.47	520.54
Oriental Mindoro	1.000	33.39	32.24	38.50	39.99	39.46	31.99	44.64	35.17	28.28	29.89	1.22	2.92	19.12	11.16	28.65	15.62	7.43	17.81	4.69	20.31	14.19	13.86	7.30	15.79	0.00	2.97	0.00							5.59	24.55	26.92	593.64
Palawan	1.000	33.46	30.17	36.08	37.40	36.90	29.92	41.64	40.15	40.42	27.66	14.15	2.70	22.92	23.85	42.82	26.41	18.98	0.63	12.65	7.83	17.71	21.28	14.20	1.23	0.42	0.00	0.00							17.56	15.01	30.77	644.91
Romblon	1.000	3.69	4.09	4.88	5.07	5.00	4.05	5.65	5.45	5.49	3.76	1.93	0.37	2.57	4.96	7.05	3.94	4.23	1.92	2.14	1.90	1.43	0.60	1.89	2.10	0.93	0.00	0.00							1.46	3.40	6.13	96.06
WRR-V																																						**5,342**
Quezon	0.053	0.40	6.25	5.50	6.45	4.26	4.62	3.65	0.19	0.50				0.69	3.71	6.60	3.72	4.27	1.71	0.83	3.04	2.50	4.55	6.48	1.93	0.00	0.00	0.00				1.61	1.30	3.42	1.92	3.37	0.83	84.30
Albay	1.000	49.53	9.17	41.60	34.78	39.14	33.97	61.64	56.82	14.41	21.04	3.21		15.90	61.41	45.56	59.12	22.03	44.56	31.09	18.77	16.77	31.71	9.40	20.01	9.53	0.00	0.00							0.00	46.95	22.82	820.94
Camarines Norte	1.000	11.85	5.64	9.61	13.22	6.34	10.57	14.76	10.93	3.08	2.59	0.77		7.17	9.49	12.35	2.30	3.46	6.26	6.16	6.07	3.17	7.88	2.66	3.57	0.00	0.00	0.00							0.00	1.86	12.93	174.68
Camarines Sur	1.000	71.89	79.82	99.96	#####	#####	#####	#####	#####	#####	49.02	0.00		51.47	98.72	#####	#####	87.71	83.52	70.73	39.69	83.39	#####	45.89	36.79	0.00	0.00	0.00	0.00						0.00	32.90	#####	2,077.61
Catanduanes	1.000	4.12	0.66	4.43	3.48	2.06	3.68	5.12	1.97	3.63	1.74	0.27		0.00	4.69	4.89	3.59	2.57	3.58	3.04	0.70	2.14	2.56	1.37	3.94	1.04	0.00	0.09							0.00	1.85	2.83	70.04
Masbate	1.000	65.01	83.58	66.93	#####	#####	43.04	#####	28.16	72.65	34.88	5.33		35.77	41.48	#####	#####	18.42	46.85	37.53	56.41	44.52	30.31	62.67	45.72	8.04	0.00	2.02							0.00	31.31	#####	1,524.91
Sorsogon	1.000	5.29	34.85	34.00	33.40	44.07	14.95	48.17	17.00	34.19	16.42	0.00		2.20	14.85	52.83	32.19	13.48	15.66	7.64	20.79	21.52	12.26	28.96	12.21	0.13	0.00	0.86							0.00	19.57	52.38	589.90
WRR-VI																																						**4,287**
Aklan	1.000	12.77	12.37	12.14	7.91	3.67	0.30							4.48	17.69	16.18	10.30	10.06	4.41	8.22	4.80	8.12	5.22	9.48	5.24	3.99	0.00	0.35	0.00	4.77	10.54	2.87	3.38	5.58	5.44	12.00	5.16	207.45
Antique	1.000	18.05	16.72	9.76	9.29	5.30	0.00	0.02						0.00	0.00	18.05	7.73	3.91	0.00	4.64	5.93	5.82	6.08	4.72	0.00	0.00	0.00	0.00	0.00	0.00	9.96	4.92	4.88	11.29	16.61	17.39	19.13	200.20
Capiz	1.000	28.36	27.27	7.95	17.52	8.08	0.00							22.28	16.00	40.83	14.09	0.00	0.00	0.13	0.00	14.12	19.79	0.00	7.92	0.00	0.00	0.00	0.00	3.04	24.14	6.07	8.69	25.78	12.35	19.84	24.35	348.61
Guimaras	1.000	1.07	0.67	1.01	0.66	0.31	0.00							0.20	0.55	1.53	0.77	0.50	0.24	0.14	0.25	0.43	0.55	0.52	0.73	0.00	0.00	0.00	0.00	0.00	0.97	0.54	0.42	0.00	1.05	0.45	1.15	14.71
Iloilo	1.000	65.56	63.59	34.29	48.00	33.55	16.33	8.78	0.07					37.33	6.43	60.39	32.91	23.34	13.86	15.80	0.00	48.73	67.46	0.00	33.46	4.37	0.00	0.00	0.00	0.00	60.46	26.20	40.51	54.64	35.10	62.96	69.27	963.40
Negros Occidental	0.924	97.88	#####	#####	82.06	9.04	3.20							24.51	#####	#####	#####	50.15	#####	68.70	84.59	#####	#####	60.79	73.92	1.04	0.00	0.00	16.93	44.63	59.17	31.34	#####	#####	#####	#####	85.23	2,352.65
Negros Oriental	0.231	9.72	11.50	11.37	7.35	3.42	0.29							5.98	8.42	17.57	12.75	6.42	6.01	6.51	8.42	6.63	5.68	8.22	5.55	0.58	0.00	0.00	0.88	5.20	10.10	11.32	4.73	9.04	5.87	4.14	6.51	200.17
WRR-VII																																						**2,127**
Negros Occidental	0.076	8.05	10.56	10.45	6.75	0.74	0.26							2.02	13.88	13.52	10.40	4.13	9.65	5.65	6.96	9.51	9.66	5.00	6.08	0.09	0.00	0.00	1.39	3.67	4.87	2.58	9.54	10.15	10.66	10.29	7.01	193.51
Bohol	1.000	58.14	53.44	29.53	31.99	38.33	19.03	34.99	0.00	0.00					0.00	20.29	0.00	0.00	59.01	52.04	34.68	65.18	65.04	23.69	56.22	24.79	12.49	42.44	0.00	0.00	42.99	39.29	49.35	59.71	45.05	76.50	73.12	1,107.33
Cebu	1.000	9.14	8.97	5.29	6.39	3.71	0.00	0.00								3.98	3.44	9.60	7.86	8.94	2.44	4.50	3.70	7.52	9.05	8.52	0.00	0.00	0.00		2.97	8.24	7.73	5.23	3.52	8.16	7.43	146.33
Negros Oriental	0.769	32.36	38.27	37.86	24.48	11.39	0.95							19.89	28.02	58.48	42.44	21.38	20.01	21.68	28.04	22.06	18.91	27.38	18.48	1.93	0.00	0.00	2.95	17.30	33.61	37.70	15.74	30.09	19.53	13.80	21.66	666.37
Siquijor	1.000	0.38	0.33	0.39	0.34	0.31	0.13	0.03								0.72	1.21	0.86	0.34	0.39	0.70	0.89	1.10	0.63	1.16	0.90	0.28	0.03	0.00		0.29	0.32	0.40	0.23	0.05	0.47	0.54	13.44
WRR-VIII																																						**2,991**
Biliran	1.000	2.30	3.18	6.93	6.62	4.28	4.73	4.98	1.12	0.00						0.90	4.92	3.89	4.77	3.71	5.73	3.84	2.76	2.64	3.04	3.99	0.72	0.67				0.00	3.97	7.38	6.18	5.25	0.02	98.50
Northern Leyte	1.000	#####	#####	66.02	78.52	26.71	26.19	0.00	0.00	0.00						40.28	34.20	#####	#####	#####	26.81	34.34	55.79	#####	#####	#####	1.44	43.59				65.42	19.61	59.96	42.30	#####	55.11	1,792.30
Southern Leyte	1.000	12.98	13.23	6.29	5.90	6.34	0.00	0.00	0.00	1.04	7.87	15.48	11.82	10.49	5.99	11.74	3.26	10.44	14.43	12.94	5.37	3.11	0.72									6.08	5.94	6.76	2.74	10.80	6.20	197.93
Northern Samar	1.000	4.15	5.09	4.29	7.72	7.45	5.52	4.10	3.10	0.59	4.66	9.18	11.95	9.19	7.76	7.55	8.58	7.28	4.40	3.03	0.24	0.39	0.30									0.00	2.45	1.78	3.05	0.00	3.33	127.12
Weatern Samar	1.000	1.31	44.48	17.89	45.92	44.35	32.83	19.21	10.14	3.51	25.00	49.20	53.46	49.18	4.78	26.67	24.18	10.38	20.46	11.16	13.50	22.60	0.00									0.00	13.44	35.42	9.58	23.64	18.44	630.76
Eastern Samar	1.000	3.99	9.46	5.91	9.75	6.89	6.97	3.29	2.14	0.74	5.71	11.22	10.10	8.97	4.51	6.11	7.10	3.33	5.49	4.13	4.00	4.42	1.56									0.00	2.20	6.68	1.70	4.01	4.06	144.45
WRR-IX																																						**1,971**
Zamboanga del Norte	1.000	5.77	8.52	5.47	4.57	4.50	2.20	1.17	0.01		4.16	5.39	5.58	6.38	9.81	5.42	6.13	4.85	5.56	4.02	4.98	4.05	3.53	0.00	0.00	0.00			0.00	0.00	2.46	2.13	4.24	0.12	0.98	8.45	4.70	125.12
Zamboanga del Sur	1.000	55.17	53.72	54.26	40.54	28.36	13.85	7.34	0.06		22.69	44.91	47.54	55.91	54.46	27.44	23.61	22.32	17.32	24.97	5.96	22.63	4.20	0.00	0.00	0.00			0.00	0.27	16.86	11.70	28.65	13.91	17.51	21.37	24.67	762.19
Zamboanga Sibugay	1.000	27.82	33.11	27.06	32.90	23.02	11.24	5.95	0.04		18.69	15.39	15.07	16.11	29.84	26.71	27.44	19.01	23.14	12.46	19.30	15.61	17.72	0.00	0.00	0.00			0.36	0.00	13.81	17.99	23.36	3.08	12.03	43.11	27.98	559.36
Misamis Occidental	1.000	35.47	36.16	39.01	37.25	35.98	20.15	28.08	14.96	2.85						8.38	22.96	27.11	12.16	12.56	10.35	7.80	15.31	9.46	22.96	18.84	17.88	0.00	0.00	0.00		0.00	2.63	19.39	7.02	1.88	3.43	470.02
Basilan	1.000	0.86	0.88	0.95	0.91	0.88	0.65	0.68	0.36	0.07						0.03	0.09	0.10	0.04	0.04	0.03	0.04	0.06	0.07	0.05	0.03	0.00	0.00	0.00	0.00		0.15	0.39	0.34	0.59	0.53	0.19	9.01
Sulu	1.000	2.61	2.66	2.87	1.87	2.64	1.96	1.59	1.10	0.21						0.10	0.16	0.36	0.15	0.10	0.25	0.15	0.15	0.26	0.20	0.24	0.21	0.14	0.00	0.00		1.21	0.90	1.61	2.55	2.21	0.45	28.94
Tawi-Tawi	1.000	1.19	1.56	1.69	1.24	1.55	0.77	0.70	0.64	0.12						0.06	0.11	0.17	0.11	0.02	0.11	0.09	0.08	0.12	0.13	0.11	0.10	0.07	0.01	0.00		0.71	0.37	1.36	1.07	1.30	0.42	15.97

WRR-X																																								**2,821**
Bukidnon	0.348	32.95	33.78	24.66	25.68	31.34	12.17	2.57	4.94	2.09	2.99			0.00	0.00	3.30	11.34	4.56	5.52	1.70	8.62	6.55	13.85	20.63	13.28	10.03	0.00	0.00	0.00	0.00	0.00	0.00	7.66	7.75	13.20	26.53	10.02	337.71
Camiguin	1.000	0.30	0.32	0.30	0.32	0.74	0.55	0.58	0.31	0.06						0.67	0.77	0.81	0.37	0.52	0.97	0.58	0.69	0.70	0.88	0.74	0.61	0.57	0.00	0.00		0.00	0.65	0.43	0.72	0.21	0.73	15.08
Lanao del Norte	0.082	2.48	1.81	1.84	2.02	1.27	1.73	0.00	2.39	1.30	0.00	0.00				0.92	0.98	0.68	2.87	1.17	0.89	2.06	3.32	2.17	2.51	0.39	0.57	0.00	0.00	0.00	0.00	0.31	0.00	2.89	2.70	2.97	1.65	43.90
Misamis Oriental	0.999	23.40	14.69	16.27	10.78	16.18	13.31	22.96	0.00	0.00						6.62	7.40	21.76	15.56	12.52	10.34	21.18	16.87	6.09	18.28	11.13	11.63	10.01	0.00	0.00		7.84	19.88	27.77	14.21	15.05	28.75	400.50
Compostela Valley	0.523	10.12	9.70	25.53	0.00	23.57	2.41	5.73	0.00	0.00						0.39	12.30	24.72	11.59	7.90	10.45	5.96	11.59	9.73	14.56	13.59	11.00	6.20	0.00	0.00		0.00	4.20	13.37	23.07	5.85	6.85	270.37
Davao del Norte	0.007	0.15	0.18	0.25	0.26	0.45	0.44	0.46	0.25	0.00						0.00	0.14	0.27	0.16	0.19	0.29	0.35	0.31	0.43	0.31	0.27	0.05	0.00	0.00	0.00		0.00	0.13	0.23	0.04	0.35	0.44	6.39
Davao Oriental	0.051	1.86	1.90	2.05	1.96	1.24	1.40	1.47	0.00	0.15						0.48	1.35	1.22	0.80	0.63	0.98	1.06	0.99	1.26	1.47	0.39	0.12	0.00	0.00	0.00		0.00	0.60	0.68	0.21	0.54	0.85	25.68
Agusan del Norte	0.973	25.02	34.60	42.84	40.97	39.57	29.30	20.50	16.44	3.13						6.94	31.25	47.25	14.39	9.77	11.71	3.83	21.58	10.76	22.57	21.74	6.96	0.00	0.00	0.00		0.00	5.97	14.22	5.56	3.53	9.29	499.69
Agusan del Sur	0.889	76.77	78.27	84.45	80.75	78.00	57.75	60.81	32.40	0.00						0.00	40.57	58.36	36.87	0.00	24.03	38.73	23.98	37.29	31.03	25.12	13.08	0.00	0.00	0.00		0.00	11.79	44.23	25.00	10.76	13.27	983.31
Dinagat Islands	1.000	0.58	1.32	0.78	1.36	0.86	0.97	0.41	0.54	0.10						0.64	1.26	0.88	0.82	0.91	0.13	1.59	0.94	0.97	1.55	1.31	0.17	0.13	0.00	0.00		0.00	0.12	0.54	0.61	1.08	0.16	20.76
Surigao del Norte	1.000	3.60	8.50	4.40	6.72	4.98	6.26	4.32	1.01	0.00						4.42	10.54	6.38	5.65	10.62	1.18	10.36	8.99	7.99	13.12	8.59	0.81	0.81	0.00	0.00		0.00	0.00	5.08	2.66	3.99	3.91	144.89
Surigao del Sur	0.104	2.46	1.82	2.34	0.78	4.81	0.00	3.51	0.00	0.00						0.00	3.25	5.76	1.65	1.36	2.79	4.01	2.74	6.55	1.31	2.89	4.11	2.12	0.00	0.00		2.73	3.61	3.79	1.46	1.16	5.75	72.76
WRR-XI																																								**4,065**
Bukidnon	0.046	4.35	4.47	3.26	3.39	4.14	1.61	0.34	0.65	0.28	0.40			0.00	0.00	0.44	1.50	0.60	0.73	0.22	1.14	0.87	1.83	2.73	1.75	1.33	0.00	0.00	0.00	0.00	0.00	0.00	1.01	1.02	1.74	3.51	1.19	44.51
Compostela Valley	0.477	9.23	8.84	23.28	0.00	21.49	2.20	5.23	0.00	0.00						0.36	11.21	22.55	10.57	7.20	9.53	5.43	10.57	8.87	13.28	12.39	10.03	5.66	0.00	0.00		0.00	3.83	12.20	21.04	5.34	6.25	246.59
Davao del Norte	0.989	21.55	26.13	34.98	36.96	63.15	61.69	65.07	34.67	0.00						0.00	19.47	38.73	21.92	27.36	40.30	49.23	44.32	60.62	43.39	38.23	6.65	0.00	0.00	0.00		0.00	18.51	32.61	6.19	49.08	62.33	903.14
Davao del Sur	0.998	24.30	63.74	68.77	53.17	21.20	47.02	28.92	13.23	0.00						14.54	38.43	45.09	34.13	43.55	31.52	57.34	18.27	63.25	29.07	9.05	22.29	0.00	0.00	0.00		5.47	33.17	58.08	61.49	52.04	30.64	967.78
Davao Oriental	0.949	34.70	35.37	38.17	36.45	23.11	26.07	27.37	0.00	2.78						8.89	25.18	22.76	14.96	11.64	18.29	19.79	18.37	23.38	27.45	7.31	2.21	0.00	0.00	0.00		0.00	11.16	12.63	3.95	10.01	15.77	477.77
Sarangani	0.869	4.46	0.00	0.55	0.00	0.00		0.00	4.44	6.36	3.53	6.88	10.39	5.78	4.04	9.15	8.07	4.80	2.34	0.00	0.00	0.51	0.98	0.00		0.00	0.70	2.49	2.66	6.32	4.31	4.22	3.75	3.04	5.26	4.20	0.97	110.22
South Cotabato	0.340	17.76	12.94	0.00	3.96	0.32		8.66	3.50	24.13	13.34	33.57	39.46	24.92	21.23	16.12	11.90	14.43	8.73	0.00	0.00	0.00	0.00	0.00		0.00	7.26	18.91	5.03	13.93	15.62	20.81	16.05	16.61	18.49	15.26	23.81	426.77
North Cotabato	0.038	3.61	0.99	0.00	0.00	0.00		1.67	1.66	2.52	4.74	6.57	5.47	3.98	2.90	3.62	1.47	1.51	3.37	0.93	0.00	0.03	0.00	0.00		0.00	1.12	2.21	0.66	3.20	3.24	3.36	2.69	3.38	2.21	3.38	4.86	75.35
Sultan Kudarat	0.052	2.25	0.24	0.00	0.00	0.00		0.00	2.55	3.66	1.05	3.81	5.99	3.02	1.35	5.28	3.13	1.54	0.13	0.00	0.00	0.00	0.57	0.00		0.00	0.00	0.47	0.99	2.46	1.43	1.54	0.72	3.24	2.70	3.24	0.67	52.03
Agusan del Norte	0.027	0.69	0.96	1.19	1.14	1.10	0.81	0.57	0.46	0.09						0.19	0.87	1.31	0.40	0.27	0.33	0.11	0.60	0.30	0.63	0.60	0.19	0.00	0.00	0.00		0.00	0.17	0.39	0.15	0.10	0.26	13.87
Agusan del Sur	0.109	9.41	9.60	10.35	9.90	9.56	7.08	7.46	3.97	0.00						0.00	4.97	7.16	4.52	0.00	2.95	4.75	2.94	4.57	3.80	3.08	1.60	0.00	0.00	0.00		0.00	1.45	5.42	3.07	1.32	1.63	120.56
Surigao del Sur	0.896	21.18	15.64	20.18	6.76	41.43	0.00	30.25	0.00	0.00						0.00	28.00	49.64	14.24	11.69	24.03	34.52	23.64	56.44	11.28	24.86	35.38	18.26	0.00	0.00		23.53	31.07	32.69	12.61	10.03	49.55	626.88
WRR-XII																																								**5,653**
Bukidnon	0.606	57.37	58.83	42.94	44.72	54.58	21.19	4.48	8.61	3.64	5.21			0.00	0.00	5.75	19.74	7.94	9.61	2.95	15.01	11.41	24.11	35.93	23.12	17.47	0.00	0.00	0.00	0.00	0.00	0.00	13.34	13.50	22.98	46.19	15.74	586.37
Lanao del Norte	0.918	27.77	20.22	20.60	22.56	14.24	19.41	0.00	26.78	14.52	0.00	0.04				10.35	10.94	7.64	32.08	13.12	10.02	23.09	37.13	24.27	28.13	4.34	6.40	0.00	0.00	0.00	0.00	3.50	0.00	32.37	30.19	33.24	18.50	491.42
Misamis Oriental	0.001	0.02	0.01	0.02	0.01	0.02	0.01	0.02	0.00	0.00						0.01	0.01	0.02	0.02	0.01	0.01	0.02	0.02	0.01	0.02	0.01	0.01	0.01	0.00	0.00		0.01	0.02	0.03	0.01	0.02	0.03	0.40
Davao del Norte	0.004	0.09	0.11	0.14	0.15	0.26	0.25	0.26	0.14	0.00						0.00	0.08	0.16	0.09	0.11	0.16	0.20	0.18	0.25	0.18	0.15	0.03	0.00	0.00	0.00		0.00	0.07	0.13	0.03	0.20	0.25	3.65
Davao del Sur	0.002	0.05	0.13	0.14	0.11	0.04	0.09	0.06	0.03	0.00						0.03	0.08	0.09	0.07	0.09	0.06	0.11	0.04	0.13	0.06	0.02	0.04	0.00	0.00	0.00		0.01	0.07	0.12	0.12	0.10	0.06	1.94
Sarangani	0.131	0.67	0.00	0.08	0.00	0.00		0.00	0.67	0.96	0.53	1.04	1.57	0.87	0.61	1.38	1.22	0.72	0.35	0.00	0.00	0.08	0.15	0.00		0.00	0.11	0.38	0.40	0.95	0.65	0.64	0.57	0.46	0.79	0.63	0.15	16.62
South Cotabato	0.660	34.48	25.13	0.00	7.68	0.62		16.81	6.79	46.84	25.90	65.17	76.59	48.38	41.21	31.29	23.11	28.01	16.95	0.00	0.00	0.00	0.00	0.00		0.00	14.10	36.71	9.75	27.04	30.31	40.40	31.16	32.24	35.89	29.62	46.23	828.44
North Cotabato	0.962	91.32	25.08	0.00	0.00	0.00		42.16	41.96	63.92	#####	#####	#####	#####	73.33	91.64	37.32	38.20	85.41	23.42	0.00	0.68	0.00	0.00		0.00	28.32	56.01	16.77	81.11	81.98	85.02	68.07	85.69	55.94	85.45	#####	1,907.43
Sultan Kudarat	0.948	41.09	4.38	0.00	0.00	0.00		0.00	46.43	66.68	19.11	69.51	#####	55.13	24.67	96.23	57.07	28.07	2.34	0.00	0.00	0.00	10.35	0.00		0.00	0.00	8.59	17.97	44.83	26.03	28.14	13.18	59.07	49.14	59.07	12.24	948.48
Agusan del Sur	0.002	0.17	0.18	0.19	0.18	0.18	0.13	0.14	0.07	0.00						0.00	0.09	0.13	0.08	0.00	0.05	0.09	0.05	0.08	0.07	0.06	0.03	0.00	0.00	0.00		0.00	0.03	0.10	0.06	0.02	0.03	2.21
Lanao del Sur	1.000	17.01	3.73	0.00	0.00	0.00		0.89	0.59	0.14	0.19	2.11	2.62	2.09	1.02	1.40	0.08	0.97	0.61	0.00	0.00	0.00	0.00	0.00		0.00	0.00	2.65	0.00	8.49	7.86	8.56	4.13	8.48	10.65	14.35	22.90	121.51
Maguindanao	1.000	75.26	24.91	0.00	0.00	0.00		3.62	3.67	3.03	4.36	10.94	12.25	8.88	7.37	4.99	2.75	2.67	5.59	3.72	0.00	0.78	0.00	0.00		0.00	22.71	45.94	0.00	65.59	57.88	71.47	46.82	55.63	38.89	64.14	#####	744.51
Total	80.000																																							**57,326**

Source: JICA Survey Team

Table F 40 Irrigation Water Demands of Groundwater Systems by WRR in 2050
(Based on Irrigated Areas Projected under NIMP 2020-2030)

(Unit: MCM)

Region/	Area	Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			Annual
Province	Rate	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
WRR-I																																						**115**
Abra	0.991	0.06	0.06	0.07	0.06	0.06	0.05	0.05	0.03	0.00							0.05	0.10	0.13	0.07	0.02	0.04	0.05	0.04	0.04	0.05	0.10	0.13	0.05	0.00	0.00	0.03	0.05	0.07	0.06	0.00	0.06	1.56
Apayao	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Benguet	0.467	0.06	0.06	0.07	0.07	0.06	0.05	0.05	0.03	0.01			0.00	0.05	0.05	0.03	0.03	0.04	0.03	0.03	0.02	0.01	0.02	0.02	0.00	0.00	0.00					0.03	0.05	0.01	0.06	0.05	0.03	1.01
Kalinga	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
Mt. Province	0.140	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Ilocos Norte	0.984	0.06	0.07	0.07	0.07	0.06	0.03	0.03	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.07	0.03	0.07	0.01	0.07	0.67
Ilocos Sur	1.000	1.59	1.62	1.75	1.68	1.50	0.85	0.68	0.12									0.00	1.73	0.87	2.23	0.88	1.36	1.35	3.33	1.37	1.02	2.04	0.00	1.02	0.12	0.00	1.67	2.09	1.65	1.35	1.61	35.50
La Union	0.947	4.22	4.30	4.64	4.45	3.96	2.26	1.80	0.31									0.17	2.00	4.60	2.19	2.17	1.09	2.53	1.94	2.53	0.12	2.74	3.49	0.00	0.00	2.43	4.46	5.57	4.39	3.59	4.26	76.19
WRR-II																																						**1,520**
Abra	0.009	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Apayao	0.997	0.90	0.92	0.99	0.96	0.92	0.68	0.56	0.39	0.07							0.00	0.74	0.83	0.63	0.53	0.51	0.46	0.53	0.31	0.25	0.38	0.79	0.17	0.27	0.03	0.40	0.00	0.00	0.00	0.76	0.90	14.88
Benguet	0.007	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	0.00	0.02
Ifugao	0.993			0.04	0.05	0.09	0.06	0.08	0.08	0.08	0.10	0.07	0.07	0.08	0.05	0.03	0.00	0.00				0.00	0.05	0.03	0.01	0.00	0.00	0.02	0.00	0.05	0.05	0.01	0.03	0.00	0.00	0.00		1.14
Kalinga	0.994	0.45	0.46	0.49	0.48	0.46	0.34	0.36	0.19	0.04							0.00	0.24	0.27	0.20	0.07	0.21	0.11	0.21	0.15	0.19	0.00	0.21	0.27	0.00		0.20	0.39	0.52	0.44	0.38	0.45	7.77
Mt. Province	0.858	0.02	0.02	0.00	0.01	0.01	0.00							0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.02	0.01	0.00	0.00	0.01	0.01	0.01	0.02	0.26
Ilocos Norte	0.016	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Batanes	1.000	0.29	0.31	0.40	0.38	0.36	0.27	0.24	0.05								0.12	0.86	0.56	0.28	0.60	0.71	0.48	0.49	0.33	0.41	0.57	0.31	0.27	0.00	0.00	0.10	0.47	0.38	0.02	0.32	0.38	9.96
Cagayan	1.000	51.61	63.12	83.61	80.37	63.30	57.52	61.33	32.68	0.00							30.38	87.28	88.39	70.90	70.06	60.85	48.11	53.27	37.20	57.19	72.63	25.63	0.00	0.00	0.00	0.00	71.58	91.96	40.56	19.28	61.66	1,480.49
Isabela	1.000	0.17	0.12	0.20	0.19	0.19	0.14	0.16	0.12	0.00	0.03	0.00					0.00	0.14	0.12	0.14	0.12	0.06	0.13	0.08	0.07	0.04	0.00	0.13	0.00	0.00	0.00	0.07	0.00	0.02	0.07	0.03	0.17	2.70
Nueva Vizcaya	0.873	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quirino	0.997	0.12	0.15	0.13	0.16	0.15	0.11	0.12	0.06	0.00							0.03	0.17	0.15	0.12	0.04	0.05	0.06	0.07	0.05	0.06	0.06	0.00	0.04	0.00	0.00	0.07	0.06	0.18	0.15	0.06	0.15	2.53
Aurora	0.410	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00
Nueva Ecija	0.005	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.00	0.00	0.00			0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.02	0.36
WRR-III																																						**1,329**
Benguet	0.526	0.07	0.07	0.08	0.08	0.07	0.05	0.06	0.03	0.01			0.00	0.05	0.06	0.04	0.03	0.04	0.03	0.03	0.02	0.01	0.02	0.02	0.00	0.00	0.00					0.03	0.06	0.01	0.07	0.06	0.04	1.14
Ifugao	0.007			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.01
Mt. Province	0.002	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
La Union	0.053	0.24	0.24	0.26	0.25	0.22	0.13	0.10	0.02									0.01	0.11	0.26	0.12	0.12	0.06	0.14	0.11	0.14	0.01	0.15	0.20	0.00	0.00	0.14	0.25	0.31	0.25	0.20	0.24	4.26
Pangasinan	1.000	41.85	43.21	47.54	46.30	42.88	27.43	28.37	17.45	0.00	0.00							0.00	0.00	13.54	12.38	24.26	29.76	22.21	22.40	22.74	36.38	15.43	32.07	0.00	26.46	26.21	33.59	37.17	45.11	49.18	41.41	785.32
Nueva Vizcaya	0.127	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quirino	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Aurora	0.548	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00
Bataan	1.000	0.59	0.60	0.65	0.63	0.60	0.45	0.47	0.25	0.05								0.00	0.18	0.32	0.35	0.28	0.21	0.25	0.52	0.46	0.18	0.19	0.14	0.26	0.00	0.07	0.44	0.41	0.61	0.49	0.42	10.09
Bulacan	0.978	2.16	2.20	2.37	2.28	1.47	1.63	1.74	0.92	0.00								0.78	1.68	0.98	1.40	0.00	1.05	1.40	0.51	1.06	2.94	0.75	0.58	0.00	0.19	0.00	0.68	2.53	0.94	1.03	2.15	35.44
Nueva Ecija	0.994	2.25	3.94	4.48	3.56	4.48	3.45	4.30	2.10	2.75	0.64	0.95	0.18			0.37	0.08	2.80	0.34	1.84	2.92	0.42	1.30	2.59	2.26	0.34	1.25	0.55	2.94	0.38	0.00	1.88	2.46	2.73	3.39	3.88	3.27	71.07
Pampanga	1.000	5.02	5.11	5.52	5.31	5.13	3.80	4.05	2.16	0.41								0.55	3.32	5.49	3.08	2.70	2.04	0.45	1.72	4.27	2.16	1.13	2.85	1.55	2.17	2.37	4.54	5.86	4.91	4.18	4.99	96.85
Tarlac	1.000	12.88	13.13	14.17	13.66	13.19	9.77	10.42	5.55	1.06								1.21	9.49	11.04	10.68	2.81	0.00	4.98	12.57	8.57	3.70	0.78	1.72	3.90	1.46	4.29	13.25	16.64	13.17	10.72	9.48	234.27
Zambales	1.000	4.91	5.00	5.40	5.19	5.01	3.71	3.95	2.10	0.00								0.00	3.83	5.67	2.88	1.78	4.60	2.24	0.64	3.12	2.66	0.10	3.66	2.24	0.00	0.00	3.38	5.63	3.80	4.08	4.88	90.48
Rizal	0.021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.06

WRR-IV																																							**249**
Aurora	0.042	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00
Bulacan	0.022	0.05	0.05	0.05	0.05	0.03	0.04	0.04	0.02	0.00								0.02	0.04	0.02	0.03	0.00	0.02	0.03	0.01	0.02	0.07	0.02	0.01	0.00	0.00	0.00	0.02	0.06	0.02	0.02	0.05	0.80
Nueva Ecija	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07
Batangas	1.000	0.22	0.23	0.33	0.32	0.31	0.23	0.24	0.13	0.02				0.06	0.30	0.40	0.20	0.13	0.27	0.01	0.29	0.15	0.14	0.08	0.01	0.00	0.00	0.00				0.00	0.18	0.20	0.26	0.05	0.30	5.06
Cavite	1.000	0.37	0.38	0.41	0.39	0.38	0.28	0.30	0.16	0.03				0.42	0.89	0.93	0.14	0.00	0.47	0.24	0.38	0.81	0.32	0.63	1.01	0.24	0.00	0.00				0.00	0.02	0.11	0.32	0.31	0.16	10.11
Laguna	1.000	0.91	0.93	1.00	0.96	0.93	0.69	0.73	0.39	0.00				0.30	0.31	0.57	0.36	0.57	0.31	0.32	0.38	0.31	0.35	0.28	0.02	0.00	0.00	0.00				0.00	0.00	0.49	0.17	0.20	0.91	12.40
Quezon	0.947	0.44	6.90	6.08	7.13	4.71	5.10	4.03	0.20	0.55				0.71	3.80	6.75	3.81	4.37	1.75	0.85	3.11	2.56	4.65	6.63	1.97	0.00	0.00	0.00				1.78	1.43	3.78	2.12	3.72	0.91	89.89
Rizal	0.979	0.19	0.05	0.14	0.20	0.19	0.14	0.15	0.00	0.02				0.00	0.06	0.20	0.11	0.03	0.04	0.07	0.11	0.10	0.07	0.07	0.00	0.03	0.00	0.00				0.00	0.11	0.08	0.17	0.10	0.19	2.65
Marinduque	1.000	0.23	0.12	0.36	0.37	0.27	0.30	0.42	0.40	0.41	0.28	0.05	0.03	0.13	0.40	0.57	0.20	0.15	0.22	0.10	0.36	0.24	0.26	0.22	0.12	0.04	0.00	0.01							0.18	0.05	0.45	6.93
Occidental Mindoro	1.000	4.46	4.55	4.91	4.70	4.54	3.36	3.56	1.90	0.36								0.00	3.12	5.81	1.98	2.64	0.00	0.22	2.75	2.82	1.36	0.43	3.95	0.00	0.86	0.91	0.90	5.77	4.57	2.40	3.61	76.44
Oriental Mindoro	1.000	1.30	1.26	1.50	1.56	1.54	1.25	1.74	1.37	1.10	1.16	0.05	0.11	0.66	0.39	0.99	0.54	0.26	0.62	0.16	0.70	0.49	0.48	0.25	0.55	0.00	0.10	0.00							0.22	0.96	1.05	22.36
Palawan	1.000	0.87	0.79	0.94	0.98	0.96	0.78	1.09	1.05	1.06	0.72	0.37	0.07	0.82	0.86	1.54	0.95	0.68	0.02	0.45	0.28	0.63	0.76	0.51	0.04	0.01	0.00	0.00							0.46	0.39	0.80	18.89
Romblon	1.000	0.11	0.12	0.15	0.15	0.15	0.12	0.17	0.16	0.16	0.11	0.06	0.01	0.08	0.16	0.22	0.12	0.13	0.06	0.07	0.06	0.05	0.02	0.06	0.07	0.03	0.00	0.00							0.04	0.10	0.18	2.92
WRR-V																																							**86**
Quezon	0.053	0.02	0.39	0.34	0.40	0.26	0.29	0.23	0.01	0.03				0.04	0.21	0.38	0.21	0.24	0.10	0.05	0.17	0.14	0.26	0.37	0.11	0.00	0.00	0.00				0.10	0.08	0.21	0.12	0.21	0.05	5.03
Albay	1.000	0.73	0.14	0.62	0.52	0.58	0.50	0.91	0.84	0.21	0.31	0.05		0.22	0.85	0.63	0.82	0.31	0.62	0.43	0.26	0.23	0.44	0.13	0.28	0.13	0.00	0.00							0.00	0.70	0.34	11.81
Camarines Norte	1.000	0.30	0.14	0.24	0.33	0.16	0.26	0.37	0.27	0.08	0.06	0.02		0.18	0.24	0.31	0.06	0.09	0.16	0.15	0.15	0.08	0.20	0.07	0.09	0.00	0.00	0.00							0.00	0.05	0.32	4.37
Camarines Sur	1.000	2.13	2.37	2.97	3.17	3.89	3.05	4.25	3.92	3.02	1.46	0.00		1.68	3.22	3.27	3.28	2.86	2.72	2.31	1.29	2.72	4.06	1.50	1.20	0.00	0.00	0.00	0.00						0.00	0.98	3.05	64.36
Catanduanes	1.000	0.03	0.01	0.04	0.03	0.02	0.03	0.04	0.02	0.03	0.01	0.00		0.00	0.04	0.04	0.03	0.02	0.03	0.03	0.01	0.02	0.02	0.01	0.03	0.01	0.00	0.00							0.00	0.02	0.02	0.58
Masbate	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00
Sorsogon	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00
WRR-VI																																							**45**
Aklan	1.000	0.22	0.21	0.20	0.13	0.06	0.01							0.07	0.27	0.25	0.16	0.15	0.07	0.13	0.07	0.12	0.08	0.14	0.08	0.06	0.00	0.01	0.00	0.08	0.18	0.05	0.06	0.09	0.09	0.20	0.09	3.32
Antique	1.000	0.07	0.06	0.04	0.04	0.02	0.00	0.00						0.00	0.00	0.51	0.22	0.11	0.00	0.13	0.17	0.16	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.02	0.02	0.04	0.06	0.07	0.07	2.16
Capiz	1.000	2.44	2.34	0.68	1.50	0.69	0.00							2.02	1.45	3.69	1.27	0.00	0.00	0.01	0.00	1.28	1.79	0.00	0.72	0.00	0.00	0.00	0.00	0.26	2.07	0.52	0.75	2.21	1.06	1.70	2.09	30.56
Guimaras	1.000	0.07	0.04	0.06	0.04	0.02	0.00							0.03	0.10	0.27	0.13	0.09	0.04	0.02	0.04	0.08	0.10	0.09	0.13	0.00	0.00	0.00	0.00	0.00	0.06	0.03	0.03	0.00	0.07	0.03	0.07	1.65
Iloilo	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					0.82	0.14	1.33	0.73	0.52	0.31	0.35	0.00	1.08	1.49	0.00	0.74	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.60
Negros Occidental	0.924	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Negros Oriental	0.231	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WRR-VII																																							**22**
Negros Occidental	0.076	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bohol	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cebu	1.000	1.23	1.21	0.71	0.86	0.50	0.00	0.00								0.65	0.56	1.56	1.28	1.45	0.40	0.73	0.60	1.22	1.47	1.39	0.00	0.00	0.00		0.40	1.11	1.04	0.71	0.47	1.10	1.00	21.66
Negros Oriental	0.769	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siquijor	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00								0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WRR-VIII																																							**5**
Biliran	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00
Northern Leyte	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00
Southern Leyte	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00
Northern Samar	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00
Weatern Samar	1.000	0.01	0.38	0.15	0.39	0.38	0.28	0.16	0.09	0.03	0.17	0.34	0.37	0.34	0.03	0.18	0.17	0.07	0.14	0.08	0.09	0.16	0.00									0.00	0.11	0.30	0.08	0.20	0.16	4.86
Eastern Samar	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00
WRR-IX																																							**9**
Zamboanga del Norte	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zamboanga del Sur	1.000	0.16	0.15	0.15	0.11	0.08	0.04	0.02	0.00		0.06	0.12	0.13	0.15	0.15	0.08	0.07	0.06	0.05	0.07	0.02	0.06	0.01	0.00	0.00	0.00			0.00	0.00	0.05	0.03	0.08	0.04	0.05	0.06	0.07	2.13
Zamboanga Sibugay	1.000	0.20	0.24	0.20	0.24	0.17	0.08	0.04	0.00		0.14	0.12	0.12	0.12	0.23	0.21	0.21	0.15	0.18	0.10	0.15	0.12	0.14	0.00	0.00	0.00			0.00	0.00	0.10	0.13	0.17	0.02	0.09	0.31	0.20	4.18
Misamis Occidental	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Basilan	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulu	1.000	0.21	0.22	0.24	0.15	0.22	0.16	0.13	0.09	0.02						0.01	0.01	0.03	0.01	0.01	0.02	0.01	0.01	0.02	0.02	0.02	0.02	0.01	0.00	0.00		0.10	0.07	0.13	0.21	0.18	0.04	2.38
Tawi-Tawi	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00

WRR-X																																								**10**
Bukidnon	0.348	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.11
Camiguin	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lanao del Norte	0.082	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.08
Misamis Oriental	0.999	0.27	0.17	0.19	0.12	0.18	0.15	0.26	0.00	0.00						0.08	0.09	0.27	0.19	0.15	0.13	0.26	0.21	0.07	0.22	0.14	0.14	0.12	0.00	0.00		0.09	0.23	0.32	0.16	0.17	0.33	4.72
Compostela Valley	0.523	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Norte	0.007	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao Oriental	0.051	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agusan del Norte	0.973	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agusan del Sur	0.889	0.23	0.23	0.25	0.24	0.23	0.17	0.18	0.10	0.00						0.00	0.33	0.47	0.30	0.00	0.19	0.31	0.19	0.30	0.25	0.20	0.10	0.00	0.00	0.00		0.00	0.04	0.13	0.07	0.03	0.04	4.59
Dinagat Islands	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Surigao del Norte	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Surigao del Sur	0.104	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.05
WRR-XI																																								**4**
Bukidnon	0.046	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Compostela Valley	0.477	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Norte	0.989	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Sur	0.998	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao Oriental	0.949	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sarangani	0.869	0.06	0.00	0.01	0.00	0.00		0.00	0.05	0.08	0.04	0.08	0.12	0.07	0.05	0.11	0.10	0.06	0.03	0.00	0.00	0.01	0.01	0.00		0.00	0.01	0.03	0.03	0.08	0.05	0.05	0.05	0.04	0.07	0.05	0.01	1.34
South Cotabato	0.340	0.01	0.00	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.15
North Cotabato	0.038	0.04	0.01	0.00	0.00	0.00		0.02	0.02	0.03	0.05	0.07	0.06	0.04	0.03	0.04	0.02	0.02	0.04	0.01	0.00	0.00	0.00	0.00		0.00	0.01	0.02	0.01	0.03	0.04	0.04	0.03	0.04	0.02	0.04	0.05	0.81
Sultan Kudarat	0.052	0.03	0.00	0.00	0.00	0.00		0.00	0.03	0.04	0.01	0.04	0.07	0.03	0.02	0.06	0.03	0.02	0.00	0.00	0.00	0.00	0.01	0.00		0.00	0.00	0.01	0.01	0.03	0.02	0.02	0.01	0.04	0.04	0.04	0.01	0.63
Agusan del Norte	0.027	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agusan del Sur	0.109	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.01	0.00						0.00	0.04	0.06	0.04	0.00	0.02	0.04	0.02	0.04	0.03	0.02	0.01	0.00	0.00	0.00		0.00	0.00	0.02	0.01	0.00	0.00	0.56
Surigao del Sur	0.896	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.04	0.07	0.02	0.02	0.03	0.05	0.03	0.08	0.02	0.03	0.05	0.03	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.46
WRR-XII																																								**35**
Bukidnon	0.606	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lanao del Norte	0.918	0.05	0.04	0.04	0.04	0.03	0.04	0.00	0.05	0.03	0.00	0.00				0.02	0.02	0.01	0.05	0.02	0.02	0.04	0.06	0.04	0.04	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.06	0.06	0.06	0.04	0.87
Misamis Oriental	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Norte	0.004	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Sur	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sarangani	0.131	0.01	0.00	0.00	0.00	0.00		0.00	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.20
South Cotabato	0.660	0.01	0.01	0.00	0.00	0.00		0.01	0.00	0.02	0.01	0.02	0.03	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00		0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.30
North Cotabato	0.962	0.99	0.27	0.00	0.00	0.00		0.45	0.45	0.69	1.29	1.79	1.49	1.09	0.79	0.99	0.40	0.41	0.92	0.25	0.00	0.01	0.00	0.00		0.00	0.31	0.61	0.18	0.88	0.89	0.92	0.74	0.93	0.61	0.93	1.33	20.61
Sultan Kudarat	0.948	0.56	0.06	0.00	0.00	0.00		0.00	0.52	0.74	0.21	0.77	1.22	0.61	0.27	1.07	0.64	0.31	0.03	0.00	0.00	0.00	0.12	0.00		0.00	0.00	0.12	0.25	0.61	0.36	0.38	0.18	0.81	0.67	0.81	0.17	11.47
Agusan del Sur	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.01
Lanao del Sur	1.000	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maguindanao	1.000	0.19	0.06	0.00	0.00	0.00		0.01	0.01	0.01	0.01	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00		0.00	0.06	0.12	0.00	0.17	0.15	0.18	0.12	0.14	0.10	0.16	0.26	1.90
Total	80.000																																							**3,428**

Source: JICA Survey Team

Table F 41 Irrigation Areas of All Systems by WRR in 2030, 2040 & 2050 (Based on NIA's 2011-2020 Irrigation Programs)

Region/	Area	2030				2040				2050			
Province	Rate	ISA	FUSA	Irrigated Area (ha)		ISA	FUSA	Irrigated Area (ha)		ISA	FUSA	Irrigated Area (ha)	
		(ha)	(ha)	Wet	Dry	(ha)	(ha)	Wet	Dry	(ha)	(ha)	Wet	Dry
WRR-I		**115,609**	**101,479**	**99,518**	**72,996**	**117,197**	**103,067**	**101,209**	**74,005**	**118,785**	**104,655**	**102,899**	**75,015**
Abra	0.991	19,652	18,678	16,260	15,493	19,652	18,678	16,260	15,493	19,652	18,678	16,260	15,493
Apayao	0.003	32	30	26	26	32	31	26	26	33	31	26	26
Benguet	0.467	7,365	7,115	6,100	5,995	7,365	7,115	6,100	5,995	7,365	7,115	6,100	5,995
Kalinga	0.006	179	165	144	136	194	180	157	149	209	195	170	161
Mt. Province	0.140	1,839	1,802	1,552	1,511	1,839	1,802	1,552	1,511	1,839	1,802	1,552	1,511
Ilocos Norte	0.984	44,482	35,241	35,900	24,009	44,482	35,241	35,900	24,009	44,482	35,241	35,900	24,009
Ilocos Sur	1.000	26,220	24,295	25,907	15,395	27,793	25,868	27,584	16,391	29,366	27,441	29,261	17,388
La Union	0.947	15,840	14,153	13,629	10,431	15,840	14,153	13,629	10,431	15,840	14,153	13,629	10,431
WRR-II		**422,736**	**395,868**	**339,252**	**333,724**	**477,070**	**450,202**	**385,892**	**379,451**	**531,404**	**504,536**	**432,533**	**425,178**
Abra	0.009	178	170	148	141	178	170	148	141	178	170	148	141
Apayao	0.997	10,666	10,132	8,649	8,575	10,745	10,211	8,717	8,642	10,824	10,290	8,784	8,709
Benguet	0.007	110	107	91	90	110	107	91	90	110	107	91	90
Ifugao	0.993	16,724	15,644	14,015	12,580	17,765	16,685	14,948	13,417	18,806	17,726	15,881	14,254
Kalinga	0.994	29,645	27,319	23,837	22,606	32,113	29,787	25,990	24,648	34,580	32,254	28,143	26,689
Mt. Province	0.858	11,272	11,042	9,512	9,260	11,272	11,042	9,512	9,260	11,272	11,042	9,512	9,260
Ilocos Norte	0.016	723	573	584	390	723	573	584	390	723	573	584	390
Batanes	1.000	359	354	354	248	359	354	354	248	359	354	354	248
Cagayan	1.000	121,474	116,310	97,068	100,660	133,639	128,475	107,220	111,188	145,803	140,639	117,372	121,715
Isabela	1.000	176,284	160,887	139,626	133,882	206,197	190,800	165,586	158,774	236,111	220,714	191,547	183,667
Nueva Vizcaya	0.873	33,364	32,332	27,482	27,482	37,594	36,562	31,078	31,078	41,824	40,792	34,673	34,673
Quirino	0.997	16,172	15,293	13,017	12,981	19,651	18,772	15,978	15,934	23,130	22,250	18,940	18,886
Aurora	0.410	4,890	4,852	4,137	4,111	5,774	5,736	4,891	4,861	6,659	6,621	5,645	5,610
Nueva Ecija	0.005	874	853	731	719	948	928	795	782	1,023	1,002	860	845
WRR-III		**544,386**	**505,893**	**462,218**	**397,799**	**603,639**	**565,146**	**517,543**	**443,204**	**662,892**	**624,399**	**572,869**	**488,609**
Benguet	0.526	8,296	8,014	6,871	6,752	8,296	8,014	6,871	6,752	8,296	8,014	6,871	6,752
Ifugao	0.007	118	110	99	89	125	118	105	95	133	125	112	100
Mt. Province	0.002	26	26	22	22	26	26	22	22	26	26	22	22
La Union	0.053	887	792	763	584	887	792	763	584	887	792	763	584
Pangasinan	1.000	145,209	131,014	130,267	92,457	159,640	145,445	144,616	102,641	174,071	159,876	158,964	112,825
Nueva Vizcaya	0.127	4,854	4,703	3,998	3,998	5,469	5,319	4,521	4,521	6,084	5,934	5,044	5,044
Quirino	0.003	49	46	39	39	59	56	48	48	70	67	57	57
Aurora	0.548	6,536	6,485	5,529	5,495	7,718	7,667	6,537	6,497	8,900	8,849	7,545	7,499
Bataan	1.000	12,677	11,188	9,478	9,541	12,677	11,188	9,478	9,541	12,677	11,188	9,478	9,541
Bulacan	0.978	39,800	33,253	33,184	23,345	42,036	35,488	35,415	24,914	44,271	37,723	37,646	26,484
Nueva Ecija	0.994	173,696	169,574	145,396	142,879	188,554	184,432	158,136	155,399	203,413	199,291	170,876	167,919
Pampanga	1.000	55,774	49,551	40,368	43,869	55,774	49,551	40,368	43,869	55,774	49,551	40,368	43,869
Tarlac	1.000	71,819	68,448	61,899	54,463	91,609	88,238	79,796	70,209	111,400	108,029	97,693	85,956
Zambales	1.000	24,502	22,559	24,193	14,157	30,608	28,665	30,741	17,989	36,714	34,771	37,290	21,821
Rizal	0.021	144	130	111	110	161	147	125	124	178	164	140	138
WRR-IV		**193,660**	**163,504**	**146,086**	**131,870**	**213,269**	**183,113**	**163,540**	**147,753**	**232,878**	**202,722**	**180,993**	**163,634**
Aurora	0.042	501	497	424	421	592	588	501	498	682	678	578	575
Bulacan	0.022	895	748	746	525	946	798	797	560	996	849	847	596
Nueva Ecija	0.001	175	171	146	144	190	186	159	156	205	200	172	169
Batangas	1.000	6,569	5,760	4,366	5,427	7,631	6,822	5,170	6,427	8,692	7,883	5,975	7,427
Cavite	1.000	16,342	8,289	7,211	6,880	17,428	9,375	8,156	7,782	18,514	10,461	9,101	8,683
Laguna	1.000	19,375	15,343	13,053	13,030	21,673	17,641	15,007	14,982	23,970	19,938	16,962	16,933
Quezon	0.947	21,010	19,091	16,919	15,536	22,691	20,772	18,408	16,904	24,372	22,453	19,898	18,272
Rizal	0.979	6,731	6,058	5,173	5,126	7,514	6,842	5,842	5,789	8,298	7,625	6,511	6,451
Marinduque	1.000	2,118	2,058	1,764	1,734	2,153	2,093	1,794	1,763	2,187	2,127	1,824	1,792
Occidental Mindoro	1.000	40,464	37,321	34,533	28,914	47,009	43,866	40,588	33,984	53,553	50,410	46,643	39,054
Oriental Mindoro	1.000	42,432	36,192	32,902	28,625	47,711	41,471	37,701	32,800	52,989	46,749	42,499	36,974
Palawan	1.000	32,901	27,858	25,447	21,911	32,901	27,858	25,447	21,911	32,901	27,858	25,447	21,911
Romblon	1.000	4,146	4,118	3,402	3,598	4,832	4,804	3,969	4,197	5,517	5,489	4,535	4,796
WRR-V		**175,702**	**150,614**	**130,266**	**125,778**	**207,051**	**181,964**	**157,354**	**151,984**	**238,401**	**213,314**	**184,442**	**178,191**
Quezon	0.053	1,176	1,068	947	869	1,270	1,163	1,030	946	1,364	1,257	1,114	1,023
Albay	1.000	39,122	37,802	33,134	31,130	46,495	45,175	39,596	37,201	53,868	52,548	46,059	43,273
Camarines Norte	1.000	13,875	13,416	11,416	11,390	18,054	17,595	14,973	14,939	22,234	21,775	18,529	18,488
Camarines Sur	1.000	92,627	70,180	60,925	58,380	107,588	85,141	73,913	70,827	122,550	100,103	86,902	83,273
Catanduanes	1.000	3,393	3,295	2,774	2,827	3,574	3,476	2,927	2,982	3,756	3,658	3,080	3,138
Masbate	1.000	11,083	10,817	9,112	9,278	15,319	15,053	12,679	12,911	19,554	19,288	16,247	16,543
Sorsogon	1.000	14,426	14,036	11,959	11,903	14,751	14,361	12,235	12,178	15,075	14,685	12,511	12,453
WRR-VI		**148,914**	**134,309**	**127,172**	**101,153**	**169,168**	**154,563**	**146,703**	**116,054**	**189,423**	**174,817**	**166,235**	**130,955**
Aklan	1.000	10,344	9,958	8,880	8,049	10,344	9,958	8,880	8,049	10,345	9,959	8,881	8,049
Antique	1.000	18,851	17,815	15,825	14,460	20,942	19,906	17,682	16,157	23,032	21,996	19,540	17,854
Capiz	1.000	15,355	12,402	11,424	9,659	15,355	12,402	11,424	9,659	15,355	12,402	11,424	9,659
Guimaras	1.000	1,165	955	904	719	1,165	955	904	719	1,165	955	904	719
Iloilo	1.000	53,301	45,383	42,927	34,224	61,526	53,608	50,707	40,427	69,752	61,834	58,487	46,630
Negros Occidental	0.924	46,406	44,975	44,813	31,644	56,286	54,855	54,658	38,596	66,166	64,735	64,502	45,547
Negros Oriental	0.231	3,492	2,821	2,398	2,397	3,550	2,879	2,448	2,446	3,608	2,937	2,497	2,496
WRR-VII		**52,226**	**46,501**	**41,874**	**37,177**	**54,525**	**48,799**	**44,007**	**38,951**	**56,824**	**51,098**	**46,141**	**40,726**
Negros Occidental	0.076	3,817	3,699	3,686	2,603	4,630	4,512	4,496	3,175	5,442	5,325	5,305	3,746
Bohol	1.000	26,547	25,197	22,591	20,243	27,840	26,490	23,750	21,282	29,133	27,783	24,910	22,321
Cebu	1.000	9,504	7,634	6,949	6,029	9,504	7,634	6,949	6,029	9,504	7,634	6,949	6,029
Negros Oriental	0.769	11,624	9,390	7,984	7,980	11,818	9,584	8,148	8,144	12,011	9,777	8,312	8,308
Siquijor	1.000	734	580	665	321	734	580	665	321	734	580	665	321

WRR-VIII		**78,576**	**77,171**	**65,225**	**65,965**	**85,300**	**83,895**	**70,929**	**71,693**	**92,025**	**90,620**	**76,634**	**77,421**
Biliran	1.000	4,182	3,780	3,134	3,292	4,182	3,780	3,134	3,292	4,182	3,780	3,134	3,292
Northern Leyte	1.000	46,157	45,753	38,442	39,337	50,597	50,193	42,173	43,155	55,038	54,634	45,904	46,973
Southern Leyte	1.000	7,165	7,077	6,051	5,980	7,165	7,077	6,051	5,980	7,165	7,077	6,051	5,980
Northern Samar	1.000	7,258	7,244	6,337	5,977	8,992	8,978	7,855	7,408	10,727	10,713	9,372	8,839
Weatern Samar	1.000	6,941	6,444	5,340	5,614	7,490	6,993	5,796	6,092	8,040	7,543	6,251	6,571
Eastern Samar	1.000	6,874	6,874	5,921	5,765	6,874	6,874	5,921	5,765	6,874	6,874	5,921	5,765
WRR-IX		**77,222**	**69,263**	**60,313**	**57,434**	**92,418**	**84,459**	**73,858**	**69,721**	**107,613**	**99,654**	**87,403**	**82,008**
Zamboanga del Norte	1.000	15,518	15,041	13,812	11,758	23,489	23,012	21,131	17,989	31,459	30,982	28,450	24,220
Zamboanga del Sur	1.000	34,764	29,960	25,768	25,164	40,281	35,477	30,512	29,798	45,797	40,993	35,257	34,431
Zamboanga Sibugay	1.000	12,288	11,565	10,058	9,603	13,793	13,070	11,367	10,852	15,297	14,574	12,675	12,101
Misamis Occidental	1.000	9,740	9,034	7,657	7,700	9,944	9,238	7,830	7,874	10,148	9,442	8,003	8,048
Basilan	1.000	708	627	536	530	708	627	536	530	708	627	536	530
Sulu	1.000	2,526	2,043	1,737	1,737	2,526	2,043	1,737	1,737	2,526	2,043	1,737	1,737
Tawi-Tawi	1.000	1,677	992	745	942	1,677	992	745	942	1,677	992	745	942
WRR-X		**127,085**	**114,965**	**99,787**	**95,653**	**168,931**	**156,811**	**135,729**	**130,850**	**210,777**	**198,657**	**171,670**	**166,047**
Bukidnon	0.348	19,074	16,174	13,805	13,692	23,627	20,727	17,691	17,546	28,180	25,281	21,577	21,400
Camiguin	1.000	755	640	633	455	755	640	633	455	755	640	633	455
Lanao del Norte	0.082	1,106	1,072	1,002	820	1,106	1,072	1,002	820	1,106	1,072	1,002	820
Misamis Oriental	0.999	9,899	6,871	5,625	6,055	12,267	9,239	7,563	8,143	14,635	11,607	9,502	10,230
Compostela Valley	0.523	21,691	21,625	18,381	18,381	35,618	35,552	30,219	30,219	49,545	49,479	42,057	42,057
Davao del Norte	0.007	207	197	167	167	209	199	169	169	211	201	171	171
Davao Oriental	0.051	598	595	504	508	746	744	630	635	894	892	756	761
Agusan del Norte	0.973	27,424	24,201	20,617	20,525	37,885	34,663	29,530	29,397	48,347	45,124	38,442	38,269
Agusan del Sur	0.889	33,215	30,996	26,787	25,905	41,105	38,885	33,605	32,499	48,994	46,775	40,423	39,093
Dinagat Islands	1.000	1,084	993	885	803	1,084	993	885	803	1,084	993	885	803
Surigao del Norte	1.000	9,523	9,158	9,192	6,377	11,231	10,866	10,906	7,566	12,939	12,574	12,620	8,755
Surigao del Sur	0.104	2,509	2,443	2,189	1,964	3,297	3,232	2,896	2,598	4,086	4,020	3,602	3,232
WRR-XI		**141,775**	**135,801**	**116,954**	**113,907**	**179,198**	**173,224**	**149,157**	**145,325**	**216,621**	**210,647**	**181,359**	**176,742**
Bukidnon	0.046	2,521	2,138	1,825	1,810	3,123	2,740	2,338	2,319	3,725	3,342	2,852	2,829
Compostela Valley	0.477	19,784	19,723	16,765	16,765	32,486	32,425	27,561	27,561	45,188	45,127	38,358	38,358
Davao del Norte	0.989	29,286	27,772	23,606	23,606	29,582	28,068	23,858	23,858	29,879	28,364	24,110	24,110
Davao del Sur	0.998	22,401	21,905	18,713	18,526	27,364	26,868	22,952	22,723	32,326	31,830	27,191	26,920
Davao Oriental	0.949	11,119	11,081	9,385	9,452	13,880	13,842	11,724	11,808	16,642	16,604	14,063	14,164
Sarangani	0.869	6,145	5,516	4,856	4,522	6,145	5,516	4,856	4,522	6,145	5,516	4,856	4,522
South Cotabato	0.340	18,973	17,278	14,775	14,598	25,680	23,985	20,511	20,264	32,387	30,692	26,246	25,931
North Cotabato	0.038	2,902	2,857	2,434	2,423	4,079	4,034	3,436	3,421	5,256	5,211	4,439	4,419
Sultan Kudarat	0.052	2,198	2,012	1,882	1,539	2,361	2,175	2,034	1,663	2,525	2,338	2,187	1,788
Agusan del Norte	0.027	761	672	572	570	1,051	962	819	816	1,342	1,252	1,067	1,062
Agusan del Sur	0.109	4,073	3,800	3,284	3,176	5,040	4,768	4,120	3,985	6,007	5,735	4,956	4,793
Surigao del Sur	0.896	21,612	21,047	18,859	16,921	28,407	27,841	24,947	22,384	35,201	34,636	31,034	27,846
WRR-XII		**277,390**	**262,814**	**229,449**	**217,335**	**367,514**	**352,938**	**307,153**	**292,841**	**457,638**	**443,062**	**384,858**	**368,347**
Bukidnon	0.606	33,215	28,165	24,039	23,842	41,144	36,094	30,806	30,554	49,073	44,023	37,573	37,266
Lanao del Norte	0.918	12,383	12,002	11,221	9,182	12,383	12,002	11,221	9,182	12,383	12,002	11,221	9,182
Misamis Oriental	0.001	10	7	6	6	12	9	8	8	15	12	10	10
Davao del Norte	0.004	118	112	95	95	120	114	96	96	121	115	98	98
Davao del Sur	0.002	45	44	38	37	55	54	46	46	65	64	54	54
Sarangani	0.131	926	832	732	682	926	832	732	682	926	832	732	682
South Cotabato	0.660	36,830	33,540	28,681	28,337	49,849	46,559	39,815	39,336	62,869	59,579	50,948	50,336
North Cotabato	0.962	73,475	72,325	61,611	61,342	103,269	102,119	86,991	86,611	133,062	131,912	112,371	111,880
Sultan Kudarat	0.948	40,075	36,678	34,304	28,049	43,050	39,654	37,087	30,324	46,025	42,629	39,869	32,599
Agusan del Sur	0.002	75	70	60	58	92	87	76	73	110	105	91	88
Lanao del Sur	1.000	23,346	22,982	20,235	18,834	34,827	34,463	30,343	28,243	46,307	45,943	40,451	37,652
Maguindanao	1.000	56,891	56,056	48,426	46,869	81,786	80,951	69,933	67,685	106,682	105,847	91,439	88,500
Total	80.000	**2,355,280**	**2,158,181**	**1,918,116**	**1,750,791**	**2,735,280**	**2,538,180**	**2,253,075**	**2,061,832**	**3,115,280**	**2,918,180**	**2,588,035**	**2,372,872**

Source: JICA Survey Team

Table F 42 Irrigation Areas of Surface Water Systems by WRR in 2030, 2040 & 2050 (Based on NIA's 2011-2020 Irrigation Programs)

Region/	Area	2030				2040				2050			
Province	Rate	ISA	FUSA	Irrigated Area (ha)		ISA	FUSA	Irrigated Area (ha)		ISA	FUSA	Irrigated Area (ha)	
		(ha)	(ha)	Wet	Dry	(ha)	(ha)	Wet	Dry	(ha)	(ha)	Wet	Dry
WRR-I		**110,278**	**97,547**	**95,273**	**69,967**	**111,756**	**99,058**	**96,871**	**70,930**	**113,234**	**100,569**	**98,470**	**71,892**
Abra	0.991	19,485	18,604	16,161	15,448	19,485	18,604	16,161	15,448	19,485	18,604	16,161	15,448
Apayao	0.003	30	29	24	24	30	29	24	24	31	29	25	24
Benguet	0.467	7,290	7,044	6,049	5,947	7,290	7,044	6,049	5,947	7,290	7,044	6,049	5,947
Kalinga	0.006	177	163	142	135	191	177	155	147	206	192	168	159
Mt. Province	0.140	1,837	1,799	1,549	1,508	1,837	1,799	1,549	1,508	1,837	1,799	1,549	1,508
Ilocos Norte	0.984	44,462	35,241	35,900	23,977	44,462	35,241	35,900	23,977	44,462	35,241	35,900	23,977
Ilocos Sur	1.000	24,387	23,106	24,490	14,670	25,850	24,602	26,075	15,620	27,313	26,098	27,661	16,570
La Union	0.947	12,611	11,562	10,956	8,258	12,611	11,562	10,956	8,258	12,611	11,562	10,956	8,258
WRR-II		**381,271**	**354,169**	**299,966**	**294,504**	**431,497**	**404,178**	**342,583**	**336,203**	**481,723**	**454,186**	**385,200**	**377,902**
Abra	0.009	177	169	147	140	177	169	147	140	177	169	147	140
Apayao	0.997	10,005	9,537	8,035	7,960	10,079	9,611	8,098	8,023	10,154	9,686	8,161	8,085
Benguet	0.007	109	106	91	89	109	106	91	89	109	106	91	89
Ifugao	0.993	16,680	15,601	13,960	12,525	17,719	16,639	14,889	13,359	18,757	17,677	15,818	14,192
Kalinga	0.994	29,270	26,941	23,543	22,306	31,707	29,375	25,669	24,320	34,143	31,808	27,795	26,335
Mt. Province	0.858	11,255	11,026	9,496	9,245	11,255	11,026	9,496	9,245	11,255	11,026	9,496	9,245
Ilocos Norte	0.016	723	573	584	390	723	573	584	390	723	573	584	390
Batanes	1.000	327	327	0	0	327	327	0	0	327	327	0	0
Cagayan	1.000	81,463	76,002	59,321	62,877	89,621	83,950	65,525	69,453	97,779	91,899	71,729	76,029
Isabela	1.000	176,163	160,764	139,533	133,789	206,057	190,655	165,477	158,665	235,950	220,546	191,420	183,540
Nueva Vizcaya	0.873	33,364	32,332	27,482	27,482	37,594	36,562	31,078	31,078	41,824	40,792	34,673	34,673
Quirino	0.997	15,984	15,102	12,919	12,883	19,423	18,537	15,858	15,813	22,861	21,973	18,797	18,744
Aurora	0.410	4,890	4,852	4,137	4,111	5,774	5,736	4,891	4,861	6,659	6,621	5,645	5,610
Nueva Ecija	0.005	859	838	719	706	932	911	782	768	1,005	985	845	830
WRR-III		**498,331**	**461,035**	**418,324**	**361,286**	**551,700**	**514,064**	**467,634**	**401,597**	**605,068**	**567,093**	**516,944**	**441,907**
Benguet	0.526	8,211	7,934	6,814	6,699	8,211	7,934	6,814	6,699	8,211	7,934	6,814	6,699
Ifugao	0.007	118	110	98	88	125	117	105	94	132	125	112	100
Mt. Province	0.002	26	26	22	22	26	26	22	22	26	26	22	22
La Union	0.053	706	647	613	462	706	647	613	462	706	647	613	462
Pangasinan	1.000	119,217	105,542	103,273	70,880	131,065	117,168	114,648	78,687	142,913	128,793	126,023	86,495
Nueva Vizcaya	0.127	4,854	4,703	3,998	3,998	5,469	5,319	4,521	4,521	6,084	5,934	5,044	5,044
Quirino	0.003	48	45	39	39	58	56	48	48	69	66	57	56
Aurora	0.548	6,536	6,485	5,529	5,495	7,718	7,667	6,537	6,497	8,900	8,849	7,545	7,499
Bataan	1.000	11,659	10,251	9,244	9,302	11,659	10,251	9,244	9,302	11,659	10,251	9,244	9,302
Bulacan	0.978	38,113	31,704	31,615	22,104	40,254	33,835	33,740	23,590	42,394	35,966	35,865	25,076
Nueva Ecija	0.994	170,674	166,546	142,871	140,396	185,274	181,139	155,390	152,698	199,874	195,733	167,908	165,000
Pampanga	1.000	52,756	46,692	37,594	41,570	52,756	46,692	37,594	41,570	52,756	46,692	37,594	41,570
Tarlac	1.000	64,447	61,436	55,396	48,118	82,205	79,198	71,412	62,030	99,964	96,961	87,429	75,942
Zambales	1.000	20,827	18,788	21,112	12,007	26,017	23,874	26,826	15,257	31,207	28,959	32,540	18,507
Rizal	0.021	140	125	108	107	156	141	121	120	172	158	135	134
WRR-IV		**182,036**	**152,488**	**137,205**	**124,591**	**200,219**	**170,586**	**153,430**	**139,461**	**218,402**	**188,684**	**169,655**	**154,329**
Aurora	0.042	501	497	424	421	592	588	501	498	682	678	578	575
Bulacan	0.022	857	713	711	497	906	761	759	531	954	809	807	564
Nueva Ecija	0.001	172	168	144	141	186	182	156	154	201	197	169	166
Batangas	1.000	6,147	5,426	4,087	5,167	7,140	6,426	4,841	6,119	8,134	7,425	5,594	7,071
Cavite	1.000	15,945	7,905	6,980	6,790	17,005	8,940	7,895	7,681	18,064	9,976	8,810	8,570
Laguna	1.000	18,603	14,682	12,808	12,740	20,810	16,881	14,726	14,648	23,016	19,079	16,645	16,556
Quezon	0.947	19,729	17,798	16,002	14,631	21,307	19,365	17,411	15,919	22,886	20,932	18,820	17,208
Rizal	0.979	6,516	5,840	5,015	4,969	7,274	6,595	5,664	5,612	8,033	7,350	6,312	6,254
Marinduque	1.000	1,785	1,747	1,539	1,514	1,815	1,776	1,565	1,540	1,844	1,806	1,591	1,565
Occidental Mindoro	1.000	35,724	32,861	29,830	25,321	41,501	38,623	35,061	29,761	47,279	44,386	40,292	34,201
Oriental Mindoro	1.000	40,366	34,206	31,799	27,552	45,388	39,194	36,436	31,570	50,409	44,183	41,074	35,588
Palawan	1.000	32,034	26,997	24,567	21,354	32,034	26,997	24,567	21,354	32,034	26,997	24,567	21,354
Romblon	1.000	3,657	3,650	3,298	3,494	4,262	4,258	3,848	4,076	4,867	4,865	4,397	4,658
WRR-V		**139,236**	**141,645**	**127,536**	**123,288**	**164,819**	**171,462**	**154,033**	**148,955**	**190,402**	**201,278**	**180,530**	**174,622**
Quezon	0.053	1,104	996	896	819	1,192	1,084	974	891	1,281	1,172	1,053	963
Albay	1.000	37,634	36,831	32,680	30,675	44,726	44,014	39,053	36,658	51,819	51,198	45,427	42,641
Camarines Norte	1.000	12,378	12,177	11,138	11,112	16,106	15,970	14,607	14,574	19,835	19,764	18,077	18,036
Camarines Sur	1.000	62,719	66,620	59,002	56,697	72,849	80,822	71,581	68,785	82,980	95,025	84,159	80,872
Catanduanes	1.000	3,133	3,044	2,751	2,804	3,301	3,212	2,903	2,958	3,468	3,380	3,055	3,113
Masbate	1.000	10,773	10,512	9,112	9,278	14,889	14,628	12,679	12,911	19,006	18,743	16,247	16,543
Sorsogon	1.000	11,496	11,467	11,959	11,903	11,755	11,732	12,235	12,178	12,013	11,997	12,511	12,453
WRR-VI		**134,139**	**123,288**	**124,592**	**100,157**	**153,218**	**142,404**	**143,905**	**115,052**	**172,297**	**161,521**	**163,217**	**129,946**
Aklan	1.000	9,676	9,300	8,747	7,915	9,676	9,300	8,747	7,916	9,677	9,301	8,747	7,916
Antique	1.000	18,285	17,317	15,390	14,405	20,313	19,350	17,196	16,095	22,341	21,382	19,002	17,786
Capiz	1.000	9,250	8,693	10,476	8,895	9,250	8,693	10,476	8,895	9,250	8,693	10,476	8,895
Guimaras	1.000	906	738	769	676	906	738	769	676	906	738	769	676
Iloilo	1.000	46,209	39,529	41,999	34,224	53,339	46,694	49,611	40,427	60,470	53,858	57,223	46,630
Negros Occidental	0.924	46,321	44,889	44,813	31,644	56,183	54,751	54,658	38,596	66,046	64,612	64,502	45,547
Negros Oriental	0.231	3,492	2,821	2,398	2,397	3,550	2,879	2,448	2,446	3,608	2,937	2,497	2,496
WRR-VII		**51,086**	**45,517**	**40,902**	**36,460**	**53,382**	**47,814**	**43,036**	**38,235**	**55,679**	**50,111**	**45,169**	**40,010**
Negros Occidental	0.076	3,810	3,692	3,686	2,603	4,621	4,503	4,496	3,175	5,432	5,314	5,305	3,746
Bohol	1.000	26,526	25,197	22,591	20,243	27,818	26,490	23,750	21,282	29,110	27,783	24,910	22,321
Cebu	1.000	8,392	6,657	5,977	5,313	8,392	6,657	5,977	5,313	8,392	6,657	5,977	5,313
Negros Oriental	0.769	11,624	9,390	7,984	7,980	11,818	9,584	8,148	8,144	12,011	9,777	8,312	8,308
Siquijor	1.000	734	580	665	321	734	580	665	321	734	580	665	321

WRR-VIII		**77,561**	**76,155**	**65,189**	**65,917**	**84,209**	**82,803**	**70,890**	**71,641**	**90,858**	**89,451**	**76,591**	**77,365**
Biliran	1.000	4,177	3,775	3,134	3,292	4,177	3,775	3,134	3,292	4,177	3,775	3,134	3,292
Northern Leyte	1.000	45,968	45,564	38,442	39,337	50,391	49,987	42,173	43,155	54,813	54,409	45,904	46,973
Southern Leyte	1.000	7,109	7,021	6,051	5,980	7,109	7,021	6,051	5,980	7,109	7,021	6,051	5,980
Northern Samar	1.000	7,032	7,017	6,337	5,977	8,712	8,698	7,855	7,408	10,393	10,378	9,372	8,839
Weatern Samar	1.000	6,891	6,393	5,304	5,566	7,436	6,939	5,756	6,041	7,982	7,484	6,209	6,516
Eastern Samar	1.000	6,384	6,384	5,921	5,765	6,384	6,384	5,921	5,765	6,384	6,384	5,921	5,765
WRR-IX		**76,058**	**68,622**	**60,034**	**57,162**	**91,030**	**83,605**	**73,556**	**69,427**	**106,002**	**98,588**	**87,077**	**81,692**
Zamboanga del Norte	1.000	15,208	14,720	13,812	11,758	23,019	22,520	21,131	17,989	30,830	30,321	28,450	24,220
Zamboanga del Sur	1.000	34,420	29,784	25,697	25,093	39,881	35,268	30,428	29,714	45,343	40,751	35,160	34,334
Zamboanga Sibugay	1.000	12,214	11,491	9,982	9,533	13,710	12,985	11,280	10,774	15,205	14,480	12,578	12,014
Misamis Occidental	1.000	9,740	9,034	7,657	7,700	9,944	9,238	7,830	7,874	10,148	9,442	8,003	8,048
Basilan	1.000	685	604	536	530	685	604	536	530	685	604	536	530
Sulu	1.000	2,220	1,997	1,605	1,605	2,220	1,997	1,605	1,605	2,220	1,997	1,605	1,605
Tawi-Tawi	1.000	1,571	992	745	942	1,571	992	745	942	1,571	992	745	942
WRR-X		**125,670**	**113,520**	**99,501**	**95,505**	**167,185**	**155,001**	**135,364**	**130,659**	**208,700**	**196,481**	**171,227**	**165,813**
Bukidnon	0.348	19,074	16,174	13,805	13,692	23,627	20,727	17,691	17,546	28,180	25,281	21,577	21,400
Camiguin	1.000	755	640	633	455	755	640	633	455	755	640	633	455
Lanao del Norte	0.082	1,098	1,064	1,001	819	1,098	1,064	1,001	819	1,098	1,064	1,001	819
Misamis Oriental	0.999	9,859	6,825	5,556	5,987	12,218	9,177	7,472	8,051	14,577	11,530	9,387	10,114
Compostela Valley	0.523	21,691	21,625	18,381	18,381	35,618	35,552	30,219	30,219	49,545	49,479	42,057	42,057
Davao del Norte	0.007	207	197	167	167	209	199	169	169	211	201	171	171
Davao Oriental	0.051	598	595	504	508	746	744	630	635	894	892	756	761
Agusan del Norte	0.973	27,424	24,201	20,617	20,525	37,885	34,663	29,530	29,397	48,347	45,124	38,442	38,269
Agusan del Sur	0.889	31,922	29,673	26,574	25,828	39,505	37,226	33,338	32,402	47,087	44,779	40,102	38,977
Dinagat Islands	1.000	1,084	993	885	803	1,084	993	885	803	1,084	993	885	803
Surigao del Norte	1.000	9,457	9,092	9,192	6,377	11,153	10,787	10,906	7,566	12,849	12,483	12,620	8,755
Surigao del Sur	0.104	2,499	2,441	2,186	1,964	3,285	3,229	2,892	2,598	4,071	4,016	3,597	3,232
WRR-XI		**141,420**	**135,501**	**116,793**	**113,789**	**178,764**	**172,858**	**148,966**	**145,190**	**216,107**	**210,215**	**181,139**	**176,590**
Bukidnon	0.046	2,521	2,138	1,825	1,810	3,123	2,740	2,338	2,319	3,725	3,342	2,852	2,829
Compostela Valley	0.477	19,784	19,723	16,765	16,765	32,486	32,425	27,561	27,561	45,188	45,127	38,358	38,358
Davao del Norte	0.989	29,286	27,772	23,606	23,606	29,582	28,068	23,858	23,858	29,879	28,364	24,110	24,110
Davao del Sur	0.998	22,401	21,905	18,713	18,526	27,364	26,868	22,952	22,723	32,326	31,830	27,191	26,920
Davao Oriental	0.949	11,119	11,081	9,385	9,452	13,880	13,842	11,724	11,808	16,642	16,604	14,063	14,164
Sarangani	0.869	6,086	5,458	4,799	4,465	6,086	5,458	4,799	4,465	6,086	5,458	4,799	4,465
South Cotabato	0.340	18,968	17,273	14,770	14,592	25,673	23,977	20,503	20,257	32,378	30,682	26,237	25,921
North Cotabato	0.038	2,868	2,822	2,408	2,397	4,030	3,984	3,400	3,385	5,193	5,147	4,391	4,372
Sultan Kudarat	0.052	2,179	1,992	1,861	1,518	2,341	2,154	2,012	1,641	2,502	2,316	2,163	1,764
Agusan del Norte	0.027	761	672	572	570	1,051	962	819	816	1,342	1,252	1,067	1,062
Agusan del Sur	0.109	3,914	3,638	3,258	3,167	4,844	4,564	4,088	3,973	5,773	5,490	4,917	4,779
Surigao del Sur	0.896	21,534	21,027	18,832	16,921	28,304	27,815	24,912	22,384	35,073	34,603	30,991	27,846
WRR-XII		**275,916**	**261,358**	**228,257**	**216,144**	**365,595**	**351,037**	**305,603**	**291,291**	**455,274**	**440,716**	**382,949**	**366,439**
Bukidnon	0.606	33,215	28,165	24,039	23,842	41,144	36,094	30,806	30,554	49,073	44,023	37,573	37,266
Lanao del Norte	0.918	12,297	11,916	11,203	9,165	12,297	11,916	11,203	9,165	12,297	11,916	11,203	9,165
Misamis Oriental	0.001	10	7	6	6	12	9	7	8	15	12	9	10
Davao del Norte	0.004	118	112	95	95	120	114	96	96	121	115	98	98
Davao del Sur	0.002	45	44	38	37	55	54	46	46	65	64	54	54
Sarangani	0.131	918	823	723	673	918	823	723	673	918	823	723	673
South Cotabato	0.660	36,820	33,529	28,671	28,327	49,836	46,544	39,800	39,322	62,851	59,559	50,930	50,318
North Cotabato	0.962	72,595	71,436	60,954	60,685	102,031	100,862	86,063	85,683	131,468	130,289	111,173	110,681
Sultan Kudarat	0.948	39,722	36,323	33,927	27,671	42,671	39,269	36,679	29,916	45,620	42,215	39,431	32,161
Agusan del Sur	0.002	72	67	60	58	89	84	75	73	106	101	90	88
Lanao del Sur	1.000	23,346	22,982	20,235	18,834	34,827	34,463	30,343	28,243	46,307	45,943	40,451	37,652
Maguindanao	1.000	56,760	55,955	48,307	46,750	81,597	80,806	69,760	67,512	106,435	105,656	91,213	88,274
Total	80.000	**2,193,003**	**2,030,845**	**1,813,573**	**1,658,772**	**2,553,374**	**2,394,869**	**2,135,871**	**1,958,640**	**2,913,746**	**2,758,893**	**2,458,168**	**2,258,506**

Source: JICA Survey Team

Table F 43 Irrigation Areas of Groundwater Systems by WRR in 2030, 2040 & 2050 (Based on NIA's 2011-2020 Irrigation Programs)

Region/ Province	Area Rate	2030				2040				2050			
		ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry	ISA (ha)	FUSA (ha)	Irrigated Area (ha) Wet	Irrigated Area (ha) Dry
WRR-I		**5,330**	**3,932**	**4,246**	**3,029**	**5,441**	**4,009**	**4,338**	**3,076**	**5,551**	**4,086**	**4,429**	**3,123**
Abra	0.991	166	74	99	45	166	74	99	45	166	74	99	45
Apayao	0.003	2	2	2	2	2	2	2	2	2	2	2	2
Benguet	0.467	75	71	51	48	75	71	51	48	75	71	51	48
Kalinga	0.006	2	2	2	2	2	2	2	2	3	3	2	2
Mt. Province	0.140	3	3	3	3	3	3	3	3	3	3	3	3
Ilocos Norte	0.984	20	0	0	32	20	0	0	32	20	0	0	32
Ilocos Sur	1.000	1,833	1,189	1,417	724	1,943	1,266	1,509	771	2,053	1,343	1,600	818
La Union	0.947	3,229	2,591	2,672	2,173	3,229	2,591	2,672	2,173	3,229	2,591	2,672	2,173
WRR-II		**41,465**	**41,699**	**39,286**	**39,220**	**45,573**	**46,024**	**43,309**	**43,248**	**49,681**	**50,350**	**47,332**	**47,276**
Abra	0.009	2	1	1	0	2	1	1	0	2	1	1	0
Apayao	0.997	661	595	614	614	666	600	619	619	671	604	624	624
Benguet	0.007	1	1	1	1	1	1	1	1	1	1	1	1
Ifugao	0.993	43	44	55	55	46	47	59	59	49	49	62	62
Kalinga	0.994	375	378	295	300	406	412	321	327	438	446	348	354
Mt. Province	0.858	16	16	16	16	16	16	16	16	16	16	16	16
Ilocos Norte	0.016	0	0	0	1	0	0	0	1	0	0	0	1
Batanes	1.000	32	27	354	248	32	27	354	248	32	27	354	248
Cagayan	1.000	40,011	40,309	37,747	37,783	44,018	44,524	41,695	41,734	48,024	48,740	45,643	45,686
Isabela	1.000	120	123	92	92	141	146	109	109	161	169	127	127
Nueva Vizcaya	0.873	0	0	0	0	0	0	0	0	0	0	0	0
Quirino	0.997	188	191	98	98	228	234	120	120	269	278	143	143
Aurora	0.410	0	0	0	0	0	0	0	0	0	0	0	0
Nueva Ecija	0.005	15	15	13	12	17	17	14	14	18	18	15	15
WRR-III		**46,055**	**44,857**	**43,894**	**36,513**	**51,939**	**51,081**	**49,909**	**41,608**	**57,824**	**57,305**	**55,924**	**46,702**
Benguet	0.526	85	80	57	54	85	80	57	54	85	80	57	54
Ifugao	0.007	0	0	0	0	0	0	0	0	0	0	0	0
Mt. Province	0.002	0	0	0	0	0	0	0	0	0	0	0	0
La Union	0.053	181	145	150	122	181	145	150	122	181	145	150	122
Pangasinan	1.000	25,992	25,472	26,994	21,577	28,575	28,277	29,968	23,953	31,158	31,083	32,941	26,330
Nueva Vizcaya	0.127	0	0	0	0	0	0	0	0	0	0	0	0
Quirino	0.003	1	1	0	0	1	1	0	0	1	1	0	0
Aurora	0.548	0	0	0	0	0	0	0	0	0	0	0	0
Bataan	1.000	1,018	937	235	239	1,018	937	235	239	1,018	937	235	239
Bulacan	0.978	1,687	1,549	1,570	1,241	1,782	1,653	1,675	1,325	1,876	1,757	1,781	1,408
Nueva Ecija	0.994	3,022	3,028	2,525	2,483	3,280	3,293	2,746	2,701	3,539	3,558	2,968	2,919
Pampanga	1.000	3,018	2,859	2,774	2,299	3,018	2,859	2,774	2,299	3,018	2,859	2,774	2,299
Tarlac	1.000	7,373	7,013	6,503	6,345	9,404	9,040	8,384	8,179	11,436	11,068	10,264	10,014
Zambales	1.000	3,675	3,771	3,082	2,150	4,591	4,791	3,916	2,732	5,506	5,812	4,750	3,314
Rizal	0.021	5	5	3	3	5	5	4	4	6	6	4	4
WRR-IV		**11,624**	**11,016**	**8,881**	**7,279**	**13,050**	**12,527**	**10,110**	**8,292**	**14,476**	**14,037**	**11,338**	**9,305**
Aurora	0.042	0	0	0	0	0	0	0	0	0	0	0	0
Bulacan	0.022	38	35	35	28	40	37	38	30	42	40	40	32
Nueva Ecija	0.001	3	3	3	2	3	3	3	3	4	4	3	3
Batangas	1.000	422	335	278	260	490	396	330	308	559	458	381	356
Cavite	1.000	397	384	231	90	424	435	261	101	450	485	291	113
Laguna	1.000	771	661	244	290	863	760	281	334	954	859	317	377
Quezon	0.947	1,282	1,293	917	905	1,384	1,407	997	984	1,487	1,521	1,078	1,064
Rizal	0.979	215	218	158	157	240	246	178	177	265	275	199	197
Marinduque	1.000	332	311	225	220	338	317	229	223	343	322	233	227
Occidental Mindoro	1.000	4,741	4,460	4,702	3,592	5,507	5,242	5,527	4,222	6,274	6,024	6,351	4,852
Oriental Mindoro	1.000	2,066	1,987	1,104	1,073	2,323	2,277	1,265	1,230	2,580	2,566	1,426	1,386
Palawan	1.000	867	861	881	557	867	861	881	557	867	861	881	557
Romblon	1.000	489	468	104	104	570	546	121	121	651	624	139	139
WRR-V		**36,466**	**8,969**	**2,730**	**2,490**	**42,232**	**10,502**	**3,321**	**3,030**	**47,999**	**12,036**	**3,912**	**3,570**
Quezon	0.053	72	72	51	51	77	79	56	55	83	85	60	60
Albay	1.000	1,489	971	454	454	1,769	1,161	543	543	2,050	1,350	632	632
Camarines Norte	1.000	1,497	1,239	278	278	1,948	1,625	365	365	2,399	2,011	452	452
Camarines Sur	1.000	29,908	3,560	1,923	1,683	34,739	4,319	2,333	2,042	39,570	5,078	2,743	2,401
Catanduanes	1.000	260	251	23	23	274	265	24	24	288	278	26	26
Masbate	1.000	311	306	0	0	430	425	0	0	548	545	0	0
Sorsogon	1.000	2,930	2,569	0	0	2,996	2,629	0	0	3,062	2,688	0	0
WRR-VI		**14,775**	**11,021**	**2,579**	**996**	**15,950**	**12,159**	**2,798**	**1,002**	**17,125**	**13,297**	**3,018**	**1,008**
Aklan	1.000	668	658	133	133	668	658	133	133	668	658	133	133
Antique	1.000	566	497	435	55	628	556	486	62	691	614	537	68
Capiz	1.000	6,105	3,709	948	764	6,105	3,709	948	764	6,105	3,709	948	764
Guimaras	1.000	259	217	135	43	259	217	135	43	259	217	135	43
Iloilo	1.000	7,092	5,854	928	0	8,187	6,915	1,096	0	9,281	7,976	1,264	0
Negros Occidental	0.924	85	85	0	0	103	104	0	0	121	123	0	0
Negros Oriental	0.231	0	0	0	0	0	0	0	0	0	0	0	0

WRR-VII		**1,140**	**984**	**972**	**716**	**1,142**	**986**	**972**	**716**	**1,145**	**987**	**972**	**716**
Negros Occidental	0.076	7	7	0	0	8	9	0	0	10	10	0	0
Bohol	1.000	21	0	0	0	22	0	0	0	23	0	0	0
Cebu	1.000	1,112	977	972	716	1,112	977	972	716	1,112	977	972	716
Negros Oriental	0.769	0	0	0	0	0	0	0	0	0	0	0	0
Siquijor	1.000	0	0	0	0	0	0	0	0	0	0	0	0
WRR-VIII		**1,015**	**1,016**	**36**	**47**	**1,091**	**1,092**	**40**	**51**	**1,167**	**1,169**	**43**	**55**
Biliran	1.000	5	5	0	0	5	5	0	0	5	5	0	0
Northern Leyte	1.000	188	188	0	0	206	207	0	0	224	225	0	0
Southern Leyte	1.000	56	56	0	0	56	56	0	0	56	56	0	0
Northern Samar	1.000	226	226	0	0	280	280	0	0	334	334	0	0
Weatern Samar	1.000	50	50	36	47	54	55	40	51	58	59	43	55
Eastern Samar	1.000	490	490	0	0	490	490	0	0	490	490	0	0
WRR-IX		**1,164**	**641**	**280**	**272**	**1,387**	**854**	**303**	**295**	**1,611**	**1,066**	**326**	**317**
Zamboanga del Norte	1.000	310	321	0	0	470	491	0	0	629	662	0	0
Zamboanga del Sur	1.000	345	176	71	71	399	209	84	84	454	241	97	97
Zamboanga Sibugay	1.000	74	75	77	70	83	84	87	79	92	94	97	88
Misamis Occidental	1.000	0	0	0	0	0	0	0	0	0	0	0	0
Basilan	1.000	23	23	0	0	23	23	0	0	23	23	0	0
Sulu	1.000	306	46	132	132	306	46	132	132	306	46	132	132
Tawi-Tawi	1.000	106	0	0	0	106	0	0	0	106	0	0	0
WRR-X		**1,415**	**1,445**	**286**	**147**	**1,746**	**1,810**	**365**	**190**	**2,077**	**2,176**	**444**	**234**
Bukidnon	0.348	0	0	0	0	0	0	0	0	0	0	0	0
Camiguin	1.000	0	0	0	0	0	0	0	0	0	0	0	0
Lanao del Norte	0.082	8	8	2	2	8	8	2	2	8	8	2	2
Misamis Oriental	0.999	39	46	68	68	49	61	92	92	58	77	116	116
Compostela Valley	0.523	0	0	0	0	0	0	0	0	0	0	0	0
Davao del Norte	0.007	0	0	0	0	0	0	0	0	0	0	0	0
Davao Oriental	0.051	0	0	0	0	0	0	0	0	0	0	0	0
Agusan del Norte	0.973	0	0	0	0	0	0	0	0	0	0	0	0
Agusan del Sur	0.889	1,293	1,323	213	77	1,600	1,659	267	97	1,907	1,996	322	116
Dinagat Islands	1.000	0	0	0	0	0	0	0	0	0	0	0	0
Surigao del Norte	1.000	66	66	0	0	78	79	0	0	89	91	0	0
Surigao del Sur	0.104	9	2	3	0	12	3	4	0	15	4	5	0
WRR-XI		**355**	**300**	**161**	**118**	**434**	**366**	**191**	**135**	**514**	**432**	**220**	**152**
Bukidnon	0.046	0	0	0	0	0	0	0	0	0	0	0	0
Compostela Valley	0.477	0	0	0	0	0	0	0	0	0	0	0	0
Davao del Norte	0.989	0	0	0	0	0	0	0	0	0	0	0	0
Davao del Sur	0.998	0	0	0	0	0	0	0	0	0	0	0	0
Davao Oriental	0.949	0	0	0	0	0	0	0	0	0	0	0	0
Sarangani	0.869	58	58	57	57	58	58	57	57	58	58	57	57
South Cotabato	0.340	5	6	5	5	7	8	7	7	9	10	9	9
North Cotabato	0.038	35	35	26	26	49	50	37	37	63	64	47	47
Sultan Kudarat	0.052	19	20	21	21	21	21	22	22	22	23	24	24
Agusan del Norte	0.027	0	0	0	0	0	0	0	0	0	0	0	0
Agusan del Sur	0.109	159	162	26	9	196	203	33	12	234	245	39	14
Surigao del Sur	0.896	78	20	26	0	103	26	35	0	128	33	43	0
WRR-XII		**1,473**	**1,455**	**1,191**	**1,191**	**1,918**	**1,901**	**1,550**	**1,550**	**2,363**	**2,346**	**1,909**	**1,908**
Bukidnon	0.606	0	0	0	0	0	0	0	0	0	0	0	0
Lanao del Norte	0.918	86	86	18	18	86	86	18	18	86	86	18	18
Misamis Oriental	0.001	0	0	0	0	0	0	0	0	0	0	0	0
Davao del Norte	0.004	0	0	0	0	0	0	0	0	0	0	0	0
Davao del Sur	0.002	0	0	0	0	0	0	0	0	0	0	0	0
Sarangani	0.131	9	9	9	9	9	9	9	9	9	9	9	9
South Cotabato	0.660	10	11	10	10	14	15	14	14	17	19	18	18
North Cotabato	0.962	880	890	657	657	1,237	1,257	928	928	1,594	1,623	1,199	1,199
Sultan Kudarat	0.948	353	356	378	378	380	385	408	408	406	414	439	439
Agusan del Sur	0.002	3	3	0	0	4	4	1	0	4	4	1	0
Lanao del Sur	1.000	0	0	0	0	0	0	0	0	0	0	0	0
Maguindanao	1.000	132	101	120	120	189	145	173	173	247	190	226	226
Total	80.000	**162,277**	**127,336**	**104,542**	**92,019**	**181,905**	**143,312**	**117,204**	**103,192**	**201,533**	**159,288**	**129,867**	**114,365**

Source: JICA Survey Team

Table F 44 Irrigation Water Demands of All Systems by WRR in 2030
(Based on Irrigated Areas Projected in Consideration of NIA Financial Program)

(Unit: MCM)

Region/	Area	Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			Annual
Province	Rate	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
WRR-I																																						**1,881**
Abra	0.991	20.91	21.31	23.01	22.18	21.43	15.88	16.90	9.01	0.00							8.23	16.08	21.36	11.54	2.67	5.95	7.44	6.85	7.28	7.69	16.06	21.00	7.97	0.00	0.00	9.04	17.96	23.56	20.27	1.28	20.94	383.81
Apayao	0.003	0.04	0.04	0.04	0.04	0.04	0.03	0.02	0.02	0.00							0.00	0.03	0.04	0.03	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.03	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.03	0.04	0.63
Benguet	0.467	7.98	8.13	8.78	8.45	8.17	6.05	6.43	3.43	0.65			0.00	5.53	5.89	3.98	3.02	4.23	3.22	3.10	2.00	1.29	2.45	1.92	0.00	0.00	0.00					3.48	6.90	1.57	7.76	6.72	4.19	125.32
Kalinga	0.006	0.20	0.21	0.22	0.22	0.21	0.15	0.16	0.09	0.02							0.00	0.11	0.13	0.10	0.04	0.10	0.05	0.10	0.07	0.09	0.00	0.10	0.13	0.00	0.00	0.09	0.18	0.23	0.20	0.17	0.20	3.59
Mt. Province	0.140	1.76	1.70	0.25	1.19	0.68	0.04							1.40	0.82	1.80	1.98	1.01	1.41	1.01	0.00	0.17	0.10	0.74	0.65	0.20	0.00	0.00	0.48	1.91	1.03	0.03	0.00	1.11	0.53	0.91	1.91	24.84
Ilocos Norte	0.984	33.27	33.91	36.60	35.25	31.38	17.86	14.32	2.48									17.05	45.16	45.56	52.05	24.41	20.71	21.11	38.60	2.85	22.43	6.06	0.00	0.00	0.00	18.94	34.83	15.39	34.38	3.62	33.51	641.74
Ilocos Sur	1.000	21.11	21.51	23.22	22.29	19.85	11.30	9.02	1.56									0.00	19.77	9.94	25.51	10.02	15.55	15.47	37.98	15.66	11.64	23.34	0.00	11.67	1.38	0.00	22.21	27.79	21.92	17.95	21.32	438.95
La Union	0.947	14.19	14.46	15.61	14.98	13.34	7.59	6.06	1.05									0.62	7.16	16.45	7.84	7.76	3.88	9.05	6.93	9.05	0.43	9.78	12.48	0.00	0.00	8.18	15.00	18.76	14.77	12.07	14.33	261.84
WRR-II																																						**8,478**
Abra	0.009	0.19	0.19	0.21	0.20	0.19	0.14	0.15	0.08	0.00							0.07	0.15	0.19	0.10	0.02	0.05	0.07	0.06	0.07	0.07	0.15	0.19	0.07	0.00	0.00	0.08	0.16	0.21	0.18	0.01	0.19	3.49
Apayao	0.997	12.66	12.89	13.92	13.44	12.99	9.63	7.81	5.50	1.05							0.00	10.50	11.74	8.97	7.54	7.22	6.48	7.50	4.37	3.59	5.45	11.22	2.41	3.83	0.45	5.60	0.00	0.00	0.00	10.68	12.71	210.14
Benguet	0.007	0.12	0.12	0.13	0.13	0.12	0.09	0.10	0.05	0.01			0.00	0.08	0.09	0.06	0.05	0.06	0.05	0.05	0.03	0.02	0.04	0.03	0.00	0.00	0.00					0.05	0.10	0.02	0.12	0.10	0.06	1.88
Ifugao	0.993			9.41	11.83	22.07	14.68	18.91	20.60	20.57	24.32	17.20	16.50	19.64	12.30	8.38	0.00	0.00				0.00	13.36	8.58	3.66	0.95	0.00	6.44	0.42	13.59	13.14	1.67	8.51	0.00	0.00	0.00		286.72
Kalinga	0.994	33.61	34.23	36.98	35.65	34.50	25.63	27.28	14.55	2.78							0.23	18.94	21.61	16.17	5.83	16.63	8.92	16.98	11.81	15.25	0.00	16.63	21.82	0.00		14.83	29.47	38.65	33.08	28.60	33.94	594.59
Mt. Province	0.858	10.80	10.42	1.52	7.28	4.16	0.26							8.58	5.04	11.03	12.14	6.18	8.65	6.16	0.00	1.06	0.63	4.52	4.00	1.23	0.00	0.00	2.94	11.73	6.31	0.20	0.00	6.81	3.26	5.60	11.73	152.24
Ilocos Norte	0.016	0.54	0.55	0.60	0.57	0.51	0.29	0.23	0.04									0.28	0.73	0.74	0.85	0.40	0.34	0.34	0.63	0.05	0.36	0.10	0.00	0.00	0.00	0.31	0.57	0.25	0.56	0.06	0.54	10.43
Batanes	1.000	0.29	0.31	0.40	0.38	0.36	0.27	0.24	0.05								0.12	0.86	0.56	0.28	0.60	0.71	0.48	0.49	0.33	0.41	0.57	0.31	0.27	0.00	0.00	0.10	0.47	0.38	0.02	0.32	0.38	9.96
Cagayan	1.000	#####	#####	#####	#####	#####	#####	#####	66.86	0.00							59.98	#####	#####	#####	#####	#####	95.01	#####	73.47	#####	#####	50.62	0.00	0.00	0.00	0.00	#####	#####	82.98	39.44	#####	2,978.92
Isabela	1.000	#####	#####	#####	#####	#####	#####	#####	#####	0.00	29.37	0.22					2.15	#####	#####	#####	#####	72.09	#####	96.61	86.77	43.84	0.00	#####	0.00	0.00	0.00	79.72	0.00	24.75	77.51	30.79	#####	3,149.90
Nueva Vizcaya	0.873	40.10	40.86	44.11	42.56	41.15	30.52	32.53	17.34	3.31							6.61	47.74	51.66	6.40	11.42	21.01	11.59	5.20	18.99	11.40	8.79	0.00	0.00	11.95	0.00	0.00	39.12	49.94	24.94	0.00	4.93	624.16
Quirino	0.997	15.39	19.93	16.78	20.73	20.03	14.85	15.82	8.43	0.00							3.99	22.92	19.48	15.76	5.15	6.72	8.00	8.79	6.19	7.38	7.67	0.00	5.29	0.00	0.00	9.69	7.92	23.97	19.62	7.35	19.58	337.45
Aurora	0.410	4.60	3.49	4.00	3.88	4.92	3.67	5.95	7.30	5.74	5.09	0.00	0.00				0.00	3.53	5.73	3.31	5.75	2.67	2.62	5.12	5.47	3.98	0.21	1.82	0.00	0.11	0.00				2.70	5.37	4.63	101.64
Nueva Ecija	0.005	0.53	0.93	1.06	0.84	1.06	0.81	1.01	0.50	0.65	0.15	0.22	0.04			0.09	0.02	0.66	0.08	0.43	0.69	0.10	0.31	0.61	0.53	0.08	0.29	0.13	0.69	0.09	0.00	0.44	0.58	0.64	0.80	0.92	0.77	16.76
WRR-III																																						**9,940**
Benguet	0.526	8.99	9.16	9.89	9.52	9.20	6.82	7.24	3.86	0.74			0.00	6.22	6.63	4.48	3.40	4.77	3.63	3.49	2.25	1.46	2.76	2.16	0.00	0.00	0.00					3.92	7.77	1.77	8.74	7.57	4.72	141.16
Ifugao	0.007			0.07	0.08	0.16	0.10	0.13	0.15	0.15	0.17	0.12	0.12	0.14	0.09	0.06	0.00	0.00				0.00	0.09	0.06	0.03	0.01	0.00	0.05	0.00	0.10	0.09	0.01	0.06	0.00	0.00	0.00		2.02
Mt. Province	0.002	0.03	0.02	0.00	0.02	0.01	0.00							0.02	0.01	0.03	0.03	0.01	0.02	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.03	0.01	0.00	0.00	0.02	0.01	0.01	0.03	0.35
La Union	0.053	0.79	0.81	0.87	0.84	0.75	0.43	0.34	0.06									0.03	0.40	0.92	0.44	0.43	0.22	0.51	0.39	0.51	0.02	0.55	0.70	0.00	0.00	0.46	0.84	1.05	0.83	0.68	0.80	14.65
Pangasinan	1.000	#####	#####	#####	#####	#####	83.56	86.42	53.15	0.00	0.00							0.00	0.00	46.44	42.47	83.22	#####	76.19	76.84	78.02	#####	52.95	#####	0.00	90.78	79.83	#####	#####	#####	#####	#####	2,491.32
Nueva Vizcaya	0.127	5.83	5.94	6.42	6.19	5.99	4.44	4.73	2.52	0.48							0.96	6.94	7.52	0.93	1.66	3.06	1.69	0.76	2.76	1.66	1.28	0.00	0.00	1.74	0.00	0.00	5.69	7.27	3.63	0.00	0.72	90.80
Quirino	0.003	0.05	0.06	0.05	0.06	0.06	0.04	0.05	0.03	0.00							0.01	0.07	0.06	0.05	0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.00	0.02	0.00	0.00	0.03	0.02	0.07	0.06	0.02	0.06	1.02
Aurora	0.548	6.14	4.67	5.35	5.19	6.57	4.91	7.95	9.75	7.67	6.80	0.00	0.00				0.00	4.72	7.65	4.43	7.69	3.56	3.50	6.84	7.31	5.31	0.28	2.43	0.00	0.15	0.00				3.61	7.17	6.19	135.85
Bataan	1.000	13.56	13.83	14.92	14.32	13.83	10.24	10.86	5.78	1.10								0.00	4.21	7.40	7.98	6.52	4.95	5.68	12.06	10.51	4.19	4.46	3.16	5.93	0.00	1.66	9.95	9.43	13.87	11.31	9.66	231.38
Bulacan	0.978	32.84	33.48	36.13	34.75	22.37	24.85	26.42	14.07	0.00								13.38	28.77	16.81	23.89	0.00	18.01	23.88	8.80	18.20	50.33	12.86	9.85	0.00	3.22	0.00	10.40	38.46	14.25	15.62	32.71	564.36
Nueva Ecija	0.994	#####	#####	#####	#####	#####	#####	#####	98.65	#####	30.13	44.65	8.47			17.31	3.72	#####	15.80	86.11	#####	19.83	61.11	#####	#####	16.18	58.57	25.82	#####	17.95	0.00	88.10	#####	#####	#####	#####	#####	3,332.56
Pampanga	1.000	61.91	63.11	68.10	65.58	63.33	46.89	49.98	26.63	5.07								5.14	31.28	51.65	29.03	25.42	19.23	4.20	16.19	40.17	20.29	10.61	26.85	14.54	20.46	29.20	55.97	72.34	60.64	51.60	61.56	1,096.96
Tarlac	1.000	76.97	78.46	84.67	81.63	78.84	58.37	62.26	33.17	6.31								8.03	62.88	73.15	70.77	18.60	0.00	32.97	83.30	56.78	24.51	5.16	11.40	25.83	9.66	25.64	79.18	99.47	78.71	64.07	56.66	1,447.45
Zambales	1.000	19.66	20.04	21.62	20.81	20.09	14.87	15.81	8.42	0.00								0.00	18.32	27.11	13.78	8.52	21.98	10.71	3.06	14.89	12.73	0.49	17.49	10.69	0.00	0.00	13.53	22.56	15.24	16.37	19.55	388.34
Rizal	0.021	0.15	0.04	0.11	0.16	0.16	0.12	0.12	0.00	0.01				0.00	0.05	0.16	0.09	0.02	0.03	0.06	0.09	0.08	0.06	0.06	0.00	0.03	0.00	0.00				0.00	0.09	0.07	0.14	0.08	0.16	2.14

WRR-IV																																							**3,278**
Aurora	0.042	0.47	0.36	0.41	0.40	0.50	0.38	0.61	0.75	0.59	0.52	0.00	0.00				0.00	0.36	0.59	0.34	0.59	0.27	0.27	0.52	0.56	0.41	0.02	0.19	0.00	0.01	0.00				0.28	0.55	0.47	10.41
Bulacan	0.022	0.74	0.75	0.81	0.78	0.50	0.56	0.59	0.32	0.00								0.30	0.65	0.38	0.54	0.00	0.41	0.54	0.20	0.41	1.13	0.29	0.22	0.00	0.07	0.00	0.23	0.87	0.32	0.35	0.74	12.70
Nueva Ecija	0.001	0.11	0.19	0.21	0.17	0.21	0.16	0.20	0.10	0.13	0.03	0.04	0.01			0.02	0.00	0.13	0.02	0.09	0.14	0.02	0.06	0.12	0.11	0.02	0.06	0.03	0.14	0.02	0.00	0.09	0.12	0.13	0.16	0.18	0.15	3.35
Batangas	1.000	5.69	5.77	8.50	8.15	7.87	5.82	6.18	3.29	0.63				1.17	5.77	7.62	3.84	2.56	5.13	0.17	5.57	2.89	2.63	1.57	0.25	0.00	0.00	0.00				0.00	4.60	5.22	6.72	1.19	7.67	116.47
Cavite	1.000	9.72	9.91	10.70	10.27	9.92	7.34	7.80	4.16	0.79				4.45	9.51	9.92	1.49	0.04	4.98	2.52	4.07	8.61	3.40	6.75	10.76	2.60	0.00	0.00				0.00	0.64	2.87	8.48	8.11	4.14	163.94
Laguna	1.000	20.59	20.99	22.65	21.73	20.99	15.54	16.51	8.80	0.00				8.05	8.43	15.24	9.71	15.20	8.41	8.58	10.08	8.30	9.42	7.46	0.63	0.00	0.00	0.00				0.00	0.00	10.95	3.87	4.49	20.51	297.14
Quezon	0.947	1.62	25.14	22.15	25.98	17.17	18.58	14.70	0.75	2.00				2.79	14.89	26.45	14.93	17.12	6.85	3.33	12.19	10.04	18.23	25.96	7.72	0.00	0.00	0.00				6.50	5.23	13.78	7.71	13.57	3.33	338.70
Rizal	0.979	7.15	1.84	5.34	7.54	7.28	5.39	5.72	0.00	0.58				0.00	2.40	7.64	4.09	1.13	1.39	2.81	4.07	3.61	2.82	2.81	0.00	1.30	0.00	0.00				0.00	4.30	3.07	6.37	3.64	7.28	99.57
Marinduque	1.000	1.81	0.96	2.90	3.01	2.13	2.41	3.36	3.24	3.26	2.24	0.44	0.22	1.03	3.19	4.53	1.60	1.23	1.75	0.82	2.84	1.88	2.06	1.76	0.97	0.29	0.00	0.06							1.42	0.41	3.65	55.45
Occidental Mindoro	1.000	40.68	41.47	44.75	42.87	41.41	30.66	32.45	17.29	3.29								0.00	25.97	48.32	16.49	21.93	0.00	1.87	22.91	23.44	11.30	3.56	32.88	0.00	7.18	8.33	8.21	52.65	41.69	21.92	32.95	676.47
Oriental Mindoro	1.000	40.62	39.21	46.83	48.64	47.99	38.91	54.30	42.78	34.39	36.36	1.49	3.55	23.16	13.52	34.70	18.93	9.00	21.57	5.68	24.60	17.19	16.79	8.84	19.13	0.00	3.60	0.00							6.80	29.86	32.74	721.18
Palawan	1.000	34.33	30.96	37.02	38.38	37.86	30.70	42.72	41.20	41.48	28.39	14.52	2.77	23.74	24.71	44.36	27.35	19.66	0.65	13.10	8.11	18.35	22.04	14.71	1.28	0.43	0.00	0.00							18.02	15.40	31.57	663.80
Romblon	1.000	4.55	5.05	6.03	6.26	6.18	5.01	6.98	6.73	6.78	4.65	2.38	0.45	3.18	6.14	8.73	4.87	5.24	2.38	2.65	2.35	1.78	0.74	2.34	2.60	1.15	0.00	0.00							1.80	4.20	7.57	118.76
WRR-V																																							**3,308**
Quezon	0.053	0.09	1.41	1.24	1.45	0.96	1.04	0.82	0.04	0.11				0.16	0.83	1.48	0.84	0.96	0.38	0.19	0.68	0.56	1.02	1.45	0.43	0.00	0.00	0.00				0.36	0.29	0.77	0.43	0.76	0.19	18.96
Albay	1.000	48.26	8.93	40.53	33.88	38.13	33.10	60.05	55.36	14.04	20.50	3.13		15.47	59.77	44.34	57.54	21.45	43.38	30.26	18.27	16.33	30.86	9.15	19.48	9.27	0.00	0.00							0.00	45.74	22.23	799.47
Camarines Norte	1.000	17.64	8.40	14.30	19.68	9.44	15.74	21.97	16.27	4.59	3.86	1.15		10.67	14.13	18.38	3.43	5.15	9.31	9.18	9.04	4.72	11.74	3.97	5.31	0.00	0.00	0.00							0.00	2.77	19.25	260.08
Camarines Sur	1.000	56.50	62.73	78.56	83.97	#####	80.80	#####	#####	79.96	38.53	0.00		40.56	77.80	79.11	79.29	69.13	65.82	55.74	31.28	65.72	98.17	36.17	28.99	0.00	0.00	0.00	0.00						0.00	25.85	80.64	1,634.78
Catanduanes	1.000	4.39	0.70	4.72	3.71	2.20	3.92	5.46	2.11	3.88	1.86	0.28		0.00	5.01	5.21	3.83	2.75	3.82	3.25	0.75	2.29	2.73	1.46	4.20	1.11	0.00	0.10							0.00	1.97	3.02	74.74
Masbate	1.000	10.16	13.06	10.45	16.18	16.51	6.72	17.98	4.40	11.35	5.45	0.83		5.59	6.48	17.66	15.86	2.88	7.32	5.86	8.81	6.95	4.73	9.79	7.14	1.26	0.00	0.32							0.00	4.89	19.58	238.20
Sorsogon	1.000	2.53	16.66	16.25	15.96	21.06	7.15	23.02	8.12	16.34	7.85	0.00		1.05	7.10	25.25	15.38	6.44	7.49	3.65	9.94	10.28	5.86	13.84	5.83	0.06	0.00	0.41							0.00	9.35	25.03	281.91
WRR-VI																																							**2,421**
Aklan	1.000	11.92	11.55	11.33	7.39	3.43	0.28							4.17	16.48	15.08	9.60	9.37	4.11	7.66	4.47	7.57	4.87	8.83	4.89	3.72	0.00	0.33	0.00	4.45	9.84	2.68	3.16	5.20	5.08	11.21	4.82	193.48
Antique	1.000	20.20	18.72	10.92	10.40	5.93	0.00	0.02						0.00	0.00	20.70	8.87	4.48	0.00	5.32	6.80	6.68	6.97	5.41	0.00	0.00	0.00	0.00	0.00	0.00	11.15	5.51	5.47	12.64	18.59	19.46	21.41	225.64
Capiz	1.000	12.99	12.49	3.64	8.02	3.70	0.00							10.25	7.36	18.78	6.48	0.00	0.00	0.06	0.00	6.50	9.10	0.00	3.64	0.00	0.00	0.00	0.00	1.39	11.06	2.78	3.98	11.81	5.66	9.09	11.16	159.97
Guimaras	1.000	1.14	0.71	1.08	0.71	0.33	0.00							0.23	0.65	1.80	0.90	0.59	0.29	0.17	0.30	0.50	0.64	0.61	0.86	0.00	0.00	0.00	0.00	0.00	1.03	0.57	0.45	0.00	1.11	0.48	1.23	16.37
Iloilo	1.000	42.42	41.15	22.19	31.06	21.71	10.57	5.68	0.04					24.69	4.25	39.94	21.77	15.44	9.16	10.45	0.00	32.23	44.61	0.00	22.13	2.89	0.00	0.00	0.00	0.00	39.12	16.95	26.21	35.35	22.71	40.74	44.82	628.29
Negros Occidental	0.924	46.48	60.98	60.33	38.97	4.29	1.52							11.64	80.11	78.03	60.03	23.81	55.74	32.62	40.16	54.87	55.77	28.87	35.10	0.49	0.00	0.00	8.04	21.19	28.10	14.88	55.10	58.61	61.54	59.38	40.47	1,117.14
Negros Oriental	0.231	3.91	4.62	4.57	2.96	1.38	0.12							2.40	3.39	7.07	5.13	2.58	2.42	2.62	3.39	2.67	2.28	3.31	2.23	0.23	0.00	0.00	0.36	2.09	4.06	4.56	1.90	3.64	2.36	1.67	2.62	80.53
WRR-VII																																							**1,049**
Negros Occidental	0.076	3.82	5.02	4.96	3.21	0.35	0.12							0.96	6.59	6.42	4.94	1.96	4.58	2.68	3.30	4.51	4.59	2.37	2.89	0.04	0.00	0.00	0.66	1.74	2.31	1.22	4.53	4.82	5.06	4.88	3.33	91.89
Bohol	1.000	26.65	24.49	13.54	14.66	17.57	8.72	16.04	0.00	0.00					0.00	9.30	0.00	0.00	27.04	23.85	15.89	29.87	29.81	10.86	25.77	11.36	5.72	19.45	0.00	0.00	19.70	18.01	22.62	27.37	20.65	35.06	33.51	507.50
Cebu	1.000	10.37	10.18	6.00	7.25	4.21	0.00	0.00								4.63	4.00	11.17	9.14	10.39	2.84	5.23	4.30	8.74	10.52	9.90	0.00	0.00	0.00		3.37	9.35	8.77	5.94	4.00	9.25	8.43	167.99
Negros Oriental	0.769	13.02	15.40	15.23	9.85	4.58	0.38							8.00	11.27	23.53	17.07	8.60	8.05	8.72	11.28	8.87	7.61	11.01	7.43	0.78	0.00	0.00	1.18	6.96	13.52	15.16	6.33	12.10	7.86	5.55	8.71	268.07
Siquijor	1.000	0.38	0.33	0.39	0.34	0.31	0.13	0.03								0.72	1.21	0.86	0.34	0.39	0.70	0.89	1.10	0.63	1.16	0.90	0.28	0.03	0.00		0.29	0.32	0.40	0.23	0.05	0.47	0.54	13.44
WRR-VIII																																							**1,485**
Biliran	1.000	1.94	2.68	5.84	5.58	3.61	3.99	4.20	0.94	0.00						0.76	4.15	3.28	4.03	3.13	4.84	3.24	2.33	2.23	2.56	3.36	0.61	0.57				0.00	3.35	6.23	5.22	4.43	0.02	83.10
Northern Leyte	1.000	63.29	64.52	29.95	35.62	12.12	11.88	0.00	0.00	0.00						18.28	15.52	64.27	48.75	54.55	12.16	15.58	25.31	47.63	53.78	56.89	0.65	19.78				29.68	8.90	27.20	19.19	52.67	25.00	813.18
Southern Leyte	1.000	9.64	9.82	4.67	4.38	4.71	0.00	0.00	0.00	0.77	5.84	11.49	8.77	7.79	4.45	8.72	2.42	7.75	10.71	9.61	3.99	2.31	0.54									4.51	4.41	5.02	2.03	8.02	4.60	146.98
Northern Samar	1.000	5.46	6.69	5.64	10.15	9.80	7.25	5.39	4.08	0.78	6.13	12.07	15.71	12.09	10.20	9.93	11.28	9.57	5.79	3.98	0.31	0.52	0.39									0.00	3.22	2.34	4.01	0.00	4.38	167.14
Weatern Samar	1.000	0.27	9.19	3.70	9.49	9.17	6.79	3.97	2.10	0.73	5.16	10.15	11.03	10.15	0.99	5.50	4.99	2.14	4.22	2.30	2.79	4.66	0.00									0.00	2.78	7.32	1.98	4.89	3.81	130.27
Eastern Samar	1.000	3.99	9.46	5.91	9.75	6.89	6.97	3.29	2.14	0.74	5.71	11.22	10.10	8.97	4.51	6.11	7.10	3.33	5.49	4.13	4.00	4.42	1.56									0.00	2.20	6.68	1.70	4.01	4.06	144.45
WRR-IX																																							**1,234**
Zamboanga del Norte	1.000	12.27	18.13	11.63	9.73	9.57	4.67	2.48	0.02		8.85	11.47	11.88	13.57	20.86	11.52	13.05	10.33	11.83	8.54	10.59	8.60	7.50	0.00	0.00	0.00			0.00	0.00	5.22	4.53	9.02	0.25	2.08	17.97	9.99	266.16
Zamboanga del Sur	1.000	40.20	39.13	39.53	29.53	20.66	10.09	5.35	0.04		16.53	32.72	34.64	40.73	39.67	19.99	17.20	16.26	12.61	18.19	4.34	16.48	3.06	0.00	0.00	0.00			0.00	0.19	12.29	8.52	20.88	10.14	12.76	15.57	17.98	555.27
Zamboanga Sibugay	1.000	9.61	11.44	9.35	11.37	7.96	3.89	2.06	0.02		6.46	5.32	5.21	5.57	10.32	9.24	9.49	6.57	8.00	4.31	6.67	5.40	6.13	0.00	0.00	0.00			0.13	0.00	4.77	6.22	8.07	1.06	4.16	14.90	9.67	193.36
Misamis Occidental	1.000	12.28	12.52	13.51	12.90	12.46	6.98	9.72	5.18	0.99						2.90	7.95	9.39	4.21	4.35	3.58	2.70	5.30	3.27	7.95	6.52	6.19	0.00	0.00	0.00		0.00	0.91	6.72	2.43	0.65	1.19	162.74
Basilan	1.000	0.86	0.88	0.95	0.91	0.88	0.65	0.68	0.36	0.07						0.03	0.09	0.10	0.04	0.04	0.03	0.04	0.06	0.07	0.05	0.03	0.00	0.00	0.00	0.00		0.15	0.39	0.34	0.59	0.53	0.19	9.01
Sulu	1.000	2.83	2.88	3.11	2.03	2.86	2.12	1.72	1.19	0.23						0.11	0.18	0.39	0.16	0.11	0.27	0.16	0.17	0.28	0.22	0.26	0.23	0.16	0.00	0.00		1.31	0.98	1.74	2.76	2.39	0.49	31.31
Tawi-Tawi	1.000	1.19	1.56	1.69	1.24	1.55	0.77	0.70	0.64	0.12						0.06	0.11	0.17	0.11	0.02	0.11	0.09	0.08	0.12	0.13	0.11	0.10	0.07	0.01	0.00		0.71	0.37	1.36	1.07	1.30	0.42	15.97

WRR-X																																						**1,900**
Bukidnon	0.348	19.86	20.36	14.86	15.48	18.89	7.33	1.55	2.98	1.26	1.80			0.00	0.00	1.99	6.83	2.75	3.33	1.02	5.20	3.95	8.35	12.44	8.00	6.05	0.00	0.00	0.00	0.00	0.00	0.00	4.62	4.67	7.96	15.99	5.45	202.98
Camiguin	1.000	0.30	0.32	0.30	0.32	0.74	0.55	0.58	0.31	0.06						0.67	0.77	0.81	0.37	0.52	0.97	0.58	0.69	0.70	0.88	0.74	0.61	0.57	0.00	0.00		0.00	0.65	0.43	0.72	0.21	0.73	15.08
Lanao del Norte	0.082	0.88	0.64	0.66	0.72	0.45	0.62	0.00	0.85	0.46	0.00	0.00				0.33	0.35	0.24	1.02	0.42	0.32	0.73	1.18	0.77	0.90	0.14	0.20	0.00	0.00	0.00	0.00	0.11	0.00	1.03	0.96	1.06	0.59	15.64
Misamis Oriental	0.999	7.80	4.90	5.42	3.60	5.39	4.44	7.66	0.00	0.00						2.21	2.47	7.26	5.19	4.18	3.45	7.07	5.63	2.03	6.10	3.71	3.88	3.34	0.00	0.00		2.61	6.63	9.26	4.74	5.02	9.59	133.58
Compostela Valley	0.523	12.44	11.92	31.38	0.00	28.97	2.96	7.04	0.00	0.00						0.48	15.11	30.39	14.25	9.71	12.84	7.32	14.24	11.96	17.90	16.71	13.52	7.63	0.00	0.00		0.00	5.16	16.44	28.36	7.20	8.42	332.36
Davao del Norte	0.007	0.07	0.09	0.11	0.12	0.21	0.20	0.21	0.11	0.00						0.00	0.06	0.13	0.07	0.09	0.13	0.16	0.14	0.20	0.14	0.12	0.02	0.00	0.00	0.00		0.00	0.06	0.11	0.02	0.16	0.20	2.95
Davao Oriental	0.051	0.81	0.82	0.89	0.85	0.54	0.61	0.64	0.00	0.06						0.21	0.59	0.53	0.35	0.27	0.43	0.46	0.43	0.54	0.64	0.17	0.05	0.00	0.00	0.00		0.00	0.26	0.29	0.09	0.23	0.37	11.12
Agusan del Norte	0.973	20.96	28.99	35.90	34.33	33.16	24.55	17.18	13.78	2.62						5.82	26.18	39.59	12.06	8.18	9.81	3.21	18.08	9.01	18.91	18.21	5.83	0.00	0.00	0.00		0.00	5.00	11.91	4.65	2.95	7.79	418.66
Agusan del Sur	0.889	41.25	42.05	45.37	43.39	41.90	31.03	32.67	17.41	0.00						0.00	21.91	31.51	19.91	0.00	12.97	20.91	12.95	20.14	16.76	13.56	7.06	0.00	0.00	0.00		0.00	6.34	23.76	13.43	5.78	7.13	529.19
Dinagat Islands	1.000	0.58	1.32	0.78	1.36	0.86	0.97	0.41	0.54	0.10						0.64	1.26	0.88	0.82	0.91	0.13	1.59	0.94	0.97	1.55	1.31	0.17	0.13	0.00	0.00		0.00	0.12	0.54	0.61	1.08	0.16	20.76
Surigao del Norte	1.000	4.43	10.44	5.41	8.26	6.12	7.70	5.31	1.25	0.00						5.43	12.95	7.85	6.95	13.06	1.45	12.73	11.06	9.82	16.12	10.56	0.99	1.00	0.00	0.00		0.00	0.00	6.24	3.27	4.90	4.81	178.11
Surigao del Sur	0.104	1.33	0.98	1.27	0.43	2.60	0.00	1.90	0.00	0.00						0.00	1.76	3.12	0.90	0.74	1.51	2.17	1.49	3.55	0.71	1.56	2.23	1.15	0.00	0.00		1.48	1.95	2.06	0.79	0.63	3.12	39.44
WRR-XI																																						**2,376**
Bukidnon	0.046	2.63	2.69	1.96	2.05	2.50	0.97	0.20	0.39	0.17	0.24			0.00	0.00	0.26	0.90	0.36	0.44	0.14	0.69	0.52	1.10	1.64	1.06	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.61	0.62	1.05	2.11	0.72	26.83
Compostela Valley	0.477	11.35	10.87	28.62	0.00	26.42	2.70	6.42	0.00	0.00						0.44	13.79	27.72	13.00	8.85	11.71	6.68	12.99	10.91	16.33	15.24	12.33	6.96	0.00	0.00		0.00	4.71	14.99	25.86	6.56	7.68	303.13
Davao del Norte	0.989	9.93	12.04	16.12	17.03	29.10	28.42	29.98	15.97	0.00						0.00	8.97	17.85	10.10	12.61	18.57	22.68	20.42	27.93	19.99	17.62	3.06	0.00	0.00	0.00		0.00	8.53	15.02	2.85	22.61	28.72	416.12
Davao del Sur	0.998	11.48	30.12	32.50	25.13	10.02	22.22	13.67	6.25	0.00						6.87	18.16	21.31	16.13	20.58	14.89	27.09	8.63	29.89	13.74	4.28	10.53	0.00	0.00	0.00		2.59	15.67	27.45	29.06	24.59	14.48	457.30
Davao Oriental	0.949	15.03	15.32	16.53	15.79	10.01	11.29	11.85	0.00	1.20						3.85	10.90	9.86	6.48	5.04	7.92	8.57	7.96	10.13	11.89	3.16	0.96	0.00	0.00	0.00		0.00	4.83	5.47	1.71	4.34	6.83	206.93
Sarangani	0.869	4.52	0.00	0.56	0.00	0.00		0.00	4.49	6.44	3.57	6.96	10.51	5.85	4.09	9.26	8.17	4.86	2.37	0.00	0.00	0.51	1.00	0.00		0.00	0.71	2.52	2.70	6.40	4.37	4.27	3.80	3.08	5.33	4.26	0.98	111.56
South Cotabato	0.340	14.33	10.45	0.00	3.19	0.26		6.99	2.82	19.47	10.77	27.09	31.84	20.11	17.13	13.01	9.61	11.64	7.05	0.00	0.00	0.00	0.00	0.00		0.00	5.86	15.26	4.05	11.24	12.60	16.79	12.95	13.40	14.92	12.31	19.22	344.37
North Cotabato	0.038	2.79	0.76	0.00	0.00	0.00		1.29	1.28	1.95	3.66	5.08	4.23	3.07	2.24	2.80	1.14	1.17	2.61	0.71	0.00	0.02	0.00	0.00		0.00	0.86	1.71	0.51	2.47	2.50	2.59	2.08	2.61	1.71	2.61	3.75	58.18
Sultan Kudarat	0.052	1.55	0.17	0.00	0.00	0.00		0.00	1.75	2.51	0.72	2.62	4.11	2.07	0.93	3.62	2.15	1.06	0.09	0.00	0.00	0.00	0.39	0.00		0.00	0.00	0.32	0.68	1.69	0.98	1.06	0.50	2.23	1.85	2.23	0.46	35.73
Agusan del Norte	0.027	0.58	0.80	1.00	0.95	0.92	0.68	0.48	0.38	0.07						0.16	0.73	1.10	0.33	0.23	0.27	0.09	0.50	0.25	0.52	0.51	0.16	0.00	0.00	0.00		0.00	0.14	0.33	0.13	0.08	0.22	11.62
Agusan del Sur	0.109	5.06	5.16	5.56	5.32	5.14	3.80	4.01	2.13	0.00						0.00	2.69	3.86	2.44	0.00	1.59	2.56	1.59	2.47	2.05	1.66	0.87	0.00	0.00	0.00		0.00	0.78	2.91	1.65	0.71	0.87	64.88
Surigao del Sur	0.896	11.47	8.47	10.93	3.66	22.44	0.00	16.38	0.00	0.00						0.00	15.18	26.92	7.72	6.34	13.03	18.72	12.82	30.61	6.12	13.48	19.19	9.91	0.00	0.00		12.74	16.83	17.71	6.83	5.43	26.84	339.77
WRR-XII																																						**3,949**
Bukidnon	0.606	34.58	35.46	25.88	26.96	32.90	12.77	2.70	5.19	2.19	3.14			0.00	0.00	3.47	11.90	4.79	5.79	1.78	9.05	6.88	14.54	21.66	13.94	10.53	0.00	0.00	0.00	0.00	0.00	0.00	8.04	8.14	13.85	27.85	9.49	353.47
Lanao del Norte	0.918	9.90	7.21	7.34	8.04	5.07	6.92	0.00	9.55	5.18	0.00	0.02				3.69	3.90	2.72	11.43	4.67	3.57	8.23	13.23	8.65	10.02	1.54	2.28	0.00	0.00	0.00	0.00	1.25	0.00	11.54	10.76	11.85	6.59	175.12
Misamis Oriental	0.001	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00						0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00		0.00	0.01	0.01	0.00	0.01	0.01	0.13
Davao del Norte	0.004	0.04	0.05	0.07	0.07	0.12	0.11	0.12	0.06	0.00						0.00	0.04	0.07	0.04	0.05	0.08	0.09	0.08	0.11	0.08	0.07	0.01	0.00	0.00	0.00		0.00	0.03	0.06	0.01	0.09	0.12	1.68
Davao del Sur	0.002	0.02	0.06	0.07	0.05	0.02	0.04	0.03	0.01	0.00						0.01	0.04	0.04	0.03	0.04	0.03	0.05	0.02	0.06	0.03	0.01	0.02	0.00	0.00	0.00		0.01	0.03	0.06	0.06	0.05	0.03	0.92
Sarangani	0.131	0.68	0.00	0.08	0.00	0.00		0.00	0.68	0.97	0.54	1.05	1.58	0.88	0.62	1.40	1.23	0.73	0.36	0.00	0.00	0.08	0.15	0.00		0.00	0.11	0.38	0.41	0.96	0.66	0.64	0.57	0.46	0.80	0.64	0.15	16.82
South Cotabato	0.660	27.82	20.28	0.00	6.20	0.50		13.56	5.48	37.80	20.90	52.59	61.80	39.04	33.26	25.25	18.65	22.60	13.68	0.00	0.00	0.00	0.00	0.00		0.00	11.38	29.62	7.87	21.82	24.46	32.60	25.14	26.02	28.96	23.90	37.30	668.49
North Cotabato	0.962	70.52	19.36	0.00	0.00	0.00		32.55	32.40	49.36	92.63	#####	#####	77.82	56.62	70.76	28.81	29.50	65.95	18.09	0.00	0.52	0.00	0.00		0.00	21.87	43.25	12.95	62.63	63.30	65.65	52.56	66.17	43.20	65.99	94.94	1,472.88
Sultan Kudarat	0.948	28.26	3.01	0.00	0.00	0.00		0.00	31.85	45.75	13.11	47.69	74.90	37.82	16.92	66.02	39.15	19.26	1.61	0.00	0.00	0.00	7.10	0.00		0.00	0.00	5.90	12.36	30.83	17.90	19.35	9.06	40.63	33.80	40.62	8.42	651.33
Agusan del Sur	0.002	0.09	0.09	0.10	0.10	0.09	0.07	0.07	0.04	0.00						0.00	0.05	0.07	0.04	0.00	0.03	0.05	0.03	0.05	0.04	0.03	0.02	0.00	0.00	0.00		0.00	0.01	0.05	0.03	0.01	0.02	1.19
Lanao del Sur	1.000	18.32	4.02	0.00	0.00	0.00		0.95	0.64	0.15	0.20	2.28	2.82	2.25	1.10	1.51	0.09	1.05	0.66	0.00	0.00	0.00	0.00	0.00		0.00	0.00	2.85	0.00	9.14	8.46	9.21	4.45	9.13	11.46	15.46	24.65	130.83
Maguindanao	1.000	48.11	15.92	0.00	0.00	0.00		2.32	2.34	1.94	2.79	6.99	7.83	5.68	4.71	3.19	1.76	1.71	3.57	2.38	0.00	0.50	0.00	0.00		0.00	14.52	29.36	0.00	41.93	37.00	45.68	29.93	35.56	24.86	41.00	64.34	475.92
Total	80.000																																					**41,300**

Source: JICA Survey Team

Table F 45 Irrigation Water Demands of Surface Water Systems by WRR in 2030
(Based on Irrigated Areas Projected in Consideration of NIA Financial Program)

(Unit: MCM)

Region/	Area	Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			Annual
Province	Rate	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
WRR-I																																						**1,802**
Abra	0.991	20.85	21.25	22.94	22.12	21.37	15.84	16.86	8.98	0.00							8.18	15.98	21.23	11.47	2.65	5.91	7.40	6.81	7.24	7.65	15.96	20.87	7.92	0.00	0.00	9.01	17.91	23.49	20.21	1.28	20.88	382.25
Apayao	0.003	0.04	0.04	0.04	0.04	0.04	0.03	0.02	0.02	0.00							0.00	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.03	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.03	0.04	0.59
Benguet	0.467	7.92	8.07	8.71	8.38	8.10	6.00	6.38	3.40	0.65			0.00	5.48	5.84	3.95	3.00	4.20	3.19	3.07	1.98	1.28	2.43	1.90	0.00	0.00	0.00					3.45	6.85	1.56	7.70	6.66	4.16	124.31
Kalinga	0.006	0.20	0.20	0.22	0.21	0.21	0.15	0.16	0.09	0.02							0.00	0.11	0.13	0.10	0.03	0.10	0.05	0.10	0.07	0.09	0.00	0.10	0.13	0.00	0.00	0.09	0.18	0.23	0.20	0.17	0.20	3.54
Mt. Province	0.140	1.76	1.70	0.25	1.19	0.68	0.04							1.40	0.82	1.80	1.98	1.01	1.41	1.00	0.00	0.17	0.10	0.74	0.65	0.20	0.00	0.00	0.48	1.91	1.03	0.03	0.00	1.11	0.53	0.91	1.91	24.80
Ilocos Norte	0.984	33.23	33.87	36.55	35.21	31.33	17.84	14.30	2.48									17.05	45.16	45.56	52.05	24.41	20.71	21.11	38.60	2.85	22.43	6.06	0.00	0.00	0.00	18.91	34.78	15.36	34.34	3.61	33.47	641.27
Ilocos Sur	1.000	20.11	20.50	22.13	21.24	18.91	10.77	8.59	1.49									0.00	18.68	9.40	24.11	9.47	14.70	14.62	35.90	14.81	11.00	22.07	0.00	11.03	1.30	0.00	21.16	26.48	20.89	17.10	20.32	416.78
La Union	0.947	11.24	11.45	12.36	11.86	10.56	6.01	4.80	0.83									0.50	5.75	13.22	6.30	6.24	3.12	7.28	5.57	7.27	0.35	7.87	10.03	0.00	0.00	6.48	11.88	14.85	11.69	9.55	11.35	208.41
WRR-II																																						**7,302**
Abra	0.009	0.19	0.19	0.21	0.20	0.19	0.14	0.15	0.08	0.00							0.07	0.15	0.19	0.10	0.02	0.05	0.07	0.06	0.07	0.07	0.14	0.19	0.07	0.00	0.00	0.08	0.16	0.21	0.18	0.01	0.19	3.47
Apayao	0.997	11.75	11.97	12.92	12.47	12.06	8.94	7.25	5.10	0.97							0.00	9.75	10.91	8.33	7.00	6.71	6.02	6.97	4.06	3.34	5.06	10.43	2.24	3.56	0.42	5.20	0.00	0.00	0.00	9.91	11.80	195.15
Benguet	0.007	0.12	0.12	0.13	0.13	0.12	0.09	0.10	0.05	0.01			0.00	0.08	0.09	0.06	0.04	0.06	0.05	0.05	0.03	0.02	0.04	0.03	0.00	0.00	0.00					0.05	0.10	0.02	0.12	0.10	0.06	1.86
Ifugao	0.993			9.36	11.78	21.97	14.62	18.83	20.51	20.48	24.22	17.12	16.43	19.56	12.24	8.34	0.00	0.00				0.00	13.31	8.54	3.64	0.95	0.00	6.41	0.42	13.54	13.09	1.67	8.48	0.00	0.00	0.00		285.50
Kalinga	0.994	33.17	33.77	36.49	35.17	34.04	25.29	26.92	14.36	2.74							0.23	18.70	21.34	15.97	5.76	16.43	8.81	16.77	11.66	15.06	0.00	16.43	21.55	0.00		14.64	29.08	38.14	32.64	28.22	33.49	586.85
Mt. Province	0.858	10.78	10.41	1.51	7.27	4.15	0.26							8.57	5.03	11.01	12.12	6.17	8.63	6.15	0.00	1.06	0.63	4.51	3.99	1.23	0.00	0.00	2.93	11.71	6.30	0.20	0.00	6.79	3.25	5.59	11.71	151.98
Ilocos Norte	0.016	0.54	0.55	0.59	0.57	0.51	0.29	0.23	0.04									0.28	0.73	0.74	0.85	0.40	0.34	0.34	0.63	0.05	0.36	0.10	0.00	0.00	0.00	0.31	0.57	0.25	0.56	0.06	0.54	10.43
Batanes	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00								0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cagayan	1.000	65.96	80.66	#####	#####	80.90	73.51	78.38	41.76	0.00							36.66	#####	#####	85.56	84.54	73.43	58.06	64.29	44.90	69.02	87.65	30.93	0.00	0.00	0.00	0.00	91.47	#####	51.83	24.63	78.80	1,842.04
Isabela	1.000	#####	#####	#####	#####	#####	#####	#####	#####	0.00	29.35	0.22					2.15	#####	#####	#####	#####	72.04	#####	96.55	86.71	43.81	0.00	#####	0.00	0.00	0.00	79.66	0.00	24.73	77.46	30.77	#####	3,147.76
Nueva Vizcaya	0.873	40.10	40.86	44.11	42.56	41.15	30.52	32.53	17.34	3.31							6.61	47.74	51.66	6.40	11.42	21.01	11.59	5.20	18.99	11.40	8.79	0.00	0.00	11.95	0.00	0.00	39.12	49.94	24.94	0.00	4.93	624.16
Quirino	0.997	15.28	19.78	16.66	20.57	19.88	14.73	15.70	8.37	0.00							3.96	22.75	19.34	15.64	5.11	6.67	7.94	8.73	6.14	7.33	7.61	0.00	5.25	0.00	0.00	9.61	7.86	23.78	19.47	7.30	19.43	334.90
Aurora	0.410	4.60	3.49	4.00	3.88	4.92	3.67	5.95	7.30	5.74	5.09	0.00	0.00				0.00	3.53	5.73	3.31	5.75	2.67	2.62	5.12	5.47	3.98	0.21	1.82	0.00	0.11	0.00				2.70	5.37	4.63	101.64
Nueva Ecija	0.005	0.52	0.91	1.04	0.82	1.04	0.80	1.00	0.49	0.64	0.15	0.22	0.04			0.09	0.02	0.65	0.08	0.43	0.68	0.10	0.30	0.60	0.52	0.08	0.29	0.13	0.68	0.09	0.00	0.44	0.57	0.63	0.79	0.90	0.76	16.47
WRR-III																																						**9,005**
Benguet	0.526	8.92	9.08	9.81	9.44	9.12	6.76	7.19	3.83	0.73			0.00	6.17	6.57	4.44	3.38	4.73	3.60	3.46	2.24	1.44	2.73	2.15	0.00	0.00	0.00					3.89	7.71	1.76	8.67	7.51	4.68	140.02
Ifugao	0.007			0.07	0.08	0.15	0.10	0.13	0.14	0.14	0.17	0.12	0.12	0.14	0.09	0.06	0.00	0.00				0.00	0.09	0.06	0.03	0.01	0.00	0.05	0.00	0.10	0.09	0.01	0.06	0.00	0.00	0.00		2.01
Mt. Province	0.002	0.03	0.02	0.00	0.02	0.01	0.00							0.02	0.01	0.03	0.03	0.01	0.02	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.03	0.01	0.00	0.00	0.02	0.01	0.01	0.03	0.35
La Union	0.053	0.63	0.64	0.69	0.66	0.59	0.34	0.27	0.05									0.03	0.32	0.74	0.35	0.35	0.17	0.41	0.31	0.41	0.02	0.44	0.56	0.00	0.00	0.36	0.66	0.83	0.65	0.53	0.64	11.66
Pangasinan	1.000	97.72	#####	#####	#####	#####	64.06	66.26	40.75	0.00	0.00							0.00	0.00	36.81	33.67	65.97	80.94	60.40	60.91	61.85	98.94	41.98	87.22	0.00	71.97	61.20	78.44	86.81	#####	#####	96.72	1,933.03
Nueva Vizcaya	0.127	5.83	5.94	6.42	6.19	5.99	4.44	4.73	2.52	0.48							0.96	6.94	7.52	0.93	1.66	3.06	1.69	0.76	2.76	1.66	1.28	0.00	0.00	1.74	0.00	0.00	5.69	7.27	3.63	0.00	0.72	90.80
Quirino	0.003	0.05	0.06	0.05	0.06	0.06	0.04	0.05	0.03	0.00							0.01	0.07	0.06	0.05	0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.00	0.02	0.00	0.00	0.03	0.02	0.07	0.06	0.02	0.06	1.01
Aurora	0.548	6.14	4.67	5.35	5.19	6.57	4.91	7.95	9.75	7.67	6.80	0.00	0.00				0.00	4.72	7.65	4.43	7.69	3.56	3.50	6.84	7.31	5.31	0.28	2.43	0.00	0.15	0.00				3.61	7.17	6.19	135.85
Bataan	1.000	13.23	13.48	14.55	13.96	13.48	9.98	10.59	5.64	1.07								0.00	4.10	7.21	7.78	6.36	4.83	5.54	11.77	10.25	4.09	4.35	3.08	5.78	0.00	1.62	9.70	9.20	13.52	11.02	9.42	225.61
Bulacan	0.978	31.10	31.70	34.21	32.91	21.18	23.53	25.01	13.32	0.00								12.75	27.41	16.02	22.76	0.00	17.16	22.75	8.39	17.34	47.95	12.25	9.38	0.00	3.07	0.00	9.84	36.42	13.49	14.79	30.97	535.69
Nueva Ecija	0.994	#####	#####	#####	#####	#####	#####	#####	96.93	#####	29.61	43.87	8.32			17.01	3.65	#####	15.53	84.61	#####	19.49	60.05	#####	#####	15.89	57.56	25.37	#####	17.63	0.00	86.57	#####	#####	#####	#####	#####	3,274.65
Pampanga	1.000	58.66	59.80	64.53	62.14	60.01	44.43	47.36	25.23	4.80								4.79	29.13	48.10	27.03	23.68	17.91	3.91	15.08	37.41	18.90	9.88	25.01	13.54	19.05	27.67	53.04	68.55	57.46	48.90	58.34	1,034.33
Tarlac	1.000	68.00	69.32	74.80	72.12	69.66	51.57	55.01	29.30	5.58								7.19	56.27	65.46	63.34	16.65	0.00	29.51	74.55	50.82	21.94	4.62	10.20	23.11	8.65	22.65	69.95	87.88	69.54	56.60	50.06	1,284.35
Zambales	1.000	16.67	17.00	18.34	17.65	17.04	12.61	13.41	7.14	0.00								0.00	15.98	23.66	12.02	7.43	19.18	9.35	2.67	13.00	11.11	0.43	15.27	9.33	0.00	0.00	11.48	19.14	12.93	13.88	16.58	333.28
Rizal	0.021	0.15	0.04	0.11	0.16	0.15	0.11	0.12	0.00	0.01				0.00	0.05	0.16	0.09	0.02	0.03	0.06	0.08	0.08	0.06	0.06	0.00	0.03	0.00	0.00				0.00	0.09	0.06	0.13	0.08	0.15	2.07

WRR-IV																																						**3,097**
Aurora	0.042	0.47	0.36	0.41	0.40	0.50	0.38	0.61	0.75	0.59	0.52	0.00	0.00				0.00	0.36	0.59	0.34	0.59	0.27	0.27	0.52	0.56	0.41	0.02	0.19	0.00	0.01	0.00				0.28	0.55	0.47	10.41
Bulacan	0.022	0.70	0.71	0.77	0.74	0.48	0.53	0.56	0.30	0.00								0.29	0.62	0.36	0.51	0.00	0.39	0.51	0.19	0.39	1.08	0.28	0.21	0.00	0.07	0.00	0.22	0.82	0.30	0.33	0.70	12.05
Nueva Ecija	0.001	0.10	0.18	0.21	0.16	0.21	0.16	0.20	0.10	0.13	0.03	0.04	0.01			0.02	0.00	0.13	0.02	0.09	0.14	0.02	0.06	0.12	0.10	0.02	0.06	0.03	0.14	0.02	0.00	0.09	0.11	0.13	0.16	0.18	0.15	3.29
Batangas	1.000	5.41	5.49	8.09	7.75	7.49	5.54	5.89	3.14	0.60				1.10	5.40	7.13	3.60	2.40	4.81	0.16	5.21	2.71	2.46	1.47	0.23	0.00	0.00	0.00				0.00	4.38	4.97	6.40	1.13	7.31	110.26
Cavite	1.000	9.60	9.78	10.56	10.14	9.79	7.25	7.70	4.10	0.78				4.31	9.20	9.60	1.44	0.04	4.82	2.44	3.94	8.34	3.29	6.53	10.41	2.52	0.00	0.00				0.00	0.63	2.83	8.37	8.00	4.09	160.49
Laguna	1.000	20.13	20.52	22.15	21.25	20.52	15.20	16.14	8.60	0.00				7.90	8.27	14.96	9.53	14.91	8.25	8.42	9.90	8.15	9.24	7.32	0.62	0.00	0.00	0.00				0.00	0.00	10.70	3.79	4.39	20.05	290.91
Quezon	0.947	1.52	23.68	20.86	24.47	16.17	17.50	13.85	0.70	1.88				2.63	14.08	25.01	14.12	16.19	6.48	3.15	11.53	9.49	17.24	24.55	7.31	0.00	0.00	0.00				6.12	4.92	12.98	7.26	12.78	3.14	319.63
Rizal	0.979	6.93	1.78	5.17	7.31	7.06	5.23	5.54	0.00	0.56				0.00	2.33	7.41	3.97	1.10	1.35	2.73	3.95	3.50	2.73	2.72	0.00	1.26	0.00	0.00				0.00	4.17	2.98	6.18	3.53	7.06	96.53
Marinduque	1.000	1.58	0.83	2.53	2.63	1.86	2.10	2.93	2.83	2.85	1.96	0.38	0.19	0.90	2.78	3.95	1.40	1.07	1.53	0.72	2.48	1.64	1.80	1.54	0.84	0.26	0.00	0.05							1.24	0.35	3.18	48.40
Occidental Mindoro	1.000	35.63	36.32	39.19	37.54	36.26	26.85	28.42	15.14	2.88								0.00	22.43	41.74	14.25	18.94	0.00	1.62	19.79	20.25	9.76	3.08	28.40	0.00	6.20	7.30	7.19	46.11	36.51	19.19	28.86	589.85
Oriental Mindoro	1.000	39.10	37.74	45.07	46.81	46.19	37.45	52.27	41.17	33.10	35.00	1.43	3.42	22.38	13.07	33.54	18.29	8.70	20.85	5.49	23.77	16.61	16.22	8.54	18.49	0.00	3.48	0.00							6.54	28.75	31.52	695.00
Palawan	1.000	33.46	30.17	36.08	37.40	36.90	29.92	41.64	40.15	40.42	27.66	14.15	2.70	22.92	23.85	42.82	26.41	18.98	0.63	12.65	7.83	17.71	21.28	14.20	1.23	0.42	0.00	0.00							17.56	15.01	30.77	644.91
Romblon	1.000	4.42	4.90	5.86	6.08	6.00	4.86	6.78	6.54	6.58	4.52	2.31	0.44	3.08	5.95	8.46	4.72	5.08	2.31	2.57	2.28	1.72	0.72	2.27	2.52	1.12	0.00	0.00							1.75	4.07	7.35	115.25
WRR-V																																						**3,240**
Quezon	0.053	0.09	1.33	1.17	1.37	0.90	0.98	0.77	0.04	0.11				0.15	0.79	1.40	0.79	0.91	0.36	0.18	0.65	0.53	0.96	1.37	0.41	0.00	0.00	0.00				0.34	0.28	0.73	0.41	0.72	0.18	17.89
Albay	1.000	47.55	8.80	39.94	33.39	37.58	32.61	59.18	54.55	13.83	20.20	3.08		15.26	58.95	43.73	56.75	21.15	42.78	29.85	18.02	16.10	30.44	9.02	19.21	9.15	0.00	0.00							0.00	45.08	21.91	788.13
Camarines Norte	1.000	17.21	8.19	13.95	19.20	9.21	15.36	21.44	15.87	4.48	3.77	1.12		10.41	13.79	17.93	3.34	5.02	9.09	8.95	8.82	4.60	11.45	3.87	5.18	0.00	0.00	0.00							0.00	2.71	18.78	253.73
Camarines Sur	1.000	54.87	60.92	76.29	81.55	#####	78.47	#####	#####	77.66	37.41	0.00		39.28	75.34	76.61	76.79	66.94	63.74	53.98	30.29	63.65	95.07	35.03	28.08	0.00	0.00	0.00	0.00						0.00	25.11	78.31	1,585.66
Catanduanes	1.000	4.36	0.70	4.69	3.68	2.18	3.89	5.41	2.09	3.84	1.85	0.28		0.00	4.97	5.17	3.80	2.73	3.79	3.22	0.74	2.27	2.71	1.45	4.17	1.10	0.00	0.10							0.00	1.96	3.00	74.12
Masbate	1.000	10.16	13.06	10.45	16.18	16.51	6.72	17.98	4.40	11.35	5.45	0.83		5.59	6.48	17.66	15.86	2.88	7.32	5.86	8.81	6.95	4.73	9.79	7.14	1.26	0.00	0.32							0.00	4.89	19.58	238.20
Sorsogon	1.000	2.53	16.66	16.25	15.96	21.06	7.15	23.02	8.12	16.34	7.85	0.00		1.05	7.10	25.25	15.38	6.44	7.49	3.65	9.94	10.28	5.86	13.84	5.83	0.06	0.00	0.41							0.00	9.35	25.03	281.91
WRR-VI																																						**2,396**
Aklan	1.000	11.73	11.36	11.14	7.26	3.37	0.28							4.11	16.23	14.85	9.45	9.23	4.05	7.55	4.40	7.46	4.79	8.70	4.81	3.66	0.00	0.33	0.00	4.37	9.67	2.64	3.10	5.12	4.99	11.02	4.74	190.43
Antique	1.000	20.13	18.65	10.88	10.36	5.90	0.00	0.02						0.00	0.00	20.13	8.62	4.36	0.00	5.18	6.61	6.49	6.78	5.26	0.00	0.00	0.00	0.00	0.00	0.00	11.11	5.49	5.45	12.59	18.52	19.39	21.33	223.24
Capiz	1.000	11.96	11.50	3.35	7.39	3.41	0.00							9.40	6.75	17.22	5.95	0.00	0.00	0.06	0.00	5.96	8.35	0.00	3.34	0.00	0.00	0.00	0.00	1.28	10.19	2.56	3.67	10.88	5.21	8.37	10.27	147.07
Guimaras	1.000	1.07	0.67	1.01	0.66	0.31	0.00							0.20	0.55	1.53	0.77	0.50	0.24	0.14	0.25	0.43	0.55	0.52	0.73	0.00	0.00	0.00	0.00	0.00	0.97	0.54	0.42	0.00	1.05	0.45	1.15	14.71
Iloilo	1.000	42.42	41.15	22.19	31.06	21.71	10.57	5.68	0.04					24.15	4.16	39.08	21.30	15.10	8.97	10.23	0.00	31.53	43.65	0.00	21.65	2.83	0.00	0.00	0.00	0.00	39.12	16.95	26.21	35.35	22.71	40.74	44.82	623.37
Negros Occidental	0.924	46.48	60.98	60.33	38.97	4.29	1.52							11.64	80.11	78.03	60.03	23.81	55.74	32.62	40.16	54.87	55.77	28.87	35.10	0.49	0.00	0.00	8.04	21.19	28.10	14.88	55.10	58.61	61.54	59.38	40.47	1,117.14
Negros Oriental	0.231	3.91	4.62	4.57	2.96	1.38	0.12							2.40	3.39	7.07	5.13	2.58	2.42	2.62	3.39	2.67	2.28	3.31	2.23	0.23	0.00	0.00	0.36	2.09	4.06	4.56	1.90	3.64	2.36	1.67	2.62	80.53
WRR-VII																																						**1,027**
Negros Occidental	0.076	3.82	5.02	4.96	3.21	0.35	0.12							0.96	6.59	6.42	4.94	1.96	4.58	2.68	3.30	4.51	4.59	2.37	2.89	0.04	0.00	0.00	0.66	1.74	2.31	1.22	4.53	4.82	5.06	4.88	3.33	91.89
Bohol	1.000	26.65	24.49	13.54	14.66	17.57	8.72	16.04	0.00	0.00					0.00	9.30	0.00	0.00	27.04	23.85	15.89	29.87	29.81	10.86	25.77	11.36	5.72	19.45	0.00	0.00	19.70	18.01	22.62	27.37	20.65	35.06	33.51	507.50
Cebu	1.000	9.14	8.97	5.29	6.39	3.71	0.00	0.00								3.98	3.44	9.60	7.86	8.94	2.44	4.50	3.70	7.52	9.05	8.52	0.00	0.00	0.00		2.97	8.24	7.73	5.23	3.52	8.16	7.43	146.33
Negros Oriental	0.769	13.02	15.40	15.23	9.85	4.58	0.38							8.00	11.27	23.53	17.07	8.60	8.05	8.72	11.28	8.87	7.61	11.01	7.43	0.78	0.00	0.00	1.18	6.96	13.52	15.16	6.33	12.10	7.86	5.55	8.71	268.07
Siquijor	1.000	0.38	0.33	0.39	0.34	0.31	0.13	0.03								0.72	1.21	0.86	0.34	0.39	0.70	0.89	1.10	0.63	1.16	0.90	0.28	0.03	0.00		0.29	0.32	0.40	0.23	0.05	0.47	0.54	13.44
WRR-VIII																																						**1,484**
Biliran	1.000	1.94	2.68	5.84	5.58	3.61	3.99	4.20	0.94	0.00						0.76	4.15	3.28	4.03	3.13	4.84	3.24	2.33	2.23	2.56	3.36	0.61	0.57				0.00	3.35	6.23	5.22	4.43	0.02	83.10
Northern Leyte	1.000	63.29	64.52	29.95	35.62	12.12	11.88	0.00	0.00	0.00						18.28	15.52	64.27	48.75	54.55	12.16	15.58	25.31	47.63	53.78	56.89	0.65	19.78				29.68	8.90	27.20	19.19	52.67	25.00	813.18
Southern Leyte	1.000	9.64	9.82	4.67	4.38	4.71	0.00	0.00	0.00	0.77	5.84	11.49	8.77	7.79	4.45	8.72	2.42	7.75	10.71	9.61	3.99	2.31	0.54									4.51	4.41	5.02	2.03	8.02	4.60	146.98
Northern Samar	1.000	5.46	6.69	5.64	10.15	9.80	7.25	5.39	4.08	0.78	6.13	12.07	15.71	12.09	10.20	9.93	11.28	9.57	5.79	3.98	0.31	0.52	0.39									0.00	3.22	2.34	4.01	0.00	4.38	167.14
Weatern Samar	1.000	0.27	9.12	3.67	9.41	9.09	6.73	3.94	2.08	0.72	5.12	10.08	10.96	10.08	0.98	5.47	4.96	2.13	4.19	2.29	2.77	4.63	0.00									0.00	2.76	7.26	1.96	4.85	3.78	129.27
Eastern Samar	1.000	3.99	9.46	5.91	9.75	6.89	6.97	3.29	2.14	0.74	5.71	11.22	10.10	8.97	4.51	6.11	7.10	3.33	5.49	4.13	4.00	4.42	1.56									0.00	2.20	6.68	1.70	4.01	4.06	144.45
WRR-IX																																						**1,228**
Zamboanga del Norte	1.000	12.27	18.13	11.63	9.73	9.57	4.67	2.48	0.02		8.85	11.47	11.88	13.57	20.86	11.52	13.05	10.33	11.83	8.54	10.59	8.60	7.50	0.00	0.00	0.00			0.00	0.00	5.22	4.53	9.02	0.25	2.08	17.97	9.99	266.16
Zamboanga del Sur	1.000	40.08	39.02	39.42	29.45	20.61	10.06	5.33	0.04		16.48	32.63	34.54	40.62	39.56	19.93	17.15	16.21	12.58	18.14	4.33	16.44	3.05	0.00	0.00	0.00			0.00	0.19	12.25	8.50	20.82	10.11	12.72	15.52	17.93	553.72
Zamboanga Sibugay	1.000	9.54	11.36	9.29	11.29	7.90	3.86	2.04	0.02		6.41	5.28	5.17	5.53	10.24	9.16	9.42	6.52	7.94	4.28	6.62	5.36	6.08	0.00	0.00	0.00			0.12	0.00	4.74	6.17	8.01	1.06	4.13	14.79	9.60	191.93
Misamis Occidental	1.000	12.28	12.52	13.51	12.90	12.46	6.98	9.72	5.18	0.99						2.90	7.95	9.39	4.21	4.35	3.58	2.70	5.30	3.27	7.95	6.52	6.19	0.00	0.00	0.00		0.00	0.91	6.72	2.43	0.65	1.19	162.74
Basilan	1.000	0.86	0.88	0.95	0.91	0.88	0.65	0.68	0.36	0.07						0.03	0.09	0.10	0.04	0.04	0.03	0.04	0.06	0.07	0.05	0.03	0.00	0.00	0.00	0.00		0.15	0.39	0.34	0.59	0.53	0.19	9.01
Sulu	1.000	2.61	2.66	2.87	1.87	2.64	1.96	1.59	1.10	0.21						0.10	0.16	0.36	0.15	0.10	0.25	0.15	0.15	0.26	0.20	0.24	0.21	0.14	0.00	0.00		1.21	0.90	1.61	2.55	2.21	0.45	28.94
Tawi-Tawi	1.000	1.19	1.56	1.69	1.24	1.55	0.77	0.70	0.64	0.12						0.06	0.11	0.17	0.11	0.02	0.11	0.09	0.08	0.12	0.13	0.11	0.10	0.07	0.01	0.00		0.71	0.37	1.36	1.07	1.30	0.42	15.97

WRR-X																																						**1,896**
Bukidnon	0.348	19.86	20.36	14.86	15.48	18.89	7.33	1.55	2.98	1.26	1.80			0.00	0.00	1.99	6.83	2.75	3.33	1.02	5.20	3.95	8.35	12.44	8.00	6.05	0.00	0.00	0.00	0.00	0.00	0.00	4.62	4.67	7.96	15.99	5.45	202.98
Camiguin	1.000	0.30	0.32	0.30	0.32	0.74	0.55	0.58	0.31	0.06						0.67	0.77	0.81	0.37	0.52	0.97	0.58	0.69	0.70	0.88	0.74	0.61	0.57	0.00	0.00		0.00	0.65	0.43	0.72	0.21	0.73	15.08
Lanao del Norte	0.082	0.88	0.64	0.65	0.72	0.45	0.62	0.00	0.85	0.46	0.00	0.00				0.33	0.35	0.24	1.02	0.42	0.32	0.73	1.18	0.77	0.89	0.14	0.20	0.00	0.00	0.00	0.00	0.11	0.00	1.03	0.96	1.06	0.59	15.61
Misamis Oriental	0.999	7.71	4.84	5.36	3.55	5.33	4.39	7.57	0.00	0.00						2.18	2.44	7.17	5.13	4.13	3.41	6.98	5.56	2.01	6.03	3.67	3.83	3.30	0.00	0.00		2.59	6.55	9.15	4.68	4.96	9.48	132.02
Compostela Valley	0.523	12.44	11.92	31.38	0.00	28.97	2.96	7.04	0.00	0.00						0.48	15.11	30.39	14.25	9.71	12.84	7.32	14.24	11.96	17.90	16.71	13.52	7.63	0.00	0.00		0.00	5.16	16.44	28.36	7.20	8.42	332.36
Davao del Norte	0.007	0.07	0.09	0.11	0.12	0.21	0.20	0.21	0.11	0.00						0.00	0.06	0.13	0.07	0.09	0.13	0.16	0.14	0.20	0.14	0.12	0.02	0.00	0.00	0.00		0.00	0.06	0.11	0.02	0.16	0.20	2.95
Davao Oriental	0.051	0.81	0.82	0.89	0.85	0.54	0.61	0.64	0.00	0.06						0.21	0.59	0.53	0.35	0.27	0.43	0.46	0.43	0.54	0.64	0.17	0.05	0.00	0.00	0.00		0.00	0.26	0.29	0.09	0.23	0.37	11.12
Agusan del Norte	0.973	20.96	28.99	35.90	34.33	33.16	24.55	17.18	13.78	2.62						5.82	26.18	39.59	12.06	8.18	9.81	3.21	18.08	9.01	18.91	18.21	5.83	0.00	0.00	0.00		0.00	5.00	11.91	4.65	2.95	7.79	418.66
Agusan del Sur	0.889	41.13	41.93	45.24	43.26	41.78	30.93	32.58	17.36	0.00						0.00	21.73	31.26	19.75	0.00	12.87	20.75	12.85	19.98	16.62	13.46	7.01	0.00	0.00	0.00		0.00	6.32	23.69	13.39	5.76	7.11	526.73
Dinagat Islands	1.000	0.58	1.32	0.78	1.36	0.86	0.97	0.41	0.54	0.10						0.64	1.26	0.88	0.82	0.91	0.13	1.59	0.94	0.97	1.55	1.31	0.17	0.13	0.00	0.00		0.00	0.12	0.54	0.61	1.08	0.16	20.76
Surigao del Norte	1.000	4.43	10.44	5.41	8.26	6.12	7.70	5.31	1.25	0.00						5.43	12.95	7.85	6.95	13.06	1.45	12.73	11.06	9.82	16.12	10.56	0.99	1.00	0.00	0.00		0.00	0.00	6.24	3.27	4.90	4.81	178.11
Surigao del Sur	0.104	1.33	0.98	1.27	0.43	2.60	0.00	1.90	0.00	0.00						0.00	1.76	3.12	0.89	0.73	1.51	2.17	1.49	3.55	0.71	1.56	2.22	1.15	0.00	0.00		1.48	1.95	2.06	0.79	0.63	3.12	39.41
WRR-XI																																						**2,373**
Bukidnon	0.046	2.63	2.69	1.96	2.05	2.50	0.97	0.20	0.39	0.17	0.24			0.00	0.00	0.26	0.90	0.36	0.44	0.14	0.69	0.52	1.10	1.64	1.06	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.61	0.62	1.05	2.11	0.72	26.83
Compostela Valley	0.477	11.35	10.87	28.62	0.00	26.42	2.70	6.42	0.00	0.00						0.44	13.79	27.72	13.00	8.85	11.71	6.68	12.99	10.91	16.33	15.24	12.33	6.96	0.00	0.00		0.00	4.71	14.99	25.86	6.56	7.68	303.13
Davao del Norte	0.989	9.93	12.04	16.12	17.03	29.10	28.42	29.98	15.97	0.00						0.00	8.97	17.85	10.10	12.61	18.57	22.68	20.42	27.93	19.99	17.62	3.06	0.00	0.00	0.00		0.00	8.53	15.02	2.85	22.61	28.72	416.12
Davao del Sur	0.998	11.48	30.12	32.50	25.13	10.02	22.22	13.67	6.25	0.00						6.87	18.16	21.31	16.13	20.58	14.89	27.09	8.63	29.89	13.74	4.28	10.53	0.00	0.00	0.00		2.59	15.67	27.45	29.06	24.59	14.48	457.30
Davao Oriental	0.949	15.03	15.32	16.53	15.79	10.01	11.29	11.85	0.00	1.20						3.85	10.90	9.86	6.48	5.04	7.92	8.57	7.96	10.13	11.89	3.16	0.96	0.00	0.00	0.00		0.00	4.83	5.47	1.71	4.34	6.83	206.93
Sarangani	0.869	4.46	0.00	0.55	0.00	0.00		0.00	4.44	6.36	3.53	6.88	10.39	5.78	4.04	9.15	8.07	4.80	2.34	0.00	0.00	0.51	0.98	0.00		0.00	0.70	2.49	2.66	6.32	4.31	4.22	3.75	3.04	5.26	4.20	0.97	110.22
South Cotabato	0.340	14.33	10.44	0.00	3.19	0.26		6.99	2.82	19.47	10.76	27.08	31.83	20.10	17.13	13.00	9.60	11.64	7.04	0.00	0.00	0.00	0.00	0.00		0.00	5.86	15.26	4.05	11.24	12.60	16.79	12.95	13.40	14.91	12.31	19.21	344.25
North Cotabato	0.038	2.76	0.76	0.00	0.00	0.00		1.27	1.27	1.93	3.62	5.02	4.18	3.04	2.21	2.77	1.13	1.15	2.58	0.71	0.00	0.02	0.00	0.00		0.00	0.85	1.69	0.51	2.45	2.47	2.57	2.05	2.59	1.69	2.58	3.71	57.56
Sultan Kudarat	0.052	1.53	0.16	0.00	0.00	0.00		0.00	1.73	2.48	0.71	2.59	4.06	2.05	0.92	3.58	2.12	1.04	0.09	0.00	0.00	0.00	0.39	0.00		0.00	0.00	0.32	0.67	1.67	0.97	1.05	0.49	2.20	1.83	2.20	0.46	35.30
Agusan del Norte	0.027	0.58	0.80	1.00	0.95	0.92	0.68	0.48	0.38	0.07						0.16	0.73	1.10	0.33	0.23	0.27	0.09	0.50	0.25	0.52	0.51	0.16	0.00	0.00	0.00		0.00	0.14	0.33	0.13	0.08	0.22	11.62
Agusan del Sur	0.109	5.04	5.14	5.55	5.30	5.12	3.79	3.99	2.13	0.00						0.00	2.66	3.83	2.42	0.00	1.58	2.54	1.57	2.45	2.04	1.65	0.86	0.00	0.00	0.00		0.00	0.77	2.90	1.64	0.71	0.87	64.58
Surigao del Sur	0.896	11.47	8.47	10.93	3.66	22.44	0.00	16.38	0.00	0.00						0.00	15.16	26.88	7.71	6.33	13.01	18.70	12.80	30.57	6.11	13.46	19.16	9.89	0.00	0.00		12.74	16.83	17.71	6.83	5.43	26.84	339.52
WRR-XII																																						**3,923**
Bukidnon	0.606	34.58	35.46	25.88	26.96	32.90	12.77	2.70	5.19	2.19	3.14			0.00	0.00	3.47	11.90	4.79	5.79	1.78	9.05	6.88	14.54	21.66	13.94	10.53	0.00	0.00	0.00	0.00	0.00	0.00	8.04	8.14	13.85	27.85	9.49	353.47
Lanao del Norte	0.918	9.88	7.19	7.33	8.03	5.06	6.90	0.00	9.53	5.17	0.00	0.02				3.68	3.89	2.72	11.41	4.67	3.56	8.21	13.21	8.63	10.01	1.54	2.28	0.00	0.00	0.00	0.00	1.24	0.00	11.51	10.74	11.82	6.58	174.81
Misamis Oriental	0.001	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00						0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00		0.00	0.01	0.01	0.00	0.00	0.01	0.13
Davao del Norte	0.004	0.04	0.05	0.07	0.07	0.12	0.11	0.12	0.06	0.00						0.00	0.04	0.07	0.04	0.05	0.08	0.09	0.08	0.11	0.08	0.07	0.01	0.00	0.00	0.00		0.00	0.03	0.06	0.01	0.09	0.12	1.68
Davao del Sur	0.002	0.02	0.06	0.07	0.05	0.02	0.04	0.03	0.01	0.00						0.01	0.04	0.04	0.03	0.04	0.03	0.05	0.02	0.06	0.03	0.01	0.02	0.00	0.00	0.00		0.01	0.03	0.06	0.06	0.05	0.03	0.92
Sarangani	0.131	0.67	0.00	0.08	0.00	0.00		0.00	0.67	0.96	0.53	1.04	1.57	0.87	0.61	1.38	1.22	0.72	0.35	0.00	0.00	0.08	0.15	0.00		0.00	0.11	0.38	0.40	0.95	0.65	0.64	0.57	0.46	0.79	0.63	0.15	16.62
South Cotabato	0.660	27.81	20.27	0.00	6.19	0.50		13.56	5.47	37.79	20.90	52.57	61.78	39.03	33.25	25.24	18.64	22.60	13.67	0.00	0.00	0.00	0.00	0.00		0.00	11.37	29.61	7.87	21.81	24.45	32.59	25.13	26.01	28.95	23.89	37.29	668.25
North Cotabato	0.962	69.76	19.16	0.00	0.00	0.00		32.20	32.05	48.83	91.64	#####	#####	76.99	56.02	70.00	28.51	29.19	65.25	17.89	0.00	0.52	0.00	0.00		0.00	21.64	42.79	12.81	61.96	62.62	64.95	52.00	65.46	42.74	65.28	93.92	1,457.13
Sultan Kudarat	0.948	27.88	2.97	0.00	0.00	0.00		0.00	31.50	45.25	12.97	47.16	74.07	37.40	16.74	65.29	38.72	19.05	1.59	0.00	0.00	0.00	7.02	0.00		0.00	0.00	5.83	12.19	30.42	17.66	19.09	8.94	40.08	33.34	40.08	8.30	643.55
Agusan del Sur	0.002	0.09	0.09	0.10	0.10	0.09	0.07	0.07	0.04	0.00						0.00	0.05	0.07	0.04	0.00	0.03	0.05	0.03	0.04	0.04	0.03	0.02	0.00	0.00	0.00		0.00	0.01	0.05	0.03	0.01	0.02	1.18
Lanao del Sur	1.000	18.32	4.02	0.00	0.00	0.00		0.95	0.64	0.15	0.20	2.28	2.82	2.25	1.10	1.51	0.09	1.05	0.66	0.00	0.00	0.00	0.00	0.00		0.00	0.00	2.85	0.00	9.14	8.46	9.21	4.45	9.13	11.46	15.46	24.65	130.83
Maguindanao	1.000	47.98	15.88	0.00	0.00	0.00		2.31	2.34	1.93	2.78	6.98	7.81	5.66	4.70	3.18	1.75	1.70	3.57	2.37	0.00	0.49	0.00	0.00		0.00	14.48	29.29	0.00	41.82	36.90	45.57	29.85	35.47	24.79	40.90	64.18	474.71
Total	80.000																																					**38,774**

Suorce: JICA Survey Team

Table F 46 Irrigation Water Demands of Groundwater Systems by WRR in 2030
(Based on Irrigated Areas Projected in Consideration of NIA Financial Program)

(Unit: MCM)

Region/	Area	Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			Annual
Province	Rate	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
WRR-I																																						**79**
Abra	0.991	0.06	0.06	0.07	0.06	0.06	0.05	0.05	0.03	0.00							0.05	0.10	0.13	0.07	0.02	0.04	0.05	0.04	0.04	0.05	0.10	0.13	0.05	0.00	0.00	0.03	0.05	0.07	0.06	0.00	0.06	1.56
Apayao	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
Benguet	0.467	0.06	0.06	0.07	0.07	0.06	0.05	0.05	0.03	0.01			0.00	0.05	0.05	0.03	0.03	0.04	0.03	0.03	0.02	0.01	0.02	0.02	0.00	0.00	0.00					0.03	0.05	0.01	0.06	0.05	0.03	1.01
Kalinga	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
Mt. Province	0.140	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Ilocos Norte	0.984	0.04	0.05	0.05	0.05	0.04	0.02	0.02	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.05	0.02	0.05	0.00	0.05	0.47
Ilocos Sur	1.000	0.99	1.01	1.09	1.05	0.93	0.53	0.42	0.07									0.00	1.08	0.54	1.40	0.55	0.85	0.85	2.08	0.86	0.64	1.28	0.00	0.64	0.08	0.00	1.04	1.31	1.03	0.84	1.00	22.17
La Union	0.947	2.96	3.01	3.25	3.12	2.78	1.58	1.26	0.22									0.12	1.40	3.22	1.54	1.52	0.76	1.78	1.36	1.77	0.08	1.92	2.45	0.00	0.00	1.71	3.13	3.91	3.08	2.51	2.99	53.43
WRR-II																																						**1,176**
Abra	0.009	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Apayao	0.997	0.91	0.92	1.00	0.96	0.93	0.69	0.56	0.39	0.08							0.00	0.75	0.83	0.64	0.54	0.51	0.46	0.53	0.31	0.26	0.39	0.80	0.17	0.27	0.03	0.40	0.00	0.00	0.00	0.76	0.91	15.00
Benguet	0.007	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	0.00	0.02
Ifugao	0.993			0.04	0.05	0.10	0.06	0.08	0.09	0.09	0.11	0.08	0.07	0.09	0.05	0.04	0.00	0.00				0.00	0.05	0.03	0.01	0.00	0.00	0.03	0.00	0.05	0.05	0.01	0.03	0.00	0.00	0.00		1.22
Kalinga	0.994	0.45	0.45	0.49	0.47	0.46	0.34	0.36	0.19	0.04							0.00	0.23	0.27	0.20	0.07	0.21	0.11	0.21	0.15	0.19	0.00	0.21	0.27	0.00		0.20	0.39	0.51	0.44	0.38	0.45	7.74
Mt. Province	0.858	0.02	0.02	0.00	0.01	0.01	0.00							0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.02	0.01	0.00	0.00	0.01	0.01	0.01	0.02	0.26
Ilocos Norte	0.016	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Batanes	1.000	0.29	0.31	0.40	0.38	0.36	0.27	0.24	0.05								0.12	0.86	0.56	0.28	0.60	0.71	0.48	0.49	0.33	0.41	0.57	0.31	0.27	0.00	0.00	0.10	0.47	0.38	0.02	0.32	0.38	9.96
Cagayan	1.000	39.63	48.47	64.20	61.72	48.61	44.17	47.10	25.10	0.00							23.33	67.02	67.88	54.44	53.80	46.73	36.95	40.91	28.57	43.92	55.78	19.68	0.00	0.00	0.00	0.00	54.97	70.62	31.15	14.80	47.35	1,136.88
Isabela	1.000	0.14	0.10	0.16	0.15	0.15	0.11	0.13	0.09	0.00	0.02	0.00					0.00	0.11	0.09	0.11	0.10	0.05	0.10	0.06	0.06	0.03	0.00	0.10	0.00	0.00	0.00	0.05	0.00	0.02	0.05	0.02	0.13	2.14
Nueva Vizcaya	0.873	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quirino	0.997	0.12	0.15	0.13	0.16	0.15	0.11	0.12	0.06	0.00							0.03	0.17	0.15	0.12	0.04	0.05	0.06	0.07	0.05	0.06	0.06	0.00	0.04	0.00	0.00	0.07	0.06	0.18	0.15	0.06	0.15	2.55
Aurora	0.410	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00
Nueva Ecija	0.005	0.01	0.02	0.02	0.01	0.02	0.01	0.02	0.01	0.01	0.00	0.00	0.00			0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.02	0.01	0.29
WRR-III																																						**936**
Benguet	0.526	0.07	0.07	0.08	0.08	0.07	0.05	0.06	0.03	0.01			0.00	0.05	0.06	0.04	0.03	0.04	0.03	0.03	0.02	0.01	0.02	0.02	0.00	0.00	0.00					0.03	0.06	0.01	0.07	0.06	0.04	1.14
Ifugao	0.007			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.01
Mt. Province	0.002	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
La Union	0.053	0.17	0.17	0.18	0.17	0.16	0.09	0.07	0.01									0.01	0.08	0.18	0.09	0.09	0.04	0.10	0.08	0.10	0.00	0.11	0.14	0.00	0.00	0.10	0.17	0.22	0.17	0.14	0.17	2.99
Pangasinan	1.000	29.75	30.72	33.79	32.92	30.48	19.50	20.17	12.40	0.00	0.00							0.00	0.00	9.62	8.80	17.24	21.16	15.79	15.92	16.17	25.86	10.97	22.80	0.00	18.81	18.63	23.88	26.43	32.07	34.97	29.44	558.29
Nueva Vizcaya	0.127	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quirino	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Aurora	0.548	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00
Bataan	1.000	0.34	0.35	0.37	0.36	0.35	0.26	0.27	0.14	0.03								0.00	0.10	0.18	0.20	0.16	0.12	0.14	0.30	0.26	0.10	0.11	0.08	0.15	0.00	0.04	0.25	0.24	0.35	0.28	0.24	5.77
Bulacan	0.978	1.75	1.78	1.92	1.85	1.19	1.32	1.40	0.75	0.00								0.63	1.36	0.80	1.13	0.00	0.85	1.13	0.42	0.86	2.38	0.61	0.47	0.00	0.15	0.00	0.55	2.04	0.76	0.83	1.74	28.67
Nueva Ecija	0.994	1.84	3.21	3.65	2.90	3.65	2.81	3.50	1.71	2.24	0.52	0.78	0.15			0.30	0.06	2.28	0.27	1.50	2.38	0.34	1.06	2.11	1.84	0.28	1.02	0.45	2.40	0.31	0.00	1.53	2.01	2.22	2.77	3.16	2.66	57.91
Pampanga	1.000	3.24	3.31	3.57	3.44	3.32	2.46	2.62	1.40	0.27								0.35	2.15	3.55	1.99	1.75	1.32	0.29	1.11	2.76	1.39	0.73	1.85	1.00	1.41	1.53	2.93	3.79	3.18	2.70	3.23	62.62
Tarlac	1.000	8.97	9.14	9.86	9.51	9.18	6.80	7.25	3.86	0.74								0.84	6.61	7.69	7.44	1.95	0.00	3.46	8.75	5.97	2.58	0.54	1.20	2.71	1.01	2.99	9.22	11.59	9.17	7.46	6.60	163.10
Zambales	1.000	2.99	3.04	3.28	3.16	3.05	2.26	2.40	1.28	0.00								0.00	2.33	3.45	1.76	1.08	2.80	1.36	0.39	1.90	1.62	0.06	2.23	1.36	0.00	0.00	2.06	3.43	2.32	2.49	2.97	55.07
Rizal	0.021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.07

WRR-IV																																						**181**
Aurora	0.042	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00
Bulacan	0.022	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.02	0.00								0.01	0.03	0.02	0.03	0.00	0.02	0.03	0.01	0.02	0.05	0.01	0.01	0.00	0.00	0.00	0.01	0.05	0.02	0.02	0.04	0.64
Nueva Ecija	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
Batangas	1.000	0.27	0.28	0.41	0.39	0.38	0.28	0.30	0.16	0.03				0.07	0.37	0.49	0.25	0.16	0.33	0.01	0.36	0.18	0.17	0.10	0.02	0.00	0.00	0.00				0.00	0.22	0.25	0.32	0.06	0.37	6.21
Cavite	1.000	0.13	0.13	0.14	0.13	0.13	0.10	0.10	0.05	0.01				0.14	0.30	0.32	0.05	0.00	0.16	0.08	0.13	0.28	0.11	0.22	0.34	0.08	0.00	0.00				0.00	0.01	0.04	0.11	0.11	0.05	3.45
Laguna	1.000	0.46	0.47	0.50	0.48	0.47	0.35	0.37	0.20	0.00				0.15	0.16	0.29	0.18	0.28	0.16	0.16	0.19	0.16	0.18	0.14	0.01	0.00	0.00	0.00				0.00	0.00	0.24	0.09	0.10	0.46	6.23
Quezon	0.947	0.09	1.46	1.29	1.51	1.00	1.08	0.86	0.04	0.12				0.15	0.81	1.43	0.81	0.93	0.37	0.18	0.66	0.54	0.99	1.41	0.42	0.00	0.00	0.00				0.38	0.30	0.80	0.45	0.79	0.19	19.07
Rizal	0.979	0.22	0.06	0.16	0.23	0.22	0.16	0.17	0.00	0.02				0.00	0.07	0.23	0.12	0.03	0.04	0.09	0.12	0.11	0.09	0.09	0.00	0.04	0.00	0.00				0.00	0.13	0.09	0.19	0.11	0.22	3.04
Marinduque	1.000	0.23	0.12	0.37	0.38	0.27	0.30	0.43	0.41	0.41	0.28	0.06	0.03	0.13	0.41	0.58	0.20	0.16	0.22	0.10	0.36	0.24	0.26	0.22	0.12	0.04	0.00	0.01							0.18	0.05	0.46	7.05
Occidental Mindoro	1.000	5.05	5.15	5.56	5.33	5.14	3.81	4.03	2.15	0.41								0.00	3.54	6.58	2.25	2.99	0.00	0.25	3.12	3.19	1.54	0.48	4.48	0.00	0.98	1.04	1.02	6.54	5.18	2.72	4.09	86.62
Oriental Mindoro	1.000	1.52	1.47	1.76	1.82	1.80	1.46	2.04	1.60	1.29	1.36	0.06	0.13	0.78	0.45	1.16	0.63	0.30	0.72	0.19	0.83	0.58	0.56	0.30	0.64	0.00	0.12	0.00							0.25	1.12	1.23	26.18
Palawan	1.000	0.87	0.79	0.94	0.98	0.96	0.78	1.09	1.05	1.06	0.72	0.37	0.07	0.82	0.86	1.54	0.95	0.68	0.02	0.45	0.28	0.63	0.76	0.51	0.04	0.01	0.00	0.00							0.46	0.39	0.80	18.89
Romblon	1.000	0.13	0.15	0.17	0.18	0.18	0.14	0.20	0.19	0.20	0.13	0.07	0.01	0.10	0.19	0.27	0.15	0.16	0.07	0.08	0.07	0.05	0.02	0.07	0.08	0.04	0.00	0.00							0.05	0.12	0.22	3.50
WRR-V																																						**68**
Quezon	0.053	0.01	0.08	0.07	0.08	0.06	0.06	0.05	0.00	0.01				0.01	0.05	0.08	0.05	0.05	0.02	0.01	0.04	0.03	0.06	0.08	0.02	0.00	0.00	0.00				0.02	0.02	0.04	0.03	0.04	0.01	1.07
Albay	1.000	0.70	0.13	0.59	0.49	0.56	0.48	0.88	0.81	0.20	0.30	0.05		0.21	0.82	0.61	0.79	0.29	0.59	0.41	0.25	0.22	0.42	0.13	0.27	0.13	0.00	0.00							0.00	0.67	0.32	11.34
Camarines Norte	1.000	0.43	0.21	0.35	0.48	0.23	0.38	0.54	0.40	0.11	0.09	0.03		0.26	0.34	0.45	0.08	0.13	0.23	0.22	0.22	0.12	0.29	0.10	0.13	0.00	0.00	0.00							0.00	0.07	0.47	6.35
Camarines Sur	1.000	1.63	1.81	2.27	2.42	2.97	2.33	3.25	2.99	2.31	1.11	0.00		1.28	2.46	2.50	2.50	2.18	2.08	1.76	0.99	2.07	3.10	1.14	0.92	0.00	0.00	0.00	0.00						0.00	0.75	2.32	49.12
Catanduanes	1.000	0.04	0.01	0.04	0.03	0.02	0.03	0.04	0.02	0.03	0.02	0.00		0.00	0.04	0.04	0.03	0.02	0.03	0.03	0.01	0.02	0.02	0.01	0.03	0.01	0.00	0.00							0.00	0.02	0.02	0.62
Masbate	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00
Sorsogon	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00
WRR-VI																																						**25**
Aklan	1.000	0.20	0.19	0.19	0.12	0.06	0.00							0.06	0.25	0.23	0.14	0.14	0.06	0.12	0.07	0.11	0.07	0.13	0.07	0.06	0.00	0.00	0.00	0.07	0.16	0.04	0.05	0.09	0.08	0.19	0.08	3.05
Antique	1.000	0.08	0.07	0.04	0.04	0.02	0.00	0.00						0.00	0.00	0.57	0.24	0.12	0.00	0.15	0.19	0.18	0.19	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.02	0.02	0.05	0.07	0.07	0.08	2.40
Capiz	1.000	1.03	0.99	0.29	0.63	0.29	0.00							0.85	0.61	1.56	0.54	0.00	0.00	0.01	0.00	0.54	0.76	0.00	0.30	0.00	0.00	0.00	0.00	0.11	0.87	0.22	0.32	0.93	0.45	0.72	0.88	12.89
Guimaras	1.000	0.07	0.04	0.06	0.04	0.02	0.00							0.03	0.10	0.27	0.13	0.09	0.04	0.02	0.04	0.08	0.10	0.09	0.13	0.00	0.00	0.00	0.00	0.00	0.06	0.03	0.03	0.00	0.07	0.03	0.07	1.65
Iloilo	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					0.53	0.09	0.86	0.47	0.33	0.20	0.23	0.00	0.70	0.96	0.00	0.48	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.92
Negros Occidental	0.924	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Negros Oriental	0.231	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WRR-VII																																						**22**
Negros Occidental	0.076	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bohol	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cebu	1.000	1.23	1.21	0.71	0.86	0.50	0.00	0.00								0.65	0.56	1.56	1.28	1.45	0.40	0.73	0.60	1.22	1.47	1.39	0.00	0.00	0.00		0.40	1.11	1.04	0.71	0.47	1.10	1.00	21.66
Negros Oriental	0.769	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siquijor	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00								0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WRR-VIII																																						**1**
Biliran	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00
Northern Leyte	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00
Southern Leyte	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00
Northern Samar	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00
Weatern Samar	1.000	0.00	0.08	0.03	0.08	0.08	0.06	0.03	0.02	0.01	0.04	0.07	0.08	0.07	0.01	0.04	0.03	0.01	0.03	0.02	0.02	0.03	0.00									0.00	0.02	0.06	0.02	0.04	0.03	1.00
Eastern Samar	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00
WRR-IX																																						**5**
Zamboanga del Norte	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zamboanga del Sur	1.000	0.11	0.11	0.11	0.08	0.06	0.03	0.02	0.00		0.05	0.09	0.10	0.11	0.11	0.06	0.05	0.04	0.03	0.05	0.01	0.05	0.01	0.00	0.00	0.00			0.00	0.00	0.03	0.02	0.06	0.03	0.04	0.04	0.05	1.55
Zamboanga Sibugay	1.000	0.07	0.08	0.07	0.08	0.06	0.03	0.01	0.00		0.05	0.04	0.04	0.04	0.08	0.07	0.07	0.05	0.06	0.03	0.05	0.04	0.05	0.00	0.00	0.00			0.00	0.00	0.03	0.05	0.06	0.01	0.03	0.11	0.07	1.43
Misamis Occidental	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Basilan	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulu	1.000	0.21	0.22	0.24	0.15	0.22	0.16	0.13	0.09	0.02						0.01	0.01	0.03	0.01	0.01	0.02	0.01	0.01	0.02	0.02	0.02	0.02	0.01	0.00	0.00		0.10	0.07	0.13	0.21	0.18	0.04	2.38
Tawi-Tawi	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00

WRR-X																																							**4**
Bukidnon	0.348	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Camiguin	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lanao del Norte	0.082	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
Misamis Oriental	0.999	0.09	0.06	0.06	0.04	0.06	0.05	0.09	0.00	0.00						0.03	0.03	0.09	0.06	0.05	0.04	0.09	0.07	0.02	0.07	0.05	0.05	0.04	0.00	0.00		0.03	0.07	0.10	0.05	0.06	0.11	1.56
Compostela Valley	0.523	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Norte	0.007	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao Oriental	0.051	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agusan del Norte	0.973	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agusan del Sur	0.889	0.12	0.13	0.14	0.13	0.12	0.09	0.10	0.05	0.00						0.00	0.17	0.25	0.16	0.00	0.10	0.17	0.10	0.16	0.13	0.11	0.06	0.00	0.00	0.00		0.00	0.02	0.07	0.04	0.02	0.02	2.46
Dinagat Islands	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Surigao del Norte	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Surigao del Sur	0.104	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.03
WRR-XI																																							**3**
Bukidnon	0.046	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Compostela Valley	0.477	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Norte	0.989	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Sur	0.998	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao Oriental	0.949	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sarangani	0.869	0.06	0.00	0.01	0.00	0.00		0.00	0.05	0.08	0.04	0.08	0.12	0.07	0.05	0.11	0.10	0.06	0.03	0.00	0.00	0.01	0.01	0.00		0.00	0.01	0.03	0.03	0.08	0.05	0.05	0.05	0.04	0.07	0.05	0.01	1.34
South Cotabato	0.340	0.01	0.00	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.12
North Cotabato	0.038	0.03	0.01	0.00	0.00	0.00		0.01	0.01	0.02	0.04	0.05	0.05	0.03	0.02	0.03	0.01	0.01	0.03	0.01	0.00	0.00	0.00	0.00		0.00	0.01	0.02	0.01	0.03	0.03	0.03	0.02	0.03	0.02	0.03	0.04	0.62
Sultan Kudarat	0.052	0.02	0.00	0.00	0.00	0.00		0.00	0.02	0.03	0.01	0.03	0.05	0.02	0.01	0.04	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.01	0.02	0.01	0.01	0.01	0.03	0.02	0.03	0.01	0.43
Agusan del Norte	0.027	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agusan del Sur	0.109	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.00						0.00	0.02	0.03	0.02	0.00	0.01	0.02	0.01	0.02	0.02	0.01	0.01	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.00	0.00	0.30
Surigao del Sur	0.896	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.02	0.04	0.01	0.01	0.02	0.03	0.02	0.04	0.01	0.02	0.03	0.01	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.25
WRR-XII																																							**25**
Bukidnon	0.606	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lanao del Norte	0.918	0.02	0.01	0.01	0.02	0.01	0.01	0.00	0.02	0.01	0.00	0.00				0.01	0.01	0.00	0.02	0.01	0.01	0.01	0.02	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.01	0.31
Misamis Oriental	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Norte	0.004	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Sur	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sarangani	0.131	0.01	0.00	0.00	0.00	0.00		0.00	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.20
South Cotabato	0.660	0.01	0.01	0.00	0.00	0.00		0.00	0.00	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.24
North Cotabato	0.962	0.76	0.21	0.00	0.00	0.00		0.35	0.35	0.53	0.99	1.37	1.14	0.83	0.60	0.75	0.31	0.31	0.70	0.19	0.00	0.01	0.00	0.00		0.00	0.23	0.46	0.14	0.67	0.68	0.70	0.56	0.71	0.46	0.71	1.02	15.74
Sultan Kudarat	0.948	0.38	0.04	0.00	0.00	0.00		0.00	0.35	0.50	0.14	0.52	0.82	0.42	0.19	0.73	0.43	0.21	0.02	0.00	0.00	0.00	0.08	0.00		0.00	0.00	0.08	0.17	0.42	0.24	0.26	0.12	0.55	0.45	0.55	0.11	7.78
Agusan del Sur	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.01
Lanao del Sur	1.000	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maguindanao	1.000	0.12	0.04	0.00	0.00	0.00		0.01	0.01	0.00	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00		0.00	0.04	0.07	0.00	0.11	0.09	0.12	0.08	0.09	0.06	0.10	0.16	1.21
Total	80.000																																					**2,525**

Source: JICA Survey Team

Table F 47 Irrigation Water Demands of All Systems by WRR in 2040
(Based on Irrigated Areas Projected in Consideration of NIA Financial Program)

(Unit: MCM)

Region/	Area	Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			Annual
Province	Rate	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
WRR-I																																						**1,909**
Abra	0.991	20.91	21.31	23.01	22.18	21.43	15.88	16.90	9.01	0.00							8.23	16.08	21.36	11.54	2.67	5.95	7.44	6.85	7.28	7.69	16.06	21.00	7.97	0.00	0.00	9.04	17.96	23.56	20.27	1.28	20.94	383.81
Apayao	0.003	0.04	0.04	0.04	0.04	0.04	0.03	0.02	0.02	0.00							0.00	0.03	0.04	0.03	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.03	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.03	0.04	0.64
Benguet	0.467	7.98	8.13	8.78	8.45	8.17	6.05	6.43	3.43	0.65			0.00	5.53	5.89	3.98	3.02	4.23	3.22	3.10	2.00	1.29	2.45	1.92	0.00	0.00	0.00					3.48	6.90	1.57	7.76	6.72	4.19	125.32
Kalinga	0.006	0.22	0.23	0.24	0.23	0.23	0.17	0.18	0.10	0.02							0.00	0.12	0.14	0.11	0.04	0.11	0.06	0.11	0.08	0.10	0.00	0.11	0.14	0.00	0.00	0.10	0.19	0.25	0.22	0.19	0.22	3.91
Mt. Province	0.140	1.76	1.70	0.25	1.19	0.68	0.04							1.40	0.82	1.80	1.98	1.01	1.41	1.01	0.00	0.17	0.10	0.74	0.65	0.20	0.00	0.00	0.48	1.91	1.03	0.03	0.00	1.11	0.53	0.91	1.91	24.84
Ilocos Norte	0.984	33.27	33.91	36.60	35.25	31.38	17.86	14.32	2.48									17.05	45.16	45.56	52.05	24.41	20.71	21.11	38.60	2.85	22.43	6.06	0.00	0.00	0.00	18.94	34.83	15.39	34.38	3.62	33.51	641.74
Ilocos Sur	1.000	22.47	22.90	24.72	23.73	21.13	12.03	9.60	1.66									0.00	21.04	10.58	27.16	10.66	16.56	16.47	40.44	16.68	12.39	24.85	0.00	12.42	1.47	0.00	23.64	29.59	23.34	19.11	22.70	467.36
La Union	0.947	14.19	14.46	15.61	14.98	13.34	7.59	6.06	1.05									0.62	7.16	16.45	7.84	7.76	3.88	9.05	6.93	9.05	0.43	9.78	12.48	0.00	0.00	8.18	15.00	18.76	14.77	12.07	14.33	261.84
WRR-II																																						**9,628**
Abra	0.009	0.19	0.19	0.21	0.20	0.19	0.14	0.15	0.08	0.00							0.07	0.15	0.19	0.10	0.02	0.05	0.07	0.06	0.07	0.07	0.15	0.19	0.07	0.00	0.00	0.08	0.16	0.21	0.18	0.01	0.19	3.49
Apayao	0.997	12.75	13.00	14.03	13.54	13.09	9.71	7.87	5.54	1.06							0.00	10.58	11.83	9.04	7.60	7.28	6.53	7.56	4.40	3.62	5.49	11.31	2.43	3.86	0.46	5.65	0.00	0.00	0.00	10.76	12.81	211.78
Benguet	0.007	0.12	0.12	0.13	0.13	0.12	0.09	0.10	0.05	0.01			0.00	0.08	0.09	0.06	0.05	0.06	0.05	0.05	0.03	0.02	0.04	0.03	0.00	0.00	0.00					0.05	0.10	0.02	0.12	0.10	0.06	1.88
Ifugao	0.993			10.03	12.62	23.53	15.66	20.17	21.97	21.94	25.94	18.34	17.60	20.95	13.12	8.93	0.00	0.00				0.00	14.25	9.15	3.90	1.02	0.00	6.87	0.45	14.49	14.02	1.78	9.08	0.00	0.00	0.00		305.81
Kalinga	0.994	36.65	37.32	40.32	38.87	37.61	27.94	29.74	15.86	3.03							0.25	20.65	23.56	17.63	6.36	18.14	9.73	18.51	12.88	16.63	0.00	18.13	23.79	0.00		16.17	32.14	42.15	36.07	31.18	37.00	648.30
Mt. Province	0.858	10.80	10.42	1.52	7.28	4.16	0.26							8.58	5.04	11.03	12.14	6.18	8.65	6.16	0.00	1.06	0.63	4.52	4.00	1.23	0.00	0.00	2.94	11.73	6.31	0.20	0.00	6.81	3.26	5.60	11.73	152.24
Ilocos Norte	0.016	0.54	0.55	0.60	0.57	0.51	0.29	0.23	0.04									0.28	0.73	0.74	0.85	0.40	0.34	0.34	0.63	0.05	0.36	0.10	0.00	0.00	0.00	0.31	0.57	0.25	0.56	0.06	0.54	10.43
Batanes	1.000	0.29	0.31	0.40	0.38	0.36	0.27	0.24	0.05								0.12	0.86	0.56	0.28	0.60	0.71	0.48	0.49	0.33	0.41	0.57	0.31	0.27	0.00	0.00	0.10	0.47	0.38	0.02	0.32	0.38	9.96
Cagayan	1.000	#####	#####	#####	#####	#####	#####	#####	73.85	0.00							66.26	#####	#####	#####	#####	#####	#####	#####	81.15	#####	#####	55.91	0.00	0.00	0.00	0.00	#####	#####	91.66	43.56	#####	3,290.48
Isabela	1.000	#####	#####	#####	#####	#####	#####	#####	#####	0.00	34.83	0.26					2.55	#####	#####	#####	#####	85.49	#####	#####	#####	51.99	0.00	#####	0.00	0.00	0.00	94.54	0.00	29.35	91.92	36.51	#####	3,735.56
Nueva Vizcaya	0.873	45.35	46.20	49.89	48.13	46.53	34.51	36.78	19.61	3.74							7.47	53.98	58.42	7.24	12.91	23.75	13.11	5.88	21.47	12.89	9.94	0.00	0.00	13.52	0.00	0.00	44.24	56.47	28.20	0.00	5.57	705.82
Quirino	0.997	18.90	24.47	20.60	25.44	24.59	18.22	19.42	10.35	0.00							4.90	28.14	23.91	19.34	6.32	8.25	9.82	10.79	7.60	9.06	9.41	0.00	6.50	0.00	0.00	11.89	9.72	29.42	24.08	9.03	24.04	414.20
Aurora	0.410	5.44	4.13	4.73	4.59	5.81	4.34	7.03	8.63	6.78	6.02	0.00	0.00				0.00	4.17	6.77	3.92	6.80	3.15	3.09	6.05	6.47	4.70	0.25	2.15	0.00	0.13	0.00				3.19	6.34	5.48	120.16
Nueva Ecija	0.005	0.58	1.01	1.15	0.91	1.15	0.89	1.10	0.54	0.70	0.16	0.24	0.05			0.09	0.02	0.72	0.09	0.47	0.75	0.11	0.33	0.67	0.58	0.09	0.32	0.14	0.76	0.10	0.00	0.48	0.63	0.70	0.87	1.00	0.84	18.23
WRR-III																																						**11,106**
Benguet	0.526	8.99	9.16	9.89	9.52	9.20	6.82	7.24	3.86	0.74			0.00	6.22	6.63	4.48	3.40	4.77	3.63	3.49	2.25	1.46	2.76	2.16	0.00	0.00	0.00					3.92	7.77	1.77	8.74	7.57	4.72	141.16
Ifugao	0.007			0.07	0.09	0.17	0.11	0.14	0.15	0.15	0.18	0.13	0.12	0.15	0.09	0.06	0.00	0.00				0.00	0.10	0.06	0.03	0.01	0.00	0.05	0.00	0.10	0.10	0.01	0.06	0.00	0.00	0.00		2.16
Mt. Province	0.002	0.03	0.02	0.00	0.02	0.01	0.00							0.02	0.01	0.03	0.03	0.01	0.02	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.03	0.01	0.00	0.00	0.02	0.01	0.01	0.03	0.35
La Union	0.053	0.79	0.81	0.87	0.84	0.75	0.43	0.34	0.06									0.03	0.40	0.92	0.44	0.43	0.22	0.51	0.39	0.51	0.02	0.55	0.70	0.00	0.00	0.46	0.84	1.05	0.83	0.68	0.80	14.65
Pangasinan	1.000	#####	#####	#####	#####	#####	92.77	95.94	59.00	0.00	0.00							0.00	0.00	51.55	47.15	92.38	#####	84.58	85.30	86.61	#####	58.78	#####	0.00	#####	88.62	#####	#####	#####	#####	#####	2,765.73
Nueva Vizcaya	0.127	6.60	6.72	7.26	7.00	6.77	5.02	5.35	2.85	0.54							1.09	7.85	8.50	1.05	1.88	3.46	1.91	0.85	3.12	1.88	1.45	0.00	0.00	1.97	0.00	0.00	6.44	8.22	4.10	0.00	0.81	102.68
Quirino	0.003	0.06	0.07	0.06	0.08	0.07	0.05	0.06	0.03	0.00							0.01	0.08	0.07	0.06	0.02	0.02	0.03	0.03	0.02	0.03	0.03	0.00	0.02	0.00	0.00	0.04	0.03	0.09	0.07	0.03	0.07	1.25
Aurora	0.548	7.26	5.52	6.33	6.14	7.77	5.80	9.39	11.53	9.07	8.04	0.00	0.00				0.00	5.58	9.05	5.23	9.09	4.21	4.14	8.09	8.64	6.28	0.34	2.88	0.00	0.18	0.00				4.27	8.48	7.32	160.61
Bataan	1.000	13.56	13.83	14.92	14.32	13.83	10.24	10.86	5.78	1.10								0.00	4.21	7.40	7.98	6.52	4.95	5.68	12.06	10.51	4.19	4.46	3.16	5.93	0.00	1.66	9.95	9.43	13.87	11.31	9.66	231.38
Bulacan	0.978	35.05	35.73	38.56	37.09	23.87	26.52	28.19	15.02	0.00								14.28	30.70	17.94	25.50	0.00	19.22	25.49	9.40	19.42	53.71	13.72	10.51	0.00	3.44	0.00	11.10	41.05	15.20	16.67	34.91	602.30
Nueva Ecija	0.994	#####	#####	#####	#####	#####	#####	#####	#####	#####	32.77	48.56	9.21			18.82	4.04	#####	17.19	93.66	#####	21.57	66.47	#####	#####	17.59	63.70	28.08	#####	19.52	0.00	95.82	#####	#####	#####	#####	#####	3,624.57
Pampanga	1.000	61.91	63.11	68.10	65.58	63.33	46.89	49.98	26.63	5.07								5.14	31.28	51.65	29.03	25.42	19.23	4.20	16.19	40.17	20.29	10.61	26.85	14.54	20.46	29.20	55.97	72.34	60.64	51.60	61.56	1,096.96
Tarlac	1.000	99.22	#####	#####	#####	#####	75.24	80.27	42.76	8.13								10.36	81.06	94.30	91.23	23.98	0.00	42.51	#####	73.20	31.60	6.66	14.69	33.29	12.45	33.06	#####	#####	#####	82.59	73.04	1,865.95
Zambales	1.000	24.98	25.47	27.47	26.45	25.53	18.89	20.09	10.70	0.00								0.00	23.28	34.45	17.51	10.82	27.93	13.61	3.88	18.93	16.17	0.62	22.23	13.58	0.00	0.00	17.19	28.67	19.37	20.80	24.84	493.45
Rizal	0.021	0.17	0.04	0.13	0.18	0.18	0.13	0.14	0.00	0.01				0.00	0.06	0.19	0.10	0.03	0.03	0.07	0.10	0.09	0.07	0.07	0.00	0.03	0.00	0.00				0.00	0.10	0.07	0.15	0.09	0.18	2.41

WRR-IV																																						**3,656**
Aurora	0.042	0.56	0.42	0.48	0.47	0.60	0.44	0.72	0.88	0.69	0.62	0.00	0.00				0.00	0.43	0.69	0.40	0.70	0.32	0.32	0.62	0.66	0.48	0.03	0.22	0.00	0.01	0.00				0.33	0.65	0.56	12.31
Bulacan	0.022	0.79	0.80	0.87	0.83	0.54	0.60	0.63	0.34	0.00								0.32	0.69	0.40	0.57	0.00	0.43	0.57	0.21	0.44	1.21	0.31	0.24	0.00	0.08	0.00	0.25	0.92	0.34	0.37	0.79	13.55
Nueva Ecija	0.001	0.12	0.20	0.23	0.18	0.23	0.18	0.22	0.11	0.14	0.03	0.05	0.01			0.02	0.00	0.14	0.02	0.09	0.15	0.02	0.07	0.13	0.12	0.02	0.06	0.03	0.15	0.02	0.00	0.10	0.13	0.14	0.17	0.20	0.17	3.65
Batangas	1.000	6.73	6.83	10.07	9.65	9.32	6.90	7.32	3.90	0.74				1.39	6.83	9.02	4.55	3.03	6.08	0.21	6.60	3.43	3.11	1.86	0.29	0.00	0.00	0.00				0.00	5.44	6.18	7.96	1.40	9.09	137.93
Cavite	1.000	11.00	11.21	12.10	11.62	11.22	8.31	8.83	4.70	0.89				5.03	10.75	11.22	1.68	0.05	5.63	2.85	4.60	9.74	3.85	7.63	12.17	2.94	0.00	0.00				0.00	0.72	3.25	9.59	9.17	4.68	185.43
Laguna	1.000	23.68	24.14	26.04	24.99	24.14	17.87	18.98	10.11	0.00				9.25	9.69	17.53	11.16	17.47	9.67	9.87	11.59	9.54	10.83	8.57	0.72	0.00	0.00	0.00				0.00	0.00	12.59	4.45	5.16	23.58	341.64
Quezon	0.947	1.76	27.36	24.10	28.27	18.68	20.22	16.00	0.81	2.17				3.03	16.20	28.78	16.25	18.63	7.46	3.63	13.26	10.92	19.83	28.25	8.40	0.00	0.00	0.00				7.07	5.69	14.99	8.39	14.76	3.63	368.53
Rizal	0.979	8.07	2.07	6.03	8.51	8.22	6.09	6.46	0.00	0.66				0.00	2.71	8.63	4.62	1.28	1.57	3.17	4.60	4.07	3.18	3.17	0.00	1.47	0.00	0.00				0.00	4.85	3.47	7.20	4.11	8.22	112.45
Marinduque	1.000	1.84	0.97	2.94	3.06	2.17	2.45	3.41	3.29	3.31	2.28	0.45	0.22	1.05	3.24	4.61	1.63	1.25	1.78	0.84	2.89	1.91	2.10	1.79	0.98	0.30	0.00	0.06							1.45	0.41	3.71	56.39
Occidental Mindoro	1.000	47.81	48.74	52.59	50.38	48.67	36.04	38.14	20.32	3.87								0.00	30.52	56.80	19.39	25.77	0.00	2.20	26.93	27.55	13.28	4.19	38.64	0.00	8.44	9.79	9.65	61.88	49.00	25.76	38.73	795.09
Oriental Mindoro	1.000	46.54	44.93	53.66	55.73	54.99	44.59	62.22	49.01	39.41	41.66	1.71	4.07	26.53	15.49	39.76	21.69	10.32	24.72	6.51	28.19	19.69	19.24	10.13	21.92	0.00	4.13	0.00							7.79	34.22	37.52	826.36
Palawan	1.000	34.33	30.96	37.02	38.38	37.86	30.70	42.72	41.20	41.48	28.39	14.52	2.77	23.74	24.71	44.36	27.35	19.66	0.65	13.10	8.11	18.35	22.04	14.71	1.28	0.43	0.00	0.00							18.02	15.40	31.57	663.80
Romblon	1.000	5.31	5.89	7.04	7.30	7.20	5.84	8.15	7.85	7.91	5.43	2.78	0.53	3.71	7.16	10.18	5.68	6.11	2.77	3.09	2.74	2.07	0.86	2.73	3.03	1.35	0.00	0.00							2.10	4.89	8.83	138.53
WRR-V																																						**3,999**
Quezon	0.053	0.10	1.53	1.35	1.58	1.05	1.13	0.90	0.05	0.12				0.17	0.91	1.61	0.91	1.04	0.42	0.20	0.74	0.61	1.11	1.58	0.47	0.00	0.00	0.00				0.40	0.32	0.84	0.47	0.83	0.20	20.62
Albay	1.000	57.67	10.68	48.43	40.49	45.57	39.55	71.77	66.16	16.78	24.50	3.74		18.49	71.43	52.99	68.77	25.63	51.84	36.16	21.84	19.51	36.88	10.93	23.28	11.08	0.00	0.00							0.00	54.67	26.57	955.40
Camarines Norte	1.000	23.13	11.01	18.76	25.81	12.38	20.65	28.82	21.34	6.02	5.07	1.51		13.99	18.54	24.11	4.50	6.75	12.22	12.03	11.86	6.19	15.39	5.20	6.96	0.00	0.00	0.00							0.00	3.64	25.24	341.11
Camarines Sur	1.000	68.54	76.10	95.31	#####	#####	98.03	#####	#####	97.01	46.74	0.00		49.21	94.38	95.98	96.19	83.86	79.86	67.62	37.94	79.73	#####	43.88	35.18	0.00	0.00	0.00	0.00						0.00	31.36	97.83	1,983.30
Catanduanes	1.000	4.63	0.74	4.98	3.91	2.32	4.14	5.76	2.22	4.09	1.96	0.30		0.00	5.28	5.50	4.04	2.90	4.03	3.43	0.79	2.41	2.88	1.54	4.43	1.18	0.00	0.10							0.00	2.08	3.19	78.86
Masbate	1.000	14.13	18.17	14.55	22.52	22.97	9.35	25.02	6.12	15.79	7.58	1.16		7.77	9.02	24.57	22.07	4.00	10.18	8.16	12.26	9.68	6.59	13.62	9.94	1.75	0.00	0.44							0.00	6.80	27.24	331.46
Sorsogon	1.000	2.58	17.04	16.62	16.33	21.55	7.31	23.55	8.31	16.72	8.03	0.00		1.07	7.26	25.83	15.74	6.59	7.66	3.74	10.17	10.52	6.00	14.16	5.97	0.06	0.00	0.42							0.00	9.57	25.61	288.43
WRR-VI																																						**2,809**
Aklan	1.000	11.92	11.55	11.33	7.39	3.43	0.28							4.17	16.48	15.08	9.60	9.38	4.11	7.66	4.47	7.57	4.87	8.83	4.89	3.72	0.00	0.33	0.00	4.45	9.84	2.68	3.16	5.20	5.08	11.21	4.82	193.49
Antique	1.000	22.57	20.92	12.20	11.62	6.62	0.00	0.02						0.00	0.00	23.13	9.91	5.01	0.00	5.95	7.59	7.46	7.79	6.05	0.00	0.00	0.00	0.00	0.00	0.00	12.46	6.15	6.11	14.12	20.77	21.75	23.93	252.12
Capiz	1.000	12.99	12.49	3.64	8.02	3.70	0.00							10.25	7.36	18.78	6.48	0.00	0.00	0.06	0.00	6.50	9.10	0.00	3.64	0.00	0.00	0.00	0.00	1.39	11.06	2.78	3.98	11.81	5.66	9.09	11.16	159.97
Guimaras	1.000	1.14	0.71	1.08	0.71	0.33	0.00							0.23	0.65	1.80	0.90	0.59	0.29	0.17	0.30	0.50	0.64	0.61	0.86	0.00	0.00	0.00	0.00	0.00	1.03	0.57	0.45	0.00	1.11	0.48	1.23	16.37
Iloilo	1.000	50.11	48.61	26.21	36.69	25.64	12.48	6.71	0.05					29.16	5.02	47.18	25.71	18.24	10.83	12.35	0.00	38.07	52.70	0.00	26.14	3.42	0.00	0.00	0.00	0.00	46.21	20.02	30.96	41.76	26.83	48.12	52.95	742.16
Negros Occidental	0.924	56.69	74.38	73.58	47.53	5.24	1.85							14.19	97.71	95.17	73.21	29.05	67.98	39.79	48.99	66.93	68.03	35.21	42.81	0.60	0.00	0.00	9.81	25.85	34.27	18.15	67.20	71.49	75.06	72.43	49.36	1,362.55
Negros Oriental	0.231	3.99	4.72	4.67	3.02	1.41	0.12							2.45	3.46	7.21	5.23	2.64	2.47	2.67	3.46	2.72	2.33	3.38	2.28	0.24	0.00	0.00	0.36	2.13	4.15	4.65	1.94	3.71	2.41	1.70	2.67	82.18
WRR-VII																																						**1,101**
Negros Occidental	0.076	4.66	6.12	6.05	3.91	0.43	0.15							1.17	8.04	7.83	6.02	2.39	5.59	3.27	4.03	5.50	5.60	2.90	3.52	0.05	0.00	0.00	0.81	2.13	2.82	1.49	5.53	5.88	6.17	5.96	4.06	112.07
Bohol	1.000	28.01	25.75	14.23	15.41	18.47	9.17	16.86	0.00	0.00					0.00	9.78	0.00	0.00	28.43	25.07	16.71	31.41	31.34	11.41	27.09	11.94	6.02	20.45	0.00	0.00	20.71	18.93	23.78	28.77	21.70	36.86	35.23	533.54
Cebu	1.000	10.37	10.18	6.00	7.25	4.21	0.00	0.00								4.63	4.00	11.17	9.14	10.39	2.84	5.23	4.30	8.74	10.52	9.90	0.00	0.00	0.00		3.37	9.35	8.77	5.94	4.00	9.25	8.43	167.99
Negros Oriental	0.769	13.29	15.71	15.54	10.05	4.68	0.39							8.17	11.50	24.01	17.43	8.78	8.21	8.90	11.51	9.06	7.76	11.24	7.59	0.79	0.00	0.00	1.21	7.10	13.80	15.48	6.46	12.35	8.02	5.66	8.89	273.59
Siquijor	1.000	0.38	0.33	0.39	0.34	0.31	0.13	0.03								0.72	1.21	0.86	0.34	0.39	0.70	0.89	1.10	0.63	1.16	0.90	0.28	0.03	0.00		0.29	0.32	0.40	0.23	0.05	0.47	0.54	13.44
WRR-VIII																																						**1,615**
Biliran	1.000	1.94	2.68	5.84	5.58	3.61	3.99	4.20	0.94	0.00						0.76	4.15	3.28	4.03	3.13	4.84	3.24	2.33	2.23	2.56	3.36	0.61	0.57				0.00	3.35	6.23	5.22	4.43	0.02	83.10
Northern Leyte	1.000	69.43	70.79	32.86	39.08	13.29	13.03	0.00	0.00	0.00						20.05	17.02	70.51	53.48	59.84	13.34	17.09	27.77	52.25	59.00	62.41	0.71	21.70				32.56	9.76	29.84	21.05	57.79	27.43	892.11
Southern Leyte	1.000	9.64	9.82	4.67	4.38	4.71	0.00	0.00	0.00	0.77	5.84	11.49	8.77	7.79	4.45	8.72	2.42	7.75	10.71	9.61	3.99	2.31	0.54									4.51	4.41	5.02	2.03	8.02	4.60	146.98
Northern Samar	1.000	6.77	8.30	6.99	12.58	12.15	8.99	6.68	5.05	0.96	7.60	14.96	19.47	14.98	12.64	12.31	13.98	11.86	7.17	4.93	0.39	0.64	0.49									0.00	4.00	2.90	4.97	0.00	5.42	207.17
Weatern Samar	1.000	0.29	9.98	4.01	10.30	9.95	7.36	4.31	2.28	0.79	5.60	11.02	11.97	11.01	1.07	5.97	5.42	2.33	4.58	2.50	3.02	5.06	0.00									0.00	3.02	7.95	2.15	5.30	4.14	141.38
Eastern Samar	1.000	3.99	9.46	5.91	9.75	6.89	6.97	3.29	2.14	0.74	5.71	11.22	10.10	8.97	4.51	6.11	7.10	3.33	5.49	4.13	4.00	4.42	1.56									0.00	2.20	6.68	1.70	4.01	4.06	144.45
WRR-IX																																						**1,506**
Zamboanga del Norte	1.000	18.78	27.73	17.79	14.89	14.64	7.15	3.80	0.03		13.54	17.55	18.17	20.76	31.92	17.62	19.96	15.80	18.09	13.07	16.20	13.16	11.48	0.00	0.00	0.00			0.00	0.00	7.99	6.94	13.81	0.39	3.19	27.49	15.29	407.20
Zamboanga del Sur	1.000	47.60	46.34	46.81	34.97	24.47	11.95	6.33	0.05		19.57	38.74	41.01	48.23	46.98	23.67	20.37	19.25	14.94	21.54	5.14	19.52	3.62	0.00	0.00	0.00			0.00	0.23	14.55	10.09	24.72	12.00	15.11	18.43	21.29	657.51
Zamboanga Sibugay	1.000	10.86	12.93	10.57	12.85	8.99	4.39	2.32	0.02		7.30	6.01	5.89	6.29	11.66	10.44	10.72	7.43	9.04	4.87	7.54	6.10	6.93	0.00	0.00	0.00			0.14	0.00	5.39	7.03	9.12	1.20	4.70	16.84	10.93	218.52
Misamis Occidental	1.000	12.56	12.80	13.81	13.19	12.74	7.13	9.94	5.30	1.01						2.97	8.13	9.60	4.30	4.45	3.66	2.76	5.42	3.35	8.13	6.67	6.33	0.00	0.00	0.00		0.00	0.93	6.87	2.49	0.67	1.21	166.42
Basilan	1.000	0.86	0.88	0.95	0.91	0.88	0.65	0.68	0.36	0.07						0.03	0.09	0.10	0.04	0.04	0.03	0.04	0.06	0.07	0.05	0.03	0.00	0.00	0.00	0.00		0.15	0.39	0.34	0.59	0.53	0.19	9.01
Sulu	1.000	2.83	2.88	3.11	2.03	2.86	2.12	1.72	1.19	0.23						0.11	0.18	0.39	0.16	0.11	0.27	0.16	0.17	0.28	0.22	0.26	0.23	0.16	0.00	0.00		1.31	0.98	1.74	2.76	2.39	0.49	31.31
Tawi-Tawi	1.000	1.19	1.56	1.69	1.24	1.55	0.77	0.70	0.64	0.12						0.06	0.11	0.17	0.11	0.02	0.11	0.09	0.08	0.12	0.13	0.11	0.10	0.07	0.01	0.00		0.71	0.37	1.36	1.07	1.30	0.42	15.97

WRR-X																																						**2,582**
Bukidnon	0.348	25.45	26.10	19.05	19.84	24.21	9.40	1.99	3.82	1.61	2.31			0.00	0.00	2.55	8.76	3.52	4.26	1.31	6.66	5.06	10.70	15.94	10.26	7.75	0.00	0.00	0.00	0.00	0.00	0.00	5.92	5.99	10.20	20.49	6.98	260.12
Camiguin	1.000	0.30	0.32	0.30	0.32	0.74	0.55	0.58	0.31	0.06						0.67	0.77	0.81	0.37	0.52	0.97	0.58	0.69	0.70	0.88	0.74	0.61	0.57	0.00	0.00		0.00	0.65	0.43	0.72	0.21	0.73	15.08
Lanao del Norte	0.082	0.88	0.64	0.66	0.72	0.45	0.62	0.00	0.85	0.46	0.00	0.00				0.33	0.35	0.24	1.02	0.42	0.32	0.73	1.18	0.77	0.90	0.14	0.20	0.00	0.00	0.00	0.00	0.11	0.00	1.03	0.96	1.06	0.59	15.64
Misamis Oriental	0.999	10.49	6.59	7.29	4.83	7.25	5.97	10.29	0.00	0.00						2.97	3.32	9.76	6.98	5.62	4.64	9.51	7.57	2.73	8.20	4.99	5.22	4.49	0.00	0.00		3.52	8.91	12.45	6.37	6.75	12.89	179.62
Compostela Valley	0.523	20.46	19.60	51.59	0.00	47.63	4.87	11.58	0.00	0.00						0.79	24.85	49.97	23.43	15.96	21.12	12.04	23.42	19.66	29.43	27.46	22.22	12.54	0.00	0.00		0.00	8.49	27.03	46.62	11.83	13.84	546.41
Davao del Norte	0.007	0.07	0.09	0.12	0.12	0.21	0.20	0.21	0.11	0.00						0.00	0.06	0.13	0.07	0.09	0.13	0.16	0.15	0.20	0.14	0.13	0.02	0.00	0.00	0.00		0.00	0.06	0.11	0.02	0.16	0.21	2.98
Davao Oriental	0.051	1.01	1.03	1.11	1.06	0.67	0.76	0.80	0.00	0.08						0.26	0.73	0.66	0.44	0.34	0.53	0.58	0.53	0.68	0.80	0.21	0.06	0.00	0.00	0.00		0.00	0.32	0.37	0.11	0.29	0.46	13.89
Agusan del Norte	0.973	30.02	41.52	51.41	49.17	47.49	35.16	24.60	19.73	3.76						8.33	37.50	56.70	17.27	11.72	14.06	4.60	25.90	12.91	27.08	26.08	8.35	0.00	0.00	0.00		0.00	7.16	17.06	6.67	4.23	11.15	599.63
Agusan del Sur	0.889	51.75	52.75	56.92	54.43	52.57	38.92	40.99	21.84	0.00						0.00	27.48	39.53	24.98	0.00	16.28	26.24	16.24	25.26	21.02	17.02	8.86	0.00	0.00	0.00		0.00	7.95	29.81	16.85	7.25	8.94	663.89
Dinagat Islands	1.000	0.58	1.32	0.78	1.36	0.86	0.97	0.41	0.54	0.10						0.64	1.26	0.88	0.82	0.91	0.13	1.59	0.94	0.97	1.55	1.31	0.17	0.13	0.00	0.00		0.00	0.12	0.54	0.61	1.08	0.16	20.76
Surigao del Norte	1.000	5.25	12.39	6.42	9.80	7.26	9.13	6.30	1.48	0.00						6.44	15.37	9.31	8.24	15.50	1.73	15.10	13.12	11.65	19.13	12.53	1.18	1.18	0.00	0.00		0.00	0.00	7.41	3.88	5.81	5.70	211.32
Surigao del Sur	0.104	1.76	1.30	1.68	0.56	3.44	0.00	2.52	0.00	0.00						0.00	2.33	4.13	1.19	0.97	2.00	2.87	1.97	4.70	0.94	2.07	2.95	1.52	0.00	0.00		1.96	2.58	2.72	1.05	0.83	4.12	52.17
WRR-XI																																						**3,031**
Bukidnon	0.046	3.36	3.45	2.52	2.62	3.20	1.24	0.26	0.50	0.21	0.31			0.00	0.00	0.34	1.16	0.47	0.56	0.17	0.88	0.67	1.41	2.11	1.36	1.02	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.79	1.35	2.71	0.92	34.38
Compostela Valley	0.477	18.66	17.87	47.05	0.00	43.44	4.45	10.56	0.00	0.00						0.72	22.66	45.57	21.37	14.56	19.26	10.98	21.36	17.93	26.84	25.05	20.27	11.44	0.00	0.00		0.00	7.74	24.65	42.52	10.79	12.62	498.35
Davao del Norte	0.989	10.03	12.17	16.29	17.21	29.41	28.73	30.30	16.14	0.00						0.00	9.07	18.04	10.21	12.74	18.77	22.93	20.64	28.23	20.20	17.80	3.10	0.00	0.00	0.00		0.00	8.62	15.18	2.88	22.85	29.02	420.57
Davao del Sur	0.998	14.08	36.94	39.86	30.82	12.28	27.25	16.76	7.67	0.00						8.43	22.27	26.13	19.78	25.24	18.27	33.23	10.59	36.66	16.85	5.25	12.92	0.00	0.00	0.00		3.17	19.22	33.66	35.64	30.16	17.76	560.89
Davao Oriental	0.949	18.77	19.14	20.65	19.72	12.51	14.10	14.81	0.00	1.50						4.81	13.62	12.31	8.09	6.30	9.90	10.71	9.94	12.65	14.85	3.95	1.20	0.00	0.00	0.00		0.00	6.04	6.83	2.14	5.42	8.54	258.50
Sarangani	0.869	4.52	0.00	0.56	0.00	0.00		0.00	4.49	6.44	3.57	6.96	10.51	5.85	4.09	9.26	8.17	4.86	2.37	0.00	0.00	0.51	1.00	0.00		0.00	0.71	2.52	2.70	6.40	4.37	4.27	3.80	3.08	5.33	4.26	0.98	111.56
South Cotabato	0.340	19.90	14.50	0.00	4.43	0.36		9.70	3.92	27.03	14.95	37.61	44.20	27.92	23.78	18.06	13.33	16.17	9.78	0.00	0.00	0.00	0.00	0.00		0.00	8.14	21.18	5.63	15.60	17.49	23.31	17.98	18.61	20.71	17.09	26.67	478.05
North Cotabato	0.038	3.93	1.08	0.00	0.00	0.00		1.82	1.81	2.75	5.17	7.17	5.97	4.34	3.16	3.95	1.61	1.65	3.68	1.01	0.00	0.03	0.00	0.00		0.00	1.22	2.41	0.72	3.49	3.53	3.66	2.93	3.69	2.41	3.68	5.30	82.15
Sultan Kudarat	0.052	1.68	0.18	0.00	0.00	0.00		0.00	1.89	2.71	0.78	2.83	4.44	2.24	1.00	3.91	2.32	1.14	0.10	0.00	0.00	0.00	0.42	0.00		0.00	0.00	0.35	0.73	1.83	1.06	1.15	0.54	2.41	2.00	2.41	0.50	38.62
Agusan del Norte	0.027	0.83	1.15	1.43	1.36	1.32	0.98	0.68	0.55	0.10						0.23	1.04	1.57	0.48	0.33	0.39	0.13	0.72	0.36	0.75	0.72	0.23	0.00	0.00	0.00		0.00	0.20	0.47	0.19	0.12	0.31	16.64
Agusan del Sur	0.109	6.34	6.47	6.98	6.67	6.45	4.77	5.03	2.68	0.00						0.00	3.37	4.85	3.06	0.00	2.00	3.22	1.99	3.10	2.58	2.09	1.09	0.00	0.00	0.00		0.00	0.97	3.66	2.07	0.89	1.10	81.40
Surigao del Sur	0.896	15.18	11.21	14.46	4.85	29.68	0.00	21.67	0.00	0.00						0.00	20.09	35.61	10.21	8.38	17.24	24.77	16.96	40.49	8.09	17.83	25.38	13.10	0.00	0.00		16.85	22.26	23.42	9.04	7.18	35.50	449.45
WRR-XII																																						**5,245**
Bukidnon	0.606	44.32	45.44	33.17	34.55	42.16	16.37	3.46	6.65	2.81	4.02			0.00	0.00	4.44	15.25	6.13	7.42	2.28	11.60	8.82	18.63	27.76	17.86	13.50	0.00	0.00	0.00	0.00	0.00	0.00	10.30	10.43	17.75	35.69	12.16	452.98
Lanao del Norte	0.918	9.90	7.21	7.34	8.04	5.07	6.92	0.00	9.55	5.18	0.00	0.02				3.69	3.90	2.72	11.43	4.67	3.57	8.23	13.23	8.65	10.02	1.54	2.28	0.00	0.00	0.00	0.00	1.25	0.00	11.54	10.76	11.85	6.59	175.12
Misamis Oriental	0.001	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.00	0.00						0.00	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00		0.00	0.01	0.01	0.01	0.01	0.01	0.18
Davao del Norte	0.004	0.04	0.05	0.07	0.07	0.12	0.12	0.12	0.07	0.00						0.00	0.04	0.07	0.04	0.05	0.08	0.09	0.08	0.11	0.08	0.07	0.01	0.00	0.00	0.00		0.00	0.03	0.06	0.01	0.09	0.12	1.70
Davao del Sur	0.002	0.03	0.07	0.08	0.06	0.02	0.05	0.03	0.02	0.00						0.02	0.04	0.05	0.04	0.05	0.04	0.07	0.02	0.07	0.03	0.01	0.03	0.00	0.00	0.00		0.01	0.04	0.07	0.07	0.06	0.04	1.12
Sarangani	0.131	0.68	0.00	0.08	0.00	0.00		0.00	0.68	0.97	0.54	1.05	1.58	0.88	0.62	1.40	1.23	0.73	0.36	0.00	0.00	0.08	0.15	0.00		0.00	0.11	0.38	0.41	0.96	0.66	0.64	0.57	0.46	0.80	0.64	0.15	16.82
South Cotabato	0.660	38.62	28.15	0.00	8.60	0.70		18.83	7.60	52.47	29.02	73.01	85.79	54.19	46.17	35.05	25.88	31.38	18.99	0.00	0.00	0.00	0.00	0.00		0.00	15.79	41.12	10.93	30.29	33.96	45.25	34.90	36.12	40.20	33.18	51.78	927.98
North Cotabato	0.962	99.57	27.34	0.00	0.00	0.00		45.96	45.74	69.69	#####	#####	#####	#####	79.95	99.91	40.68	41.65	93.12	25.54	0.00	0.74	0.00	0.00		0.00	30.88	61.07	18.29	88.44	89.38	92.69	74.22	93.42	60.99	93.17	#####	2,079.61
Sultan Kudarat	0.948	30.55	3.25	0.00	0.00	0.00		0.00	34.44	49.46	14.18	51.56	80.97	40.89	18.30	71.37	42.33	20.82	1.74	0.00	0.00	0.00	7.67	0.00		0.00	0.00	6.38	13.36	33.33	19.36	20.92	9.80	43.92	36.54	43.92	9.10	704.16
Agusan del Sur	0.002	0.12	0.12	0.13	0.12	0.12	0.09	0.09	0.05	0.00						0.00	0.06	0.09	0.06	0.00	0.04	0.06	0.04	0.06	0.05	0.04	0.02	0.00	0.00	0.00		0.00	0.02	0.07	0.04	0.02	0.02	1.49
Lanao del Sur	1.000	27.46	6.02	0.00	0.00	0.00		1.43	0.96	0.22	0.30	3.41	4.24	3.37	1.64	2.26	0.13	1.57	0.99	0.00	0.00	0.00	0.00	0.00		0.00	0.00	4.28	0.00	13.70	12.69	13.81	6.67	13.68	17.19	23.18	36.97	196.18
Maguindanao	1.000	69.47	22.99	0.00	0.00	0.00		3.35	3.39	2.80	4.03	10.10	11.30	8.20	6.81	4.61	2.54	2.46	5.16	3.44	0.00	0.72	0.00	0.00		0.00	20.97	42.40	0.00	60.55	53.43	65.97	43.22	51.35	35.90	59.21	92.92	687.28
Total	80.000																																					**48,186**

Source: JICA Survey Team

Table F 48 Irrigation Water Demands of Surface Water Systems by WRR in 2040
(Based on Irrigated Areas Projected in Consideration of NIA Financial Program)

(Unit: MCM)

Region/	Area	Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			Annual
Province	Rate	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
WRR-I																																						**1,829**
Abra	0.991	20.85	21.25	22.94	22.12	21.37	15.84	16.86	8.98	0.00							8.18	15.98	21.23	11.47	2.65	5.91	7.40	6.81	7.24	7.65	15.96	20.87	7.92	0.00	0.00	9.01	17.91	23.49	20.21	1.28	20.88	382.25
Apayao	0.003	0.04	0.04	0.04	0.04	0.04	0.03	0.02	0.02	0.00							0.00	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.03	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.03	0.04	0.59
Benguet	0.467	7.92	8.07	8.71	8.38	8.10	6.00	6.38	3.40	0.65			0.00	5.48	5.84	3.95	3.00	4.20	3.19	3.07	1.98	1.28	2.43	1.90	0.00	0.00	0.00					3.45	6.85	1.56	7.70	6.66	4.16	124.31
Kalinga	0.006	0.22	0.22	0.24	0.23	0.22	0.17	0.18	0.09	0.02							0.00	0.12	0.14	0.11	0.04	0.11	0.06	0.11	0.08	0.10	0.00	0.11	0.14	0.00	0.00	0.10	0.19	0.25	0.21	0.19	0.22	3.86
Mt. Province	0.140	1.76	1.70	0.25	1.19	0.68	0.04							1.40	0.82	1.80	1.98	1.01	1.41	1.00	0.00	0.17	0.10	0.74	0.65	0.20	0.00	0.00	0.48	1.91	1.03	0.03	0.00	1.11	0.53	0.91	1.91	24.80
Ilocos Norte	0.984	33.23	33.87	36.55	35.21	31.33	17.84	14.30	2.48									17.05	45.16	45.56	52.05	24.41	20.71	21.11	38.60	2.85	22.43	6.06	0.00	0.00	0.00	18.91	34.78	15.36	34.34	3.61	33.47	641.27
Ilocos Sur	1.000	21.42	21.83	23.56	22.62	20.14	11.47	9.15	1.58									0.00	19.89	10.00	25.67	10.08	15.65	15.57	38.22	15.77	11.71	23.49	0.00	11.74	1.39	0.00	22.53	28.20	22.24	18.21	21.63	443.76
La Union	0.947	11.24	11.45	12.36	11.86	10.56	6.01	4.80	0.83									0.50	5.75	13.22	6.30	6.24	3.12	7.28	5.57	7.27	0.35	7.87	10.03	0.00	0.00	6.48	11.88	14.85	11.69	9.55	11.35	208.41
WRR-II																																						**8,331**
Abra	0.009	0.19	0.19	0.21	0.20	0.19	0.14	0.15	0.08	0.00							0.07	0.15	0.19	0.10	0.02	0.05	0.07	0.06	0.07	0.07	0.14	0.19	0.07	0.00	0.00	0.08	0.16	0.21	0.18	0.01	0.19	3.47
Apayao	0.997	11.84	12.06	13.02	12.57	12.15	9.01	7.31	5.14	0.98							0.00	9.83	10.99	8.40	7.06	6.76	6.07	7.02	4.09	3.36	5.10	10.51	2.26	3.58	0.42	5.24	0.00	0.00	0.00	9.99	11.89	196.67
Benguet	0.007	0.12	0.12	0.13	0.13	0.12	0.09	0.10	0.05	0.01			0.00	0.08	0.09	0.06	0.04	0.06	0.05	0.05	0.03	0.02	0.04	0.03	0.00	0.00	0.00					0.05	0.10	0.02	0.12	0.10	0.06	1.86
Ifugao	0.993			9.99	12.56	23.43	15.59	20.08	21.88	21.84	25.83	18.26	17.52	20.86	13.06	8.90	0.00	0.00				0.00	14.20	9.11	3.89	1.01	0.00	6.84	0.45	14.44	13.96	1.78	9.04	0.00	0.00	0.00		304.50
Kalinga	0.994	36.16	36.82	39.78	38.35	37.11	27.57	29.35	15.65	2.99							0.25	20.39	23.27	17.42	6.28	17.91	9.61	18.28	12.72	16.42	0.00	17.91	23.49	0.00		15.96	31.71	41.59	35.59	30.77	36.51	639.86
Mt. Province	0.858	10.78	10.41	1.51	7.27	4.15	0.26							8.57	5.03	11.01	12.12	6.17	8.63	6.15	0.00	1.06	0.63	4.51	3.99	1.23	0.00	0.00	2.93	11.71	6.30	0.20	0.00	6.79	3.25	5.59	11.71	151.98
Ilocos Norte	0.016	0.54	0.55	0.59	0.57	0.51	0.29	0.23	0.04									0.28	0.73	0.74	0.85	0.40	0.34	0.34	0.63	0.05	0.36	0.10	0.00	0.00	0.00	0.31	0.57	0.25	0.56	0.06	0.54	10.43
Batanes	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00								0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cagayan	1.000	72.85	89.10	#####	#####	89.36	81.20	86.58	46.13	0.00							40.49	#####	#####	94.51	93.39	81.11	64.14	71.01	49.59	76.24	96.82	34.17	0.00	0.00	0.00	0.00	#####	#####	57.25	27.21	87.04	2,034.70
Isabela	1.000	#####	#####	#####	#####	#####	#####	#####	#####	0.00	34.80	0.26					2.55	#####	#####	#####	#####	85.44	#####	#####	#####	51.96	0.00	#####	0.00	0.00	0.00	94.48	0.00	29.33	91.86	36.49	#####	3,733.02
Nueva Vizcaya	0.873	45.35	46.20	49.89	48.13	46.53	34.51	36.78	19.61	3.74							7.47	53.98	58.42	7.24	12.91	23.75	13.11	5.88	21.47	12.89	9.94	0.00	0.00	13.52	0.00	0.00	44.24	56.47	28.20	0.00	5.57	705.82
Quirino	0.997	18.75	24.28	20.44	25.25	24.40	18.09	19.27	10.27	0.00							4.87	27.93	23.73	19.20	6.28	8.19	9.75	10.71	7.54	9.00	9.34	0.00	6.45	0.00	0.00	11.80	9.64	29.19	23.90	8.96	23.86	411.08
Aurora	0.410	5.44	4.13	4.73	4.59	5.81	4.34	7.03	8.63	6.78	6.02	0.00	0.00				0.00	4.17	6.77	3.92	6.80	3.15	3.09	6.05	6.47	4.70	0.25	2.15	0.00	0.13	0.00				3.19	6.34	5.48	120.16
Nueva Ecija	0.005	0.57	0.99	1.13	0.90	1.13	0.87	1.08	0.53	0.69	0.16	0.24	0.05			0.09	0.02	0.71	0.08	0.46	0.74	0.11	0.33	0.65	0.57	0.09	0.31	0.14	0.74	0.10	0.00	0.47	0.62	0.69	0.86	0.98	0.82	17.92
WRR-III																																						**10,039**
Benguet	0.526	8.92	9.08	9.81	9.44	9.12	6.76	7.19	3.83	0.73			0.00	6.17	6.57	4.44	3.38	4.73	3.60	3.46	2.24	1.44	2.73	2.15	0.00	0.00	0.00					3.89	7.71	1.76	8.67	7.51	4.68	140.02
Ifugao	0.007			0.07	0.09	0.17	0.11	0.14	0.15	0.15	0.18	0.13	0.12	0.15	0.09	0.06	0.00	0.00				0.00	0.10	0.06	0.03	0.01	0.00	0.05	0.00	0.10	0.10	0.01	0.06	0.00	0.00	0.00		2.15
Mt. Province	0.002	0.03	0.02	0.00	0.02	0.01	0.00							0.02	0.01	0.03	0.03	0.01	0.02	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.03	0.01	0.00	0.00	0.02	0.01	0.01	0.03	0.35
La Union	0.053	0.63	0.64	0.69	0.66	0.59	0.34	0.27	0.05									0.03	0.32	0.74	0.35	0.35	0.17	0.41	0.31	0.41	0.02	0.44	0.56	0.00	0.00	0.36	0.66	0.83	0.65	0.53	0.64	11.66
Pangasinan	1.000	#####	#####	#####	#####	#####	71.12	73.55	45.23	0.00	0.00							0.00	0.00	40.87	37.38	73.24	89.86	67.05	67.62	68.66	#####	46.60	96.83	0.00	79.89	67.94	87.08	96.37	#####	#####	#####	2,145.95
Nueva Vizcaya	0.127	6.60	6.72	7.26	7.00	6.77	5.02	5.35	2.85	0.54							1.09	7.85	8.50	1.05	1.88	3.46	1.91	0.85	3.12	1.88	1.45	0.00	0.00	1.97	0.00	0.00	6.44	8.22	4.10	0.00	0.81	102.68
Quirino	0.003	0.06	0.07	0.06	0.08	0.07	0.05	0.06	0.03	0.00							0.01	0.08	0.07	0.06	0.02	0.02	0.03	0.03	0.02	0.03	0.03	0.00	0.02	0.00	0.00	0.04	0.03	0.09	0.07	0.03	0.07	1.24
Aurora	0.548	7.26	5.52	6.33	6.14	7.77	5.80	9.39	11.53	9.07	8.04	0.00	0.00				0.00	5.58	9.05	5.23	9.09	4.21	4.14	8.09	8.64	6.28	0.34	2.88	0.00	0.18	0.00				4.27	8.48	7.32	160.61
Bataan	1.000	13.23	13.48	14.55	13.96	13.48	9.98	10.59	5.64	1.07								0.00	4.10	7.21	7.78	6.36	4.83	5.54	11.77	10.25	4.09	4.35	3.08	5.78	0.00	1.62	9.70	9.20	13.52	11.02	9.42	225.61
Bulacan	0.978	33.19	33.83	36.51	35.12	22.60	25.11	26.69	14.22	0.00								13.61	29.25	17.09	24.29	0.00	18.31	24.28	8.95	18.50	51.17	13.07	10.01	0.00	3.27	0.00	10.51	38.87	14.39	15.78	33.05	571.70
Nueva Ecija	0.994	#####	#####	#####	#####	#####	#####	#####	#####	#####	32.20	47.72	9.05			18.50	3.97	#####	16.89	92.03	#####	21.19	65.31	#####	#####	17.29	62.60	27.59	#####	19.18	0.00	94.16	#####	#####	#####	#####	#####	3,561.59
Pampanga	1.000	58.66	59.80	64.53	62.14	60.01	44.43	47.36	25.23	4.80								4.79	29.13	48.10	27.03	23.68	17.91	3.91	15.08	37.41	18.90	9.88	25.01	13.54	19.05	27.67	53.04	68.55	57.46	48.90	58.34	1,034.33
Tarlac	1.000	87.66	89.37	96.43	92.98	89.79	66.47	70.92	37.78	7.19								9.27	72.54	84.39	81.65	21.46	0.00	38.04	96.10	65.51	28.28	5.96	13.15	29.80	11.14	29.20	90.18	#####	89.64	72.97	64.53	1,655.69
Zambales	1.000	21.18	21.60	23.30	22.43	21.65	16.02	17.04	9.07	0.00								0.00	20.31	30.06	15.28	9.44	24.37	11.88	3.39	16.51	14.11	0.54	19.40	11.85	0.00	0.00	14.58	24.32	16.43	17.64	21.07	423.48
Rizal	0.021	0.17	0.04	0.13	0.18	0.17	0.13	0.13	0.00	0.01				0.00	0.06	0.18	0.10	0.03	0.03	0.07	0.10	0.08	0.07	0.07	0.00	0.03	0.00	0.00				0.00	0.10	0.07	0.15	0.09	0.17	2.34

WRR-IV																																							**3,450**
Aurora	0.042	0.56	0.42	0.48	0.47	0.60	0.44	0.72	0.88	0.69	0.62	0.00	0.00				0.00	0.43	0.69	0.40	0.70	0.32	0.32	0.62	0.66	0.48	0.03	0.22	0.00	0.01	0.00				0.33	0.65	0.56	12.31
Bulacan	0.022	0.75	0.76	0.82	0.79	0.51	0.56	0.60	0.32	0.00								0.31	0.66	0.38	0.55	0.00	0.41	0.55	0.20	0.42	1.15	0.29	0.23	0.00	0.07	0.00	0.24	0.87	0.32	0.36	0.74	12.86
Nueva Ecija	0.001	0.11	0.20	0.23	0.18	0.23	0.17	0.22	0.11	0.14	0.03	0.05	0.01			0.02	0.00	0.14	0.02	0.09	0.15	0.02	0.07	0.13	0.11	0.02	0.06	0.03	0.15	0.02	0.00	0.09	0.12	0.14	0.17	0.20	0.16	3.58
Batangas	1.000	6.41	6.50	9.58	9.18	8.87	6.57	6.97	3.71	0.71				1.30	6.40	8.45	4.26	2.84	5.69	0.19	6.18	3.21	2.91	1.74	0.27	0.00	0.00	0.00				0.00	5.18	5.89	7.58	1.34	8.65	130.58
Cavite	1.000	10.85	11.07	11.94	11.47	11.07	8.20	8.71	4.64	0.88				4.87	10.41	10.86	1.63	0.05	5.45	2.76	4.45	9.43	3.72	7.39	11.78	2.85	0.00	0.00				0.00	0.71	3.21	9.46	9.05	4.62	181.53
Laguna	1.000	23.15	23.60	25.46	24.43	23.60	17.47	18.56	9.89	0.00				9.08	9.51	17.20	10.95	17.15	9.49	9.69	11.38	9.37	10.63	8.41	0.71	0.00	0.00	0.00				0.00	0.00	12.31	4.35	5.05	23.05	334.47
Quezon	0.947	1.66	25.76	22.69	26.63	17.59	19.04	15.06	0.76	2.05				2.87	15.32	27.22	15.36	17.62	7.05	3.43	12.55	10.33	18.76	26.72	7.95	0.00	0.00	0.00				6.66	5.36	14.12	7.90	13.90	3.41	347.77
Rizal	0.979	7.82	2.01	5.84	8.25	7.97	5.90	6.26	0.00	0.64				0.00	2.63	8.36	4.48	1.24	1.52	3.08	4.46	3.95	3.09	3.08	0.00	1.42	0.00	0.00				0.00	4.71	3.36	6.98	3.99	7.97	109.01
Marinduque	1.000	1.60	0.85	2.57	2.67	1.89	2.14	2.98	2.87	2.89	1.99	0.39	0.19	0.91	2.83	4.02	1.42	1.09	1.55	0.73	2.52	1.67	1.83	1.56	0.86	0.26	0.00	0.05							1.26	0.36	3.24	49.22
Occidental Mindoro	1.000	41.87	42.68	46.06	44.12	42.62	31.56	33.40	17.80	3.39								0.00	26.37	49.06	16.75	22.26	0.00	1.90	23.26	23.80	11.47	3.62	33.38	0.00	7.29	8.58	8.45	54.19	42.91	22.56	33.92	693.28
Oriental Mindoro	1.000	44.80	43.24	51.65	53.64	52.93	42.91	59.89	47.18	37.93	40.10	1.64	3.92	25.64	14.97	38.43	20.96	9.97	23.89	6.29	27.24	19.03	18.59	9.79	21.18	0.00	3.99	0.00							7.49	32.94	36.11	796.36
Palawan	1.000	33.46	30.17	36.08	37.40	36.90	29.92	41.64	40.15	40.42	27.66	14.15	2.70	22.92	23.85	42.82	26.41	18.98	0.63	12.65	7.83	17.71	21.28	14.20	1.23	0.42	0.00	0.00							17.56	15.01	30.77	644.91
Romblon	1.000	5.16	5.72	6.84	7.09	7.00	5.67	7.91	7.63	7.68	5.27	2.70	0.51	3.59	6.94	9.87	5.51	5.92	2.69	2.99	2.65	2.01	0.83	2.65	2.93	1.31	0.00	0.00							2.04	4.75	8.58	134.45
WRR-V																																							**3,916**
Quezon	0.053	0.09	1.44	1.27	1.49	0.98	1.07	0.84	0.04	0.11				0.16	0.86	1.52	0.86	0.99	0.39	0.19	0.70	0.58	1.05	1.50	0.44	0.00	0.00	0.00				0.37	0.30	0.79	0.44	0.78	0.19	19.46
Albay	1.000	56.83	10.52	47.72	39.90	44.91	38.98	70.72	65.19	16.53	24.14	3.69		18.24	70.45	52.27	67.82	25.28	51.13	35.67	21.54	19.25	36.38	10.78	22.96	10.93	0.00	0.00							0.00	53.87	26.18	941.85
Camarines Norte	1.000	22.57	10.74	18.30	25.18	12.08	20.14	28.12	20.82	5.87	4.94	1.47		13.65	18.08	23.52	4.39	6.59	11.92	11.74	11.57	6.03	15.02	5.07	6.79	0.00	0.00	0.00							0.00	3.55	24.62	332.78
Camarines Sur	1.000	66.57	73.91	92.56	98.94	#####	95.20	#####	#####	94.21	45.39	0.00		47.66	91.40	92.95	93.16	81.22	77.33	65.49	36.75	77.22	#####	42.49	34.07	0.00	0.00	0.00	0.00						0.00	30.46	95.01	1,923.70
Catanduanes	1.000	4.60	0.74	4.94	3.88	2.30	4.11	5.71	2.20	4.06	1.95	0.30		0.00	5.24	5.46	4.00	2.88	4.00	3.40	0.78	2.39	2.86	1.53	4.40	1.17	0.00	0.10							0.00	2.07	3.16	78.21
Masbate	1.000	14.13	18.17	14.55	22.52	22.97	9.35	25.02	6.12	15.79	7.58	1.16		7.77	9.02	24.57	22.07	4.00	10.18	8.16	12.26	9.68	6.59	13.62	9.94	1.75	0.00	0.44							0.00	6.80	27.24	331.46
Sorsogon	1.000	2.58	17.04	16.62	16.33	21.55	7.31	23.55	8.31	16.72	8.03	0.00		1.07	7.26	25.83	15.74	6.59	7.66	3.74	10.17	10.52	6.00	14.16	5.97	0.06	0.00	0.42							0.00	9.57	25.61	288.43
WRR-VI																																							**2,783**
Aklan	1.000	11.73	11.36	11.14	7.26	3.37	0.28							4.11	16.24	14.85	9.45	9.23	4.05	7.55	4.40	7.46	4.79	8.70	4.81	3.66	0.00	0.33	0.00	4.37	9.67	2.64	3.10	5.12	4.99	11.02	4.74	190.44
Antique	1.000	22.49	20.84	12.15	11.57	6.60	0.00	0.02						0.00	0.00	22.49	9.63	4.87	0.00	5.79	7.39	7.25	7.57	5.88	0.00	0.00	0.00	0.00	0.00	0.00	12.41	6.13	6.08	14.07	20.70	21.66	23.83	249.44
Capiz	1.000	11.96	11.50	3.35	7.39	3.41	0.00							9.40	6.75	17.22	5.95	0.00	0.00	0.06	0.00	5.96	8.35	0.00	3.34	0.00	0.00	0.00	0.00	1.28	10.19	2.56	3.67	10.88	5.21	8.37	10.27	147.07
Guimaras	1.000	1.07	0.67	1.01	0.66	0.31	0.00							0.20	0.55	1.53	0.77	0.50	0.24	0.14	0.25	0.43	0.55	0.52	0.73	0.00	0.00	0.00	0.00	0.00	0.97	0.54	0.42	0.00	1.05	0.45	1.15	14.71
Iloilo	1.000	50.11	48.61	26.21	36.69	25.64	12.48	6.71	0.05					28.53	4.92	46.16	25.16	17.84	10.59	12.08	0.00	37.25	51.56	0.00	25.57	3.34	0.00	0.00	0.00	0.00	46.21	20.02	30.96	41.76	26.83	48.12	52.95	736.35
Negros Occidental	0.924	56.69	74.38	73.58	47.53	5.24	1.85							14.19	97.71	95.17	73.21	29.05	67.98	39.79	48.99	66.93	68.03	35.21	42.81	0.60	0.00	0.00	9.81	25.85	34.27	18.15	67.20	71.49	75.06	72.43	49.36	1,362.55
Negros Oriental	0.231	3.99	4.72	4.67	3.02	1.41	0.12							2.45	3.46	7.21	5.23	2.64	2.47	2.67	3.46	2.72	2.33	3.38	2.28	0.24	0.00	0.00	0.36	2.13	4.15	4.65	1.94	3.71	2.41	1.70	2.67	82.18
WRR-VII																																							**1,079**
Negros Occidental	0.076	4.66	6.12	6.05	3.91	0.43	0.15							1.17	8.04	7.83	6.02	2.39	5.59	3.27	4.03	5.50	5.60	2.90	3.52	0.05	0.00	0.00	0.81	2.13	2.82	1.49	5.53	5.88	6.17	5.96	4.06	112.07
Bohol	1.000	28.01	25.75	14.23	15.41	18.47	9.17	16.86	0.00	0.00					0.00	9.78	0.00	0.00	28.43	25.07	16.71	31.41	31.34	11.41	27.09	11.94	6.02	20.45	0.00	0.00	20.71	18.93	23.78	28.77	21.70	36.86	35.23	533.54
Cebu	1.000	9.14	8.97	5.29	6.39	3.71	0.00	0.00								3.98	3.44	9.60	7.86	8.94	2.44	4.50	3.70	7.52	9.05	8.52	0.00	0.00	0.00		2.97	8.24	7.73	5.23	3.52	8.16	7.43	146.33
Negros Oriental	0.769	13.29	15.71	15.54	10.05	4.68	0.39							8.17	11.50	24.01	17.43	8.78	8.21	8.90	11.51	9.06	7.76	11.24	7.59	0.79	0.00	0.00	1.21	7.10	13.80	15.48	6.46	12.35	8.02	5.66	8.89	273.59
Siquijor	1.000	0.38	0.33	0.39	0.34	0.31	0.13	0.03								0.72	1.21	0.86	0.34	0.39	0.70	0.89	1.10	0.63	1.16	0.90	0.28	0.03	0.00		0.29	0.32	0.40	0.23	0.05	0.47	0.54	13.44
WRR-VIII																																							**1,614**
Biliran	1.000	1.94	2.68	5.84	5.58	3.61	3.99	4.20	0.94	0.00						0.76	4.15	3.28	4.03	3.13	4.84	3.24	2.33	2.23	2.56	3.36	0.61	0.57				0.00	3.35	6.23	5.22	4.43	0.02	83.10
Northern Leyte	1.000	69.43	70.79	32.86	39.08	13.29	13.03	0.00	0.00	0.00						20.05	17.02	70.51	53.48	59.84	13.34	17.09	27.77	52.25	59.00	62.41	0.71	21.70				32.56	9.76	29.84	21.05	57.79	27.43	892.11
Southern Leyte	1.000	9.64	9.82	4.67	4.38	4.71	0.00	0.00	0.00	0.77	5.84	11.49	8.77	7.79	4.45	8.72	2.42	7.75	10.71	9.61	3.99	2.31	0.54									4.51	4.41	5.02	2.03	8.02	4.60	146.98
Northern Samar	1.000	6.77	8.30	6.99	12.58	12.15	8.99	6.68	5.05	0.96	7.60	14.96	19.47	14.98	12.64	12.31	13.98	11.86	7.17	4.93	0.39	0.64	0.49									0.00	4.00	2.90	4.97	0.00	5.42	207.17
Weatern Samar	1.000	0.29	9.89	3.98	10.21	9.86	7.30	4.27	2.26	0.78	5.56	10.94	11.89	10.94	1.06	5.93	5.38	2.31	4.55	2.48	3.00	5.03	0.00									0.00	2.99	7.88	2.13	5.26	4.10	140.30
Eastern Samar	1.000	3.99	9.46	5.91	9.75	6.89	6.97	3.29	2.14	0.74	5.71	11.22	10.10	8.97	4.51	6.11	7.10	3.33	5.49	4.13	4.00	4.42	1.56									0.00	2.20	6.68	1.70	4.01	4.06	144.45
WRR-IX																																							**1,500**
Zamboanga del Norte	1.000	18.78	27.73	17.79	14.89	14.64	7.15	3.80	0.03		13.54	17.55	18.17	20.76	31.92	17.62	19.96	15.80	18.09	13.07	16.20	13.16	11.48	0.00	0.00	0.00			0.00	0.00	7.99	6.94	13.81	0.39	3.19	27.49	15.29	407.20
Zamboanga del Sur	1.000	47.46	46.21	46.68	34.87	24.40	11.92	6.31	0.05		19.52	38.64	40.90	48.09	46.85	23.60	20.31	19.20	14.90	21.48	5.13	19.46	3.61	0.00	0.00	0.00			0.00	0.23	14.51	10.06	24.65	11.97	15.07	18.38	21.23	655.68
Zamboanga Sibugay	1.000	10.79	12.84	10.49	12.76	8.93	4.36	2.31	0.02		7.25	5.97	5.84	6.25	11.57	10.36	10.64	7.37	8.97	4.83	7.48	6.05	6.87	0.00	0.00	0.00			0.14	0.00	5.36	6.98	9.06	1.19	4.66	16.72	10.85	216.90
Misamis Occidental	1.000	12.56	12.80	13.81	13.19	12.74	7.13	9.94	5.30	1.01						2.97	8.13	9.60	4.30	4.45	3.66	2.76	5.42	3.35	8.13	6.67	6.33	0.00	0.00	0.00		0.00	0.93	6.87	2.49	0.67	1.21	166.42
Basilan	1.000	0.86	0.88	0.95	0.91	0.88	0.65	0.68	0.36	0.07						0.03	0.09	0.10	0.04	0.04	0.03	0.04	0.06	0.07	0.05	0.03	0.00	0.00	0.00	0.00		0.15	0.39	0.34	0.59	0.53	0.19	9.01
Sulu	1.000	2.61	2.66	2.87	1.87	2.64	1.96	1.59	1.10	0.21						0.10	0.16	0.36	0.15	0.10	0.25	0.15	0.15	0.26	0.20	0.24	0.21	0.14	0.00	0.00		1.21	0.90	1.61	2.55	2.21	0.45	28.94
Tawi-Tawi	1.000	1.19	1.56	1.69	1.24	1.55	0.77	0.70	0.64	0.12						0.06	0.11	0.17	0.11	0.02	0.11	0.09	0.08	0.12	0.13	0.11	0.10	0.07	0.01	0.00		0.71	0.37	1.36	1.07	1.30	0.42	15.97

WRR-X																																						**2,576**
Bukidnon	0.348	25.45	26.10	19.05	19.84	24.21	9.40	1.99	3.82	1.61	2.31			0.00	0.00	2.55	8.76	3.52	4.26	1.31	6.66	5.06	10.70	15.94	10.26	7.75	0.00	0.00	0.00	0.00	0.00	0.00	5.92	5.99	10.20	20.49	6.98	260.12
Camiguin	1.000	0.30	0.32	0.30	0.32	0.74	0.55	0.58	0.31	0.06						0.67	0.77	0.81	0.37	0.52	0.97	0.58	0.69	0.70	0.88	0.74	0.61	0.57	0.00	0.00		0.00	0.65	0.43	0.72	0.21	0.73	15.08
Lanao del Norte	0.082	0.88	0.64	0.65	0.72	0.45	0.62	0.00	0.85	0.46	0.00	0.00				0.33	0.35	0.24	1.02	0.42	0.32	0.73	1.18	0.77	0.89	0.14	0.20	0.00	0.00	0.00	0.00	0.11	0.00	1.03	0.96	1.06	0.59	15.61
Misamis Oriental	0.999	10.37	6.51	7.21	4.78	7.17	5.90	10.18	0.00	0.00						2.93	3.28	9.65	6.90	5.55	4.58	9.39	7.48	2.70	8.10	4.93	5.15	4.44	0.00	0.00		3.48	8.81	12.31	6.30	6.67	12.75	177.52
Compostela Valley	0.523	20.46	19.60	51.59	0.00	47.63	4.87	11.58	0.00	0.00						0.79	24.85	49.97	23.43	15.96	21.12	12.04	23.42	19.66	29.43	27.46	22.22	12.54	0.00	0.00		0.00	8.49	27.03	46.62	11.83	13.84	546.41
Davao del Norte	0.007	0.07	0.09	0.12	0.12	0.21	0.20	0.21	0.11	0.00						0.00	0.06	0.13	0.07	0.09	0.13	0.16	0.15	0.20	0.14	0.13	0.02	0.00	0.00	0.00		0.00	0.06	0.11	0.02	0.16	0.21	2.98
Davao Oriental	0.051	1.01	1.03	1.11	1.06	0.67	0.76	0.80	0.00	0.08						0.26	0.73	0.66	0.44	0.34	0.53	0.58	0.53	0.68	0.80	0.21	0.06	0.00	0.00	0.00		0.00	0.32	0.37	0.11	0.29	0.46	13.89
Agusan del Norte	0.973	30.02	41.52	51.41	49.17	47.49	35.16	24.60	19.73	3.76						8.33	37.50	56.70	17.27	11.72	14.06	4.60	25.90	12.91	27.08	26.08	8.35	0.00	0.00	0.00		0.00	7.16	17.06	6.67	4.23	11.15	599.63
Agusan del Sur	0.889	51.59	52.60	56.75	54.27	52.41	38.81	40.87	21.77	0.00						0.00	27.26	39.22	24.78	0.00	16.15	26.03	16.11	25.06	20.85	16.88	8.79	0.00	0.00	0.00		0.00	7.92	29.72	16.80	7.23	8.92	660.80
Dinagat Islands	1.000	0.58	1.32	0.78	1.36	0.86	0.97	0.41	0.54	0.10						0.64	1.26	0.88	0.82	0.91	0.13	1.59	0.94	0.97	1.55	1.31	0.17	0.13	0.00	0.00		0.00	0.12	0.54	0.61	1.08	0.16	20.76
Surigao del Norte	1.000	5.25	12.39	6.42	9.80	7.26	9.13	6.30	1.48	0.00						6.44	15.37	9.31	8.24	15.50	1.73	15.10	13.12	11.65	19.13	12.53	1.18	1.18	0.00	0.00		0.00	0.00	7.41	3.88	5.81	5.70	211.32
Surigao del Sur	0.104	1.76	1.30	1.68	0.56	3.44	0.00	2.52	0.00	0.00						0.00	2.33	4.13	1.18	0.97	2.00	2.87	1.97	4.69	0.94	2.07	2.94	1.52	0.00	0.00		1.96	2.58	2.72	1.05	0.83	4.12	52.13
WRR-XI																																						**3,027**
Bukidnon	0.046	3.36	3.45	2.52	2.62	3.20	1.24	0.26	0.50	0.21	0.31			0.00	0.00	0.34	1.16	0.47	0.56	0.17	0.88	0.67	1.41	2.11	1.36	1.02	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.79	1.35	2.71	0.92	34.38
Compostela Valley	0.477	18.66	17.87	47.05	0.00	43.44	4.45	10.56	0.00	0.00						0.72	22.66	45.57	21.37	14.56	19.26	10.98	21.36	17.93	26.84	25.05	20.27	11.44	0.00	0.00		0.00	7.74	24.65	42.52	10.79	12.62	498.35
Davao del Norte	0.989	10.03	12.17	16.29	17.21	29.41	28.73	30.30	16.14	0.00						0.00	9.07	18.04	10.21	12.74	18.77	22.93	20.64	28.23	20.20	17.80	3.10	0.00	0.00	0.00		0.00	8.62	15.18	2.88	22.85	29.02	420.57
Davao del Sur	0.998	14.08	36.94	39.86	30.82	12.28	27.25	16.76	7.67	0.00						8.43	22.27	26.13	19.78	25.24	18.27	33.23	10.59	36.66	16.85	5.25	12.92	0.00	0.00	0.00		3.17	19.22	33.66	35.64	30.16	17.76	560.89
Davao Oriental	0.949	18.77	19.14	20.65	19.72	12.51	14.10	14.81	0.00	1.50						4.81	13.62	12.31	8.09	6.30	9.90	10.71	9.94	12.65	14.85	3.95	1.20	0.00	0.00	0.00		0.00	6.04	6.83	2.14	5.42	8.54	258.50
Sarangani	0.869	4.46	0.00	0.55	0.00	0.00		0.00	4.44	6.36	3.53	6.88	10.39	5.78	4.04	9.15	8.07	4.80	2.34	0.00	0.00	0.51	0.98	0.00		0.00	0.70	2.49	2.66	6.32	4.31	4.22	3.75	3.04	5.26	4.20	0.97	110.22
South Cotabato	0.340	19.89	14.49	0.00	4.43	0.36		9.70	3.92	27.02	14.94	37.60	44.18	27.91	23.77	18.05	13.33	16.16	9.78	0.00	0.00	0.00	0.00	0.00		0.00	8.13	21.18	5.63	15.60	17.49	23.30	17.97	18.60	20.70	17.09	26.67	477.88
North Cotabato	0.038	3.89	1.07	0.00	0.00	0.00		1.80	1.79	2.72	5.11	7.09	5.90	4.29	3.12	3.90	1.59	1.63	3.64	1.00	0.00	0.03	0.00	0.00		0.00	1.21	2.39	0.71	3.46	3.49	3.62	2.90	3.65	2.38	3.64	5.24	81.27
Sultan Kudarat	0.052	1.65	0.18	0.00	0.00	0.00		0.00	1.87	2.68	0.77	2.80	4.39	2.22	0.99	3.87	2.30	1.13	0.09	0.00	0.00	0.00	0.42	0.00		0.00	0.00	0.35	0.72	1.80	1.05	1.13	0.53	2.38	1.98	2.38	0.49	38.16
Agusan del Norte	0.027	0.83	1.15	1.43	1.36	1.32	0.98	0.68	0.55	0.10						0.23	1.04	1.57	0.48	0.33	0.39	0.13	0.72	0.36	0.75	0.72	0.23	0.00	0.00	0.00		0.00	0.20	0.47	0.19	0.12	0.31	16.64
Agusan del Sur	0.109	6.33	6.45	6.96	6.65	6.43	4.76	5.01	2.67	0.00						0.00	3.34	4.81	3.04	0.00	1.98	3.19	1.98	3.07	2.56	2.07	1.08	0.00	0.00	0.00		0.00	0.97	3.64	2.06	0.89	1.09	81.02
Surigao del Sur	0.896	15.18	11.21	14.46	4.85	29.68	0.00	21.67	0.00	0.00						0.00	20.06	35.56	10.20	8.37	17.21	24.73	16.94	40.44	8.08	17.81	25.35	13.08	0.00	0.00		16.85	22.26	23.42	9.04	7.18	35.50	449.12
WRR-XII																																						**5,211**
Bukidnon	0.606	44.32	45.44	33.17	34.55	42.16	16.37	3.46	6.65	2.81	4.02			0.00	0.00	4.44	15.25	6.13	7.42	2.28	11.60	8.82	18.63	27.76	17.86	13.50	0.00	0.00	0.00	0.00	0.00	0.00	10.30	10.43	17.75	35.69	12.16	452.98
Lanao del Norte	0.918	9.88	7.19	7.33	8.03	5.06	6.90	0.00	9.53	5.17	0.00	0.02				3.68	3.89	2.72	11.41	4.67	3.56	8.21	13.21	8.63	10.01	1.54	2.28	0.00	0.00	0.00	0.00	1.24	0.00	11.51	10.74	11.82	6.58	174.81
Misamis Oriental	0.001	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.00	0.00						0.00	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00		0.00	0.01	0.01	0.01	0.01	0.01	0.18
Davao del Norte	0.004	0.04	0.05	0.07	0.07	0.12	0.12	0.12	0.07	0.00						0.00	0.04	0.07	0.04	0.05	0.08	0.09	0.08	0.11	0.08	0.07	0.01	0.00	0.00	0.00		0.00	0.03	0.06	0.01	0.09	0.12	1.70
Davao del Sur	0.002	0.03	0.07	0.08	0.06	0.02	0.05	0.03	0.02	0.00						0.02	0.04	0.05	0.04	0.05	0.04	0.07	0.02	0.07	0.03	0.01	0.03	0.00	0.00	0.00		0.01	0.04	0.07	0.07	0.06	0.04	1.12
Sarangani	0.131	0.67	0.00	0.08	0.00	0.00		0.00	0.67	0.96	0.53	1.04	1.57	0.87	0.61	1.38	1.22	0.72	0.35	0.00	0.00	0.08	0.15	0.00		0.00	0.11	0.38	0.40	0.95	0.65	0.64	0.57	0.46	0.79	0.63	0.15	16.62
South Cotabato	0.660	38.61	28.14	0.00	8.60	0.70		18.82	7.60	52.45	29.01	72.98	85.76	54.17	46.15	35.04	25.88	31.37	18.98	0.00	0.00	0.00	0.00	0.00		0.00	15.79	41.11	10.92	30.28	33.94	45.24	34.89	36.11	40.19	33.17	51.76	927.65
North Cotabato	0.962	98.50	27.05	0.00	0.00	0.00		45.47	45.26	68.95	#####	#####	#####	#####	79.10	98.84	40.25	41.21	92.13	25.26	0.00	0.73	0.00	0.00		0.00	30.55	60.41	18.09	87.49	88.42	91.70	73.42	92.42	60.34	92.17	#####	2,057.38
Sultan Kudarat	0.948	30.14	3.21	0.00	0.00	0.00		0.00	34.06	48.92	14.02	50.99	80.08	40.44	18.09	70.59	41.86	20.59	1.72	0.00	0.00	0.00	7.59	0.00		0.00	0.00	6.30	13.18	32.88	19.10	20.64	9.67	43.33	36.05	43.33	8.98	695.75
Agusan del Sur	0.002	0.12	0.12	0.13	0.12	0.12	0.09	0.09	0.05	0.00						0.00	0.06	0.09	0.06	0.00	0.04	0.06	0.04	0.06	0.05	0.04	0.02	0.00	0.00	0.00		0.00	0.02	0.07	0.04	0.02	0.02	1.49
Lanao del Sur	1.000	27.46	6.02	0.00	0.00	0.00		1.43	0.96	0.22	0.30	3.41	4.24	3.37	1.64	2.26	0.13	1.57	0.99	0.00	0.00	0.00	0.00	0.00		0.00	0.00	4.28	0.00	13.70	12.69	13.81	6.67	13.68	17.19	23.18	36.97	196.18
Maguindanao	1.000	69.30	22.94	0.00	0.00	0.00		3.34	3.38	2.79	4.02	10.07	11.28	8.18	6.79	4.60	2.53	2.46	5.15	3.43	0.00	0.71	0.00	0.00		0.00	20.91	42.30	0.00	60.39	53.29	65.80	43.11	51.22	35.81	59.06	92.68	685.53
Total	80.000																																					**45,357**

Suorce: JICA Survey Team

Table F 49 Irrigation Water Demands of Groundwater Systems by WRR in 2030
(Based on Irrigated Areas Projected in Consideration of NIA Financial Program)

(Unit: MCM)

Region/	Area	Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			Annual
Province	Rate	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
WRR-I																																						**80**
Abra	0.991	0.06	0.06	0.07	0.06	0.06	0.05	0.05	0.03	0.00							0.05	0.10	0.13	0.07	0.02	0.04	0.05	0.04	0.04	0.05	0.10	0.13	0.05	0.00	0.00	0.03	0.05	0.07	0.06	0.00	0.06	1.56
Apayao	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
Benguet	0.467	0.06	0.06	0.07	0.07	0.06	0.05	0.05	0.03	0.01			0.00	0.05	0.05	0.03	0.03	0.04	0.03	0.03	0.02	0.01	0.02	0.02	0.00	0.00	0.00					0.03	0.05	0.01	0.06	0.05	0.03	1.01
Kalinga	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
Mt. Province	0.140	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Ilocos Norte	0.984	0.04	0.05	0.05	0.05	0.04	0.02	0.02	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.05	0.02	0.05	0.00	0.05	0.47
Ilocos Sur	1.000	1.06	1.08	1.16	1.12	0.99	0.57	0.45	0.08									0.00	1.15	0.58	1.49	0.58	0.91	0.90	2.21	0.91	0.68	1.36	0.00	0.68	0.08	0.00	1.11	1.39	1.10	0.90	1.07	23.60
La Union	0.947	2.96	3.01	3.25	3.12	2.78	1.58	1.26	0.22									0.12	1.40	3.22	1.54	1.52	0.76	1.78	1.36	1.77	0.08	1.92	2.45	0.00	0.00	1.71	3.13	3.91	3.08	2.51	2.99	53.43
WRR-II																																						**1,297**
Abra	0.009	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Apayao	0.997	0.91	0.93	1.01	0.97	0.94	0.70	0.56	0.40	0.08							0.00	0.75	0.84	0.64	0.54	0.52	0.46	0.54	0.31	0.26	0.39	0.80	0.17	0.27	0.03	0.40	0.00	0.00	0.00	0.77	0.92	15.11
Benguet	0.007	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	0.00	0.02
Ifugao	0.993			0.04	0.06	0.10	0.07	0.09	0.10	0.10	0.11	0.08	0.08	0.09	0.06	0.04	0.00	0.00				0.00	0.06	0.04	0.02	0.00	0.00	0.03	0.00	0.06	0.05	0.01	0.04	0.00	0.00	0.00		1.30
Kalinga	0.994	0.49	0.50	0.54	0.52	0.50	0.37	0.39	0.21	0.04							0.00	0.26	0.29	0.22	0.08	0.22	0.12	0.23	0.16	0.21	0.00	0.22	0.29	0.00		0.21	0.43	0.56	0.48	0.41	0.49	8.44
Mt. Province	0.858	0.02	0.02	0.00	0.01	0.01	0.00							0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.02	0.01	0.00	0.00	0.01	0.01	0.01	0.02	0.26
Ilocos Norte	0.016	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Batanes	1.000	0.29	0.31	0.40	0.38	0.36	0.27	0.24	0.05								0.12	0.86	0.56	0.28	0.60	0.71	0.48	0.49	0.33	0.41	0.57	0.31	0.27	0.00	0.00	0.10	0.47	0.38	0.02	0.32	0.38	9.96
Cagayan	1.000	43.78	53.54	70.92	68.17	53.69	48.79	52.03	27.72	0.00							25.77	74.03	74.97	60.14	59.42	51.61	40.81	45.19	31.56	48.51	61.61	21.74	0.00	0.00	0.00	0.00	60.72	78.00	34.40	16.35	52.30	1,255.78
Isabela	1.000	0.16	0.11	0.18	0.18	0.17	0.13	0.15	0.11	0.00	0.02	0.00					0.00	0.13	0.11	0.13	0.12	0.06	0.12	0.08	0.07	0.03	0.00	0.12	0.00	0.00	0.00	0.07	0.00	0.02	0.06	0.03	0.16	2.53
Nueva Vizcaya	0.873	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quirino	0.997	0.14	0.18	0.16	0.19	0.19	0.14	0.15	0.08	0.00							0.04	0.21	0.18	0.15	0.05	0.06	0.07	0.08	0.06	0.07	0.07	0.00	0.05	0.00	0.00	0.09	0.07	0.22	0.18	0.07	0.18	3.13
Aurora	0.410	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00
Nueva Ecija	0.005	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.00	0.00	0.00			0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.01	0.32
WRR-III																																						**1,066**
Benguet	0.526	0.07	0.07	0.08	0.08	0.07	0.05	0.06	0.03	0.01			0.00	0.05	0.06	0.04	0.03	0.04	0.03	0.03	0.02	0.01	0.02	0.02	0.00	0.00	0.00					0.03	0.06	0.01	0.07	0.06	0.04	1.14
Ifugao	0.007			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.01
Mt. Province	0.002	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
La Union	0.053	0.17	0.17	0.18	0.17	0.16	0.09	0.07	0.01									0.01	0.08	0.18	0.09	0.09	0.04	0.10	0.08	0.10	0.00	0.11	0.14	0.00	0.00	0.10	0.17	0.22	0.17	0.14	0.17	2.99
Pangasinan	1.000	33.02	34.10	37.52	36.54	33.84	21.65	22.39	13.77	0.00	0.00							0.00	0.00	10.68	9.77	19.14	23.49	17.53	17.68	17.95	28.71	12.18	25.31	0.00	20.88	20.68	26.51	29.34	35.60	38.82	32.68	619.78
Nueva Vizcaya	0.127	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quirino	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Aurora	0.548	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00
Bataan	1.000	0.34	0.35	0.37	0.36	0.35	0.26	0.27	0.14	0.03								0.00	0.10	0.18	0.20	0.16	0.12	0.14	0.30	0.26	0.10	0.11	0.08	0.15	0.00	0.04	0.25	0.24	0.35	0.28	0.24	5.77
Bulacan	0.978	1.86	1.90	2.05	1.97	1.27	1.41	1.50	0.80	0.00								0.68	1.45	0.85	1.21	0.00	0.91	1.21	0.44	0.92	2.54	0.65	0.50	0.00	0.16	0.00	0.59	2.18	0.81	0.89	1.86	30.60
Nueva Ecija	0.994	2.00	3.49	3.97	3.15	3.97	3.06	3.81	1.86	2.44	0.57	0.84	0.16			0.33	0.07	2.48	0.30	1.63	2.59	0.37	1.15	2.30	2.00	0.31	1.11	0.49	2.61	0.34	0.00	1.67	2.18	2.42	3.01	3.44	2.90	62.98
Pampanga	1.000	3.24	3.31	3.57	3.44	3.32	2.46	2.62	1.40	0.27								0.35	2.15	3.55	1.99	1.75	1.32	0.29	1.11	2.76	1.39	0.73	1.85	1.00	1.41	1.53	2.93	3.79	3.18	2.70	3.23	62.62
Tarlac	1.000	11.56	11.78	12.72	12.26	11.84	8.77	9.35	4.98	0.95								1.09	8.52	9.91	9.59	2.52	0.00	4.47	11.28	7.69	3.32	0.70	1.54	3.50	1.31	3.85	11.89	14.94	11.82	9.62	8.51	210.26
Zambales	1.000	3.79	3.87	4.17	4.02	3.88	2.87	3.05	1.62	0.00								0.00	2.96	4.39	2.23	1.38	3.56	1.73	0.49	2.41	2.06	0.08	2.83	1.73	0.00	0.00	2.61	4.35	2.94	3.16	3.77	69.97
Rizal	0.021	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00				0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.01	0.07

WRR-IV																																						**205**
Aurora	0.042	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00
Bulacan	0.022	0.04	0.04	0.05	0.04	0.03	0.03	0.03	0.02	0.00								0.02	0.03	0.02	0.03	0.00	0.02	0.03	0.01	0.02	0.06	0.01	0.01	0.00	0.00	0.00	0.01	0.05	0.02	0.02	0.04	0.69
Nueva Ecija	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
Batangas	1.000	0.32	0.33	0.48	0.46	0.45	0.33	0.35	0.19	0.04				0.09	0.44	0.58	0.29	0.19	0.39	0.01	0.42	0.22	0.20	0.12	0.02	0.00	0.00	0.00				0.00	0.26	0.30	0.38	0.07	0.44	7.35
Cavite	1.000	0.14	0.15	0.16	0.15	0.15	0.11	0.12	0.06	0.01				0.16	0.34	0.36	0.05	0.00	0.18	0.09	0.15	0.31	0.12	0.24	0.39	0.09	0.00	0.00				0.00	0.01	0.04	0.13	0.12	0.06	3.90
Laguna	1.000	0.53	0.54	0.58	0.56	0.54	0.40	0.42	0.23	0.00				0.17	0.18	0.33	0.21	0.33	0.18	0.18	0.22	0.18	0.20	0.16	0.01	0.00	0.00	0.00				0.00	0.00	0.28	0.10	0.11	0.53	7.16
Quezon	0.947	0.10	1.59	1.40	1.65	1.09	1.18	0.93	0.05	0.13				0.16	0.88	1.56	0.88	1.01	0.40	0.20	0.72	0.59	1.07	1.53	0.46	0.00	0.00	0.00				0.41	0.33	0.87	0.49	0.86	0.21	20.75
Rizal	0.979	0.25	0.06	0.18	0.26	0.25	0.19	0.20	0.00	0.02				0.00	0.08	0.26	0.14	0.04	0.05	0.10	0.14	0.12	0.10	0.10	0.00	0.04	0.00	0.00				0.00	0.15	0.11	0.22	0.13	0.25	3.44
Marinduque	1.000	0.23	0.12	0.37	0.39	0.27	0.31	0.43	0.42	0.42	0.29	0.06	0.03	0.13	0.41	0.59	0.21	0.16	0.23	0.11	0.37	0.24	0.27	0.23	0.13	0.04	0.00	0.01							0.18	0.05	0.47	7.17
Occidental Mindoro	1.000	5.94	6.06	6.53	6.26	6.05	4.48	4.74	2.52	0.48								0.00	4.16	7.73	2.64	3.51	0.00	0.30	3.67	3.75	1.81	0.57	5.26	0.00	1.15	1.22	1.20	7.69	6.09	3.20	4.81	101.81
Oriental Mindoro	1.000	1.74	1.68	2.01	2.09	2.06	1.67	2.33	1.84	1.48	1.56	0.06	0.15	0.89	0.52	1.33	0.73	0.35	0.83	0.22	0.95	0.66	0.65	0.34	0.74	0.00	0.14	0.00							0.29	1.28	1.41	30.00
Palawan	1.000	0.87	0.79	0.94	0.98	0.96	0.78	1.09	1.05	1.06	0.72	0.37	0.07	0.82	0.86	1.54	0.95	0.68	0.02	0.45	0.28	0.63	0.76	0.51	0.04	0.01	0.00	0.00							0.46	0.39	0.80	18.89
Romblon	1.000	0.15	0.17	0.20	0.21	0.21	0.17	0.24	0.23	0.23	0.16	0.08	0.02	0.11	0.22	0.31	0.17	0.19	0.08	0.09	0.08	0.06	0.03	0.08	0.09	0.04	0.00	0.00							0.06	0.14	0.26	4.09
WRR-V																																						**83**
Quezon	0.053	0.01	0.09	0.08	0.09	0.06	0.07	0.05	0.00	0.01				0.01	0.05	0.09	0.05	0.06	0.02	0.01	0.04	0.03	0.06	0.09	0.03	0.00	0.00	0.00				0.02	0.02	0.05	0.03	0.05	0.01	1.16
Albay	1.000	0.84	0.16	0.71	0.59	0.67	0.58	1.05	0.97	0.24	0.36	0.05		0.25	0.98	0.73	0.94	0.35	0.71	0.50	0.30	0.27	0.51	0.15	0.32	0.15	0.00	0.00							0.00	0.80	0.39	13.55
Camarines Norte	1.000	0.57	0.27	0.46	0.63	0.30	0.50	0.70	0.52	0.15	0.12	0.04		0.34	0.45	0.59	0.11	0.16	0.30	0.29	0.29	0.15	0.38	0.13	0.17	0.00	0.00	0.00							0.00	0.09	0.62	8.33
Camarines Sur	1.000	1.98	2.19	2.75	2.94	3.60	2.83	3.94	3.63	2.80	1.35	0.00		1.55	2.98	3.03	3.04	2.65	2.52	2.13	1.20	2.52	3.76	1.38	1.11	0.00	0.00	0.00	0.00						0.00	0.90	2.82	59.59
Catanduanes	1.000	0.04	0.01	0.04	0.03	0.02	0.03	0.05	0.02	0.03	0.02	0.00		0.00	0.04	0.05	0.03	0.02	0.03	0.03	0.01	0.02	0.02	0.01	0.04	0.01	0.00	0.00							0.00	0.02	0.03	0.65
Masbate	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00
Sorsogon	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00
WRR-VI																																						**26**
Aklan	1.000	0.20	0.19	0.19	0.12	0.06	0.00							0.06	0.25	0.23	0.14	0.14	0.06	0.12	0.07	0.11	0.07	0.13	0.07	0.06	0.00	0.00	0.00	0.07	0.16	0.04	0.05	0.09	0.08	0.19	0.08	3.05
Antique	1.000	0.09	0.08	0.05	0.04	0.03	0.00	0.00						0.00	0.00	0.64	0.27	0.14	0.00	0.16	0.21	0.21	0.21	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.02	0.02	0.05	0.08	0.08	0.09	2.69
Capiz	1.000	1.03	0.99	0.29	0.63	0.29	0.00							0.85	0.61	1.56	0.54	0.00	0.00	0.01	0.00	0.54	0.76	0.00	0.30	0.00	0.00	0.00	0.00	0.11	0.87	0.22	0.32	0.93	0.45	0.72	0.88	12.89
Guimaras	1.000	0.07	0.04	0.06	0.04	0.02	0.00							0.03	0.10	0.27	0.13	0.09	0.04	0.02	0.04	0.08	0.10	0.09	0.13	0.00	0.00	0.00	0.00	0.00	0.06	0.03	0.03	0.00	0.07	0.03	0.07	1.65
Iloilo	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					0.63	0.11	1.02	0.56	0.39	0.23	0.27	0.00	0.82	1.14	0.00	0.56	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.81
Negros Occidental	0.924	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Negros Oriental	0.231	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WRR-VII																																						**22**
Negros Occidental	0.076	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bohol	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cebu	1.000	1.23	1.21	0.71	0.86	0.50	0.00	0.00								0.65	0.56	1.56	1.28	1.45	0.40	0.73	0.60	1.22	1.47	1.39	0.00	0.00	0.00		0.40	1.11	1.04	0.71	0.47	1.10	1.00	21.66
Negros Oriental	0.769	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siquijor	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00								0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WRR-VIII																																						**1**
Biliran	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00
Northern Leyte	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00
Southern Leyte	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00
Northern Samar	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00
Weatern Samar	1.000	0.00	0.08	0.03	0.09	0.08	0.06	0.04	0.02	0.01	0.04	0.08	0.08	0.08	0.01	0.04	0.04	0.02	0.03	0.02	0.02	0.03	0.00									0.00	0.03	0.07	0.02	0.04	0.03	1.08
Eastern Samar	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00
WRR-IX																																						**6**
Zamboanga del Norte	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zamboanga del Sur	1.000	0.13	0.13	0.13	0.10	0.07	0.03	0.02	0.00		0.05	0.11	0.11	0.13	0.13	0.07	0.06	0.05	0.04	0.06	0.01	0.05	0.01	0.00	0.00	0.00			0.00	0.00	0.04	0.03	0.07	0.03	0.04	0.05	0.06	1.83
Zamboanga Sibugay	1.000	0.08	0.09	0.08	0.09	0.07	0.03	0.02	0.00		0.06	0.05	0.04	0.05	0.09	0.08	0.08	0.06	0.07	0.04	0.06	0.05	0.05	0.00	0.00	0.00			0.00	0.00	0.04	0.05	0.07	0.01	0.03	0.12	0.08	1.62
Misamis Occidental	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Basilan	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulu	1.000	0.21	0.22	0.24	0.15	0.22	0.16	0.13	0.09	0.02						0.01	0.01	0.03	0.01	0.01	0.02	0.01	0.01	0.02	0.02	0.02	0.02	0.01	0.00	0.00		0.10	0.07	0.13	0.21	0.18	0.04	2.38
Tawi-Tawi	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00

WRR-X																																							**5**
Bukidnon	0.348	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Camiguin	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lanao del Norte	0.082	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
Misamis Oriental	0.999	0.12	0.07	0.08	0.05	0.08	0.07	0.12	0.00	0.00						0.04	0.04	0.12	0.08	0.07	0.06	0.12	0.09	0.03	0.10	0.06	0.06	0.05	0.00	0.00		0.04	0.10	0.14	0.07	0.08	0.15	2.09
Compostela Valley	0.523	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Norte	0.007	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao Oriental	0.051	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agusan del Norte	0.973	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agusan del Sur	0.889	0.15	0.16	0.17	0.16	0.16	0.12	0.12	0.07	0.00						0.00	0.22	0.31	0.20	0.00	0.13	0.21	0.13	0.20	0.17	0.14	0.07	0.00	0.00	0.00		0.00	0.02	0.09	0.05	0.02	0.03	3.09
Dinagat Islands	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Surigao del Norte	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Surigao del Sur	0.104	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.04
WRR-XI																																							**4**
Bukidnon	0.046	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Compostela Valley	0.477	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Norte	0.989	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Sur	0.998	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao Oriental	0.949	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sarangani	0.869	0.06	0.00	0.01	0.00	0.00		0.00	0.05	0.08	0.04	0.08	0.12	0.07	0.05	0.11	0.10	0.06	0.03	0.00	0.00	0.01	0.01	0.00		0.00	0.01	0.03	0.03	0.08	0.05	0.05	0.05	0.04	0.07	0.05	0.01	1.34
South Cotabato	0.340	0.01	0.01	0.00	0.00	0.00		0.00	0.00	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.17
North Cotabato	0.038	0.04	0.01	0.00	0.00	0.00		0.02	0.02	0.03	0.06	0.08	0.06	0.05	0.03	0.04	0.02	0.02	0.04	0.01	0.00	0.00	0.00	0.00		0.00	0.01	0.03	0.01	0.04	0.04	0.04	0.03	0.04	0.03	0.04	0.06	0.88
Sultan Kudarat	0.052	0.02	0.00	0.00	0.00	0.00		0.00	0.02	0.03	0.01	0.03	0.05	0.02	0.01	0.04	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.01	0.02	0.01	0.02	0.01	0.03	0.03	0.03	0.01	0.46
Agusan del Norte	0.027	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agusan del Sur	0.109	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.00						0.00	0.03	0.04	0.02	0.00	0.02	0.03	0.02	0.02	0.02	0.02	0.01	0.00	0.00	0.00		0.00	0.00	0.01	0.01	0.00	0.00	0.38
Surigao del Sur	0.896	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.03	0.05	0.01	0.01	0.02	0.03	0.02	0.06	0.01	0.02	0.04	0.02	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.33
WRR-XII																																							**33**
Bukidnon	0.606	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lanao del Norte	0.918	0.02	0.01	0.01	0.02	0.01	0.01	0.00	0.02	0.01	0.00	0.00				0.01	0.01	0.00	0.02	0.01	0.01	0.01	0.02	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.01	0.31
Misamis Oriental	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Norte	0.004	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Sur	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sarangani	0.131	0.01	0.00	0.00	0.00	0.00		0.00	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.20
South Cotabato	0.660	0.01	0.01	0.00	0.00	0.00		0.01	0.00	0.02	0.01	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00		0.00	0.01	0.01	0.00	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.02	0.33
North Cotabato	0.962	1.07	0.29	0.00	0.00	0.00		0.49	0.49	0.74	1.40	1.94	1.61	1.17	0.85	1.07	0.43	0.44	0.99	0.27	0.00	0.01	0.00	0.00		0.00	0.33	0.65	0.20	0.95	0.96	0.99	0.80	1.00	0.65	1.00	1.44	22.23
Sultan Kudarat	0.948	0.41	0.04	0.00	0.00	0.00		0.00	0.38	0.54	0.16	0.57	0.89	0.45	0.20	0.79	0.47	0.23	0.02	0.00	0.00	0.00	0.08	0.00		0.00	0.00	0.09	0.18	0.45	0.26	0.28	0.13	0.59	0.49	0.59	0.12	8.42
Agusan del Sur	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.01
Lanao del Sur	1.000	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maguindanao	1.000	0.18	0.06	0.00	0.00	0.00		0.01	0.01	0.01	0.01	0.02	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00		0.00	0.05	0.11	0.00	0.15	0.14	0.17	0.11	0.13	0.09	0.15	0.24	1.75
Total	80.000																																					**2,829**

Source: JICA Survey Team

Table F 50 Irrigation Water Demands of All Systems by WRR in 2050
(Based on Irrigated Areas Projected in Consideration of NIA Financial Program)

(Unit: MCM)

Region/	Area	Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			Annual
Province	Rate	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
WRR-I																																						**1,938**
Abra	0.991	20.91	21.31	23.01	22.18	21.43	15.88	16.90	9.01	0.00							8.23	16.08	21.36	11.54	2.67	5.95	7.44	6.85	7.28	7.69	16.06	21.00	7.97	0.00	0.00	9.04	17.96	23.56	20.27	1.28	20.94	383.81
Apayao	0.003	0.04	0.04	0.04	0.04	0.04	0.03	0.02	0.02	0.00							0.00	0.03	0.04	0.03	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.03	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.03	0.04	0.64
Benguet	0.467	7.98	8.13	8.78	8.45	8.17	6.05	6.43	3.43	0.65			0.00	5.53	5.89	3.98	3.02	4.23	3.22	3.10	2.00	1.29	2.45	1.92	0.00	0.00	0.00					3.48	6.90	1.57	7.76	6.72	4.19	125.32
Kalinga	0.006	0.24	0.24	0.26	0.25	0.25	0.18	0.19	0.10	0.02							0.00	0.13	0.15	0.12	0.04	0.12	0.06	0.12	0.08	0.11	0.00	0.12	0.16	0.00	0.00	0.11	0.21	0.28	0.24	0.20	0.24	4.24
Mt. Province	0.140	1.76	1.70	0.25	1.19	0.68	0.04							1.40	0.82	1.80	1.98	1.01	1.41	1.01	0.00	0.17	0.10	0.74	0.65	0.20	0.00	0.00	0.48	1.91	1.03	0.03	0.00	1.11	0.53	0.91	1.91	24.84
Ilocos Norte	0.984	33.27	33.91	36.60	35.25	31.38	17.86	14.32	2.48									17.05	45.16	45.56	52.05	24.41	20.71	21.11	38.60	2.85	22.43	6.06	0.00	0.00	0.00	18.94	34.83	15.39	34.38	3.62	33.51	641.74
Ilocos Sur	1.000	23.84	24.30	26.22	25.18	22.41	12.76	10.18	1.76									0.00	22.32	11.23	28.81	11.31	17.56	17.47	42.89	17.69	13.14	26.36	0.00	13.18	1.56	0.00	25.08	31.39	24.76	20.27	24.08	495.78
La Union	0.947	14.19	14.46	15.61	14.98	13.34	7.59	6.06	1.05									0.62	7.16	16.45	7.84	7.76	3.88	9.05	6.93	9.05	0.43	9.78	12.48	0.00	0.00	8.18	15.00	18.76	14.77	12.07	14.33	261.84
WRR-II																																						**10,778**
Abra	0.009	0.19	0.19	0.21	0.20	0.19	0.14	0.15	0.08	0.00							0.07	0.15	0.19	0.10	0.02	0.05	0.07	0.06	0.07	0.07	0.15	0.19	0.07	0.00	0.00	0.08	0.16	0.21	0.18	0.01	0.19	3.49
Apayao	0.997	12.85	13.10	14.14	13.65	13.19	9.78	7.93	5.58	1.06							0.00	10.66	11.92	9.11	7.66	7.33	6.58	7.62	4.44	3.65	5.53	11.40	2.45	3.89	0.46	5.69	0.00	0.00	0.00	10.84	12.91	213.42
Benguet	0.007	0.12	0.12	0.13	0.13	0.12	0.09	0.10	0.05	0.01			0.00	0.08	0.09	0.06	0.05	0.06	0.05	0.05	0.03	0.02	0.04	0.03	0.00	0.00	0.00					0.05	0.10	0.02	0.12	0.10	0.06	1.88
Ifugao	0.993			10.66	13.40	25.00	16.63	21.43	23.34	23.31	27.56	19.48	18.69	22.26	13.93	9.49	0.00	0.00				0.00	15.14	9.72	4.14	1.08	0.00	7.30	0.48	15.40	14.89	1.90	9.64	0.00	0.00	0.00		324.89
Kalinga	0.994	39.69	40.41	43.66	42.09	40.73	30.25	32.21	17.18	3.28							0.27	22.36	25.52	19.09	6.88	19.64	10.53	20.05	13.94	18.01	0.00	19.64	25.76	0.00		17.51	34.80	45.64	39.05	33.76	40.07	702.00
Mt. Province	0.858	10.80	10.42	1.52	7.28	4.16	0.26							8.58	5.04	11.03	12.14	6.18	8.65	6.16	0.00	1.06	0.63	4.52	4.00	1.23	0.00	0.00	2.94	11.73	6.31	0.20	0.00	6.81	3.26	5.60	11.73	152.24
Ilocos Norte	0.016	0.54	0.55	0.60	0.57	0.51	0.29	0.23	0.04									0.28	0.73	0.74	0.85	0.40	0.34	0.34	0.63	0.05	0.36	0.10	0.00	0.00	0.00	0.31	0.57	0.25	0.56	0.06	0.54	10.43
Batanes	1.000	0.29	0.31	0.40	0.38	0.36	0.27	0.24	0.05								0.12	0.86	0.56	0.28	0.60	0.71	0.48	0.49	0.33	0.41	0.57	0.31	0.27	0.00	0.00	0.10	0.47	0.38	0.02	0.32	0.38	9.96
Cagayan	1.000	#####	#####	#####	#####	#####	#####	#####	80.85	0.00							72.53	#####	#####	#####	#####	#####	#####	#####	88.84	#####	#####	61.20	0.00	0.00	0.00	0.00	#####	#####	#####	47.69	#####	3,602.03
Isabela	1.000	#####	#####	#####	#####	#####	#####	#####	#####	0.00	40.29	0.30					2.95	#####	#####	#####	#####	98.90	#####	#####	#####	60.15	0.00	#####	0.00	0.00	0.00	#####	0.00	33.95	#####	42.24	#####	4,321.22
Nueva Vizcaya	0.873	50.60	51.55	55.66	53.70	51.92	38.50	41.04	21.88	4.17							8.34	60.23	65.18	8.07	14.41	26.50	14.63	6.56	23.96	14.38	11.09	0.00	0.00	15.08	0.00	0.00	49.36	63.01	31.46	0.00	6.21	787.48
Quirino	0.997	22.40	29.00	24.42	30.16	29.15	21.60	23.02	12.27	0.00							5.81	33.35	28.35	22.93	7.50	9.78	11.65	12.79	9.01	10.74	11.15	0.00	7.70	0.00	0.00	14.09	11.52	34.87	28.54	10.70	28.49	490.96
Aurora	0.410	6.27	4.76	5.46	5.30	6.71	5.01	8.11	9.96	7.83	6.95	0.00	0.00				0.00	4.82	7.81	4.52	7.85	3.64	3.57	6.98	7.46	5.43	0.29	2.48	0.00	0.15	0.00				3.68	7.32	6.32	138.69
Nueva Ecija	0.005	0.62	1.09	1.24	0.99	1.24	0.96	1.19	0.58	0.76	0.18	0.26	0.05			0.10	0.02	0.78	0.09	0.51	0.81	0.12	0.36	0.72	0.63	0.10	0.35	0.15	0.82	0.11	0.00	0.52	0.68	0.76	0.94	1.08	0.91	19.70
WRR-III																																						**12,271**
Benguet	0.526	8.99	9.16	9.89	9.52	9.20	6.82	7.24	3.86	0.74			0.00	6.22	6.63	4.48	3.40	4.77	3.63	3.49	2.25	1.46	2.76	2.16	0.00	0.00	0.00					3.92	7.77	1.77	8.74	7.57	4.72	141.16
Ifugao	0.007			0.08	0.09	0.18	0.12	0.15	0.16	0.16	0.19	0.14	0.13	0.16	0.10	0.07	0.00	0.00				0.00	0.11	0.07	0.03	0.01	0.00	0.05	0.00	0.11	0.10	0.01	0.07	0.00	0.00	0.00		2.29
Mt. Province	0.002	0.03	0.02	0.00	0.02	0.01	0.00							0.02	0.01	0.03	0.03	0.01	0.02	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.03	0.01	0.00	0.00	0.02	0.01	0.01	0.03	0.35
La Union	0.053	0.79	0.81	0.87	0.84	0.75	0.43	0.34	0.06									0.03	0.40	0.92	0.44	0.43	0.22	0.51	0.39	0.51	0.02	0.55	0.70	0.00	0.00	0.46	0.84	1.05	0.83	0.68	0.80	14.65
Pangasinan	1.000	#####	#####	#####	#####	#####	#####	#####	64.86	0.00	0.00							0.00	0.00	56.67	51.83	#####	#####	92.97	93.76	95.21	#####	64.61	#####	0.00	#####	97.41	#####	#####	#####	#####	#####	3,040.15
Nueva Vizcaya	0.127	7.36	7.50	8.10	7.81	7.55	5.60	5.97	3.18	0.61							1.21	8.76	9.48	1.17	2.10	3.86	2.13	0.95	3.49	2.09	1.61	0.00	0.00	2.19	0.00	0.00	7.18	9.17	4.58	0.00	0.90	114.56
Quirino	0.003	0.07	0.09	0.07	0.09	0.09	0.06	0.07	0.04	0.00							0.02	0.10	0.09	0.07	0.02	0.03	0.04	0.04	0.03	0.03	0.03	0.00	0.02	0.00	0.00	0.04	0.03	0.10	0.09	0.03	0.09	1.48
Aurora	0.548	8.38	6.37	7.30	7.08	8.97	6.69	10.84	13.31	10.46	9.28	0.00	0.00				0.00	6.44	10.44	6.04	10.49	4.86	4.77	9.33	9.97	7.25	0.39	3.32	0.00	0.20	0.00				4.92	9.79	8.45	185.37
Bataan	1.000	13.56	13.83	14.92	14.32	13.83	10.24	10.86	5.78	1.10								0.00	4.21	7.40	7.98	6.52	4.95	5.68	12.06	10.51	4.19	4.46	3.16	5.93	0.00	1.66	9.95	9.43	13.87	11.31	9.66	231.38
Bulacan	0.978	37.26	37.98	40.99	39.43	25.38	28.19	29.97	15.96	0.00								15.18	32.64	19.07	27.10	0.00	20.43	27.09	9.99	20.64	57.10	14.59	11.17	0.00	3.65	0.00	11.80	43.63	16.16	17.72	37.11	640.23
Nueva Ecija	0.994	#####	#####	#####	#####	#####	#####	#####	#####	#####	35.41	52.47	9.95			20.34	4.37	#####	18.57	#####	#####	23.31	71.82	#####	#####	19.01	68.84	30.34	#####	21.09	0.00	#####	#####	#####	#####	#####	#####	3,916.58
Pampanga	1.000	61.91	63.11	68.10	65.58	63.33	46.89	49.98	26.63	5.07								5.14	31.28	51.65	29.03	25.42	19.23	4.20	16.19	40.17	20.29	10.61	26.85	14.54	20.46	29.20	55.97	72.34	60.64	51.60	61.56	1,096.96
Tarlac	1.000	#####	#####	#####	#####	#####	92.12	98.27	52.35	9.96								12.68	99.23	#####	#####	29.36	0.00	52.04	#####	89.62	38.69	8.15	17.99	40.76	15.25	40.47	#####	#####	#####	#####	89.42	2,284.45
Zambales	1.000	30.30	30.89	33.33	32.08	30.97	22.91	24.37	12.98	0.00								0.00	28.23	41.78	21.24	13.13	33.88	16.51	4.71	22.96	19.62	0.76	26.96	16.47	0.00	0.00	20.86	34.78	23.50	25.23	30.13	598.56
Rizal	0.021	0.19	0.05	0.14	0.20	0.20	0.15	0.15	0.00	0.02				0.00	0.06	0.21	0.11	0.03	0.04	0.08	0.11	0.10	0.08	0.08	0.00	0.04	0.00	0.00				0.00	0.12	0.08	0.17	0.10	0.20	2.69

WRR-IV																																						**4,033**
Aurora	0.042	0.64	0.49	0.56	0.54	0.69	0.51	0.83	1.02	0.80	0.71	0.00	0.00				0.00	0.49	0.80	0.46	0.80	0.37	0.37	0.72	0.76	0.56	0.03	0.25	0.00	0.02	0.00				0.38	0.75	0.65	14.21
Bulacan	0.022	0.84	0.85	0.92	0.89	0.57	0.63	0.67	0.36	0.00								0.34	0.73	0.43	0.61	0.00	0.46	0.61	0.22	0.46	1.28	0.33	0.25	0.00	0.08	0.00	0.27	0.98	0.36	0.40	0.83	14.40
Nueva Ecija	0.001	0.12	0.22	0.25	0.20	0.25	0.19	0.24	0.12	0.15	0.04	0.05	0.01			0.02	0.00	0.16	0.02	0.10	0.16	0.02	0.07	0.14	0.13	0.02	0.07	0.03	0.16	0.02	0.00	0.10	0.14	0.15	0.19	0.22	0.18	3.94
Batangas	1.000	7.78	7.89	11.63	11.15	10.77	7.97	8.46	4.51	0.86				1.60	7.89	10.43	5.26	3.51	7.02	0.24	7.62	3.96	3.59	2.15	0.34	0.00	0.00	0.00				0.00	6.29	7.15	9.20	1.62	10.50	159.39
Cavite	1.000	12.27	12.51	13.50	12.96	12.52	9.27	9.85	5.25	1.00				5.62	12.00	12.52	1.88	0.05	6.28	3.18	5.14	10.87	4.29	8.52	13.58	3.29	0.00	0.00				0.00	0.80	3.62	10.70	10.23	5.23	206.90
Laguna	1.000	26.76	27.28	29.44	28.24	27.28	20.20	21.46	11.43	0.00				10.46	10.96	19.81	12.62	19.75	10.93	11.16	13.11	10.79	12.24	9.69	0.82	0.00	0.00	0.00				0.00	0.00	14.23	5.03	5.83	26.65	386.14
Quezon	0.947	1.90	29.57	26.05	30.56	20.19	21.85	17.29	0.88	2.35				3.28	17.51	31.11	17.56	20.13	8.06	3.92	14.34	11.81	21.44	30.53	9.08	0.00	0.00	0.00				7.65	6.15	16.21	9.07	15.96	3.92	398.35
Rizal	0.979	8.99	2.31	6.72	9.49	9.16	6.79	7.20	0.00	0.73				0.00	3.02	9.61	5.15	1.43	1.75	3.54	5.13	4.54	3.55	3.54	0.00	1.64	0.00	0.00				0.00	5.41	3.86	8.02	4.58	9.16	125.32
Marinduque	1.000	1.87	0.99	2.99	3.11	2.21	2.49	3.47	3.35	3.37	2.32	0.45	0.23	1.07	3.29	4.68	1.66	1.27	1.81	0.85	2.94	1.95	2.13	1.82	1.00	0.30	0.00	0.06							1.47	0.42	3.77	57.33
Occidental Mindoro	1.000	54.95	56.01	60.44	57.90	55.93	41.41	43.83	23.35	4.44								0.00	35.08	65.27	22.28	29.62	0.00	2.53	30.95	31.66	15.26	4.81	44.41	0.00	9.70	11.25	11.09	71.11	56.31	29.60	44.51	913.71
Oriental Mindoro	1.000	52.47	50.65	60.49	62.83	61.99	50.26	70.14	55.25	44.43	46.97	1.92	4.59	29.91	17.46	44.82	24.45	11.63	27.86	7.34	31.78	22.20	21.68	11.42	24.71	0.00	4.65	0.00							8.78	38.58	42.30	931.54
Palawan	1.000	34.33	30.96	37.02	38.38	37.86	30.70	42.72	41.20	41.48	28.39	14.52	2.77	23.74	24.71	44.36	27.35	19.66	0.65	13.10	8.11	18.35	22.04	14.71	1.28	0.43	0.00	0.00							18.02	15.40	31.57	663.80
Romblon	1.000	6.07	6.73	8.04	8.34	8.23	6.67	9.31	8.98	9.04	6.20	3.17	0.61	4.24	8.19	11.63	6.50	6.98	3.17	3.53	3.13	2.37	0.98	3.12	3.46	1.54	0.00	0.00							2.40	5.59	10.10	158.31
WRR-V																																						**4,690**
Quezon	0.053	0.11	1.65	1.46	1.71	1.13	1.22	0.97	0.05	0.13				0.18	0.98	1.74	0.98	1.13	0.45	0.22	0.80	0.66	1.20	1.71	0.51	0.00	0.00	0.00				0.43	0.34	0.91	0.51	0.89	0.22	22.29
Albay	1.000	67.08	12.42	56.34	47.10	53.01	46.01	83.48	76.95	19.51	28.49	4.35		21.51	83.09	61.64	79.99	29.81	60.30	42.07	25.40	22.70	42.90	12.72	27.07	12.89	0.00	0.00							0.00	63.59	30.91	1,111.33
Camarines Norte	1.000	28.63	13.63	23.22	31.94	15.32	25.55	35.67	26.41	7.45	6.27	1.86		17.32	22.94	29.83	5.56	8.36	15.12	14.89	14.68	7.65	19.05	6.44	8.62	0.00	0.00	0.00							0.00	4.50	31.24	422.14
Camarines Sur	1.000	80.59	89.48	#####	#####	#####	#####	#####	#####	#####	54.95	0.00		57.86	#####	#####	#####	98.60	93.89	79.51	44.61	93.74	#####	51.59	41.36	0.00	0.00	0.00	0.00						0.00	36.88	#####	2,331.82
Catanduanes	1.000	4.88	0.78	5.25	4.12	2.44	4.36	6.06	2.34	4.30	2.07	0.32		0.00	5.56	5.79	4.25	3.05	4.24	3.61	0.83	2.54	3.03	1.62	4.67	1.24	0.00	0.11							0.00	2.19	3.36	82.98
Masbate	1.000	18.11	23.28	18.64	28.86	29.43	11.99	32.07	7.84	20.23	9.71	1.48		9.96	11.55	31.49	28.28	5.13	13.05	10.45	15.71	12.40	8.44	17.46	12.73	2.24	0.00	0.56							0.00	8.72	34.90	424.72
Sorsogon	1.000	2.64	17.43	17.00	16.70	22.04	7.48	24.08	8.50	17.10	8.21	0.00		1.10	7.43	26.41	16.09	6.74	7.83	3.82	10.40	10.76	6.13	14.48	6.10	0.07	0.00	0.43							0.00	9.79	26.19	294.94
WRR-VI																																						**3,196**
Aklan	1.000	11.92	11.55	11.33	7.39	3.43	0.28							4.17	16.48	15.08	9.60	9.38	4.11	7.66	4.47	7.57	4.87	8.83	4.89	3.72	0.00	0.33	0.00	4.45	9.84	2.68	3.16	5.20	5.08	11.21	4.82	193.49
Antique	1.000	24.95	23.11	13.48	12.84	7.32	0.00	0.02						0.00	0.00	25.56	10.95	5.53	0.00	6.57	8.39	8.24	8.60	6.68	0.00	0.00	0.00	0.00	0.00	0.00	13.77	6.80	6.75	15.61	22.96	24.03	26.44	278.61
Capiz	1.000	12.99	12.49	3.64	8.02	3.70	0.00							10.25	7.36	18.78	6.48	0.00	0.00	0.06	0.00	6.50	9.10	0.00	3.64	0.00	0.00	0.00	0.00	1.39	11.06	2.78	3.98	11.81	5.66	9.09	11.16	159.97
Guimaras	1.000	1.14	0.71	1.08	0.71	0.33	0.00							0.23	0.65	1.80	0.90	0.59	0.29	0.17	0.30	0.50	0.64	0.61	0.86	0.00	0.00	0.00	0.00	0.00	1.03	0.57	0.45	0.00	1.11	0.48	1.23	16.37
Iloilo	1.000	57.80	56.06	30.23	42.32	29.58	14.40	7.74	0.06					33.64	5.80	54.42	29.66	21.03	12.49	14.24	0.00	43.91	60.78	0.00	30.15	3.94	0.00	0.00	0.00	0.00	53.30	23.09	35.71	48.17	30.94	55.51	61.07	856.03
Negros Occidental	0.924	66.90	87.77	86.83	56.09	6.18	2.19							16.75	#####	#####	86.40	34.28	80.22	46.95	57.81	78.98	80.28	41.55	50.53	0.71	0.00	0.00	11.57	30.50	40.44	21.42	79.31	84.36	88.58	85.47	58.25	1,607.97
Negros Oriental	0.231	4.07	4.81	4.76	3.08	1.43	0.12							2.50	3.52	7.36	5.34	2.69	2.52	2.73	3.53	2.78	2.38	3.44	2.33	0.24	0.00	0.00	0.37	2.18	4.23	4.74	1.98	3.79	2.46	1.74	2.73	83.84
WRR-VII																																						**1,152**
Negros Occidental	0.076	5.50	7.22	7.14	4.61	0.51	0.18							1.38	9.48	9.24	7.11	2.82	6.60	3.86	4.76	6.50	6.60	3.42	4.16	0.06	0.00	0.00	0.95	2.51	3.33	1.76	6.52	6.94	7.29	7.03	4.79	132.26
Bohol	1.000	29.38	27.01	14.92	16.17	19.37	9.62	17.68	0.00	0.00					0.00	10.25	0.00	0.00	29.82	26.30	17.52	32.94	32.87	11.97	28.41	12.53	6.31	21.45	0.00	0.00	21.72	19.85	24.94	30.18	22.76	38.66	36.95	559.58
Cebu	1.000	10.37	10.18	6.00	7.25	4.21	0.00	0.00								4.63	4.00	11.17	9.14	10.39	2.84	5.23	4.30	8.74	10.52	9.90	0.00	0.00	0.00		3.37	9.35	8.77	5.94	4.00	9.25	8.43	167.99
Negros Oriental	0.769	13.55	16.03	15.86	10.25	4.77	0.40							8.33	11.73	24.50	17.78	8.96	8.38	9.08	11.74	9.24	7.92	11.47	7.74	0.81	0.00	0.00	1.23	7.25	14.08	15.79	6.59	12.60	8.18	5.78	9.07	279.11
Siquijor	1.000	0.38	0.33	0.39	0.34	0.31	0.13	0.03								0.72	1.21	0.86	0.34	0.39	0.70	0.89	1.10	0.63	1.16	0.90	0.28	0.03	0.00		0.29	0.32	0.40	0.23	0.05	0.47	0.54	13.44
WRR-VIII																																						**1,743**
Biliran	1.000	1.94	2.68	5.84	5.58	3.61	3.99	4.20	0.94	0.00						0.76	4.15	3.28	4.03	3.13	4.84	3.24	2.33	2.23	2.56	3.36	0.61	0.57				0.00	3.35	6.23	5.22	4.43	0.02	83.10
Northern Leyte	1.000	75.58	77.05	35.77	42.54	14.47	14.19	0.00	0.00	0.00						21.83	18.53	76.75	58.21	65.13	14.53	18.60	30.22	56.87	64.22	67.93	0.78	23.61				35.44	10.63	32.48	22.92	62.90	29.86	971.03
Southern Leyte	1.000	9.64	9.82	4.67	4.38	4.71	0.00	0.00	0.00	0.77	5.84	11.49	8.77	7.79	4.45	8.72	2.42	7.75	10.71	9.61	3.99	2.31	0.00									4.51	4.41	5.02	2.03	8.02	4.60	146.44
Northern Samar	1.000	8.08	9.90	8.34	15.01	14.49	10.73	7.97	6.03	1.15	9.06	17.84	23.23	17.88	15.08	14.69	16.68	14.15	8.56	5.89	0.46	0.77	0.00									0.00	4.77	3.46	5.93	0.00	6.47	246.61
Weatern Samar	1.000	0.32	10.76	4.33	11.11	10.73	7.94	4.65	2.45	0.85	6.04	11.88	12.91	11.88	1.16	6.44	5.84	2.51	4.94	2.69	3.26	5.46	0.00									0.00	3.25	8.57	2.32	5.72	4.46	152.49
Eastern Samar	1.000	3.99	9.46	5.91	9.75	6.89	6.97	3.29	2.14	0.74	5.71	11.22	10.10	8.97	4.51	6.11	7.10	3.33	5.49	4.13	4.00	4.42	0.00									0.00	2.20	6.68	1.70	4.01	4.06	142.89
WRR-IX																																						**1,778**
Zamboanga del Norte	1.000	25.28	37.34	23.95	20.04	19.71	9.63	5.11	0.04		18.23	23.63	24.46	27.96	42.97	23.73	26.87	21.27	24.36	17.60	21.81	17.72	15.45	0.00	0.00	0.00			0.00	0.00	10.76	9.34	18.59	0.52	4.29	37.01	20.58	548.24
Zamboanga del Sur	1.000	55.00	53.55	54.09	40.41	28.27	13.81	7.32	0.06		22.61	44.77	47.39	55.73	54.28	27.35	23.53	22.24	17.26	24.89	5.94	22.55	4.18	0.00	0.00	0.00			0.00	0.27	16.81	11.66	28.56	13.87	17.46	21.30	24.60	759.75
Zamboanga Sibugay	1.000	12.12	14.42	11.79	14.33	10.03	4.90	2.59	0.02		8.14	6.71	6.57	7.02	13.00	11.64	11.96	8.28	10.08	5.43	8.41	6.80	7.72	0.00	0.00	0.00			0.16	0.00	6.02	7.83	10.17	1.34	5.24	18.78	12.19	243.67
Misamis Occidental	1.000	12.83	13.08	14.12	13.48	13.02	7.29	10.16	5.41	1.03						3.03	8.31	9.81	4.40	4.55	3.74	2.82	5.54	3.42	8.31	6.82	6.47	0.00	0.00	0.00		0.00	0.95	7.02	2.54	0.68	1.24	170.09
Basilan	1.000	0.86	0.88	0.95	0.91	0.88	0.65	0.68	0.36	0.07						0.03	0.09	0.10	0.04	0.04	0.03	0.04	0.06	0.07	0.05	0.03	0.00	0.00	0.00	0.00		0.15	0.39	0.34	0.59	0.53	0.19	9.01
Sulu	1.000	2.83	2.88	3.11	2.03	2.86	2.12	1.72	1.19	0.23						0.11	0.18	0.39	0.16	0.11	0.27	0.16	0.17	0.28	0.22	0.26	0.23	0.16	0.00	0.00		1.31	0.98	1.74	2.76	2.39	0.49	31.31
Tawi-Tawi	1.000	1.19	1.56	1.69	1.24	1.55	0.77	0.70	0.64	0.12						0.06	0.11	0.17	0.11	0.02	0.11	0.09	0.08	0.12	0.13	0.11	0.10	0.07	0.01	0.00		0.71	0.37	1.36	1.07	1.30	0.42	15.97

WRR-X																																						**3,263**
Bukidnon	0.348	31.04	31.83	23.23	24.20	29.53	11.46	2.42	4.66	1.97	2.82			0.00	0.00	3.11	10.68	4.30	5.20	1.60	8.12	6.17	13.05	19.44	12.51	9.45	0.00	0.00	0.00	0.00	0.00	0.00	7.22	7.31	12.44	24.99	8.52	317.27
Camiguin	1.000	0.30	0.32	0.30	0.32	0.74	0.55	0.58	0.31	0.06						0.67	0.77	0.81	0.37	0.52	0.97	0.58	0.69	0.70	0.88	0.74	0.61	0.57	0.00	0.00		0.00	0.65	0.43	0.72	0.21	0.73	15.08
Lanao del Norte	0.082	0.88	0.64	0.66	0.72	0.45	0.62	0.00	0.85	0.46	0.00	0.00				0.33	0.35	0.24	1.02	0.42	0.32	0.73	1.18	0.77	0.90	0.14	0.20	0.00	0.00	0.00	0.00	0.11	0.00	1.03	0.96	1.06	0.59	15.64
Misamis Oriental	0.999	13.18	8.28	9.16	6.07	9.11	7.49	12.93	0.00	0.00						3.73	4.17	12.27	8.77	7.06	5.83	11.94	9.51	3.43	10.31	6.27	6.56	5.64	0.00	0.00		4.42	11.20	15.64	8.00	8.47	16.20	225.66
Compostela Valley	0.523	28.47	27.27	71.80	0.00	66.28	6.78	16.11	0.00	0.00						1.10	34.58	69.54	32.61	22.21	29.39	16.75	32.59	27.37	40.96	38.22	30.93	17.45	0.00	0.00		0.00	11.81	37.61	64.88	16.47	19.26	760.45
Davao del Norte	0.007	0.07	0.09	0.12	0.12	0.21	0.21	0.22	0.12	0.00						0.00	0.06	0.13	0.07	0.09	0.13	0.16	0.15	0.20	0.14	0.13	0.02	0.00	0.00	0.00		0.00	0.06	0.11	0.02	0.16	0.21	3.01
Davao Oriental	0.051	1.21	1.23	1.33	1.27	0.81	0.91	0.95	0.00	0.10						0.31	0.88	0.79	0.52	0.41	0.64	0.69	0.64	0.82	0.96	0.25	0.08	0.00	0.00	0.00		0.00	0.39	0.44	0.14	0.35	0.55	16.66
Agusan del Norte	0.973	39.08	54.05	66.93	64.00	61.82	45.77	32.03	25.69	4.89						10.85	48.82	73.81	22.48	15.26	18.30	5.99	33.72	16.81	35.26	33.96	10.86	0.00	0.00	0.00		0.00	9.32	22.21	8.68	5.51	14.52	780.61
Agusan del Sur	0.889	62.25	63.46	68.47	65.47	63.24	46.82	49.31	26.27	0.00						0.00	33.06	47.55	30.04	0.00	19.58	31.56	19.54	30.39	25.29	20.47	10.66	0.00	0.00	0.00		0.00	9.56	35.86	20.27	8.72	10.76	798.59
Dinagat Islands	1.000	0.58	1.32	0.78	1.36	0.86	0.97	0.41	0.54	0.10						0.64	1.26	0.88	0.82	0.91	0.13	1.59	0.94	0.97	1.55	1.31	0.17	0.13	0.00	0.00		0.00	0.12	0.54	0.61	1.08	0.16	20.76
Surigao del Norte	1.000	6.08	14.34	7.43	11.34	8.40	10.57	7.29	1.71	0.00						7.45	17.78	10.77	9.54	17.93	2.00	17.48	15.18	13.49	22.14	14.50	1.37	1.37	0.00	0.00		0.00	0.00	8.57	4.49	6.73	6.60	244.54
Surigao del Sur	0.104	2.19	1.62	2.09	0.70	4.29	0.00	3.13	0.00	0.00						0.00	2.90	5.14	1.47	1.21	2.49	3.58	2.45	5.85	1.17	2.58	3.67	1.89	0.00	0.00		2.43	3.21	3.38	1.30	1.04	5.13	64.90
WRR-XI																																						**3,685**
Bukidnon	0.046	4.10	4.21	3.07	3.20	3.90	1.52	0.32	0.62	0.26	0.37			0.00	0.00	0.41	1.41	0.57	0.69	0.21	1.07	0.82	1.72	2.57	1.65	1.25	0.00	0.00	0.00	0.00	0.00	0.00	0.95	0.97	1.64	3.30	1.13	41.94
Compostela Valley	0.477	25.97	24.87	65.48	0.00	60.45	6.19	14.70	0.00	0.00						1.00	31.54	63.42	29.74	20.26	26.80	15.28	29.72	24.96	37.36	34.86	28.21	15.92	0.00	0.00		0.00	10.77	34.31	59.17	15.02	17.57	693.57
Davao del Norte	0.989	10.14	12.30	16.46	17.39	29.72	29.03	30.62	16.31	0.00						0.00	9.16	18.23	10.32	12.88	18.97	23.17	20.85	28.53	20.42	17.99	3.13	0.00	0.00	0.00		0.00	8.71	15.34	2.92	23.10	29.33	425.01
Davao del Sur	0.998	16.68	43.76	47.22	36.51	14.55	32.28	19.86	9.08	0.00						9.98	26.39	30.96	23.43	29.90	21.64	39.37	12.55	43.43	19.96	6.21	15.31	0.00	0.00	0.00		3.76	22.77	39.88	42.22	35.73	21.04	664.49
Davao Oriental	0.949	22.52	22.96	24.77	23.66	15.00	16.92	17.76	0.00	1.80						5.77	16.34	14.77	9.71	7.55	11.87	12.85	11.92	15.18	17.81	4.74	1.43	0.00	0.00	0.00		0.00	7.24	8.20	2.57	6.50	10.24	310.08
Sarangani	0.869	4.52	0.00	0.56	0.00	0.00		0.00	4.49	6.44	3.57	6.96	10.51	5.85	4.09	9.26	8.17	4.86	2.37	0.00	0.00	0.51	1.00	0.00		0.00	0.71	2.52	2.70	6.40	4.37	4.27	3.80	3.08	5.33	4.26	0.98	111.56
South Cotabato	0.340	25.46	18.55	0.00	5.67	0.46		12.41	5.01	34.59	19.13	48.13	56.56	35.72	30.43	23.11	17.06	20.69	12.52	0.00	0.00	0.00	0.00	0.00		0.00	10.41	27.11	7.20	19.97	22.38	29.83	23.01	23.81	26.50	21.87	34.13	611.73
North Cotabato	0.038	5.08	1.40	0.00	0.00	0.00		2.35	2.33	3.56	6.67	9.26	7.71	5.61	4.08	5.10	2.08	2.13	4.75	1.30	0.00	0.04	0.00	0.00		0.00	1.58	3.12	0.93	4.51	4.56	4.73	3.79	4.77	3.11	4.75	6.84	106.11
Sultan Kudarat	0.052	1.80	0.19	0.00	0.00	0.00		0.00	2.03	2.92	0.84	3.04	4.77	2.41	1.08	4.21	2.50	1.23	0.10	0.00	0.00	0.00	0.45	0.00		0.00	0.00	0.38	0.79	1.97	1.14	1.23	0.58	2.59	2.15	2.59	0.54	41.52
Agusan del Norte	0.027	1.08	1.50	1.86	1.78	1.72	1.27	0.89	0.71	0.14						0.30	1.35	2.05	0.62	0.42	0.51	0.17	0.94	0.47	0.98	0.94	0.30	0.00	0.00	0.00		0.00	0.26	0.62	0.24	0.15	0.40	21.66
Agusan del Sur	0.109	7.63	7.78	8.40	8.03	7.75	5.74	6.05	3.22	0.00						0.00	4.05	5.83	3.68	0.00	2.40	3.87	2.40	3.73	3.10	2.51	1.31	0.00	0.00	0.00		0.00	1.17	4.40	2.49	1.07	1.32	97.91
Surigao del Sur	0.896	18.88	13.94	17.98	6.03	36.92	0.00	26.96	0.00	0.00						0.00	24.99	44.30	12.70	10.43	21.44	30.81	21.10	50.37	10.07	22.19	31.58	16.30	0.00	0.00		20.97	27.69	29.14	11.24	8.94	44.16	559.14
WRR-XII																																						**6,540**
Bukidnon	0.606	54.05	55.43	40.46	42.14	51.43	19.96	4.22	8.11	3.43	4.91			0.00	0.00	5.42	18.60	7.48	9.05	2.78	14.14	10.75	22.72	33.86	21.78	16.46	0.00	0.00	0.00	0.00	0.00	0.00	12.57	12.72	21.66	43.52	14.83	552.48
Lanao del Norte	0.918	9.90	7.21	7.34	8.04	5.07	6.92	0.00	9.55	5.18	0.00	0.02				3.69	3.90	2.72	11.43	4.67	3.57	8.23	13.23	8.65	10.02	1.54	2.28	0.00	0.00	0.00	0.00	1.25	0.00	11.54	10.76	11.85	6.59	175.12
Misamis Oriental	0.001	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00						0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.00	0.00		0.00	0.01	0.02	0.01	0.01	0.02	0.23
Davao del Norte	0.004	0.04	0.05	0.07	0.07	0.12	0.12	0.12	0.07	0.00						0.00	0.04	0.07	0.04	0.05	0.08	0.09	0.08	0.12	0.08	0.07	0.01	0.00	0.00	0.00		0.00	0.04	0.06	0.01	0.09	0.12	1.72
Davao del Sur	0.002	0.03	0.09	0.09	0.07	0.03	0.06	0.04	0.02	0.00						0.02	0.05	0.06	0.05	0.06	0.04	0.08	0.03	0.09	0.04	0.01	0.03	0.00	0.00	0.00		0.01	0.05	0.08	0.08	0.07	0.04	1.33
Sarangani	0.131	0.68	0.00	0.08	0.00	0.00		0.00	0.68	0.97	0.54	1.05	1.58	0.88	0.62	1.40	1.23	0.73	0.36	0.00	0.00	0.08	0.15	0.00		0.00	0.11	0.38	0.41	0.96	0.66	0.64	0.57	0.46	0.80	0.64	0.15	16.82
South Cotabato	0.660	49.42	36.02	0.00	11.01	0.89		24.10	9.73	67.14	37.13	93.42	#####	69.35	59.08	44.85	33.12	40.15	24.30	0.00	0.00	0.00	0.00	0.00		0.00	20.21	52.62	13.98	38.76	43.45	57.91	44.66	46.22	51.45	42.46	66.26	1,187.47
North Cotabato	0.962	#####	35.32	0.00	0.00	0.00		59.37	59.09	90.02	#####	#####	#####	#####	#####	#####	52.55	53.80	#####	32.99	0.00	0.95	0.00	0.00		0.00	39.89	78.88	23.62	#####	#####	#####	95.87	#####	78.79	#####	#####	2,686.34
Sultan Kudarat	0.948	32.84	3.50	0.00	0.00	0.00		0.00	37.02	53.17	15.24	55.43	87.05	43.95	19.67	76.73	45.50	22.38	1.87	0.00	0.00	0.00	8.25	0.00		0.00	0.00	6.86	14.37	35.83	20.81	22.49	10.53	47.22	39.28	47.22	9.78	756.99
Agusan del Sur	0.002	0.14	0.14	0.15	0.15	0.14	0.11	0.11	0.06	0.00						0.00	0.07	0.11	0.07	0.00	0.04	0.07	0.04	0.07	0.06	0.05	0.02	0.00	0.00	0.00		0.00	0.02	0.08	0.05	0.02	0.02	1.80
Lanao del Sur	1.000	36.61	8.03	0.00	0.00	0.00		1.91	1.28	0.30	0.40	4.55	5.65	4.49	2.19	3.02	0.17	2.09	1.31	0.00	0.00	0.00	0.00	0.00		0.00	0.00	5.70	0.00	18.27	16.92	18.41	8.90	18.24	22.92	30.90	49.28	261.54
Maguindanao	1.000	90.84	30.07	0.00	0.00	0.00		4.37	4.43	3.66	5.27	13.20	14.78	10.72	8.90	6.02	3.32	3.22	6.75	4.49	0.00	0.94	0.00	0.00		0.00	27.41	55.45	0.00	79.17	69.86	86.26	56.51	67.14	46.94	77.42	#####	898.64
Total	80.000																																					**55,069**

Source: JICA Survey Team

Table F 51 Irrigation Water Demands of Surface Water Systems by WRR in 2050
(Based on Irrigated Areas Projected in Consideration of NIA Financial Program)

(Unit: MCM)

Region/	Area	Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			Annual
Province	Rate	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
WRR-I																																						**1,857**
Abra	0.991	20.85	21.25	22.94	22.12	21.37	15.84	16.86	8.98	0.00							8.18	15.98	21.23	11.47	2.65	5.91	7.40	6.81	7.24	7.65	15.96	20.87	7.92	0.00	0.00	9.01	17.91	23.49	20.21	1.28	20.88	382.25
Apayao	0.003	0.04	0.04	0.04	0.04	0.04	0.03	0.02	0.02	0.00							0.00	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.03	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.03	0.04	0.60
Benguet	0.467	7.92	8.07	8.71	8.38	8.10	6.00	6.38	3.40	0.65			0.00	5.48	5.84	3.95	3.00	4.20	3.19	3.07	1.98	1.28	2.43	1.90	0.00	0.00	0.00					3.45	6.85	1.56	7.70	6.66	4.16	124.31
Kalinga	0.006	0.24	0.24	0.26	0.25	0.24	0.18	0.19	0.10	0.02							0.00	0.13	0.15	0.11	0.04	0.12	0.06	0.12	0.08	0.11	0.00	0.12	0.15	0.00	0.00	0.10	0.21	0.27	0.23	0.20	0.24	4.18
Mt. Province	0.140	1.76	1.70	0.25	1.19	0.68	0.04							1.40	0.82	1.80	1.98	1.01	1.41	1.00	0.00	0.17	0.10	0.74	0.65	0.20	0.00	0.00	0.48	1.91	1.03	0.03	0.00	1.11	0.53	0.91	1.91	24.80
Ilocos Norte	0.984	33.23	33.87	36.55	35.21	31.33	17.84	14.30	2.48									17.05	45.16	45.56	52.05	24.41	20.71	21.11	38.60	2.85	22.43	6.06	0.00	0.00	0.00	18.91	34.78	15.36	34.34	3.61	33.47	641.27
Ilocos Sur	1.000	22.72	23.15	24.99	23.99	21.36	12.16	9.70	1.68									0.00	21.10	10.61	27.24	10.69	16.60	16.52	40.55	16.73	12.42	24.92	0.00	12.46	1.47	0.00	23.90	29.91	23.59	19.32	22.95	470.75
La Union	0.947	11.24	11.45	12.36	11.86	10.56	6.01	4.80	0.83									0.50	5.75	13.22	6.30	6.24	3.12	7.28	5.57	7.27	0.35	7.87	10.03	0.00	0.00	6.48	11.88	14.85	11.69	9.55	11.35	208.41
WRR-II																																						**9,361**
Abra	0.009	0.19	0.19	0.21	0.20	0.19	0.14	0.15	0.08	0.00							0.07	0.15	0.19	0.10	0.02	0.05	0.07	0.06	0.07	0.07	0.14	0.19	0.07	0.00	0.00	0.08	0.16	0.21	0.18	0.01	0.19	3.47
Apayao	0.997	11.93	12.16	13.13	12.67	12.25	9.08	7.36	5.18	0.99							0.00	9.91	11.08	8.46	7.11	6.81	6.11	7.08	4.12	3.39	5.14	10.59	2.28	3.61	0.43	5.28	0.00	0.00	0.00	10.07	11.98	198.19
Benguet	0.007	0.12	0.12	0.13	0.13	0.12	0.09	0.10	0.05	0.01			0.00	0.08	0.09	0.06	0.04	0.06	0.05	0.05	0.03	0.02	0.04	0.03	0.00	0.00	0.00					0.05	0.10	0.02	0.12	0.10	0.06	1.86
Ifugao	0.993			10.61	13.34	24.89	16.56	21.34	23.24	23.21	27.44	19.40	18.61	22.16	13.87	9.45	0.00	0.00				0.00	15.08	9.68	4.13	1.08	0.00	7.27	0.47	15.34	14.83	1.89	9.60	0.00	0.00	0.00		323.50
Kalinga	0.994	39.16	39.87	43.08	41.53	40.19	29.85	31.78	16.95	3.24							0.27	22.08	25.20	18.86	6.80	19.40	10.40	19.80	13.77	17.78	0.00	19.39	25.44	0.00		17.28	34.34	45.03	38.54	33.31	39.54	692.86
Mt. Province	0.858	10.78	10.41	1.51	7.27	4.15	0.26							8.57	5.03	11.01	12.12	6.17	8.63	6.15	0.00	1.06	0.63	4.51	3.99	1.23	0.00	0.00	2.93	11.71	6.30	0.20	0.00	6.79	3.25	5.59	11.71	151.98
Ilocos Norte	0.016	0.54	0.55	0.59	0.57	0.51	0.29	0.23	0.04									0.28	0.73	0.74	0.85	0.40	0.34	0.34	0.63	0.05	0.36	0.10	0.00	0.00	0.00	0.31	0.57	0.25	0.56	0.06	0.54	10.43
Batanes	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00								0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cagayan	1.000	79.75	97.53	#####	#####	97.82	88.89	94.78	50.50	0.00							44.33	#####	#####	#####	#####	88.79	70.21	77.74	54.29	83.46	#####	37.40	0.00	0.00	0.00	0.00	#####	#####	62.67	29.79	95.28	2,227.35
Isabela	1.000	#####	#####	#####	#####	#####	#####	#####	#####	0.00	40.26	0.30					2.95	#####	#####	#####	#####	98.83	#####	#####	#####	60.11	0.00	#####	0.00	0.00	0.00	#####	0.00	33.93	#####	42.21	#####	4,318.29
Nueva Vizcaya	0.873	50.60	51.55	55.66	53.70	51.92	38.50	41.04	21.88	4.17							8.34	60.23	65.18	8.07	14.41	26.50	14.63	6.56	23.96	14.38	11.09	0.00	0.00	15.08	0.00	0.00	49.36	63.01	31.46	0.00	6.21	787.48
Quirino	0.997	22.23	28.78	24.23	29.93	28.93	21.44	22.84	12.17	0.00							5.77	33.10	28.13	22.75	7.44	9.70	11.56	12.69	8.94	10.66	11.07	0.00	7.64	0.00	0.00	13.99	11.43	34.60	28.33	10.62	28.28	487.26
Aurora	0.410	6.27	4.76	5.46	5.30	6.71	5.01	8.11	9.96	7.83	6.95	0.00	0.00				0.00	4.82	7.81	4.52	7.85	3.64	3.57	6.98	7.46	5.43	0.29	2.48	0.00	0.15	0.00				3.68	7.32	6.32	138.69
Nueva Ecija	0.005	0.61	1.07	1.22	0.97	1.22	0.94	1.17	0.57	0.75	0.18	0.26	0.05			0.10	0.02	0.76	0.09	0.50	0.80	0.12	0.36	0.71	0.62	0.09	0.34	0.15	0.80	0.10	0.00	0.51	0.67	0.74	0.92	1.06	0.89	19.36
WRR-III																																						**11,074**
Benguet	0.526	8.92	9.08	9.81	9.44	9.12	6.76	7.19	3.83	0.73			0.00	6.17	6.57	4.44	3.38	4.73	3.60	3.46	2.24	1.44	2.73	2.15	0.00	0.00	0.00					3.89	7.71	1.76	8.67	7.51	4.68	140.02
Ifugao	0.007			0.07	0.09	0.18	0.12	0.15	0.16	0.16	0.19	0.14	0.13	0.16	0.10	0.07	0.00	0.00				0.00	0.11	0.07	0.03	0.01	0.00	0.05	0.00	0.11	0.10	0.01	0.07	0.00	0.00	0.00		2.28
Mt. Province	0.002	0.03	0.02	0.00	0.02	0.01	0.00							0.02	0.01	0.03	0.03	0.01	0.02	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.03	0.01	0.00	0.00	0.02	0.01	0.01	0.03	0.35
La Union	0.053	0.63	0.64	0.69	0.66	0.59	0.34	0.27	0.05									0.03	0.32	0.74	0.35	0.35	0.17	0.41	0.31	0.41	0.02	0.44	0.56	0.00	0.00	0.36	0.66	0.83	0.65	0.53	0.64	11.66
Pangasinan	1.000	#####	#####	#####	#####	#####	78.17	80.85	49.72	0.00	0.00							0.00	0.00	44.92	41.09	80.51	98.78	73.70	74.33	75.48	#####	51.22	#####	0.00	87.82	74.68	95.72	#####	#####	#####	#####	2,358.87
Nueva Vizcaya	0.127	7.36	7.50	8.10	7.81	7.55	5.60	5.97	3.18	0.61							1.21	8.76	9.48	1.17	2.10	3.86	2.13	0.95	3.49	2.09	1.61	0.00	0.00	2.19	0.00	0.00	7.18	9.17	4.58	0.00	0.90	114.56
Quirino	0.003	0.07	0.09	0.07	0.09	0.09	0.06	0.07	0.04	0.00							0.02	0.10	0.08	0.07	0.02	0.03	0.03	0.04	0.03	0.03	0.03	0.00	0.02	0.00	0.00	0.04	0.03	0.10	0.09	0.03	0.09	1.47
Aurora	0.548	8.38	6.37	7.30	7.08	8.97	6.69	10.84	13.31	10.46	9.28	0.00	0.00				0.00	6.44	10.44	6.04	10.49	4.86	4.77	9.33	9.97	7.25	0.39	3.32	0.00	0.20	0.00				4.92	9.79	8.45	185.37
Bataan	1.000	13.23	13.48	14.55	13.96	13.48	9.98	10.59	5.64	1.07								0.00	4.10	7.21	7.78	6.36	4.83	5.54	11.77	10.25	4.09	4.35	3.08	5.78	0.00	1.62	9.70	9.20	13.52	11.02	9.42	225.61
Bulacan	0.978	35.28	35.96	38.81	37.33	24.03	26.70	28.37	15.12	0.00								14.46	31.09	18.17	25.82	0.00	19.46	25.81	9.52	19.67	54.40	13.90	10.64	0.00	3.48	0.00	11.17	41.31	15.30	16.78	35.13	607.71
Nueva Ecija	0.994	#####	#####	#####	#####	#####	#####	#####	#####	#####	34.79	51.56	9.78			19.99	4.29	#####	18.25	99.44	#####	22.90	70.58	#####	#####	18.68	67.64	29.81	#####	20.73	0.00	#####	#####	#####	#####	#####	#####	3,848.52
Pampanga	1.000	58.66	59.80	64.53	62.14	60.01	44.43	47.36	25.23	4.80								4.79	29.13	48.10	27.03	23.68	17.91	3.91	15.08	37.41	18.90	9.88	25.01	13.54	19.05	27.67	53.04	68.55	57.46	48.90	58.34	1,034.33
Tarlac	1.000	#####	#####	#####	#####	#####	81.38	86.82	46.25	8.80								11.35	88.81	#####	99.96	26.27	0.00	46.57	#####	80.21	34.63	7.29	16.10	36.48	13.64	35.75	#####	#####	#####	89.33	79.01	2,027.03
Zambales	1.000	25.69	26.20	28.26	27.21	26.27	19.43	20.67	11.01	0.00								0.00	24.64	36.46	18.53	11.45	29.57	14.41	4.11	20.03	17.12	0.66	23.53	14.38	0.00	0.00	17.69	29.50	19.93	21.39	25.55	513.69
Rizal	0.021	0.19	0.05	0.14	0.20	0.19	0.14	0.15	0.00	0.02				0.00	0.06	0.20	0.11	0.03	0.04	0.07	0.11	0.09	0.07	0.07	0.00	0.03	0.00	0.00				0.00	0.11	0.08	0.17	0.10	0.19	2.61

WRR-IV																																						**3,804**
Aurora	0.042	0.64	0.49	0.56	0.54	0.69	0.51	0.83	1.02	0.80	0.71	0.00	0.00				0.00	0.49	0.80	0.46	0.80	0.37	0.37	0.72	0.76	0.56	0.03	0.25	0.00	0.02	0.00				0.38	0.75	0.65	14.21
Bulacan	0.022	0.79	0.81	0.87	0.84	0.54	0.60	0.64	0.34	0.00								0.33	0.70	0.41	0.58	0.00	0.44	0.58	0.21	0.44	1.22	0.31	0.24	0.00	0.08	0.00	0.25	0.93	0.34	0.38	0.79	13.67
Nueva Ecija	0.001	0.12	0.21	0.24	0.19	0.24	0.19	0.23	0.11	0.15	0.04	0.05	0.01			0.02	0.00	0.15	0.02	0.10	0.16	0.02	0.07	0.14	0.12	0.02	0.07	0.03	0.16	0.02	0.00	0.10	0.13	0.15	0.18	0.21	0.18	3.87
Batangas	1.000	7.41	7.51	11.07	10.61	10.25	7.59	8.06	4.29	0.82				1.50	7.39	9.76	4.93	3.28	6.58	0.22	7.14	3.71	3.36	2.01	0.32	0.00	0.00	0.00				0.00	5.99	6.80	8.76	1.54	10.00	150.89
Cavite	1.000	12.11	12.35	13.32	12.79	12.36	9.15	9.72	5.18	0.99				5.44	11.62	12.12	1.82	0.05	6.08	3.08	4.97	10.52	4.16	8.24	13.14	3.18	0.00	0.00				0.00	0.79	3.58	10.56	10.10	5.16	202.55
Laguna	1.000	26.16	26.67	28.78	27.61	26.67	19.75	20.98	11.18	0.00				10.26	10.75	19.44	12.38	19.38	10.72	10.95	12.86	10.59	12.01	9.51	0.80	0.00	0.00	0.00				0.00	0.00	13.91	4.92	5.70	26.06	378.04
Quezon	0.947	1.79	27.85	24.53	28.78	19.01	20.58	16.28	0.83	2.21				3.10	16.56	29.42	16.61	19.04	7.62	3.71	13.56	11.17	20.27	28.88	8.59	0.00	0.00	0.00				7.20	5.79	15.26	8.54	15.03	3.69	375.92
Rizal	0.979	8.72	2.24	6.51	9.20	8.88	6.58	6.98	0.00	0.71				0.00	2.93	9.32	4.99	1.38	1.69	3.43	4.97	4.40	3.44	3.43	0.00	1.59	0.00	0.00				0.00	5.25	3.74	7.78	4.44	8.88	121.49
Marinduque	1.000	1.63	0.86	2.61	2.72	1.93	2.17	3.03	2.92	2.94	2.02	0.40	0.20	0.93	2.87	4.08	1.45	1.11	1.58	0.74	2.56	1.70	1.86	1.59	0.87	0.26	0.00	0.05							1.28	0.37	3.29	50.04
Occidental Mindoro	1.000	48.12	49.05	52.93	50.71	48.98	36.27	38.39	20.45	3.89								0.00	30.30	56.38	19.25	25.58	0.00	2.18	26.73	27.35	13.18	4.16	38.36	0.00	8.38	9.86	9.71	62.28	49.31	25.93	38.98	796.71
Oriental Mindoro	1.000	50.50	48.75	58.22	60.47	59.67	48.38	67.51	53.18	42.76	45.21	1.85	4.42	28.91	16.88	43.32	23.63	11.24	26.93	7.09	30.71	21.46	20.96	11.03	23.88	0.00	4.49	0.00							8.45	37.13	40.71	897.72
Palawan	1.000	33.46	30.17	36.08	37.40	36.90	29.92	41.64	40.15	40.42	27.66	14.15	2.70	22.92	23.85	42.82	26.41	18.98	0.63	12.65	7.83	17.71	21.28	14.20	1.23	0.42	0.00	0.00							17.56	15.01	30.77	644.91
Romblon	1.000	5.90	6.54	7.81	8.10	7.99	6.48	9.04	8.72	8.78	6.02	3.08	0.59	4.11	7.94	11.28	6.30	6.77	3.07	3.42	3.03	2.29	0.95	3.03	3.35	1.49	0.00	0.00							2.33	5.43	9.80	153.64
WRR-V																																						**4,592**
Quezon	0.053	0.10	1.56	1.37	1.61	1.06	1.15	0.91	0.05	0.12				0.17	0.93	1.65	0.93	1.07	0.43	0.21	0.76	0.62	1.13	1.62	0.48	0.00	0.00	0.00				0.40	0.32	0.85	0.48	0.84	0.21	21.04
Albay	1.000	66.10	12.24	55.51	46.41	52.24	45.34	82.26	75.83	19.23	28.08	4.29		21.22	81.95	60.80	78.89	29.40	59.47	41.49	25.05	22.39	42.31	12.54	26.70	12.71	0.00	0.00							0.00	62.66	30.46	1,095.57
Camarines Norte	1.000	27.93	13.29	22.65	31.16	14.95	24.93	34.79	25.76	7.27	6.12	1.82		16.90	22.38	29.11	5.43	8.15	14.75	14.53	14.32	7.47	18.59	6.28	8.41	0.00	0.00	0.00							0.00	4.39	30.47	411.83
Camarines Sur	1.000	78.26	86.90	#####	#####	#####	#####	#####	#####	#####	53.37	0.00		56.03	#####	#####	#####	95.49	90.92	77.00	43.20	90.79	#####	49.96	40.05	0.00	0.00	0.00	0.00						0.00	35.81	#####	2,261.75
Catanduanes	1.000	4.84	0.78	5.20	4.08	2.42	4.32	6.01	2.32	4.27	2.05	0.31		0.00	5.51	5.74	4.21	3.03	4.20	3.58	0.82	2.52	3.01	1.61	4.63	1.23	0.00	0.11							0.00	2.17	3.33	82.30
Masbate	1.000	18.11	23.28	18.64	28.86	29.43	11.99	32.07	7.84	20.23	9.71	1.48		9.96	11.55	31.49	28.28	5.13	13.05	10.45	15.71	12.40	8.44	17.46	12.73	2.24	0.00	0.56							0.00	8.72	34.90	424.72
Sorsogon	1.000	2.64	17.43	17.00	16.70	22.04	7.48	24.08	8.50	17.10	8.21	0.00		1.10	7.43	26.41	16.09	6.74	7.83	3.82	10.40	10.76	6.13	14.48	6.10	0.07	0.00	0.43							0.00	9.79	26.19	294.94
WRR-VI																																						**3,169**
Aklan	1.000	11.73	11.36	11.14	7.26	3.37	0.28							4.11	16.24	14.85	9.45	9.23	4.05	7.55	4.40	7.46	4.79	8.70	4.81	3.66	0.00	0.33	0.00	4.38	9.67	2.64	3.10	5.12	4.99	11.02	4.74	190.44
Antique	1.000	24.85	23.02	13.43	12.79	7.29	0.00	0.02						0.00	0.00	24.86	10.64	5.38	0.00	6.39	8.16	8.02	8.37	6.50	0.00	0.00	0.00	0.00	0.00	0.00	13.72	6.77	6.72	15.55	22.87	23.94	26.34	275.64
Capiz	1.000	11.96	11.50	3.35	7.39	3.41	0.00							9.40	6.75	17.22	5.95	0.00	0.00	0.06	0.00	5.96	8.35	0.00	3.34	0.00	0.00	0.00	0.00	1.28	10.19	2.56	3.67	10.88	5.21	8.37	10.27	147.07
Guimaras	1.000	1.07	0.67	1.01	0.66	0.31	0.00							0.20	0.55	1.53	0.77	0.50	0.24	0.14	0.25	0.43	0.55	0.52	0.73	0.00	0.00	0.00	0.00	0.00	0.97	0.54	0.42	0.00	1.05	0.45	1.15	14.71
Iloilo	1.000	57.80	56.06	30.23	42.32	29.58	14.40	7.74	0.06					32.91	5.67	53.24	29.02	20.58	12.22	13.93	0.00	42.96	59.47	0.00	29.49	3.85	0.00	0.00	0.00	0.00	53.30	23.09	35.71	48.17	30.94	55.51	61.07	849.33
Negros Occidental	0.924	66.90	87.77	86.83	56.09	6.18	2.19							16.75	#####	#####	86.40	34.28	80.22	46.95	57.81	78.98	80.28	41.55	50.53	0.71	0.00	0.00	11.57	30.50	40.44	21.42	79.31	84.36	88.58	85.47	58.25	1,607.97
Negros Oriental	0.231	4.07	4.81	4.76	3.08	1.43	0.12							2.50	3.52	7.36	5.34	2.69	2.52	2.73	3.53	2.78	2.38	3.44	2.33	0.24	0.00	0.00	0.37	2.18	4.23	4.74	1.98	3.79	2.46	1.74	2.73	83.84
WRR-VII																																						**1,131**
Negros Occidental	0.076	5.50	7.22	7.14	4.61	0.51	0.18							1.38	9.48	9.24	7.11	2.82	6.60	3.86	4.76	6.50	6.60	3.42	4.16	0.06	0.00	0.00	0.95	2.51	3.33	1.76	6.52	6.94	7.29	7.03	4.79	132.26
Bohol	1.000	29.38	27.01	14.92	16.17	19.37	9.62	17.68	0.00	0.00					0.00	10.25	0.00	0.00	29.82	26.30	17.52	32.94	32.87	11.97	28.41	12.53	6.31	21.45	0.00	0.00	21.72	19.85	24.94	30.18	22.76	38.66	36.95	559.58
Cebu	1.000	9.14	8.97	5.29	6.39	3.71	0.00	0.00								3.98	3.44	9.60	7.86	8.94	2.44	4.50	3.70	7.52	9.05	8.52	0.00	0.00	0.00		2.97	8.24	7.73	5.23	3.52	8.16	7.43	146.33
Negros Oriental	0.769	13.55	16.03	15.86	10.25	4.77	0.40							8.33	11.73	24.50	17.78	8.96	8.38	9.08	11.74	9.24	7.92	11.47	7.74	0.81	0.00	0.00	1.23	7.25	14.08	15.79	6.59	12.60	8.18	5.78	9.07	279.11
Siquijor	1.000	0.38	0.33	0.39	0.34	0.31	0.13	0.03								0.72	1.21	0.86	0.34	0.39	0.70	0.89	1.10	0.63	1.16	0.90	0.28	0.03	0.00		0.29	0.32	0.40	0.23	0.05	0.47	0.54	13.44
WRR-VIII																																						**1,741**
Biliran	1.000	1.94	2.68	5.84	5.58	3.61	3.99	4.20	0.94	0.00						0.76	4.15	3.28	4.03	3.13	4.84	3.24	2.33	2.23	2.56	3.36	0.61	0.57				0.00	3.35	6.23	5.22	4.43	0.02	83.10
Northern Leyte	1.000	75.58	77.05	35.77	42.54	14.47	14.19	0.00	0.00	0.00						21.83	18.53	76.75	58.21	65.13	14.53	18.60	30.22	56.87	64.22	67.93	0.78	23.61				35.44	10.63	32.48	22.92	62.90	29.86	971.03
Southern Leyte	1.000	9.64	9.82	4.67	4.38	4.71	0.00	0.00	0.00	0.77	5.84	11.49	8.77	7.79	4.45	8.72	2.42	7.75	10.71	9.61	3.99	2.31	0.00									4.51	4.41	5.02	2.03	8.02	4.60	146.44
Northern Samar	1.000	8.08	9.90	8.34	15.01	14.49	10.73	7.97	6.03	1.15	9.06	17.84	23.23	17.88	15.08	14.69	16.68	14.15	8.56	5.89	0.46	0.77	0.00									0.00	4.77	3.46	5.93	0.00	6.47	246.61
Weatern Samar	1.000	0.31	10.67	4.29	11.02	10.64	7.88	4.61	2.43	0.84	6.00	11.80	12.82	11.80	1.15	6.40	5.80	2.49	4.91	2.68	3.24	5.42	0.00									0.00	3.23	8.50	2.30	5.67	4.42	151.32
Eastern Samar	1.000	3.99	9.46	5.91	9.75	6.89	6.97	3.29	2.14	0.74	5.71	11.22	10.10	8.97	4.51	6.11	7.10	3.33	5.49	4.13	4.00	4.42	0.00									0.00	2.20	6.68	1.70	4.01	4.06	142.89
WRR-IX																																						**1,772**
Zamboanga del Norte	1.000	25.28	37.34	23.95	20.04	19.71	9.63	5.11	0.04		18.23	23.63	24.46	27.96	42.97	23.73	26.87	21.27	24.36	17.60	21.81	17.72	15.45	0.00	0.00	0.00			0.00	0.00	10.76	9.34	18.59	0.52	4.29	37.01	20.58	548.24
Zamboanga del Sur	1.000	54.84	53.39	53.93	40.29	28.19	13.77	7.30	0.05		22.55	44.64	47.26	55.57	54.13	27.27	23.47	22.18	17.21	24.82	5.93	22.49	4.17	0.00	0.00	0.00			0.00	0.27	16.76	11.63	28.48	13.83	17.41	21.24	24.53	757.63
Zamboanga Sibugay	1.000	12.03	14.32	11.70	14.23	9.95	4.86	2.57	0.02		8.08	6.65	6.52	6.97	12.90	11.55	11.87	8.22	10.01	5.39	8.34	6.75	7.66	0.00	0.00	0.00			0.16	0.00	5.97	7.78	10.10	1.33	5.20	18.64	12.10	241.86
Misamis Occidental	1.000	12.83	13.08	14.12	13.48	13.02	7.29	10.16	5.41	1.03						3.03	8.31	9.81	4.40	4.55	3.74	2.82	5.54	3.42	8.31	6.82	6.47	0.00	0.00	0.00		0.00	0.95	7.02	2.54	0.68	1.24	170.09
Basilan	1.000	0.86	0.88	0.95	0.91	0.88	0.65	0.68	0.36	0.07						0.03	0.09	0.10	0.04	0.04	0.03	0.04	0.06	0.07	0.05	0.03	0.00	0.00	0.00	0.00		0.15	0.39	0.34	0.59	0.53	0.19	9.01
Sulu	1.000	2.61	2.66	2.87	1.87	2.64	1.96	1.59	1.10	0.21						0.10	0.16	0.36	0.15	0.10	0.25	0.15	0.15	0.26	0.20	0.24	0.21	0.14	0.00	0.00		1.21	0.90	1.61	2.55	2.21	0.45	28.94
Tawi-Tawi	1.000	1.19	1.56	1.69	1.24	1.55	0.77	0.70	0.64	0.12						0.06	0.11	0.17	0.11	0.02	0.11	0.09	0.08	0.12	0.13	0.11	0.10	0.07	0.01	0.00		0.71	0.37	1.36	1.07	1.30	0.42	15.97

WRR-X																																							**3,257**
Bukidnon	0.348	31.04	31.83	23.23	24.20	29.53	11.46	2.42	4.66	1.97	2.82			0.00	0.00	3.11	10.68	4.30	5.20	1.60	8.12	6.17	13.05	19.44	12.51	9.45	0.00	0.00	0.00	0.00	0.00	0.00	7.22	7.31	12.44	24.99	8.52	317.27
Camiguin	1.000	0.30	0.32	0.30	0.32	0.74	0.55	0.58	0.31	0.06						0.67	0.77	0.81	0.37	0.52	0.97	0.58	0.69	0.70	0.88	0.74	0.61	0.57	0.00	0.00		0.00	0.65	0.43	0.72	0.21	0.73	15.08
Lanao del Norte	0.082	0.88	0.64	0.65	0.72	0.45	0.62	0.00	0.85	0.46	0.00	0.00				0.33	0.35	0.24	1.02	0.42	0.32	0.73	1.18	0.77	0.89	0.14	0.20	0.00	0.00	0.00	0.00	0.11	0.00	1.03	0.96	1.06	0.59	15.61
Misamis Oriental	0.999	13.03	8.18	9.06	6.01	9.01	7.41	12.79	0.00	0.00						3.69	4.12	12.12	8.67	6.97	5.76	11.80	9.40	3.39	10.18	6.20	6.48	5.57	0.00	0.00		4.37	11.07	15.46	7.91	8.38	16.01	223.03
Compostela Valley	0.523	28.47	27.27	71.80	0.00	66.28	6.78	16.11	0.00	0.00						1.10	34.58	69.54	32.61	22.21	29.39	16.75	32.59	27.37	40.96	38.22	30.93	17.45	0.00	0.00		0.00	11.81	37.61	64.88	16.47	19.26	760.45
Davao del Norte	0.007	0.07	0.09	0.12	0.12	0.21	0.21	0.22	0.12	0.00						0.00	0.06	0.13	0.07	0.09	0.13	0.16	0.15	0.20	0.14	0.13	0.02	0.00	0.00	0.00		0.00	0.06	0.11	0.02	0.16	0.21	3.01
Davao Oriental	0.051	1.21	1.23	1.33	1.27	0.81	0.91	0.95	0.00	0.10						0.31	0.88	0.79	0.52	0.41	0.64	0.69	0.64	0.82	0.96	0.25	0.08	0.00	0.00	0.00		0.00	0.39	0.44	0.14	0.35	0.55	16.66
Agusan del Norte	0.973	39.08	54.05	66.93	64.00	61.82	45.77	32.03	25.69	4.89						10.85	48.82	73.81	22.48	15.26	18.30	5.99	33.72	16.81	35.26	33.96	10.86	0.00	0.00	0.00		0.00	9.32	22.21	8.68	5.51	14.52	780.61
Agusan del Sur	0.889	62.06	63.27	68.27	65.28	63.05	46.68	49.16	26.19	0.00						0.00	32.80	47.17	29.80	0.00	19.42	31.31	19.38	30.15	25.09	20.31	10.57	0.00	0.00	0.00		0.00	9.53	35.75	20.21	8.70	10.73	794.88
Dinagat Islands	1.000	0.58	1.32	0.78	1.36	0.86	0.97	0.41	0.54	0.10						0.64	1.26	0.88	0.82	0.91	0.13	1.59	0.94	0.97	1.55	1.31	0.17	0.13	0.00	0.00		0.00	0.12	0.54	0.61	1.08	0.16	20.76
Surigao del Norte	1.000	6.08	14.34	7.43	11.34	8.40	10.57	7.29	1.71	0.00						7.45	17.78	10.77	9.54	17.93	2.00	17.48	15.18	13.49	22.14	14.50	1.37	1.37	0.00	0.00		0.00	0.00	8.57	4.49	6.73	6.60	244.54
Surigao del Sur	0.104	2.19	1.62	2.09	0.70	4.29	0.00	3.13	0.00	0.00						0.00	2.90	5.13	1.47	1.21	2.49	3.57	2.45	5.84	1.17	2.57	3.66	1.89	0.00	0.00		2.43	3.21	3.38	1.30	1.04	5.13	64.85
WRR-XI																																							**3,681**
Bukidnon	0.046	4.10	4.21	3.07	3.20	3.90	1.52	0.32	0.62	0.26	0.37			0.00	0.00	0.41	1.41	0.57	0.69	0.21	1.07	0.82	1.72	2.57	1.65	1.25	0.00	0.00	0.00	0.00	0.00	0.00	0.95	0.97	1.64	3.30	1.13	41.94
Compostela Valley	0.477	25.97	24.87	65.48	0.00	60.45	6.19	14.70	0.00	0.00						1.00	31.54	63.42	29.74	20.26	26.80	15.28	29.72	24.96	37.36	34.86	28.21	15.92	0.00	0.00		0.00	10.77	34.31	59.17	15.02	17.57	693.57
Davao del Norte	0.989	10.14	12.30	16.46	17.39	29.72	29.03	30.62	16.31	0.00						0.00	9.16	18.23	10.32	12.88	18.97	23.17	20.85	28.53	20.42	17.99	3.13	0.00	0.00	0.00		0.00	8.71	15.34	2.92	23.10	29.33	425.01
Davao del Sur	0.998	16.68	43.76	47.22	36.51	14.55	32.28	19.86	9.08	0.00						9.98	26.39	30.96	23.43	29.90	21.64	39.37	12.55	43.43	19.96	6.21	15.31	0.00	0.00	0.00		3.76	22.77	39.88	42.22	35.73	21.04	664.49
Davao Oriental	0.949	22.52	22.96	24.77	23.66	15.00	16.92	17.76	0.00	1.80						5.77	16.34	14.77	9.71	7.55	11.87	12.85	11.92	15.18	17.81	4.74	1.43	0.00	0.00	0.00		0.00	7.24	8.20	2.57	6.50	10.24	310.08
Sarangani	0.869	4.46	0.00	0.55	0.00	0.00		0.00	4.44	6.36	3.53	6.88	10.39	5.78	4.04	9.15	8.07	4.80	2.34	0.00	0.00	0.51	0.98	0.00		0.00	0.70	2.49	2.66	6.32	4.31	4.22	3.75	3.04	5.26	4.20	0.97	110.22
South Cotabato	0.340	25.45	18.55	0.00	5.67	0.46		12.41	5.01	34.58	19.12	48.11	56.54	35.71	30.42	23.10	17.06	20.68	12.51	0.00	0.00	0.00	0.00	0.00		0.00	10.41	27.10	7.20	19.96	22.38	29.82	23.00	23.80	26.49	21.86	34.12	611.51
North Cotabato	0.038	5.03	1.38	0.00	0.00	0.00		2.32	2.31	3.52	6.60	9.16	7.62	5.55	4.04	5.04	2.05	2.10	4.70	1.29	0.00	0.04	0.00	0.00		0.00	1.56	3.08	0.92	4.46	4.51	4.68	3.75	4.72	3.08	4.70	6.77	104.98
Sultan Kudarat	0.052	1.78	0.19	0.00	0.00	0.00		0.00	2.01	2.88	0.83	3.01	4.72	2.38	1.07	4.16	2.47	1.21	0.10	0.00	0.00	0.00	0.45	0.00		0.00	0.00	0.37	0.78	1.94	1.13	1.22	0.57	2.56	2.13	2.55	0.53	41.03
Agusan del Norte	0.027	1.08	1.50	1.86	1.78	1.72	1.27	0.89	0.71	0.14						0.30	1.35	2.05	0.62	0.42	0.51	0.17	0.94	0.47	0.98	0.94	0.30	0.00	0.00	0.00		0.00	0.26	0.62	0.24	0.15	0.40	21.66
Agusan del Sur	0.109	7.61	7.76	8.37	8.00	7.73	5.72	6.03	3.21	0.00						0.00	4.02	5.78	3.65	0.00	2.38	3.84	2.38	3.70	3.08	2.49	1.30	0.00	0.00	0.00		0.00	1.17	4.38	2.48	1.07	1.32	97.46
Surigao del Sur	0.896	18.88	13.94	17.98	6.03	36.92	0.00	26.96	0.00	0.00						0.00	24.95	44.24	12.69	10.42	21.41	30.77	21.07	50.30	10.05	22.16	31.53	16.28	0.00	0.00		20.97	27.69	29.14	11.24	8.94	44.16	558.72
WRR-XII																																							**6,499**
Bukidnon	0.606	54.05	55.43	40.46	42.14	51.43	19.96	4.22	8.11	3.43	4.91			0.00	0.00	5.42	18.60	7.48	9.05	2.78	14.14	10.75	22.72	33.86	21.78	16.46	0.00	0.00	0.00	0.00	0.00	0.00	12.57	12.72	21.66	43.52	14.83	552.48
Lanao del Norte	0.918	9.88	7.19	7.33	8.03	5.06	6.90	0.00	9.53	5.17	0.00	0.02				3.68	3.89	2.72	11.41	4.67	3.56	8.21	13.21	8.63	10.01	1.54	2.28	0.00	0.00	0.00	0.00	1.24	0.00	11.51	10.74	11.82	6.58	174.81
Misamis Oriental	0.001	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00						0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.00	0.00		0.00	0.01	0.02	0.01	0.01	0.02	0.22
Davao del Norte	0.004	0.04	0.05	0.07	0.07	0.12	0.12	0.12	0.07	0.00						0.00	0.04	0.07	0.04	0.05	0.08	0.09	0.08	0.12	0.08	0.07	0.01	0.00	0.00	0.00		0.00	0.04	0.06	0.01	0.09	0.12	1.72
Davao del Sur	0.002	0.03	0.09	0.09	0.07	0.03	0.06	0.04	0.02	0.00						0.02	0.05	0.06	0.05	0.06	0.04	0.08	0.03	0.09	0.04	0.01	0.03	0.00	0.00	0.00		0.01	0.05	0.08	0.08	0.07	0.04	1.33
Sarangani	0.131	0.67	0.00	0.08	0.00	0.00		0.00	0.67	0.96	0.53	1.04	1.57	0.87	0.61	1.38	1.22	0.72	0.35	0.00	0.00	0.08	0.15	0.00		0.00	0.11	0.38	0.40	0.95	0.65	0.64	0.57	0.46	0.79	0.63	0.15	16.62
South Cotabato	0.660	49.41	36.00	0.00	11.00	0.89		24.09	9.72	67.12	37.12	93.39	#####	69.32	59.05	44.84	33.11	40.14	24.29	0.00	0.00	0.00	0.00	0.00		0.00	20.20	52.60	13.98	38.75	43.44	57.89	44.65	46.20	51.43	42.44	66.24	1,187.05
North Cotabato	0.962	#####	34.94	0.00	0.00	0.00		58.74	58.46	89.06	#####	#####	#####	#####	#####	#####	51.99	53.23	#####	32.64	0.00	0.94	0.00	0.00		0.00	39.46	78.04	23.37	#####	#####	#####	94.84	#####	77.94	#####	#####	2,657.63
Sultan Kudarat	0.948	32.40	3.45	0.00	0.00	0.00		0.00	36.61	52.59	15.07	54.82	86.09	43.47	19.45	75.88	45.00	22.14	1.85	0.00	0.00	0.00	8.16	0.00		0.00	0.00	6.77	14.17	35.35	20.53	22.19	10.39	46.58	38.75	46.58	9.65	747.95
Agusan del Sur	0.002	0.14	0.14	0.15	0.15	0.14	0.11	0.11	0.06	0.00						0.00	0.07	0.11	0.07	0.00	0.04	0.07	0.04	0.07	0.06	0.05	0.02	0.00	0.00	0.00		0.00	0.02	0.08	0.05	0.02	0.02	1.79
Lanao del Sur	1.000	36.61	8.03	0.00	0.00	0.00		1.91	1.28	0.30	0.40	4.55	5.65	4.49	2.19	3.02	0.17	2.09	1.31	0.00	0.00	0.00	0.00	0.00		0.00	0.00	5.70	0.00	18.27	16.92	18.41	8.90	18.24	22.92	30.90	49.28	261.54
Maguindanao	1.000	90.61	29.99	0.00	0.00	0.00		4.36	4.42	3.65	5.25	13.17	14.74	10.69	8.88	6.01	3.31	3.21	6.73	4.48	0.00	0.93	0.00	0.00		0.00	27.34	55.30	0.00	78.97	69.68	86.04	56.36	66.97	46.82	77.23	#####	896.35
Total	80.000																																					**51,937**

Source: JICA Survey Team

Table F 52 Irrigation Water Demands of Groundwater Systems by WRR in 2050
(Based on Irrigated Areas Projected in Consideration of NIA Financial Program)

(Unit: MCM)

Region/	Area	Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sept			Oct			Nov			Dec			Annual
Province	Rate	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
WRR-I																																						**82**
Abra	0.991	0.06	0.06	0.07	0.06	0.06	0.05	0.05	0.03	0.00							0.05	0.10	0.13	0.07	0.02	0.04	0.05	0.04	0.04	0.05	0.10	0.13	0.05	0.00	0.00	0.03	0.05	0.07	0.06	0.00	0.06	1.56
Apayao	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
Benguet	0.467	0.06	0.06	0.07	0.07	0.06	0.05	0.05	0.03	0.01			0.00	0.05	0.05	0.03	0.03	0.04	0.03	0.03	0.02	0.01	0.02	0.02	0.00	0.00	0.00					0.03	0.05	0.01	0.06	0.05	0.03	1.01
Kalinga	0.006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
Mt. Province	0.140	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Ilocos Norte	0.984	0.04	0.05	0.05	0.05	0.04	0.02	0.02	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.05	0.02	0.05	0.00	0.05	0.47
Ilocos Sur	1.000	1.12	1.14	1.23	1.18	1.05	0.60	0.48	0.08									0.00	1.22	0.61	1.58	0.62	0.96	0.96	2.35	0.97	0.72	1.44	0.00	0.72	0.09	0.00	1.18	1.48	1.16	0.95	1.13	25.04
La Union	0.947	2.96	3.01	3.25	3.12	2.78	1.58	1.26	0.22									0.12	1.40	3.22	1.54	1.52	0.76	1.78	1.36	1.77	0.08	1.92	2.45	0.00	0.00	1.71	3.13	3.91	3.08	2.51	2.99	53.43
WRR-II																																						**1,418**
Abra	0.009	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Apayao	0.997	0.92	0.94	1.01	0.98	0.94	0.70	0.57	0.40	0.08							0.00	0.76	0.85	0.65	0.54	0.52	0.47	0.54	0.32	0.26	0.39	0.81	0.17	0.28	0.03	0.41	0.00	0.00	0.00	0.78	0.92	15.23
Benguet	0.007	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	0.00	0.02
Ifugao	0.993			0.05	0.06	0.11	0.07	0.09	0.10	0.10	0.12	0.09	0.08	0.10	0.06	0.04	0.00	0.00				0.00	0.06	0.04	0.02	0.00	0.00	0.03	0.00	0.06	0.06	0.01	0.04	0.00	0.00	0.00		1.38
Kalinga	0.994	0.53	0.54	0.58	0.56	0.54	0.40	0.43	0.23	0.04							0.00	0.28	0.32	0.24	0.09	0.24	0.13	0.25	0.17	0.22	0.00	0.24	0.32	0.00		0.23	0.46	0.61	0.52	0.45	0.53	9.14
Mt. Province	0.858	0.02	0.02	0.00	0.01	0.01	0.00							0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.02	0.01	0.00	0.00	0.01	0.01	0.01	0.02	0.26
Ilocos Norte	0.016	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Batanes	1.000	0.29	0.31	0.40	0.38	0.36	0.27	0.24	0.05								0.12	0.86	0.56	0.28	0.60	0.71	0.48	0.49	0.33	0.41	0.57	0.31	0.27	0.00	0.00	0.10	0.47	0.38	0.02	0.32	0.38	9.96
Cagayan	1.000	47.92	58.61	77.63	74.63	58.78	53.41	56.95	30.35	0.00							28.20	81.04	82.07	65.83	65.05	56.50	44.67	49.47	34.55	53.11	67.44	23.80	0.00	0.00	0.00	0.00	66.46	85.39	37.66	17.90	57.25	1,374.68
Isabela	1.000	0.19	0.13	0.21	0.21	0.20	0.15	0.18	0.13	0.00	0.03	0.00					0.00	0.15	0.13	0.16	0.13	0.07	0.14	0.09	0.08	0.04	0.00	0.14	0.00	0.00	0.00	0.08	0.00	0.02	0.07	0.03	0.18	2.93
Nueva Vizcaya	0.873	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quirino	0.997	0.17	0.22	0.18	0.23	0.22	0.16	0.17	0.09	0.00							0.04	0.25	0.21	0.17	0.06	0.07	0.09	0.10	0.07	0.08	0.08	0.00	0.06	0.00	0.00	0.11	0.09	0.26	0.22	0.08	0.22	3.71
Aurora	0.410	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00
Nueva Ecija	0.005	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.00	0.00	0.00			0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.02	0.34
WRR-III																																						**1,197**
Benguet	0.526	0.07	0.07	0.08	0.08	0.07	0.05	0.06	0.03	0.01			0.00	0.05	0.06	0.04	0.03	0.04	0.03	0.03	0.02	0.01	0.02	0.02	0.00	0.00	0.00					0.03	0.06	0.01	0.07	0.06	0.04	1.14
Ifugao	0.007			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.01
Mt. Province	0.002	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
La Union	0.053	0.17	0.17	0.18	0.17	0.16	0.09	0.07	0.01									0.01	0.08	0.18	0.09	0.09	0.04	0.10	0.08	0.10	0.00	0.11	0.14	0.00	0.00	0.10	0.17	0.22	0.17	0.14	0.17	2.99
Pangasinan	1.000	36.30	37.49	41.24	40.17	37.20	23.80	24.61	15.14	0.00	0.00							0.00	0.00	11.74	10.74	21.04	25.82	19.27	19.43	19.73	31.56	13.39	27.82	0.00	22.96	22.73	29.14	32.25	39.13	42.67	35.93	681.28
Nueva Vizcaya	0.127	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Quirino	0.003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Aurora	0.548	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00
Bataan	1.000	0.34	0.35	0.37	0.36	0.35	0.26	0.27	0.14	0.03								0.00	0.10	0.18	0.20	0.16	0.12	0.14	0.30	0.26	0.10	0.11	0.08	0.15	0.00	0.04	0.25	0.24	0.35	0.28	0.24	5.77
Bulacan	0.978	1.98	2.02	2.18	2.10	1.35	1.50	1.59	0.85	0.00								0.72	1.54	0.90	1.28	0.00	0.97	1.28	0.47	0.98	2.70	0.69	0.53	0.00	0.17	0.00	0.63	2.32	0.86	0.94	1.97	32.52
Nueva Ecija	0.994	2.16	3.77	4.29	3.41	4.29	3.31	4.11	2.02	2.63	0.62	0.91	0.17			0.35	0.08	2.68	0.32	1.76	2.79	0.40	1.25	2.48	2.16	0.33	1.20	0.53	2.82	0.37	0.00	1.80	2.36	2.61	3.25	3.72	3.13	68.06
Pampanga	1.000	3.24	3.31	3.57	3.44	3.32	2.46	2.62	1.40	0.27								0.35	2.15	3.55	1.99	1.75	1.32	0.29	1.11	2.76	1.39	0.73	1.85	1.00	1.41	1.53	2.93	3.79	3.18	2.70	3.23	62.62
Tarlac	1.000	14.15	14.43	15.57	15.01	14.50	10.73	11.45	6.10	1.16								1.33	10.43	12.13	11.74	3.08	0.00	5.47	13.81	9.42	4.07	0.86	1.89	4.28	1.60	4.71	14.56	18.29	14.47	11.78	10.42	257.41
Zambales	1.000	4.60	4.69	5.06	4.87	4.70	3.48	3.70	1.97	0.00								0.00	3.60	5.32	2.71	1.67	4.32	2.10	0.60	2.92	2.50	0.10	3.43	2.10	0.00	0.00	3.17	5.28	3.57	3.83	4.58	84.88
Rizal	0.021	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00				0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.01	0.00	0.01	0.08

WRR-IV																																						**230**
Aurora	0.042	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00
Bulacan	0.022	0.04	0.05	0.05	0.05	0.03	0.03	0.04	0.02	0.00								0.02	0.03	0.02	0.03	0.00	0.02	0.03	0.01	0.02	0.06	0.02	0.01	0.00	0.00	0.00	0.01	0.05	0.02	0.02	0.04	0.73
Nueva Ecija	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07
Batangas	1.000	0.37	0.38	0.56	0.53	0.52	0.38	0.41	0.22	0.04				0.10	0.50	0.66	0.34	0.22	0.45	0.02	0.49	0.25	0.23	0.14	0.02	0.00	0.00	0.00				0.00	0.30	0.34	0.44	0.08	0.50	8.49
Cavite	1.000	0.16	0.16	0.18	0.17	0.16	0.12	0.13	0.07	0.01				0.18	0.38	0.40	0.06	0.00	0.20	0.10	0.16	0.35	0.14	0.27	0.43	0.11	0.00	0.00				0.00	0.01	0.05	0.14	0.13	0.07	4.35
Laguna	1.000	0.60	0.61	0.66	0.63	0.61	0.45	0.48	0.25	0.00				0.20	0.21	0.37	0.24	0.37	0.20	0.21	0.25	0.20	0.23	0.18	0.02	0.00	0.00	0.00				0.00	0.00	0.32	0.11	0.13	0.59	8.10
Quezon	0.947	0.11	1.72	1.52	1.78	1.18	1.27	1.01	0.05	0.14				0.18	0.95	1.69	0.95	1.09	0.44	0.21	0.78	0.64	1.16	1.65	0.49	0.00	0.00	0.00				0.45	0.36	0.94	0.53	0.93	0.23	22.43
Rizal	0.979	0.28	0.07	0.21	0.29	0.28	0.21	0.22	0.00	0.02				0.00	0.09	0.29	0.16	0.04	0.05	0.11	0.16	0.14	0.11	0.11	0.00	0.05	0.00	0.00				0.00	0.17	0.12	0.25	0.14	0.28	3.83
Marinduque	1.000	0.24	0.13	0.38	0.39	0.28	0.32	0.44	0.42	0.43	0.29	0.06	0.03	0.14	0.42	0.60	0.21	0.16	0.23	0.11	0.37	0.25	0.27	0.23	0.13	0.04	0.00	0.01							0.19	0.05	0.48	7.29
Occidental Mindoro	1.000	6.83	6.96	7.51	7.19	6.95	5.15	5.45	2.90	0.55								0.00	4.78	8.89	3.03	4.03	0.00	0.34	4.21	4.31	2.08	0.65	6.05	0.00	1.32	1.40	1.38	8.84	7.00	3.68	5.53	117.00
Oriental Mindoro	1.000	1.97	1.90	2.27	2.36	2.32	1.88	2.63	2.07	1.67	1.76	0.07	0.17	1.00	0.59	1.50	0.82	0.39	0.93	0.25	1.07	0.74	0.73	0.38	0.83	0.00	0.16	0.00							0.33	1.45	1.59	33.82
Palawan	1.000	0.87	0.79	0.94	0.98	0.96	0.78	1.09	1.05	1.06	0.72	0.37	0.07	0.82	0.86	1.54	0.95	0.68	0.02	0.45	0.28	0.63	0.76	0.51	0.04	0.01	0.00	0.00							0.46	0.39	0.80	18.89
Romblon	1.000	0.18	0.19	0.23	0.24	0.24	0.19	0.27	0.26	0.26	0.18	0.09	0.02	0.13	0.25	0.36	0.20	0.21	0.10	0.11	0.10	0.07	0.03	0.10	0.11	0.05	0.00	0.00							0.07	0.16	0.29	4.67
WRR-V																																						**98**
Quezon	0.053	0.01	0.10	0.08	0.10	0.07	0.07	0.06	0.00	0.01				0.01	0.05	0.09	0.05	0.06	0.02	0.01	0.04	0.04	0.07	0.09	0.03	0.00	0.00	0.00				0.02	0.02	0.05	0.03	0.05	0.01	1.26
Albay	1.000	0.98	0.18	0.82	0.69	0.77	0.67	1.22	1.12	0.28	0.42	0.06		0.29	1.14	0.85	1.10	0.41	0.83	0.58	0.35	0.31	0.59	0.17	0.37	0.18	0.00	0.00							0.00	0.93	0.45	15.76
Camarines Norte	1.000	0.70	0.33	0.57	0.78	0.37	0.62	0.87	0.65	0.18	0.15	0.05		0.42	0.56	0.73	0.14	0.20	0.37	0.36	0.36	0.19	0.46	0.16	0.21	0.00	0.00	0.00							0.00	0.11	0.76	10.31
Camarines Sur	1.000	2.32	2.58	3.23	3.45	4.24	3.32	4.63	4.27	3.29	1.58	0.00		1.83	3.50	3.56	3.57	3.11	2.96	2.51	1.41	2.96	4.42	1.63	1.31	0.00	0.00	0.00	0.00						0.00	1.06	3.32	70.07
Catanduanes	1.000	0.04	0.01	0.04	0.03	0.02	0.04	0.05	0.02	0.04	0.02	0.00		0.00	0.05	0.05	0.04	0.03	0.04	0.03	0.01	0.02	0.03	0.01	0.04	0.01	0.00	0.00							0.00	0.02	0.03	0.68
Masbate	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00
Sorsogon	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00
WRR-VI																																						**27**
Aklan	1.000	0.20	0.19	0.19	0.12	0.06	0.00							0.06	0.25	0.23	0.14	0.14	0.06	0.12	0.07	0.11	0.07	0.13	0.07	0.06	0.00	0.00	0.00	0.07	0.16	0.04	0.05	0.09	0.08	0.19	0.08	3.05
Antique	1.000	0.10	0.09	0.05	0.05	0.03	0.00	0.00						0.00	0.00	0.70	0.30	0.15	0.00	0.18	0.23	0.23	0.24	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.03	0.03	0.06	0.09	0.09	0.10	2.97
Capiz	1.000	1.03	0.99	0.29	0.63	0.29	0.00							0.85	0.61	1.56	0.54	0.00	0.00	0.01	0.00	0.54	0.76	0.00	0.30	0.00	0.00	0.00	0.00	0.11	0.87	0.22	0.32	0.93	0.45	0.72	0.88	12.89
Guimaras	1.000	0.07	0.04	0.06	0.04	0.02	0.00							0.03	0.10	0.27	0.13	0.09	0.04	0.02	0.04	0.08	0.10	0.09	0.13	0.00	0.00	0.00	0.00	0.00	0.06	0.03	0.03	0.00	0.07	0.03	0.07	1.65
Iloilo	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					0.73	0.13	1.18	0.64	0.45	0.27	0.31	0.00	0.95	1.31	0.00	0.65	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.70
Negros Occidental	0.924	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Negros Oriental	0.231	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WRR-VII																																						**22**
Negros Occidental	0.076	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bohol	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cebu	1.000	1.23	1.21	0.71	0.86	0.50	0.00	0.00								0.65	0.56	1.56	1.28	1.45	0.40	0.73	0.60	1.22	1.47	1.39	0.00	0.00	0.00		0.40	1.11	1.04	0.71	0.47	1.10	1.00	21.66
Negros Oriental	0.769	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Siquijor	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00								0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WRR-VIII																																						**1**
Biliran	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00
Northern Leyte	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00
Southern Leyte	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00
Northern Samar	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00
Weatern Samar	1.000	0.00	0.09	0.04	0.09	0.09	0.07	0.04	0.02	0.01	0.04	0.08	0.09	0.08	0.01	0.04	0.04	0.02	0.03	0.02	0.02	0.04	0.00									0.00	0.03	0.07	0.02	0.05	0.04	1.17
Eastern Samar	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00									0.00	0.00	0.00	0.00	0.00	0.00	0.00
WRR-IX																																						**6**
Zamboanga del Norte	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zamboanga del Sur	1.000	0.16	0.15	0.15	0.11	0.08	0.04	0.02	0.00		0.06	0.12	0.13	0.15	0.15	0.08	0.06	0.06	0.05	0.07	0.02	0.06	0.01	0.00	0.00	0.00			0.00	0.00	0.05	0.03	0.08	0.04	0.05	0.06	0.07	2.12
Zamboanga Sibugay	1.000	0.09	0.10	0.09	0.10	0.07	0.04	0.02	0.00		0.06	0.05	0.05	0.05	0.10	0.09	0.09	0.06	0.08	0.04	0.06	0.05	0.06	0.00	0.00	0.00			0.00	0.00	0.04	0.06	0.07	0.01	0.04	0.14	0.09	1.81
Misamis Occidental	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Basilan	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sulu	1.000	0.21	0.22	0.24	0.15	0.22	0.16	0.13	0.09	0.02						0.01	0.01	0.03	0.01	0.01	0.02	0.01	0.01	0.02	0.02	0.02	0.02	0.01	0.00	0.00		0.10	0.07	0.13	0.21	0.18	0.04	2.38
Tawi-Tawi	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00

WRR-X																																							**6**
Bukidnon	0.348	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Camiguin	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lanao del Norte	0.082	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
Misamis Oriental	0.999	0.15	0.09	0.10	0.07	0.10	0.08	0.15	0.00	0.00						0.05	0.05	0.15	0.11	0.09	0.07	0.15	0.12	0.04	0.13	0.08	0.08	0.07	0.00	0.00		0.05	0.13	0.18	0.09	0.10	0.18	2.63
Compostela Valley	0.523	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Norte	0.007	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao Oriental	0.051	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agusan del Norte	0.973	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agusan del Sur	0.889	0.19	0.19	0.20	0.20	0.19	0.14	0.15	0.08	0.00						0.00	0.26	0.38	0.24	0.00	0.16	0.25	0.16	0.24	0.20	0.16	0.08	0.00	0.00	0.00		0.00	0.03	0.11	0.06	0.03	0.03	3.71
Dinagat Islands	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Surigao del Norte	1.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Surigao del Sur	0.104	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.05
WRR-XI																																							**4**
Bukidnon	0.046	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Compostela Valley	0.477	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Norte	0.989	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Sur	0.998	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao Oriental	0.949	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sarangani	0.869	0.06	0.00	0.01	0.00	0.00		0.00	0.05	0.08	0.04	0.08	0.12	0.07	0.05	0.11	0.10	0.06	0.03	0.00	0.00	0.01	0.01	0.00		0.00	0.01	0.03	0.03	0.08	0.05	0.05	0.05	0.04	0.07	0.05	0.01	1.34
South Cotabato	0.340	0.01	0.01	0.00	0.00	0.00		0.00	0.00	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.22
North Cotabato	0.038	0.05	0.01	0.00	0.00	0.00		0.03	0.02	0.04	0.07	0.10	0.08	0.06	0.04	0.05	0.02	0.02	0.05	0.01	0.00	0.00	0.00	0.00		0.00	0.02	0.03	0.01	0.05	0.05	0.05	0.04	0.05	0.03	0.05	0.07	1.13
Sultan Kudarat	0.052	0.02	0.00	0.00	0.00	0.00		0.00	0.02	0.03	0.01	0.03	0.05	0.03	0.01	0.05	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.01	0.01	0.03	0.02	0.02	0.01	0.03	0.03	0.03	0.01	0.50
Agusan del Norte	0.027	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Agusan del Sur	0.109	0.02	0.02	0.03	0.02	0.02	0.02	0.02	0.01	0.00						0.00	0.03	0.05	0.03	0.00	0.02	0.03	0.02	0.03	0.02	0.02	0.01	0.00	0.00	0.00		0.00	0.00	0.01	0.01	0.00	0.00	0.46
Surigao del Sur	0.896	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.03	0.06	0.02	0.01	0.03	0.04	0.03	0.07	0.01	0.03	0.04	0.02	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.41
WRR-XII																																							**41**
Bukidnon	0.606	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lanao del Norte	0.918	0.02	0.01	0.01	0.02	0.01	0.01	0.00	0.02	0.01	0.00	0.00				0.01	0.01	0.00	0.02	0.01	0.01	0.01	0.02	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.01	0.31
Misamis Oriental	0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Norte	0.004	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Davao del Sur	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sarangani	0.131	0.01	0.00	0.00	0.00	0.00		0.00	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.20
South Cotabato	0.660	0.02	0.01	0.00	0.00	0.00		0.01	0.00	0.02	0.01	0.03	0.04	0.02	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00		0.00	0.01	0.02	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.42
North Cotabato	0.962	1.38	0.38	0.00	0.00	0.00		0.63	0.63	0.96	1.80	2.50	2.08	1.51	1.10	1.38	0.56	0.57	1.28	0.35	0.00	0.01	0.00	0.00		0.00	0.43	0.85	0.25	1.22	1.24	1.28	1.03	1.29	0.84	1.29	1.86	28.72
Sultan Kudarat	0.948	0.44	0.05	0.00	0.00	0.00		0.00	0.41	0.59	0.17	0.61	0.96	0.48	0.22	0.84	0.50	0.25	0.02	0.00	0.00	0.00	0.09	0.00		0.00	0.00	0.09	0.19	0.48	0.28	0.30	0.14	0.64	0.53	0.64	0.13	9.05
Agusan del Sur	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.01
Lanao del Sur	1.000	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maguindanao	1.000	0.23	0.08	0.00	0.00	0.00		0.01	0.01	0.01	0.01	0.03	0.04	0.03	0.02	0.01	0.01	0.01	0.02	0.01	0.00	0.00	0.00	0.00		0.00	0.07	0.14	0.00	0.20	0.18	0.22	0.14	0.17	0.12	0.20	0.31	2.29
Total	80.000																																					**3,132**

Source: JICA Survey Team

Table F 53 National Irrigation Systems in WRR V

Province	No.	Name of NISs	Nos. of NIS	ISA (ha)	FUSA (ha)	2020 Actual Irrigated Area (ha)			2020 Cropping Intensity (%)			Year of Completion	Last Rehab./ Improv. Year
						Wet	Dry	Total	Wet	Dry	Total		
(Region IV-A)													
Quezon		*(None in WRR-V)*											
(Region V)													
Albay	1	**South Quinale RIS**	1	758	753	139	148	287	18.5	19.7	38.1	1977	2021
	2	Mahaba RIS	2	727	727	727	727	1,454	100.0	100.0	200.0	1984	2021
	3	**Cabilogan-San Juan RIS**	1	793	731	628	552	1,180	85.9	75.5	161.4	2008	2021
	4	Ogsong RIS	1	210	210	210	210	420	100.0	100.0	200.0	1984	2021
	5	**Nasisi RIS**	1	628	628	628	628	1,256	100.0	100.0	200.0	1984	2021
	6	Hibiga RIS	1	500	500	500	500	1,000	100.0	100.0	200.0	1981	1981
Camarines Norte	7	Daet-Talisay RIS	1	3,141	3,141	2,798	2,797	5,595	89.1	89.0	178.1	1957	2018
	8	Matogdon RIS	1	471	306	268	284	552	87.6	92.8	180.4	1976	2018
Camarines Sur	9	**Barit RIS**	1	2,647	2,635	2,179	2,167	4,346	82.7	82.2	164.9	1969	2021
	10	Cagaycay RIS	1	2,135	2,095	1,803	1,783	3,586	86.1	85.1	171.2	1962	2018
	11	**Tigman-Hinagyaman-Inarihan RIS**	1	3,573	3,542	3,480	3,479	6,959	98.2	98.2	196.5	1989	2016
	12	**Rida RIS**	1	2,698	2,657	2,221	2,090	4,311	83.6	78.7	162.3	1989	2021
	13	**Lower Lalo RIS**	1	1,596	1,574	1,431	1,422	2,853	90.9	90.3	181.3	1984	2020
	14	Buhi-Lalo Upper-Lolo RIS	1	1,061	1,056	1,045	1,045	2,090	99.0	99.0	197.9	1975	2020
	15	Libmanan-Cabusao PIS (River)	1	2,195	2,195	2,082	2,082	4,164	94.9	94.9	189.7	1981	2021
Catanduanes		(None)											
Masbate		(None)											
Sorsogon	16	San Francisco RIS	1	590	590	590	590	1,180	100.0	100.0	200.0	1968	2021
	17	San Ramon RIS	1	412	412	412	412	824	100.0	100.0	200.0	1957	2021
		Total	**18**	**24,135**	**23,752**	**21,141**	**20,916**	**42,057**	**89.0**	**88.1**	**177.1**		

Source: NIA Inventory Data and NIA Region V Office

Table F 54 10-Days Livestock & Poultry Water Demands in 2020

(Unit: MCM)

Region/	Area	AWD	Jan			Feb			Mar			Apr			May			Jun		
Province	Rate	2020	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
WRR-V		**10.722**	**0.2937**	**0.2937**	**0.3231**	**0.2937**	**0.2937**	**0.2350**	**0.2937**	**0.2937**	**0.3231**	**0.2937**	**0.2937**	**0.2937**	**0.2937**	**0.2937**	**0.3231**	**0.2937**	**0.2937**	**0.2937**
Quezon	0.053	0.166	0.0045	0.0045	0.0050	0.0045	0.0045	0.0036	0.0045	0.0045	0.0050	0.0045	0.0045	0.0045	0.0045	0.0045	0.0050	0.0045	0.0045	0.0045
Albay	1.000	2.190	0.0600	0.0600	0.0660	0.0600	0.0600	0.0480	0.0600	0.0600	0.0660	0.0600	0.0600	0.0600	0.0600	0.0600	0.0660	0.0600	0.0600	0.0600
Camarines Norte	1.000	1.649	0.0452	0.0452	0.0497	0.0452	0.0452	0.0361	0.0452	0.0452	0.0497	0.0452	0.0452	0.0452	0.0452	0.0452	0.0497	0.0452	0.0452	0.0452
Camarines Sur	1.000	3.237	0.0887	0.0887	0.0975	0.0887	0.0887	0.0709	0.0887	0.0887	0.0975	0.0887	0.0887	0.0887	0.0887	0.0887	0.0975	0.0887	0.0887	0.0887
Catanduanes	1.000	0.589	0.0161	0.0161	0.0177	0.0161	0.0161	0.0129	0.0161	0.0161	0.0177	0.0161	0.0161	0.0161	0.0161	0.0161	0.0177	0.0161	0.0161	0.0161
Masbate	1.000	1.808	0.0495	0.0495	0.0545	0.0495	0.0495	0.0396	0.0495	0.0495	0.0545	0.0495	0.0495	0.0495	0.0495	0.0495	0.0545	0.0495	0.0495	0.0495
Sorsogon	1.000	1.084	0.0297	0.0297	0.0327	0.0297	0.0297	0.0238	0.0297	0.0297	0.0327	0.0297	0.0297	0.0297	0.0297	0.0297	0.0327	0.0297	0.0297	0.0297
WRR-VII		**12.660**	**0.3469**	**0.3469**	**0.3815**	**0.3469**	**0.3469**	**0.2775**	**0.3469**	**0.3469**	**0.3815**	**0.3469**	**0.3469**	**0.3469**	**0.3469**	**0.3469**	**0.3815**	**0.3469**	**0.3469**	**0.3469**
Negros Occidental	0.076	0.393	0.0108	0.0108	0.0118	0.0108	0.0108	0.0086	0.0108	0.0108	0.0118	0.0108	0.0108	0.0108	0.0108	0.0108	0.0118	0.0108	0.0108	0.0108
Bohol	1.000	3.891	0.1066	0.1066	0.1173	0.1066	0.1066	0.0853	0.1066	0.1066	0.1173	0.1066	0.1066	0.1066	0.1066	0.1066	0.1173	0.1066	0.1066	0.1066
Cebu	1.000	5.346	0.1465	0.1465	0.1611	0.1465	0.1465	0.1172	0.1465	0.1465	0.1611	0.1465	0.1465	0.1465	0.1465	0.1465	0.1611	0.1465	0.1465	0.1465
Negros Oriental	0.769	2.463	0.0675	0.0675	0.0742	0.0675	0.0675	0.0540	0.0675	0.0675	0.0742	0.0675	0.0675	0.0675	0.0675	0.0675	0.0742	0.0675	0.0675	0.0675
Siquijor	1.000	0.568	0.0155	0.0155	0.0171	0.0155	0.0155	0.0124	0.0155	0.0155	0.0171	0.0155	0.0155	0.0155	0.0155	0.0155	0.0171	0.0155	0.0155	0.0155
WRR-XI		**12.391**	**0.3395**	**0.3395**	**0.3734**	**0.3395**	**0.3395**	**0.2716**	**0.3395**	**0.3395**	**0.3734**	**0.3395**	**0.3395**	**0.3395**	**0.3395**	**0.3395**	**0.3734**	**0.3395**	**0.3395**	**0.3395**
Bukidnon	0.046	0.288	0.0079	0.0079	0.0087	0.0079	0.0079	0.0063	0.0079	0.0079	0.0087	0.0079	0.0079	0.0079	0.0079	0.0079	0.0087	0.0079	0.0079	0.0079
Compostela Valley	0.477	0.616	0.0169	0.0169	0.0186	0.0169	0.0169	0.0135	0.0169	0.0169	0.0186	0.0169	0.0169	0.0169	0.0169	0.0169	0.0186	0.0169	0.0169	0.0169
Davao del Norte	0.989	4.022	0.1102	0.1102	0.1212	0.1102	0.1102	0.0882	0.1102	0.1102	0.1212	0.1102	0.1102	0.1102	0.1102	0.1102	0.1212	0.1102	0.1102	0.1102
Davao del Sur	0.998	3.105	0.0851	0.0851	0.0936	0.0851	0.0851	0.0681	0.0851	0.0851	0.0936	0.0851	0.0851	0.0851	0.0851	0.0851	0.0936	0.0851	0.0851	0.0851
Davao Oriental	0.949	1.301	0.0356	0.0356	0.0392	0.0356	0.0356	0.0285	0.0356	0.0356	0.0392	0.0356	0.0356	0.0356	0.0356	0.0356	0.0392	0.0356	0.0356	0.0356
Sarangani	0.869	0.703	0.0192	0.0192	0.0212	0.0192	0.0192	0.0154	0.0192	0.0192	0.0212	0.0192	0.0192	0.0192	0.0192	0.0192	0.0212	0.0192	0.0192	0.0192
South Cotabato	0.340	1.491	0.0408	0.0408	0.0449	0.0408	0.0408	0.0327	0.0408	0.0408	0.0449	0.0408	0.0408	0.0408	0.0408	0.0408	0.0449	0.0408	0.0408	0.0408
North Cotabato	0.038	0.115	0.0032	0.0032	0.0035	0.0032	0.0032	0.0025	0.0032	0.0032	0.0035	0.0032	0.0032	0.0032	0.0032	0.0032	0.0035	0.0032	0.0032	0.0032
Sultan Kudarat	0.052	0.072	0.0020	0.0020	0.0022	0.0020	0.0020	0.0016	0.0020	0.0020	0.0022	0.0020	0.0020	0.0020	0.0020	0.0020	0.0022	0.0020	0.0020	0.0020
Agusan del Norte	0.027	0.018	0.0005	0.0005	0.0006	0.0005	0.0005	0.0004	0.0005	0.0005	0.0006	0.0005	0.0005	0.0005	0.0005	0.0005	0.0006	0.0005	0.0005	0.0005
Agusan del Sur	0.109	0.083	0.0023	0.0023	0.0025	0.0023	0.0023	0.0018	0.0023	0.0023	0.0025	0.0023	0.0023	0.0023	0.0023	0.0023	0.0025	0.0023	0.0023	0.0023
Surigao del Sur	0.896	0.577	0.0158	0.0158	0.0174	0.0158	0.0158	0.0127	0.0158	0.0158	0.0174	0.0158	0.0158	0.0158	0.0158	0.0158	0.0174	0.0158	0.0158	0.0158

Source: JICA Survey Team

(Unit: MCM)

Region/ Province	Area Rate	AWD 2020	Jul 1	Jul 2	Jul 3	Aug 1	Aug 2	Aug 3	Sep 1	Sep 2	Sep 3	Oct 1	Oct 2	Oct 3	Nov 1	Nov 2	Nov 3	Dec 1	Dec 2	Dec 3
WRR-V		**10.722**	**0.2937**	**0.2937**	**0.3231**	**0.2937**	**0.2937**	**0.3231**	**0.2937**	**0.2937**	**0.2937**	**0.2937**	**0.2937**	**0.3231**	**0.2937**	**0.2937**	**0.2937**	**0.2937**	**0.2937**	**0.3231**
Quezon	0.053	0.166	0.0045	0.0045	0.0050	0.0045	0.0045	0.0050	0.0045	0.0045	0.0045	0.0045	0.0045	0.0050	0.0045	0.0045	0.0045	0.0045	0.0045	0.0050
Albay	1.000	2.190	0.0600	0.0600	0.0660	0.0600	0.0600	0.0660	0.0600	0.0600	0.0600	0.0600	0.0600	0.0660	0.0600	0.0600	0.0600	0.0600	0.0600	0.0660
Camarines Norte	1.000	1.649	0.0452	0.0452	0.0497	0.0452	0.0452	0.0497	0.0452	0.0452	0.0452	0.0452	0.0452	0.0497	0.0452	0.0452	0.0452	0.0452	0.0452	0.0497
Camarines Sur	1.000	3.237	0.0887	0.0887	0.0975	0.0887	0.0887	0.0975	0.0887	0.0887	0.0887	0.0887	0.0887	0.0975	0.0887	0.0887	0.0887	0.0887	0.0887	0.0975
Catanduanes	1.000	0.589	0.0161	0.0161	0.0177	0.0161	0.0161	0.0177	0.0161	0.0161	0.0161	0.0161	0.0161	0.0177	0.0161	0.0161	0.0161	0.0161	0.0161	0.0177
Masbate	1.000	1.808	0.0495	0.0495	0.0545	0.0495	0.0495	0.0545	0.0495	0.0495	0.0495	0.0495	0.0495	0.0545	0.0495	0.0495	0.0495	0.0495	0.0495	0.0545
Sorsogon	1.000	1.084	0.0297	0.0297	0.0327	0.0297	0.0297	0.0327	0.0297	0.0297	0.0297	0.0297	0.0297	0.0327	0.0297	0.0297	0.0297	0.0297	0.0297	0.0327
WRR-VII		**12.660**	**0.3469**	**0.3469**	**0.3815**	**0.3469**	**0.3469**	**0.3815**	**0.3469**	**0.3469**	**0.3469**	**0.3469**	**0.3469**	**0.3815**	**0.3469**	**0.3469**	**0.3469**	**0.3469**	**0.3469**	**0.3815**
Negros Occidental	0.076	0.393	0.0108	0.0108	0.0118	0.0108	0.0108	0.0118	0.0108	0.0108	0.0108	0.0108	0.0108	0.0118	0.0108	0.0108	0.0108	0.0108	0.0108	0.0118
Bohol	1.000	3.891	0.1066	0.1066	0.1173	0.1066	0.1066	0.1173	0.1066	0.1066	0.1066	0.1066	0.1066	0.1173	0.1066	0.1066	0.1066	0.1066	0.1066	0.1173
Cebu	1.000	5.346	0.1465	0.1465	0.1611	0.1465	0.1465	0.1611	0.1465	0.1465	0.1465	0.1465	0.1465	0.1611	0.1465	0.1465	0.1465	0.1465	0.1465	0.1611
Negros Oriental	0.769	2.463	0.0675	0.0675	0.0742	0.0675	0.0675	0.0742	0.0675	0.0675	0.0675	0.0675	0.0675	0.0742	0.0675	0.0675	0.0675	0.0675	0.0675	0.0742
Siquijor	1.000	0.568	0.0155	0.0155	0.0171	0.0155	0.0155	0.0171	0.0155	0.0155	0.0155	0.0155	0.0155	0.0171	0.0155	0.0155	0.0155	0.0155	0.0155	0.0171
WRR-XI		**12.391**	**0.3395**	**0.3395**	**0.3734**	**0.3395**	**0.3395**	**0.3734**	**0.3395**	**0.3395**	**0.3395**	**0.3395**	**0.3395**	**0.3734**	**0.3395**	**0.3395**	**0.3395**	**0.3395**	**0.3395**	**0.3734**
Bukidnon	0.046	0.288	0.0079	0.0079	0.0087	0.0079	0.0079	0.0087	0.0079	0.0079	0.0079	0.0079	0.0079	0.0087	0.0079	0.0079	0.0079	0.0079	0.0079	0.0087
Compostela Valley	0.477	0.616	0.0169	0.0169	0.0186	0.0169	0.0169	0.0186	0.0169	0.0169	0.0169	0.0169	0.0169	0.0186	0.0169	0.0169	0.0169	0.0169	0.0169	0.0186
Davao del Norte	0.989	4.022	0.1102	0.1102	0.1212	0.1102	0.1102	0.1212	0.1102	0.1102	0.1102	0.1102	0.1102	0.1212	0.1102	0.1102	0.1102	0.1102	0.1102	0.1212
Davao del Sur	0.998	3.105	0.0851	0.0851	0.0936	0.0851	0.0851	0.0936	0.0851	0.0851	0.0851	0.0851	0.0851	0.0936	0.0851	0.0851	0.0851	0.0851	0.0851	0.0936
Davao Oriental	0.949	1.301	0.0356	0.0356	0.0392	0.0356	0.0356	0.0392	0.0356	0.0356	0.0356	0.0356	0.0356	0.0392	0.0356	0.0356	0.0356	0.0356	0.0356	0.0392
Sarangani	0.869	0.703	0.0192	0.0192	0.0212	0.0192	0.0192	0.0212	0.0192	0.0192	0.0192	0.0192	0.0192	0.0212	0.0192	0.0192	0.0192	0.0192	0.0192	0.0212
South Cotabato	0.340	1.491	0.0408	0.0408	0.0449	0.0408	0.0408	0.0449	0.0408	0.0408	0.0408	0.0408	0.0408	0.0449	0.0408	0.0408	0.0408	0.0408	0.0408	0.0449
North Cotabato	0.038	0.115	0.0032	0.0032	0.0035	0.0032	0.0032	0.0035	0.0032	0.0032	0.0032	0.0032	0.0032	0.0035	0.0032	0.0032	0.0032	0.0032	0.0032	0.0035
Sultan Kudarat	0.052	0.072	0.0020	0.0020	0.0022	0.0020	0.0020	0.0022	0.0020	0.0020	0.0020	0.0020	0.0020	0.0022	0.0020	0.0020	0.0020	0.0020	0.0020	0.0022
Agusan del Norte	0.027	0.018	0.0005	0.0005	0.0006	0.0005	0.0005	0.0006	0.0005	0.0005	0.0005	0.0005	0.0005	0.0006	0.0005	0.0005	0.0005	0.0005	0.0005	0.0006
Agusan del Sur	0.109	0.083	0.0023	0.0023	0.0025	0.0023	0.0023	0.0025	0.0023	0.0023	0.0023	0.0023	0.0023	0.0025	0.0023	0.0023	0.0023	0.0023	0.0023	0.0025
Surigao del Sur	0.896	0.577	0.0158	0.0158	0.0174	0.0158	0.0158	0.0174	0.0158	0.0158	0.0158	0.0158	0.0158	0.0174	0.0158	0.0158	0.0158	0.0158	0.0158	0.0174

Source: JICA Survey Team

Table F 55 10-Days Livestock & Poultry Water Demands in 2030

(Unit: MCM)

Region/ Province	Area Rate	AWD 2030	Jan 1	Jan 2	Jan 3	Feb 1	Feb 2	Feb 3	Mar 1	Mar 2	Mar 3	Apr 1	Apr 2	Apr 3	May 1	May 2	May 3	Jun 1	Jun 2	Jun 3
WRR-V		**12.148**	**0.3328**	**0.3328**	**0.3661**	**0.3328**	**0.3328**	**0.2663**	**0.3328**	**0.3328**	**0.3661**	**0.3328**	**0.3328**	**0.3328**	**0.3328**	**0.3328**	**0.3661**	**0.3328**	**0.3328**	**0.3328**
Quezon	0.053	0.188	0.0051	0.0051	0.0057	0.0051	0.0051	0.0041	0.0051	0.0051	0.0057	0.0051	0.0051	0.0051	0.0051	0.0051	0.0057	0.0051	0.0051	0.0051
Albay	1.000	2.481	0.0680	0.0680	0.0748	0.0680	0.0680	0.0544	0.0680	0.0680	0.0748	0.0680	0.0680	0.0680	0.0680	0.0680	0.0748	0.0680	0.0680	0.0680
Camarines Norte	1.000	1.868	0.0512	0.0512	0.0563	0.0512	0.0512	0.0410	0.0512	0.0512	0.0563	0.0512	0.0512	0.0512	0.0512	0.0512	0.0563	0.0512	0.0512	0.0512
Camarines Sur	1.000	3.667	0.1005	0.1005	0.1105	0.1005	0.1005	0.0804	0.1005	0.1005	0.1105	0.1005	0.1005	0.1005	0.1005	0.1005	0.1105	0.1005	0.1005	0.1005
Catanduanes	1.000	0.667	0.0183	0.0183	0.0201	0.0183	0.0183	0.0146	0.0183	0.0183	0.0201	0.0183	0.0183	0.0183	0.0183	0.0183	0.0201	0.0183	0.0183	0.0183
Masbate	1.000	2.049	0.0561	0.0561	0.0617	0.0561	0.0561	0.0449	0.0561	0.0561	0.0617	0.0561	0.0561	0.0561	0.0561	0.0561	0.0617	0.0561	0.0561	0.0561
Sorsogon	1.000	1.228	0.0336	0.0336	0.0370	0.0336	0.0336	0.0269	0.0336	0.0336	0.0370	0.0336	0.0336	0.0336	0.0336	0.0336	0.0370	0.0336	0.0336	0.0336
WRR-VII		**14.344**	**0.3930**	**0.3930**	**0.4323**	**0.3930**	**0.3930**	**0.3144**	**0.3930**	**0.3930**	**0.4323**	**0.3930**	**0.3930**	**0.3930**	**0.3930**	**0.3930**	**0.4323**	**0.3930**	**0.3930**	**0.3930**
Negros Occidental	0.076	0.445	0.0122	0.0122	0.0134	0.0122	0.0122	0.0098	0.0122	0.0122	0.0134	0.0122	0.0122	0.0122	0.0122	0.0122	0.0134	0.0122	0.0122	0.0122
Bohol	1.000	4.408	0.1208	0.1208	0.1328	0.1208	0.1208	0.0966	0.1208	0.1208	0.1328	0.1208	0.1208	0.1208	0.1208	0.1208	0.1328	0.1208	0.1208	0.1208
Cebu	1.000	6.057	0.1659	0.1659	0.1825	0.1659	0.1659	0.1327	0.1659	0.1659	0.1825	0.1659	0.1659	0.1659	0.1659	0.1659	0.1825	0.1659	0.1659	0.1659
Negros Oriental	0.769	2.791	0.0765	0.0765	0.0841	0.0765	0.0765	0.0612	0.0765	0.0765	0.0841	0.0765	0.0765	0.0765	0.0765	0.0765	0.0841	0.0765	0.0765	0.0765
Siquijor	1.000	0.643	0.0176	0.0176	0.0194	0.0176	0.0176	0.0141	0.0176	0.0176	0.0194	0.0176	0.0176	0.0176	0.0176	0.0176	0.0194	0.0176	0.0176	0.0176
WRR-XI		**14.039**	**0.3846**	**0.3846**	**0.4231**	**0.3846**	**0.3846**	**0.3077**	**0.3846**	**0.3846**	**0.4231**	**0.3846**	**0.3846**	**0.3846**	**0.3846**	**0.3846**	**0.4231**	**0.3846**	**0.3846**	**0.3846**
Bukidnon	0.046	0.327	0.0089	0.0089	0.0098	0.0089	0.0089	0.0072	0.0089	0.0089	0.0098	0.0089	0.0089	0.0089	0.0089	0.0089	0.0098	0.0089	0.0089	0.0089
Compostela Valley	0.477	0.698	0.0191	0.0191	0.0210	0.0191	0.0191	0.0153	0.0191	0.0191	0.0210	0.0191	0.0191	0.0191	0.0191	0.0191	0.0210	0.0191	0.0191	0.0191
Davao del Norte	0.989	4.557	0.1248	0.1248	0.1373	0.1248	0.1248	0.0999	0.1248	0.1248	0.1373	0.1248	0.1248	0.1248	0.1248	0.1248	0.1373	0.1248	0.1248	0.1248
Davao del Sur	0.998	3.518	0.0964	0.0964	0.1060	0.0964	0.0964	0.0771	0.0964	0.0964	0.1060	0.0964	0.0964	0.0964	0.0964	0.0964	0.1060	0.0964	0.0964	0.0964
Davao Oriental	0.949	1.474	0.0404	0.0404	0.0444	0.0404	0.0404	0.0323	0.0404	0.0404	0.0444	0.0404	0.0404	0.0404	0.0404	0.0404	0.0444	0.0404	0.0404	0.0404
Sarangani	0.869	0.796	0.0218	0.0218	0.0240	0.0218	0.0218	0.0174	0.0218	0.0218	0.0240	0.0218	0.0218	0.0218	0.0218	0.0218	0.0240	0.0218	0.0218	0.0218
South Cotabato	0.340	1.689	0.0463	0.0463	0.0509	0.0463	0.0463	0.0370	0.0463	0.0463	0.0509	0.0463	0.0463	0.0463	0.0463	0.0463	0.0509	0.0463	0.0463	0.0463
North Cotabato	0.038	0.130	0.0036	0.0036	0.0039	0.0036	0.0036	0.0029	0.0036	0.0036	0.0039	0.0036	0.0036	0.0036	0.0036	0.0036	0.0039	0.0036	0.0036	0.0036
Sultan Kudarat	0.052	0.082	0.0023	0.0023	0.0025	0.0023	0.0023	0.0018	0.0023	0.0023	0.0025	0.0023	0.0023	0.0023	0.0023	0.0023	0.0025	0.0023	0.0023	0.0023
Agusan del Norte	0.027	0.021	0.0006	0.0006	0.0006	0.0006	0.0006	0.0005	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006
Agusan del Sur	0.109	0.094	0.0026	0.0026	0.0028	0.0026	0.0026	0.0021	0.0026	0.0026	0.0028	0.0026	0.0026	0.0026	0.0026	0.0026	0.0028	0.0026	0.0026	0.0026
Surigao del Sur	0.896	0.654	0.0179	0.0179	0.0197	0.0179	0.0179	0.0143	0.0179	0.0179	0.0197	0.0179	0.0179	0.0179	0.0179	0.0179	0.0197	0.0179	0.0179	0.0179

Source: JICA Survey Team

Remarks: Water demands in 2030 are estimated based on population increase ratio; (2030)=(2020) x (1.133)

(Unit: MCM)

Region/ Province	Area Rate	AWD 2030	Jul 1	Jul 2	Jul 3	Aug 1	Aug 2	Aug 3	Sep 1	Sep 2	Sep 3	Oct 1	Oct 2	Oct 3	Nov 1	Nov 2	Nov 3	Dec 1	Dec 2	Dec 3
WRR-V		**12.148**	**0.3328**	**0.3328**	**0.3661**	**0.3328**	**0.3328**	**0.3661**	**0.3328**	**0.3328**	**0.3328**	**0.3328**	**0.3328**	**0.3661**	**0.3328**	**0.3328**	**0.3328**	**0.3328**	**0.3328**	**0.3661**
Quezon	0.053	0.188	0.0051	0.0051	0.0057	0.0051	0.0051	0.0057	0.0051	0.0051	0.0051	0.0051	0.0051	0.0057	0.0051	0.0051	0.0051	0.0051	0.0051	0.0057
Albay	1.000	2.481	0.0680	0.0680	0.0748	0.0680	0.0680	0.0748	0.0680	0.0680	0.0680	0.0680	0.0680	0.0748	0.0680	0.0680	0.0680	0.0680	0.0680	0.0748
Camarines Norte	1.000	1.868	0.0512	0.0512	0.0563	0.0512	0.0512	0.0563	0.0512	0.0512	0.0512	0.0512	0.0512	0.0563	0.0512	0.0512	0.0512	0.0512	0.0512	0.0563
Camarines Sur	1.000	3.667	0.1005	0.1005	0.1105	0.1005	0.1005	0.1105	0.1005	0.1005	0.1005	0.1005	0.1005	0.1105	0.1005	0.1005	0.1005	0.1005	0.1005	0.1105
Catanduanes	1.000	0.667	0.0183	0.0183	0.0201	0.0183	0.0183	0.0201	0.0183	0.0183	0.0183	0.0183	0.0183	0.0201	0.0183	0.0183	0.0183	0.0183	0.0183	0.0201
Masbate	1.000	2.049	0.0561	0.0561	0.0617	0.0561	0.0561	0.0617	0.0561	0.0561	0.0561	0.0561	0.0561	0.0617	0.0561	0.0561	0.0561	0.0561	0.0561	0.0617
Sorsogon	1.000	1.228	0.0336	0.0336	0.0370	0.0336	0.0336	0.0370	0.0336	0.0336	0.0336	0.0336	0.0336	0.0370	0.0336	0.0336	0.0336	0.0336	0.0336	0.0370
WRR-VII		**14.344**	**0.3930**	**0.3930**	**0.4323**	**0.3930**	**0.3930**	**0.4323**	**0.3930**	**0.3930**	**0.3930**	**0.3930**	**0.3930**	**0.4323**	**0.3930**	**0.3930**	**0.3930**	**0.3930**	**0.3930**	**0.4323**
Negros Occidental	0.076	0.445	0.0122	0.0122	0.0134	0.0122	0.0122	0.0134	0.0122	0.0122	0.0122	0.0122	0.0122	0.0134	0.0122	0.0122	0.0122	0.0122	0.0122	0.0134
Bohol	1.000	4.408	0.1208	0.1208	0.1328	0.1208	0.1208	0.1328	0.1208	0.1208	0.1208	0.1208	0.1208	0.1328	0.1208	0.1208	0.1208	0.1208	0.1208	0.1328
Cebu	1.000	6.057	0.1659	0.1659	0.1825	0.1659	0.1659	0.1825	0.1659	0.1659	0.1659	0.1659	0.1659	0.1825	0.1659	0.1659	0.1659	0.1659	0.1659	0.1825
Negros Oriental	0.769	2.791	0.0765	0.0765	0.0841	0.0765	0.0765	0.0841	0.0765	0.0765	0.0765	0.0765	0.0765	0.0841	0.0765	0.0765	0.0765	0.0765	0.0765	0.0841
Siquijor	1.000	0.643	0.0176	0.0176	0.0194	0.0176	0.0176	0.0194	0.0176	0.0176	0.0176	0.0176	0.0176	0.0194	0.0176	0.0176	0.0176	0.0176	0.0176	0.0194
WRR-XI		**14.039**	**0.3846**	**0.3846**	**0.4231**	**0.3846**	**0.3846**	**0.4231**	**0.3846**	**0.3846**	**0.3846**	**0.3846**	**0.3846**	**0.4231**	**0.3846**	**0.3846**	**0.3846**	**0.3846**	**0.3846**	**0.4231**
Bukidnon	0.046	0.327	0.0089	0.0089	0.0098	0.0089	0.0089	0.0098	0.0089	0.0089	0.0089	0.0089	0.0089	0.0098	0.0089	0.0089	0.0089	0.0089	0.0089	0.0098
Compostela Valley	0.477	0.698	0.0191	0.0191	0.0210	0.0191	0.0191	0.0210	0.0191	0.0191	0.0191	0.0191	0.0191	0.0210	0.0191	0.0191	0.0191	0.0191	0.0191	0.0210
Davao del Norte	0.989	4.557	0.1248	0.1248	0.1373	0.1248	0.1248	0.1373	0.1248	0.1248	0.1248	0.1248	0.1248	0.1373	0.1248	0.1248	0.1248	0.1248	0.1248	0.1373
Davao del Sur	0.998	3.518	0.0964	0.0964	0.1060	0.0964	0.0964	0.1060	0.0964	0.0964	0.0964	0.0964	0.0964	0.1060	0.0964	0.0964	0.0964	0.0964	0.0964	0.1060
Davao Oriental	0.949	1.474	0.0404	0.0404	0.0444	0.0404	0.0404	0.0444	0.0404	0.0404	0.0404	0.0404	0.0404	0.0444	0.0404	0.0404	0.0404	0.0404	0.0404	0.0444
Sarangani	0.869	0.796	0.0218	0.0218	0.0240	0.0218	0.0218	0.0240	0.0218	0.0218	0.0218	0.0218	0.0218	0.0240	0.0218	0.0218	0.0218	0.0218	0.0218	0.0240
South Cotabato	0.340	1.689	0.0463	0.0463	0.0509	0.0463	0.0463	0.0509	0.0463	0.0463	0.0463	0.0463	0.0463	0.0509	0.0463	0.0463	0.0463	0.0463	0.0463	0.0509
North Cotabato	0.038	0.130	0.0036	0.0036	0.0039	0.0036	0.0036	0.0039	0.0036	0.0036	0.0036	0.0036	0.0036	0.0039	0.0036	0.0036	0.0036	0.0036	0.0036	0.0039
Sultan Kudarat	0.052	0.082	0.0023	0.0023	0.0025	0.0023	0.0023	0.0025	0.0023	0.0023	0.0023	0.0023	0.0023	0.0025	0.0023	0.0023	0.0023	0.0023	0.0023	0.0025
Agusan del Norte	0.027	0.021	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006
Agusan del Sur	0.109	0.094	0.0026	0.0026	0.0028	0.0026	0.0026	0.0028	0.0026	0.0026	0.0026	0.0026	0.0026	0.0028	0.0026	0.0026	0.0026	0.0026	0.0026	0.0028
Surigao del Sur	0.896	0.654	0.0179	0.0179	0.0197	0.0179	0.0179	0.0197	0.0179	0.0179	0.0179	0.0179	0.0179	0.0197	0.0179	0.0179	0.0179	0.0179	0.0179	0.0197

Source: JICA Survey Team

Remarks: Water demands in 2030 are estimated based on population increase ratio; (2030)=(2020) x (1.133)

Table F 56 10-Days Livestock & Poultry Water Demands in 2040

(Unit: MCM)

Region/	Area	AWD	Jan			Feb			Mar			Apr			May			Jun		
Province	Rate	2040	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
WRR-V		**13.327**	**0.3651**	**0.3651**	**0.4016**	**0.3651**	**0.3651**	**0.2921**	**0.3651**	**0.3651**	**0.4016**	**0.3651**	**0.3651**	**0.3651**	**0.3651**	**0.3651**	**0.4016**	**0.3651**	**0.3651**	**0.3651**
Quezon	0.053	0.206	0.0056	0.0056	0.0062	0.0056	0.0056	0.0045	0.0056	0.0056	0.0062	0.0056	0.0056	0.0056	0.0056	0.0056	0.0062	0.0056	0.0056	0.0056
Albay	1.000	2.722	0.0746	0.0746	0.0820	0.0746	0.0746	0.0597	0.0746	0.0746	0.0820	0.0746	0.0746	0.0746	0.0746	0.0746	0.0820	0.0746	0.0746	0.0746
Camarines Norte	1.000	2.050	0.0562	0.0562	0.0618	0.0562	0.0562	0.0449	0.0562	0.0562	0.0618	0.0562	0.0562	0.0562	0.0562	0.0562	0.0618	0.0562	0.0562	0.0562
Camarines Sur	1.000	4.023	0.1102	0.1102	0.1212	0.1102	0.1102	0.0882	0.1102	0.1102	0.1212	0.1102	0.1102	0.1102	0.1102	0.1102	0.1212	0.1102	0.1102	0.1102
Catanduanes	1.000	0.732	0.0200	0.0200	0.0221	0.0200	0.0200	0.0160	0.0200	0.0200	0.0221	0.0200	0.0200	0.0200	0.0200	0.0200	0.0221	0.0200	0.0200	0.0200
Masbate	1.000	2.248	0.0616	0.0616	0.0677	0.0616	0.0616	0.0493	0.0616	0.0616	0.0677	0.0616	0.0616	0.0616	0.0616	0.0616	0.0677	0.0616	0.0616	0.0616
Sorsogon	1.000	1.347	0.0369	0.0369	0.0406	0.0369	0.0369	0.0295	0.0369	0.0369	0.0406	0.0369	0.0369	0.0369	0.0369	0.0369	0.0406	0.0369	0.0369	0.0369
WRR-VII		**15.737**	**0.4311**	**0.4311**	**0.4743**	**0.4311**	**0.4311**	**0.3449**	**0.4311**	**0.4311**	**0.4743**	**0.4311**	**0.4311**	**0.4311**	**0.4311**	**0.4311**	**0.4743**	**0.4311**	**0.4311**	**0.4311**
Negros Occidental	0.076	0.489	0.0134	0.0134	0.0147	0.0134	0.0134	0.0107	0.0134	0.0134	0.0147	0.0134	0.0134	0.0134	0.0134	0.0134	0.0147	0.0134	0.0134	0.0134
Bohol	1.000	4.836	0.1325	0.1325	0.1457	0.1325	0.1325	0.1060	0.1325	0.1325	0.1457	0.1325	0.1325	0.1325	0.1325	0.1325	0.1457	0.1325	0.1325	0.1325
Cebu	1.000	6.645	0.1820	0.1820	0.2003	0.1820	0.1820	0.1456	0.1820	0.1820	0.2003	0.1820	0.1820	0.1820	0.1820	0.1820	0.2003	0.1820	0.1820	0.1820
Negros Oriental	0.769	3.062	0.0839	0.0839	0.0923	0.0839	0.0839	0.0671	0.0839	0.0839	0.0923	0.0839	0.0839	0.0839	0.0839	0.0839	0.0923	0.0839	0.0839	0.0839
Siquijor	1.000	0.705	0.0193	0.0193	0.0213	0.0193	0.0193	0.0155	0.0193	0.0193	0.0213	0.0193	0.0193	0.0193	0.0193	0.0193	0.0213	0.0193	0.0193	0.0193
WRR-XI		**15.402**	**0.4220**	**0.4220**	**0.4642**	**0.4220**	**0.4220**	**0.3376**	**0.4220**	**0.4220**	**0.4642**	**0.4220**	**0.4220**	**0.4220**	**0.4220**	**0.4220**	**0.4642**	**0.4220**	**0.4220**	**0.4220**
Bukidnon	0.046	0.358	0.0098	0.0098	0.0108	0.0098	0.0098	0.0079	0.0098	0.0098	0.0108	0.0098	0.0098	0.0098	0.0098	0.0098	0.0108	0.0098	0.0098	0.0098
Compostela Valley	0.477	0.766	0.0210	0.0210	0.0231	0.0210	0.0210	0.0168	0.0210	0.0210	0.0231	0.0210	0.0210	0.0210	0.0210	0.0210	0.0231	0.0210	0.0210	0.0210
Davao del Norte	0.989	4.999	0.1370	0.1370	0.1507	0.1370	0.1370	0.1096	0.1370	0.1370	0.1507	0.1370	0.1370	0.1370	0.1370	0.1370	0.1507	0.1370	0.1370	0.1370
Davao del Sur	0.998	3.859	0.1057	0.1057	0.1163	0.1057	0.1057	0.0846	0.1057	0.1057	0.1163	0.1057	0.1057	0.1057	0.1057	0.1057	0.1163	0.1057	0.1057	0.1057
Davao Oriental	0.949	1.617	0.0443	0.0443	0.0487	0.0443	0.0443	0.0354	0.0443	0.0443	0.0487	0.0443	0.0443	0.0443	0.0443	0.0443	0.0487	0.0443	0.0443	0.0443
Sarangani	0.869	0.873	0.0239	0.0239	0.0263	0.0239	0.0239	0.0191	0.0239	0.0239	0.0263	0.0239	0.0239	0.0239	0.0239	0.0239	0.0263	0.0239	0.0239	0.0239
South Cotabato	0.340	1.853	0.0508	0.0508	0.0558	0.0508	0.0508	0.0406	0.0508	0.0508	0.0558	0.0508	0.0508	0.0508	0.0508	0.0508	0.0558	0.0508	0.0508	0.0508
North Cotabato	0.038	0.143	0.0039	0.0039	0.0043	0.0039	0.0039	0.0031	0.0039	0.0039	0.0043	0.0039	0.0039	0.0039	0.0039	0.0039	0.0043	0.0039	0.0039	0.0039
Sultan Kudarat	0.052	0.090	0.0025	0.0025	0.0027	0.0025	0.0025	0.0020	0.0025	0.0025	0.0027	0.0025	0.0025	0.0025	0.0025	0.0025	0.0027	0.0025	0.0025	0.0025
Agusan del Norte	0.027	0.023	0.0006	0.0006	0.0007	0.0006	0.0006	0.0005	0.0006	0.0006	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0006	0.0006	0.0006
Agusan del Sur	0.109	0.103	0.0028	0.0028	0.0031	0.0028	0.0028	0.0023	0.0028	0.0028	0.0031	0.0028	0.0028	0.0028	0.0028	0.0028	0.0031	0.0028	0.0028	0.0028
Surigao del Sur	0.896	0.718	0.0197	0.0197	0.0216	0.0197	0.0197	0.0157	0.0197	0.0197	0.0216	0.0197	0.0197	0.0197	0.0197	0.0197	0.0216	0.0197	0.0197	0.0197

Source: JICA Survey Team

Remarks: Water demands in 2040 are estimated based on population increase ratio; (2040)=(2020) x (1.243)

(Unit: MCM)

Region/ Province	Area Rate	AWD 2040	Jul 1	Jul 2	Jul 3	Aug 1	Aug 2	Aug 3	Sep 1	Sep 2	Sep 3	Oct 1	Oct 2	Oct 3	Nov 1	Nov 2	Nov 3	Dec 1	Dec 2	Dec 3
WRR-V		**13.327**	**0.3651**	**0.3651**	**0.4016**	**0.3651**	**0.3651**	**0.4016**	**0.3651**	**0.3651**	**0.3651**	**0.3651**	**0.3651**	**0.4016**	**0.3651**	**0.3651**	**0.3651**	**0.3651**	**0.3651**	**0.4016**
Quezon	0.053	0.206	0.0056	0.0056	0.0062	0.0056	0.0056	0.0062	0.0056	0.0056	0.0056	0.0056	0.0056	0.0062	0.0056	0.0056	0.0056	0.0056	0.0056	0.0062
Albay	1.000	2.722	0.0746	0.0746	0.0820	0.0746	0.0746	0.0820	0.0746	0.0746	0.0746	0.0746	0.0746	0.0820	0.0746	0.0746	0.0746	0.0746	0.0746	0.0820
Camarines Norte	1.000	2.050	0.0562	0.0562	0.0618	0.0562	0.0562	0.0618	0.0562	0.0562	0.0562	0.0562	0.0562	0.0618	0.0562	0.0562	0.0562	0.0562	0.0562	0.0618
Camarines Sur	1.000	4.023	0.1102	0.1102	0.1212	0.1102	0.1102	0.1212	0.1102	0.1102	0.1102	0.1102	0.1102	0.1212	0.1102	0.1102	0.1102	0.1102	0.1102	0.1212
Catanduanes	1.000	0.732	0.0200	0.0200	0.0221	0.0200	0.0200	0.0221	0.0200	0.0200	0.0200	0.0200	0.0200	0.0221	0.0200	0.0200	0.0200	0.0200	0.0200	0.0221
Masbate	1.000	2.248	0.0616	0.0616	0.0677	0.0616	0.0616	0.0677	0.0616	0.0616	0.0616	0.0616	0.0616	0.0677	0.0616	0.0616	0.0616	0.0616	0.0616	0.0677
Sorsogon	1.000	1.347	0.0369	0.0369	0.0406	0.0369	0.0369	0.0406	0.0369	0.0369	0.0369	0.0369	0.0369	0.0406	0.0369	0.0369	0.0369	0.0369	0.0369	0.0406
WRR-VII		**15.737**	**0.4311**	**0.4311**	**0.4743**	**0.4311**	**0.4311**	**0.4743**	**0.4311**	**0.4311**	**0.4311**	**0.4311**	**0.4311**	**0.4743**	**0.4311**	**0.4311**	**0.4311**	**0.4311**	**0.4311**	**0.4743**
Negros Occidental	0.076	0.489	0.0134	0.0134	0.0147	0.0134	0.0134	0.0147	0.0134	0.0134	0.0134	0.0134	0.0134	0.0147	0.0134	0.0134	0.0134	0.0134	0.0134	0.0147
Bohol	1.000	4.836	0.1325	0.1325	0.1457	0.1325	0.1325	0.1457	0.1325	0.1325	0.1325	0.1325	0.1325	0.1457	0.1325	0.1325	0.1325	0.1325	0.1325	0.1457
Cebu	1.000	6.645	0.1820	0.1820	0.2003	0.1820	0.1820	0.2003	0.1820	0.1820	0.1820	0.1820	0.1820	0.2003	0.1820	0.1820	0.1820	0.1820	0.1820	0.2003
Negros Oriental	0.769	3.062	0.0839	0.0839	0.0923	0.0839	0.0839	0.0923	0.0839	0.0839	0.0839	0.0839	0.0839	0.0923	0.0839	0.0839	0.0839	0.0839	0.0839	0.0923
Siquijor	1.000	0.705	0.0193	0.0193	0.0213	0.0193	0.0193	0.0213	0.0193	0.0193	0.0193	0.0193	0.0193	0.0213	0.0193	0.0193	0.0193	0.0193	0.0193	0.0213
WRR-XI		**15.402**	**0.4220**	**0.4220**	**0.4642**	**0.4220**	**0.4220**	**0.4642**	**0.4220**	**0.4220**	**0.4220**	**0.4220**	**0.4220**	**0.4642**	**0.4220**	**0.4220**	**0.4220**	**0.4220**	**0.4220**	**0.4642**
Bukidnon	0.046	0.358	0.0098	0.0098	0.0108	0.0098	0.0098	0.0108	0.0098	0.0098	0.0098	0.0098	0.0098	0.0108	0.0098	0.0098	0.0098	0.0098	0.0098	0.0108
Compostela Valley	0.477	0.766	0.0210	0.0210	0.0231	0.0210	0.0210	0.0231	0.0210	0.0210	0.0210	0.0210	0.0210	0.0231	0.0210	0.0210	0.0210	0.0210	0.0210	0.0231
Davao del Norte	0.989	4.999	0.1370	0.1370	0.1507	0.1370	0.1370	0.1507	0.1370	0.1370	0.1370	0.1370	0.1370	0.1507	0.1370	0.1370	0.1370	0.1370	0.1370	0.1507
Davao del Sur	0.998	3.859	0.1057	0.1057	0.1163	0.1057	0.1057	0.1163	0.1057	0.1057	0.1057	0.1057	0.1057	0.1163	0.1057	0.1057	0.1057	0.1057	0.1057	0.1163
Davao Oriental	0.949	1.617	0.0443	0.0443	0.0487	0.0443	0.0443	0.0487	0.0443	0.0443	0.0443	0.0443	0.0443	0.0487	0.0443	0.0443	0.0443	0.0443	0.0443	0.0487
Sarangani	0.869	0.873	0.0239	0.0239	0.0263	0.0239	0.0239	0.0263	0.0239	0.0239	0.0239	0.0239	0.0239	0.0263	0.0239	0.0239	0.0239	0.0239	0.0239	0.0263
South Cotabato	0.340	1.853	0.0508	0.0508	0.0558	0.0508	0.0508	0.0558	0.0508	0.0508	0.0508	0.0508	0.0508	0.0558	0.0508	0.0508	0.0508	0.0508	0.0508	0.0558
North Cotabato	0.038	0.143	0.0039	0.0039	0.0043	0.0039	0.0039	0.0043	0.0039	0.0039	0.0039	0.0039	0.0039	0.0043	0.0039	0.0039	0.0039	0.0039	0.0039	0.0043
Sultan Kudarat	0.052	0.090	0.0025	0.0025	0.0027	0.0025	0.0025	0.0027	0.0025	0.0025	0.0025	0.0025	0.0025	0.0027	0.0025	0.0025	0.0025	0.0025	0.0025	0.0027
Agusan del Norte	0.027	0.023	0.0006	0.0006	0.0007	0.0006	0.0006	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007
Agusan del Sur	0.109	0.103	0.0028	0.0028	0.0031	0.0028	0.0028	0.0031	0.0028	0.0028	0.0028	0.0028	0.0028	0.0031	0.0028	0.0028	0.0028	0.0028	0.0028	0.0031
Surigao del Sur	0.896	0.718	0.0197	0.0197	0.0216	0.0197	0.0197	0.0216	0.0197	0.0197	0.0197	0.0197	0.0197	0.0216	0.0197	0.0197	0.0197	0.0197	0.0197	0.0216

Source: JICA Survey Team

Remarks: Water demands in 2040 are estimated based on population increase ratio; (2040)=(2020) x (1.243)

Table F 57 10-Days Livestock & Poultry Water Demands in 2050

(Unit: MCM)

Region/	Area	AWD	Jan			Feb			Mar			Apr			May			Jun		
Province	Rate	2050	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
WRR-V		**14.099**	**0.3863**	**0.3863**	**0.4249**	**0.3863**	**0.3863**	**0.3090**	**0.3863**	**0.3863**	**0.4249**	**0.3863**	**0.3863**	**0.3863**	**0.3863**	**0.3863**	**0.4249**	**0.3863**	**0.3863**	**0.3863**
Quezon	0.053	0.218	0.0060	0.0060	0.0066	0.0060	0.0060	0.0048	0.0060	0.0060	0.0066	0.0060	0.0060	0.0060	0.0060	0.0060	0.0066	0.0060	0.0060	0.0060
Albay	1.000	2.879	0.0789	0.0789	0.0868	0.0789	0.0789	0.0631	0.0789	0.0789	0.0868	0.0789	0.0789	0.0789	0.0789	0.0789	0.0868	0.0789	0.0789	0.0789
Camarines Norte	1.000	2.169	0.0594	0.0594	0.0654	0.0594	0.0594	0.0475	0.0594	0.0594	0.0654	0.0594	0.0594	0.0594	0.0594	0.0594	0.0654	0.0594	0.0594	0.0594
Camarines Sur	1.000	4.256	0.1166	0.1166	0.1283	0.1166	0.1166	0.0933	0.1166	0.1166	0.1283	0.1166	0.1166	0.1166	0.1166	0.1166	0.1283	0.1166	0.1166	0.1166
Catanduanes	1.000	0.774	0.0212	0.0212	0.0233	0.0212	0.0212	0.0170	0.0212	0.0212	0.0233	0.0212	0.0212	0.0212	0.0212	0.0212	0.0233	0.0212	0.0212	0.0212
Masbate	1.000	2.378	0.0651	0.0651	0.0717	0.0651	0.0651	0.0521	0.0651	0.0651	0.0717	0.0651	0.0651	0.0651	0.0651	0.0651	0.0717	0.0651	0.0651	0.0651
Sorsogon	1.000	1.425	0.0390	0.0390	0.0429	0.0390	0.0390	0.0312	0.0390	0.0390	0.0429	0.0390	0.0390	0.0390	0.0390	0.0390	0.0429	0.0390	0.0390	0.0390
WRR-VII		**16.648**	**0.4561**	**0.4561**	**0.5017**	**0.4561**	**0.4561**	**0.3649**	**0.4561**	**0.4561**	**0.5017**	**0.4561**	**0.4561**	**0.4561**	**0.4561**	**0.4561**	**0.5017**	**0.4561**	**0.4561**	**0.4561**
Negros Occidental	0.076	0.517	0.0142	0.0142	0.0156	0.0142	0.0142	0.0113	0.0142	0.0142	0.0156	0.0142	0.0142	0.0142	0.0142	0.0142	0.0156	0.0142	0.0142	0.0142
Bohol	1.000	5.116	0.1402	0.1402	0.1542	0.1402	0.1402	0.1121	0.1402	0.1402	0.1542	0.1402	0.1402	0.1402	0.1402	0.1402	0.1542	0.1402	0.1402	0.1402
Cebu	1.000	7.030	0.1926	0.1926	0.2119	0.1926	0.1926	0.1541	0.1926	0.1926	0.2119	0.1926	0.1926	0.1926	0.1926	0.1926	0.2119	0.1926	0.1926	0.1926
Negros Oriental	0.769	3.239	0.0887	0.0887	0.0976	0.0887	0.0887	0.0710	0.0887	0.0887	0.0976	0.0887	0.0887	0.0887	0.0887	0.0887	0.0976	0.0887	0.0887	0.0887
Siquijor	1.000	0.746	0.0204	0.0204	0.0225	0.0204	0.0204	0.0164	0.0204	0.0204	0.0225	0.0204	0.0204	0.0204	0.0204	0.0204	0.0225	0.0204	0.0204	0.0204
WRR-XI		**16.294**	**0.4464**	**0.4464**	**0.4911**	**0.4464**	**0.4464**	**0.3571**	**0.4464**	**0.4464**	**0.4911**	**0.4464**	**0.4464**	**0.4464**	**0.4464**	**0.4464**	**0.4911**	**0.4464**	**0.4464**	**0.4464**
Bukidnon	0.046	0.379	0.0104	0.0104	0.0114	0.0104	0.0104	0.0083	0.0104	0.0104	0.0114	0.0104	0.0104	0.0104	0.0104	0.0104	0.0114	0.0104	0.0104	0.0104
Compostela Valley	0.477	0.810	0.0222	0.0222	0.0244	0.0222	0.0222	0.0178	0.0222	0.0222	0.0244	0.0222	0.0222	0.0222	0.0222	0.0222	0.0244	0.0222	0.0222	0.0222
Davao del Norte	0.989	5.289	0.1449	0.1449	0.1594	0.1449	0.1449	0.1159	0.1449	0.1449	0.1594	0.1449	0.1449	0.1449	0.1449	0.1449	0.1594	0.1449	0.1449	0.1449
Davao del Sur	0.998	4.083	0.1119	0.1119	0.1231	0.1119	0.1119	0.0895	0.1119	0.1119	0.1231	0.1119	0.1119	0.1119	0.1119	0.1119	0.1231	0.1119	0.1119	0.1119
Davao Oriental	0.949	1.710	0.0469	0.0469	0.0515	0.0469	0.0469	0.0375	0.0469	0.0469	0.0515	0.0469	0.0469	0.0469	0.0469	0.0469	0.0515	0.0469	0.0469	0.0469
Sarangani	0.869	0.924	0.0253	0.0253	0.0278	0.0253	0.0253	0.0202	0.0253	0.0253	0.0278	0.0253	0.0253	0.0253	0.0253	0.0253	0.0278	0.0253	0.0253	0.0253
South Cotabato	0.340	1.960	0.0537	0.0537	0.0591	0.0537	0.0537	0.0430	0.0537	0.0537	0.0591	0.0537	0.0537	0.0537	0.0537	0.0537	0.0591	0.0537	0.0537	0.0537
North Cotabato	0.038	0.151	0.0041	0.0041	0.0046	0.0041	0.0041	0.0033	0.0041	0.0041	0.0046	0.0041	0.0041	0.0041	0.0041	0.0041	0.0046	0.0041	0.0041	0.0041
Sultan Kudarat	0.052	0.095	0.0026	0.0026	0.0029	0.0026	0.0026	0.0021	0.0026	0.0026	0.0029	0.0026	0.0026	0.0026	0.0026	0.0026	0.0029	0.0026	0.0026	0.0026
Agusan del Norte	0.027	0.024	0.0007	0.0007	0.0007	0.0007	0.0007	0.0005	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007
Agusan del Sur	0.109	0.109	0.0030	0.0030	0.0033	0.0030	0.0030	0.0024	0.0030	0.0030	0.0033	0.0030	0.0030	0.0030	0.0030	0.0030	0.0033	0.0030	0.0030	0.0030
Surigao del Sur	0.896	0.759	0.0208	0.0208	0.0229	0.0208	0.0208	0.0166	0.0208	0.0208	0.0229	0.0208	0.0208	0.0208	0.0208	0.0208	0.0229	0.0208	0.0208	0.0208

Source: JICA Survey Team

Remarks: Water demands in 2050 are estimated based on population increase ratio; (2050)=(2020) x (1.315)

(Unit: MCM)

Region/ Province	Area Rate	AWD 2050	Jul 1	Jul 2	Jul 3	Aug 1	Aug 2	Aug 3	Sep 1	Sep 2	Sep 3	Oct 1	Oct 2	Oct 3	Nov 1	Nov 2	Nov 3	Dec 1	Dec 2	Dec 3
WRR-V		**14.099**	**0.3863**	**0.3863**	**0.4249**	**0.3863**	**0.3863**	**0.4249**	**0.3863**	**0.3863**	**0.3863**	**0.3863**	**0.3863**	**0.4249**	**0.3863**	**0.3863**	**0.3863**	**0.3863**	**0.3863**	**0.4249**
Quezon	0.053	0.218	0.0060	0.0060	0.0066	0.0060	0.0060	0.0066	0.0060	0.0060	0.0060	0.0060	0.0060	0.0066	0.0060	0.0060	0.0060	0.0060	0.0060	0.0066
Albay	1.000	2.879	0.0789	0.0789	0.0868	0.0789	0.0789	0.0868	0.0789	0.0789	0.0789	0.0789	0.0789	0.0868	0.0789	0.0789	0.0789	0.0789	0.0789	0.0868
Camarines Norte	1.000	2.169	0.0594	0.0594	0.0654	0.0594	0.0594	0.0654	0.0594	0.0594	0.0594	0.0594	0.0594	0.0654	0.0594	0.0594	0.0594	0.0594	0.0594	0.0654
Camarines Sur	1.000	4.256	0.1166	0.1166	0.1283	0.1166	0.1166	0.1283	0.1166	0.1166	0.1166	0.1166	0.1166	0.1283	0.1166	0.1166	0.1166	0.1166	0.1166	0.1283
Catanduanes	1.000	0.774	0.0212	0.0212	0.0233	0.0212	0.0212	0.0233	0.0212	0.0212	0.0212	0.0212	0.0212	0.0233	0.0212	0.0212	0.0212	0.0212	0.0212	0.0233
Masbate	1.000	2.378	0.0651	0.0651	0.0717	0.0651	0.0651	0.0717	0.0651	0.0651	0.0651	0.0651	0.0651	0.0717	0.0651	0.0651	0.0651	0.0651	0.0651	0.0717
Sorsogon	1.000	1.425	0.0390	0.0390	0.0429	0.0390	0.0390	0.0429	0.0390	0.0390	0.0390	0.0390	0.0390	0.0429	0.0390	0.0390	0.0390	0.0390	0.0390	0.0429
WRR-VII		**16.648**	**0.4561**	**0.4561**	**0.5017**	**0.4561**	**0.4561**	**0.5017**	**0.4561**	**0.4561**	**0.4561**	**0.4561**	**0.4561**	**0.5017**	**0.4561**	**0.4561**	**0.4561**	**0.4561**	**0.4561**	**0.5017**
Negros Occidental	0.076	0.517	0.0142	0.0142	0.0156	0.0142	0.0142	0.0156	0.0142	0.0142	0.0142	0.0142	0.0142	0.0156	0.0142	0.0142	0.0142	0.0142	0.0142	0.0156
Bohol	1.000	5.116	0.1402	0.1402	0.1542	0.1402	0.1402	0.1542	0.1402	0.1402	0.1402	0.1402	0.1402	0.1542	0.1402	0.1402	0.1402	0.1402	0.1402	0.1542
Cebu	1.000	7.030	0.1926	0.1926	0.2119	0.1926	0.1926	0.2119	0.1926	0.1926	0.1926	0.1926	0.1926	0.2119	0.1926	0.1926	0.1926	0.1926	0.1926	0.2119
Negros Oriental	0.769	3.239	0.0887	0.0887	0.0976	0.0887	0.0887	0.0976	0.0887	0.0887	0.0887	0.0887	0.0887	0.0976	0.0887	0.0887	0.0887	0.0887	0.0887	0.0976
Siquijor	1.000	0.746	0.0204	0.0204	0.0225	0.0204	0.0204	0.0225	0.0204	0.0204	0.0204	0.0204	0.0204	0.0225	0.0204	0.0204	0.0204	0.0204	0.0204	0.0225
WRR-XI		**16.294**	**0.4464**	**0.4464**	**0.4911**	**0.4464**	**0.4464**	**0.4911**	**0.4464**	**0.4464**	**0.4464**	**0.4464**	**0.4464**	**0.4911**	**0.4464**	**0.4464**	**0.4464**	**0.4464**	**0.4464**	**0.4911**
Bukidnon	0.046	0.379	0.0104	0.0104	0.0114	0.0104	0.0104	0.0114	0.0104	0.0104	0.0104	0.0104	0.0104	0.0114	0.0104	0.0104	0.0104	0.0104	0.0104	0.0114
Compostela Valley	0.477	0.810	0.0222	0.0222	0.0244	0.0222	0.0222	0.0244	0.0222	0.0222	0.0222	0.0222	0.0222	0.0244	0.0222	0.0222	0.0222	0.0222	0.0222	0.0244
Davao del Norte	0.989	5.289	0.1449	0.1449	0.1594	0.1449	0.1449	0.1594	0.1449	0.1449	0.1449	0.1449	0.1449	0.1594	0.1449	0.1449	0.1449	0.1449	0.1449	0.1594
Davao del Sur	0.998	4.083	0.1119	0.1119	0.1231	0.1119	0.1119	0.1231	0.1119	0.1119	0.1119	0.1119	0.1119	0.1231	0.1119	0.1119	0.1119	0.1119	0.1119	0.1231
Davao Oriental	0.949	1.710	0.0469	0.0469	0.0515	0.0469	0.0469	0.0515	0.0469	0.0469	0.0469	0.0469	0.0469	0.0515	0.0469	0.0469	0.0469	0.0469	0.0469	0.0515
Sarangani	0.869	0.924	0.0253	0.0253	0.0278	0.0253	0.0253	0.0278	0.0253	0.0253	0.0253	0.0253	0.0253	0.0278	0.0253	0.0253	0.0253	0.0253	0.0253	0.0278
South Cotabato	0.340	1.960	0.0537	0.0537	0.0591	0.0537	0.0537	0.0591	0.0537	0.0537	0.0537	0.0537	0.0537	0.0591	0.0537	0.0537	0.0537	0.0537	0.0537	0.0591
North Cotabato	0.038	0.151	0.0041	0.0041	0.0046	0.0041	0.0041	0.0046	0.0041	0.0041	0.0041	0.0041	0.0041	0.0046	0.0041	0.0041	0.0041	0.0041	0.0041	0.0046
Sultan Kudarat	0.052	0.095	0.0026	0.0026	0.0029	0.0026	0.0026	0.0029	0.0026	0.0026	0.0026	0.0026	0.0026	0.0029	0.0026	0.0026	0.0026	0.0026	0.0026	0.0029
Agusan del Norte	0.027	0.024	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007
Agusan del Sur	0.109	0.109	0.0030	0.0030	0.0033	0.0030	0.0030	0.0033	0.0030	0.0030	0.0030	0.0030	0.0030	0.0033	0.0030	0.0030	0.0030	0.0030	0.0030	0.0033
Surigao del Sur	0.896	0.759	0.0208	0.0208	0.0229	0.0208	0.0208	0.0229	0.0208	0.0208	0.0208	0.0208	0.0208	0.0229	0.0208	0.0208	0.0208	0.0208	0.0208	0.0229

Source: JICA Survey Team

Remarks: Water demands in 2050 are estimated based on population increase ratio; (2050)=(2020) x (1.315)

Table F 58 National Irrigation Systems in WRR VII

Province	No.	Name of NISs	Nos. of NIS	ISA (ha)	FUSA (ha)	2020 Actual Irrigated Area (ha)			2020 Cropping Intensity (%)			Year of Completion	Last Rehab./ Improv.Year
						Wet	Dry	Total	Wet	Dry	Total		
(Region VI)													
Negros Occidental		*(None in WRR-VII)*											
(Region VII)													
Bohol	1	Bohol Integrated IS- Malinao IS	1	4,961	4,741	4,034	3,851	7,885	85.1	81.2	166.3	1997	2022
	2	Bohol Integrated IS- Capayas IS	1	1,297	1,183	669	512	1,181	56.6	43.3	99.8	1991	2022
	3	Bohol Integrated IS- Bayongan IS	1	4,269	3,986	3,052	2,326	5,378	76.6	58.4	134.9	2009	2022
	4	Tugas-Can-Oiln SRIS	1	260	260	260	260	520	100.0	100.0	200.0	1975-1976	2018
	5	Talibon SRIS	1	1,229	1,067	623	458	1,081	58.4	42.9	101.3	2010	2022
	6	Tubigon-Ilihan SRIS	1	190	190	40	0	40	21.1	0.0	21.1	1984-1985	2017
	7	Ilaya SRIS	1	535	535	495	145	640	92.5	27.1	119.6	1994	2020
	8	San Vicente SRIS	1	56	56	56	56	112	100.0	100.0	200.0	1997-1998	2013
	9	Binaojot SWIM	1	20	20	20	2	22	100.0	10.0	110.0	2012	N/A
	10	USF Dam	1	0	0	0	0	0				2012	N/A
Cebu	11	Can-asujan SRIS	1	782	762	731	731	1,462	95.9	95.9	191.9	2007	2021
Negros Oriental	12	Dauin SRIS	1	1,000	900	950	950	1,900	105.6	105.6	211.1	2009	2022
	13	Nasig-id SRIS	1	1,000	900	700	700	1,400	77.8	77.8	155.6	2005	2022
	14	Mayabon CIS/ Calanga SRIS	1	585	400	400	400	800	100.0	100.0	200.0	1995	2022
Siquijor		(None)											
Total			**14**	**16,184**	**15,000**	**12,030**	**10,391**	**22,421**	**80.2**	**69.3**	**149.5**		

Source: NIA Inventory Data and NIA Region VII Office

Table F 59 National Irrigation Systems in WRR XI

Province	No.	Name of NISs	Nos. of NIS	ISA (ha)	FUSA (ha)	2020 Actual Irrigated Area (ha)			2020 Cropping Intensity (%)			Year of Completion	Last Rehab./ Improv.Year
						Wet	Dry	Total	Wet	Dry	Total		
(Region XI)													
Bukidonon		*(None in WRR-XI)*											
(Region XI)													
Compostela Valley		*Batutu RIS*	*1*	*4,475*	*4,435*	*4,435*	*4,435*	*8,870*	*100.0*	*100.0*	*200.0*	*1979*	*2021*
Davao del Norte	1	Lasang RIS	1	4,929	4,929	3,346	3,346	6,692	67.9	67.9	135.8	1983	2021
	2	Saug RIS	1	5,044	4,459	4,148	4,148	8,296	93.0	93.0	186.1	1980	2021
	3	Libuganon RIS	1	10,815	9,315	7,825	7,825	15,650	84.0	84.0	168.0	1990	2021
	4	Kipaliku RIS	1	2,600	2,600	2,073	2,073	4,146	79.7	79.7	159.5	1993	2021
	5	Libuganon Left RIS	1	1,095	995	806	806	1,612	81.0	81.0	162.0	1990	2021
Davao del Sur	6	Padada RIS	1	3,512	3,015	2,715	2,714	5,429	90.0	90.0	180.1	1956	2021
	7	Mal RIS	1	3,200	3,200	2,820	2,783	5,603	88.1	87.0	175.1	1992	(NISRIP)
Davao Oriental	8	Lupon IS	1	3,144	3,144	3,144	3,140	6,284	100.0	99.9	199.9	1973	2020
Sub-total			8	34,339	31,657	26,877	26,835	53,712	84.9	84.8	169.7		
(Region XII)													
Sarangani		*(None in WRR-XI)*											
North Cotabato		*(None in WRR-XI)*											
South Cotabato		*(None in WRR-XI)*											
(Region XIII)													
Agusan del Norte		*(None in WRR-XI)*											
Agusan del Sur		*(None in WRR-XI)*											
Surigao del Sur	9	Tago RIS	1	4,356	4,320	3,600	3,600	7,200	83.3	83.3	166.7	-	-
Total			**9**	**38,695**	**35,977**	**30,477**	**30,435**	**60,912**	**84.7**	**84.6**	**169.3**		

Source: NIA Inventry Data and NIA Region XII Office

Remarks: Above total not included of Batutu RIS in Compostela Valley, which is located in WRR-X.

Table F 60 Gates Data of National Irrigation Systems in WRR V

Province	No.	Name of NISs	Nos. of NIS	Gate	Gate Size (m)			Operational (Lifting) Mechanism			Gate Need Rehab.	Remarks	NIS Year of Completion	NIS Last Rehab./ Improv. Year
					Width	Height	Nos.	Manual	Electric Power	Electric Power w/Remote Control				
Albay	1	South Quinale RIS	1	Sluice Gate Left	3.160	2.500	2	√			No		1977	2021
				Sluice Gate Right	3.140	2.500	2	√			No			
				Intake Gate (LMC)	1.450	1.050	2	√			No			
				Intake Gate (RMC)	0.700	0.700	1	√			No			
	2	Mahaba RIS	1	Sluice Gate (Dam#1)	1.170	1.160	1	√			No		1984	2021
		(MAZOIA)		Intake Gate (Dam#1)	0.780	0.720	2	√			No			
				Sluice Gate (Dam#2)	2.100	1.230	5	√			No			
				Intake Gate (Dam#2)	1.040	1.020	1	√			Yes			
	3	Mahaba RIS	1	Sluice Gate	1.540	1.170	1	√			No			
		(TAPSIA)		Intake Gate	0.830	0.840	1	√			No			
	4	Mahaba RIS	1	Sluice Gate	1.540	1.170	1	√			No			
		(OSMCIA)		Intake Gate	0.740	0.800	1	√			No			
	5	Cabilogan-San Juan RIS	1	Sluice Gate	3.130	2.460	2	√			No		2008	2021
				Intake Gate	1.060	0.750	2	√			No			
	6	Ogsong RIS	1	Sluice Gate	2.000	2.450	1	√			Yes		1984	2021
				Intake Gate	1.260	1.330	1	√			Yes			
	7	Nasisi RIS	1	Sluice Gate	3.700	1.830	1	√			No		1984	2021
				Intake Gate	0.970	0.970	2	√			Yes			
	8	Hibiga RIS	1	Sluice Gate	2.250	2.240	1	√			No		1981	1981
				Intake Gate	1.270	0.820	1	√			No			
Camarines Norte	9	Daet-Talisay RIS	1	Sluice Gate	5.675	3.640	1	√				Under-rehab.	1957	2018
				Intake Gate	1.200	1.450	3	√			No			
	10	Matogdon RIS	1	Sluice Gate	2.800	3.050	1	√			No		1976	2018
				Intake Gate	1.550	2.050	2	√			No			
Camarines Sur	11	Barit RIS	1	Sluice Gate	6.700	9.950	1	√			Yes		1969	2021
				Intake Gate	9.300	7.000	4	√			Yes			
		Waras Auxiliary Dam		Sluice Gate										
				Intake Gate	0.900	1.960	1	√			Yes			
	12	Cagaycay RIS	1	Sluice Gate	4.040	7.800	1		√		Yes		1962	2018
				Intake Gate	2.150	7.000	1	√			Yes			
	13	Tigman-Hinagyaman-Inarihan RIS	1	Sluice Gate	4.300	2.200	1		√		No		1989	2016
		(Tigman)		Intake Gate	2.150	2.000	1		√		No			
		Tigman-Hinagyaman-Inarihan RIS		Sluice Gate	4.300	2.100	1		√		No			
		(Hinagyaman)		Intake Gate	1.750	2.500	1		√		No			
		Tigman-Hinagyaman-Inarihan RIS		Sluice Gate			1		√		No			
		(Inarihan)		Intake Gate			1		√		No			
	14	Rida RIS (Bifurcation)	1	Sluice Gate	6.000	3.000	3	√			Yes		1989	2021
				Intake Gate										
		Upper Barit Dam		Sluice Gate	4.600	9.000	2	√			Yes			
				Intake Gate	7.000	3.000	4	√			Yes			
		San Francisco Dam		Sluice Gate	17.530	4.260	5	√			Yes			
				Intake Gate	5.940	5.000	2	√			Yes			
	15	Lower Lalo RIS	1	Sluice Gate									1984	2020
		(Intake Structure)		Intake Gate	12.000	4.360	6	√			Yes			
	16	Buhi-Lalo Upper-Lolo RIS	1	Sluice Gate	2.530	4.300	1	√			Yes		1975	2020
				Intake Gate	2.350	5.140	1	√			Yes			
	17	Libmanan-Cabusao PIS (River)	1	Sluice Gate									1981	2021
				Intake Gate										
Catanduanes		(None)												
Masbate		(None)												
Sorsogon	18	San Francisco RIS	1	Sluice Gate	1.000	2.500	1	√			No		1968	2021
				Intake Gate	1.300	2.500	1	√			No			
	19	San Ramon RIS	1	Sluice Gate	1.000	2.500	1	√			Yes		1957	2021
				Intake Gate	1.300	2.500	1	√			Yes			
		Total					**80**	**73**	**7**	**0**	**39**			

Source: NIA Regional Office V

Table F 61 Gates Data of National Irrigation Systems in WRR XI

Province	No.	Name of NISs	Nos. of NIS	Gate	Gate Size (m)			Operational (Lifting) Mechanism				Gate	NIS	NIS
					Width	Height	Nos.	Manual	Electric Power	Mechanical	Electric Power w/Remote Control	Need Rehab.	Year of Completion	Last Rehab./ Improv. Year
(Region XI)														
Compostela Valley		*Batutu RIS*	*1*	*Sluice Gate*	*2.200*	*3.000*	*2*	√				*No*	*1979*	*2021*
				Sluice Gate	*3.200*	*3.000*	*2*	√				***Yes***		
				Intake Gate, West	*2.000*	*2.000*	*2*	√				***Yes***		
				Intake Gate, East	*1.580*	*1.660*	*4*	√				***Yes***		
Davao del Norte	1	Lasang RIS	1	Sluice Gate	1.800	2.300	3		√			No	1983	2021
				Sluice Gate	4.000	2.300	1		√			No		
				Intake Gate	1.250	1.050	6		√			No		
	2	Saug RIS	1	Sluice Gate	3.950	3.000	1			√		**Yes**	1980	2021
				Intake Gate	1.900	1.600	4	√				No		
	3	Libuganon RIS	1	Sluice Gate	5.300	4.050	2			√		**Yes**	1990	2021
				Intake Gate	1.400	1.200	8			√		No		
	4	Kipaliku RIS	1	Sluice Gate	2.500	2.500	4			√		**Yes**	1993	2021
		(Maanipis)		Intake Gate	1.200	1.100	3	√				**Yes**		
		Kipaliku RIS		Sluice Gate	3.000	3.000	4			√		**Yes**		
		(Lungaog Creek Dam)		Intake Gate	2.300	1.400						**Yes**		
				Intake Gate	1.400	1.800	2	√				**Yes**		
	5	Libuganon Left RIS	1	Sluice Gate	5.000	3.500	2			√		**Yes**	1990	2021
				Intake Gate	1.200	1.200	2			√		No		
Davao del Sur	6	Padada RIS	1	Sluice Gate	4.138	2.800	1		√			No	1956	2021
				Intake Gate	1.400	1.500	2		√			No		
	7	Mal RIS	1	Sluice Gate	3.050	3.000	2	√				**Yes**	1992	**(By NISRIP)**
				Intake Gate	1.250	1.300	3	√				**Yes**		
Davao Oriental	8	Lupon IS	1	Sluice Gate	3.000	2.000	4		√			**Yes**	1973	2020
				Intake Gate	1.500	1.000	2	√				**Yes**		
(Region XIII)														
Surigao del Sur	9	Tago RIS	1	Sluice Gate									-	-
				Intake Gate										
		Total					**66**	**26**	**17**	**23**		**29**		

Remarks: Batutu RIS in Compostela Valley is located in WRR-X.
Source: NIA Regional Office XI

ANNEX G

Surface Water Resources Development / Water Resources Facility

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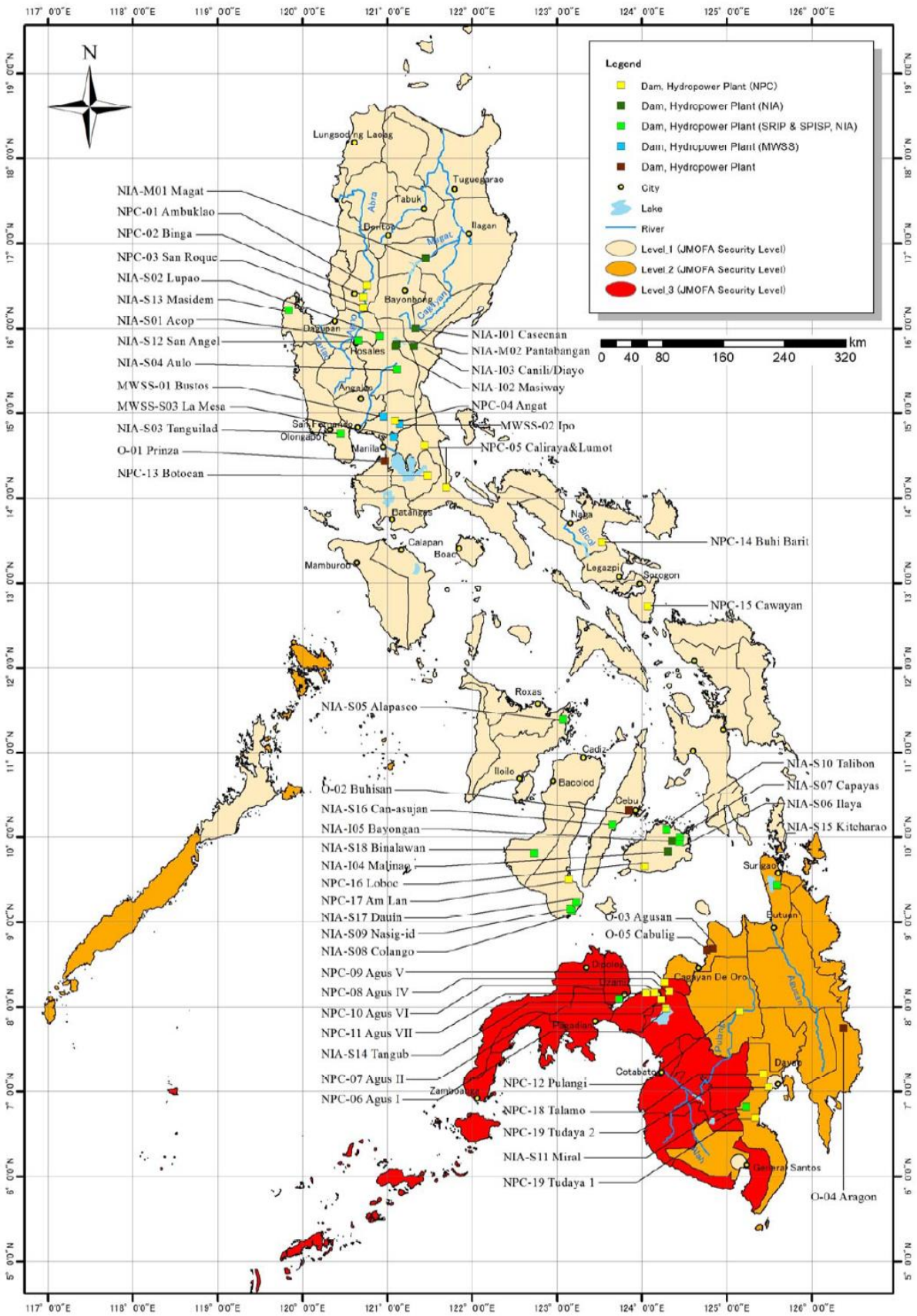
Annex G-1: List and Location Map of Existing Dams

No.	Name of Dam	Construction Year	Owner	Operator of Power Station	Purpose of Dams	Type of Power Station	Location		Dam				
							Island	River	Type of Dam	Height(m)	Crest Length (m)	Reservoir gross storage (MCM)	Reservoir usable storage (MCM)
NPC													
NPC-01	Ambukulao	1956	Non-NPC/IPP	SNAPBI	H	Dam	Luzon	Agno	ER	129.00	452.00	327.00	258.00
NPC-02	Binga	1960	Non-NPC/IPP	SNAPBI	H	Dam	Luzon	Agno	ER	107.40	215.00	87.40	48.00
NPC-03	San Roque	2003	Non-NPC/IPP	SNAPBI	H,I,S,F	Dam	Luzon	Agno	ER	200.00	1130.00	850.00	
NPC-04	Angat	1967	Non-NPC/IPP	AHC	H,I,S,F	Dam	Luzon	Angat	ER	131.00	568.00	850.00	
NPC-05	Kalayaan Pumped Storage	1983	NPC	CBK	H		Luzon						
	- Caliraya dam	1945	NPC				Luzon /Laguna	Caliraya	TE	42.00	240.00	86.00	78.00
	- Lumot dam	1948 start constructio	NPC				Luzon /Laguna	Lumot	TE	30.00		43.80	
NPC-06	Agus I	1992/1994	NPC	NPC Mindanao	H	ROR	Mindanao	Agus	-				
NPC-07	Agus II	1979	NPC	NPC Mindanao	H	ROR	Mindanao /Lanao	Agus	TE	29.00	140.00		
NPC-08	Agus IV	1985	NPC	NPC Mindanao	H	Dam	Mindanao	Agus	ER	-			247.00
NPC-09	Agus V	1985	NPC	NPC Mindanao	H	ROR	Mindanao	Agus	-	-			
NPC-10	Agus VI	1953-1971	NPC	NPC Mindanao	H	Dam	Mindanao	Agus	ER	12.50	67.00		
NPC-11	Agus VII	1983	NPC	NPC Mindanao	H	Dam	Mindanao	Agus	CG		173.60		288.00
NPC-12	Pulangi IV	1986	NPC	NPC Mindanao	H	Dam	Mindanao	Pulangi	ER	11 - 17	1070.00		
(Other Source)													
NPC-13	Botocan	1948	NPC	CBK Power Company	H	ROR	Luzon /Laguna	Pagsanjan	Concrete gravity	30.48	70.1		
NPC-14	Buhi Barit	1957	NPC		H	ROR	Luzon /Camarin	Lake Buhi		-	-		
NPC-15	Cawayan	1959	NPC		H	ROR	Luzon /Sorsogo	Cawayan		-	-		
NPC-16	Loboc	1955	NPC	Sta. Clara Power	H	ROR	Bohol	Loboc	Overflow concrete	Head =11.1m			
NPC-17	Amlan	1958	NPC	Sta. Clara Power	H	ROR	Negros	Amlan	Overflow concrete				
NPC-18	Talomo	1950	NPC		H								
NPC-19	Tudaya	no info	NPC		H								
	*SNAPBI (SN Aboitiz Power Benguet, Inc.), SRPC(San Roque Power Corporation), AHC(Angat Hydro Corporation), CBKPC (CBK Power Company Ltd.)												

Data source: Pre-feasibility study of rehabilitation and improvement of existing dams in Philippines (METI, 2018)

NIA (Multi Purpose Dam)													
NIA-M01	Magat	1982	NIA	SNAP	Irrigation	Dam	Luzon	Magat	Dam /Rockfill	114.00	4160.00	1,250.0	
NIA-02	Pantabangan	1974	NIA	First Gen	Irrigation	Dam	Luzon	Pampanga	Dam /Earthfill	107.00	1615.00	2,996.0	
NIA (Irrigation Dam/SRIP)													
NIA-S01	Acop		NIA	None	I	None	Luzon			12.50			
NIA-S02	Lupao	1994	NIA	None	I	None	Luzon			27.00			
NIA-S03	Tanguilad		NIA	None	I	None	Luzon			28.50			
NIA-S04	Aulo		NIA	None	I	None	Luzon			30.00			
NIA-S05	Alapasco	1995	NIA	None	I	None	Iloilo			21.00			
NIA-S06	Ilaya		NIA	None	I	None	Bohol			25.00			
NIA-S07	Capayas		NIA	None	I	None	Bohol			17.00			
NIA-S08	Calango	1995	NIA	None	I	None	Negros			26.00			
NIA-S09	Nasig-Id		NIA	None	I	None	Negros			32.00			
NIA-S10	Talibon		NIA	None	I	None	Bohol			21.50			
NIA-S11	Miral	1994	NIA	None	I	None	Mindanao			27.00			
NIA-S12	San Angel		NIA	None	I	None	Luzon			21.50			
NIA-S13	Masidem		NIA	None	I	None	Luzon			27.00			
NIA-S14	Tangub		NIA	None	I	None	Mindanao			32.25			
NIA-S15	Kitcharao		NIA	None	I	None	Mindanao			29.00			
NIA-S16	Can-Asujan		NIA	None	I	None	Cebu			25.00			
NIA-S17	Dauin		NIA	None	I	None	Negros			29.00			
NIA-S18	Binalawan		NIA	None	I	None	Negros			16.00			
NIA (Irrigation Dam)													
NIA-I01	Casecnan	2002	NIA	NPC/IPP	I, H	None	Luzon	Casecnan	Diversion dam	-	-		
NIA-I02	Masiway	1981	NIA	Non-NPC/IPP	I, H	None	Luzon	Pampanga	Dam	25.00			6.00
NIA-I03	Canili /Diayo Dam	1981	NIA	None	-	None	Luzon /Aurora	Canili	-	-	-		
NIA-I04	Malinao (Bohol I)	1998	NIA	None	I	None	Bohol	Wahing	Dam Filltype	20.40	845.00		
NIA-I05	Bayongan (Bohol II)	2007	NIA	None	I	None	Bohol	-	Dam Earthfill	35.50	855.00		
NIA-I06	Capayas (Bohol II)	1992	NIA	None	I	None	Bohol						
NWSS													
NWSS-01	Bustos	1926	-		I		Luzon	Angat	Weir /Rubber?				
NWSS-02	Ipo	1984	-		S		Luzon	Angat	Dam /Concrete				
NWSS-03	La Mesa	1929	-		S		Luzon	Tullahan	Earth Dam	33.00		51.00	
Others													
O-01	Prinza (Molino)	19th Century			I		Luzon	Zapote	Gravity Dam	10.00	450.00		
O-02	Buhisan dam	around 1912	Metro Cebu District		S		Cebu		Dam				
O-03	Agusan Dam	1957			H		Mindanao	Agusan	Weir	1.00	22.00		
O-04	Aragon Dam	2014		Hector	I		Mindanao /Davao	Cateel	Gravity Dam	5.50			
O-05	Cabulig	2012		MINERGY	H		Mindanao	Claveria	Dam Concrete	38.00			

Data source: Pre-feasibility study of rehabilitation and improvement of existing dams in Philippines (METI, 2018)



Data source: Pre-feasibility study of rehabilitation and improvement of existing dams in Philippines (METI, 2018)

Annex G-2: Progress of Water Development Schemes Proposed by 1998 M/P

Progress of Proposed Dam Projects for Major River Basins

No.	River Basin Name	WRR	Name of Projects	Project Owner	Status	Storage Volume (MCM)	Hydropower (MW)	Data Source
1	Laoag	WRR I	Palsiguan-Nueva Multi-Purpose Dam Project	NIA	-	Active: 189+0.5	36+6.8	1998 M/P (F/S Reporton Ilocos Norte Irrigation Project, JICA, 1980)
			Ilocos Norte, Ilocos Sur and Abra Irrigation Project Stage II (INISAIP-II)	NIA	Construction on-going	147+1.2	14+6.8	Project Desicription for Public Scoping, NIA, 2020 http://eia.emb.gov.ph/?page_id=1514
2	Laoag	WRR I	Tina-Gasgas-Cura Multi-Purpose Dam Project	DPWH	No data	Active: 12.5+33.1+1.2	5.6	1998 M/P (F/S Report, DPWH, 1982)
3	Abra	WRR I	Binongan Multi-Purpose Dam Project	NPC	No data	Active: 79	175	1998 M/P (F/S Report on Bonongan Hydroelectric Project, ADB, 1985)
4	Cagayan	WRR II	Mallig II Multi-Purpose Dam Project	No data	No data	Active: 545	5.4	1998 M/P (M/P of Cagayan River Basin, JICA, 1987)
5	Cagayan	WRR II	Matuno Multi-Purpose Dam Project	NIA	Site conflict	Active: 97	180	1998 M/P (F/S on Matuno, JICA, 1984)
			Matuno 1 Hydroelectric Power Project, Ambaguio	IPP	Constructed	No data	7.4	Awarded Hydropower Projects as of 30 June 2020, DOE
			Matuno 2 Hydroelectric Power Project, Ambaguio	IPP	Constructed	No data	15	Awarded Hydropower Projects as of 30 June 2020, DOE
			Matuno Hydroelectric Power Project, Bambang	IPP	Constructed	No data	8	Awarded Hydropower Projects as of 30 June 2020, DOE
			Matuno 2 Hydroelectric Power Project, Bambang	IPP	Constructed	No data	7.9	Awarded Hydropower Projects as of 30 June 2020, DOE
6	Cagayan	WRR II	Addalam A Hydroelectric Project	NPC	Site conflict	Active: 32	45	1998 M/P (F/S, NPC)
			Addalam Hydroelectric Power Project, Aglipay	IPP	Constructed	No data	3.6	Awarded Hydropower Projects as of 30 June 2020, DOE
			Addalam Hydroelectric Power Project, Cabarroguis	IPP	Constructed	No data	14.2	Awarded Hydropower Projects as of 30 June 2020, DOE
7	Cagayan	WRR II	Ilaguen B Hydroelectric Project	NPC	Site conflict	Active: 31	46	1998 M/P (F/S, NPC)
			Ilaguen Hydroelectric Power Project, San Mariano & San Guillermo	IPP	Constructed	No data	19	Awarded Hydropower Projects as of 30 June 2020, DOE
			Ilaguen 2 Hydroelectric Power Project, Echague	IPP	Constructed	No data	14	Awarded Hydropower Projects as of 30 June 2020, DOE
			Ilaguen 3 Hydroelectric Power Project, Echague	IPP	Constructed	No data	25.7	Awarded Hydropower Projects as of 30 June 2020, DOE
8	Abulug	WRR II	Agulubu Hydroelectric Project	NPC	No data	Active: 2164	360	1998 M/P (F/S, NPC, 1992)
9	Agno	WRR III	Balog-Balog Multi-Purpose Dam Project	NIA	-	Active: 575	33	1998 M/P (F/S, NIA, 1980)
			ditto	NIA	-	No data	No data	Review of M/P, JICA, 2011
			Balog-Balog Multipurpose Project Phase II (BBMP II)	NIA	Construction on-going	No data	No data	Construction contract of BBMP II, News on March 16, 2016 https://www.nia.gov.ph/?q=content/nia-inks-p3452-m-deal-bbmp-ii
10	Pampanga	WRR III	Balintingon Multi-Purpose Dam Project	NIA	Canceled	Active: 463	40	1998 M/P (F/S, NIA)
			Balintingon Irrigation Dam Project	NIA	Planned	No data	None	Review of M/P, JICA, 2011
			Balintingon Project	NIA	Planned	No data	No data	Evaluation of project is on-going, news on August 7, 2013 https://www.nia.gov.ph/?q=content/nia-chief-guest-net-25-1
11	Pampanga	WRR III	Bayabas and Maasim Dam Project	NIA	-	Active: 148+100	None	1998 M/P (Pre-F/S, WB, 1994)
			Bayabas Small Reservoir Irrigation Project (Bayabas SRIP)	NIA	Planned	Gross: 47.5	No data	Project Desicription for Public Scoping, NIA, 2018 http://eia.emb.gov.ph/?page_id=1514
			ditto	NIA	Construction on-going	No data	No data	List of on-going projects, NIA, 2016 http://region3.nia.gov.ph/?q=content/going-projects
			Maasim Dam Project	NIA	Planned	No data	No data	Pre-feasibility study completed. No development. Metro Manila Water Security Study, WB, 2012
12	Amnay-Patric	WRR IV	Amnay Multi-Purpose Dam Project	No data	No data	Active: 80	15	Map Study, 1998 M/P
13	Bicol	WRR V	Talisay Multi-Purpose Dam Project	No data	No data	Active: 231	4.4	1998 M/P (Water Resources Development Study, USAID, 1976)
14	Panay	WRR VI	Panay Multi-Purpose Dam Project	MPWH	Canceled	Active: 30.5	7.1	1998 M/P (Basin-Wide Flood Control Study, JICA, 1985)
			Panay River Basin Integrated Development Project (PRBIDP)	NIA	Planned	184+14	None	Environmental Impact Statement, NIA, 2017 http://eia.emb.gov.ph/wp-content/uploads/2016/06/PRBIDP-EIS-Summary-for-the-Public.Eng_.pdf
15	Jalaur	WRR VI	Jalaur Multi-Purpose Dam Project	NPC	Canceled	Active: 337	20	1998 M/P (D/D, NPC)
			Jalaur River Multi-Purpose Project Stage II (JRMP II)	NIA	Construction on-going	No data	No data	http://jrmp.nia.gov.ph/
16	Ilog-Hilabangan	WRR VI	Ilog No.1 Multi-Purpose Dam Project	DPWH	No data	Active: 370	52	1998 M/P (Flood Control Project, JICA, 1991)
17	Tagoloan	WRR X	Tagoloan Multi-Purpose Dam Project	No data	No data	Active: 83	22	Map Study, 1998 M/P
18	Cagayan de Oro	WRR X	Bulag-Batang Hydroelectric Project	NPC	Canceled	Active: 28.3	132	1998 M/P (D/D, NPC)
			Bulanog Batang Hydroelectric Project	No data	Canceled	No data	33.5	New feasibility study https://www.entura.com.au/projects/9225/
			Bulanog-Batang Hydroelectric Power Project	IPP	Planned	No data	150	Awarded Hydropower Projects as of 30 June 2020, DOE
19	Tagum-Libuganon	WRR XI	Buhonao Multi-Purpose Dam Project	No data	No data	Active: 720	63	Map Study, 1998 M/P
20	Davao	WRR XI	Davao II Multi-Purpose Dam Project	No data	No data	Active: 224	100	Map Study, 1998 M/P
21	Buayan Malungun	WRR XI	Dimloc Multi-Purpose Dam Project	No data	No data	Active: 193	None	1998 M/P (Survey/Inventory on Water Impounding Reservoirs, NWRC, 1978)
22	Mindanao	WRR XII	Pulangi Multi-Purpose Dam Project	NPC	Canceled	Active: 1190	348	1998 M/P (Pre-F/S, NPC)
			Pulangi 5 Hydropower Project	IPP	Construction on-going	No data	250	MOU to begin construction is made. https://www.hydroreview.com/business-finance/us-800-million-250-mw-pulangi-5-hydropower-project-slated-for-philippines/#gref

Progress of Proposed Projects for 9 Urbanized Areas

No.	Major City	Project Name	Project Owner	Status	Capacity	Data Source
1	Metro Manila	(i) Development of Laguna Lake	-	-	300 MLD	
		Putatan WTP 1	Maynilad	Operational	100 MLD	https://mwss.gov.ph/maynilads-putatan-water-treatment-plant-2-inauguration/
		Putatan WTP 2	Maynilad	Operational	150 MLD	https://www.mayniladwater.com.ph/our-company/facilities/
		Cardona WTP	Manila Water	Operational	100 MLD	https://mwss.gov.ph/projects/mwss-water-source-map/
		Putatan WTP 3 (Poblacion WTP)	Maynilad	Construction on-going	100 MLD	https://mwss.gov.ph/projects/mwss-water-source-map/
		East Bay Laguna Water Source Project	Manila Water	Construction on-going	250 MLD	https://mwss.gov.ph/projects/mwss-water-source-map/
2	Metro Manila	(ii) MWSP III (Laiban dam)	-	Canceled	1900 MLD	https://mwss.gov.ph/projects/new-centennial-water-source-kaliwa-dam-project/frequently-asked-questions/
3	Metro Manila	(iii) Kanan-Umiray transbasin	-	-	-	
		Kanan Dam	-	-	Active: 1137 MCM	1998 M/P (Report for HEPP, JICA, 1987)
		Kanan River /Agos River Phase 1a	MWSS	Planned	1800 MLD	https://mwss.gov.ph/projects/mwss-water-source-map/
		Kanan /Agos River Phase 1b	MWSS	Planned	2000 MLD	https://mwss.gov.ph/projects/mwss-water-source-map/
		Smag River	Maynilad /Manila Water	Construction on-going	188 MLD	https://mwss.gov.ph/projects/mwss-water-source-map/
4	Metro Manila	(iv) Bayabas dam and Massim dam	NIA	Construction on-going	Active: 148+100 MCM	Refer to Progress of Proposed Dam Projects for Major River Basins
5	Metro Manila	(v) Kaliwa-Cogco water supply	-	-	-	
		Upper Kaliwa River	MWSS	Planned	800 MLD	https://mwss.gov.ph/projects/mwss-water-source-map/
		New Centennial Water Source - Kaliwa Dam	MWSS	Construction on-going	600 MLD	https://mwss.gov.ph/projects/mwss-water-source-map/
6	Metro Manila	(vi) Pampanga water conveyance (Pampanga-Novaliches Transbasin Project)	-	No data	-	
7	Metro Cebu	(i) Mananga II dam	MCWD	Planned	68 MLD	Metro Cebu Roadmap, JICA, 2015
		Dam construction project in Mananga Watershed	-	Planned	No data	Proposed as long term plan (11-15 year) M/P, DENR, 2017
8	Metro Cebu	(ii) Malubog-Mananga transbasin	MCWD	No data	-	
9	Metro Cebu	(iii) Lusam-Pulanbato transbasin (Lusalan-Pulambato Water Supply Project)	-	-	-	
		Lusaran Dam	MCWD	No data	Active: 116 MCM 173 MLD	1998 M/P (Cebu M/P, JICA, 1994)
		Pulambato Dam	MCWD	No data	Active: 2.4 MCM 36 MLD	1998 M/P (Cebu M/P, JICA, 1994)
10	Metro Cebu	(iv) Bohol-Cebu water supply				
		Tipolo Dam	MCWD	No data	Active: 120 MCM 346 MLD	Map Study, 1998 M/P
11	Baguio City	(i) BOT Scheme (Bulk water supply)	BOT	No data	50 MLD	1998 M/P
		Badiwan Mini-Bulk Water Project	No data	Construction on-going	No data	https://baguiowaterdistrict.gov.ph/projects/
12	Baguio City	(ii) Rehabilitation of existing facilites (Amilang Spring, Stage I and St. Thomas Reservoir)	BWD	No data	-	1998 M/P
13	Baguio City	(iii) Laboy dam	BWD	No data	Gross: 8.6 MCM	Map Study, 1998 M/P
14	Baguio City	(iv) Laboy weir and ponds	BWD	No data	-	1998 M/P
15	Davao City	BOT Scheme (The Davao II multi-purpose dam is proposed as an alternative of the BOT Scheme.)	BOT	-	230 MLD	1998 M/P
		Davao City Bulk Water Supply Project (DCBWSP)	BOT	Construction on-going	300 MLD	http://pawd.org.ph/wp-content/uploads/2020/02/D4-Technology_APO-AGUA-PRESENTATION.pdf
		Davao II multi-purpose dam	DCWD	Canceled	Active: 224 MCM	Map Study, 1998 M/P
16	Angeles City	Not necessary	-	-	-	
17	Iloilo City	Not necessary	-	-	-	
18	Bacolod City	Not necessary (The Bago multi-purpose dam is proposed as an alternative of the groundwater development.)	-	-	-	
19	Cagayan de Oro City	BOT Scheme (Bulonog-Batang dam)	-	-	-	Refer to Progress of Proposed Dam Projects for Major River Basins
20	Zamboanga City	Pasonaca dam	ZCWD	-	Active: 13.7 MCM 260 MLD	Map Study, 1998 M/P
		Bulk Water Supply (Pamucutan River)	PPP	Operational	50 MLD	http://primewatercorp.com/bulk-water-supply.html
Additional Proposed Schemes						
21	Metro Manila	New Wawa Dam Bulk Water Supply Project (Wawa-Calawis)	Manila Water	Construction on-going	438 MLD	https://mwss.gov.ph/projects/mwss-water-source-map/
22	Metro Manila	Calawis WTP	Manila Water	Construction on-going	80 MLD	https://mwss.gov.ph/projects/mwss-water-source-map/
23	Metro Manila	Ipo Dam 3	MWSS	Planned	40 MLD	https://mwss.gov.ph/projects/mwss-water-source-map/
24	Metro Cebu	Desalination Plant	MCWD	Planned	9.6 MLD	The study for improvement of water supply and sanitation in Metro Cebu, JICA, 2010
		ditto	MCWD	Planned	20 MLD	Metro Cebu Roadmap, JICA, 2015

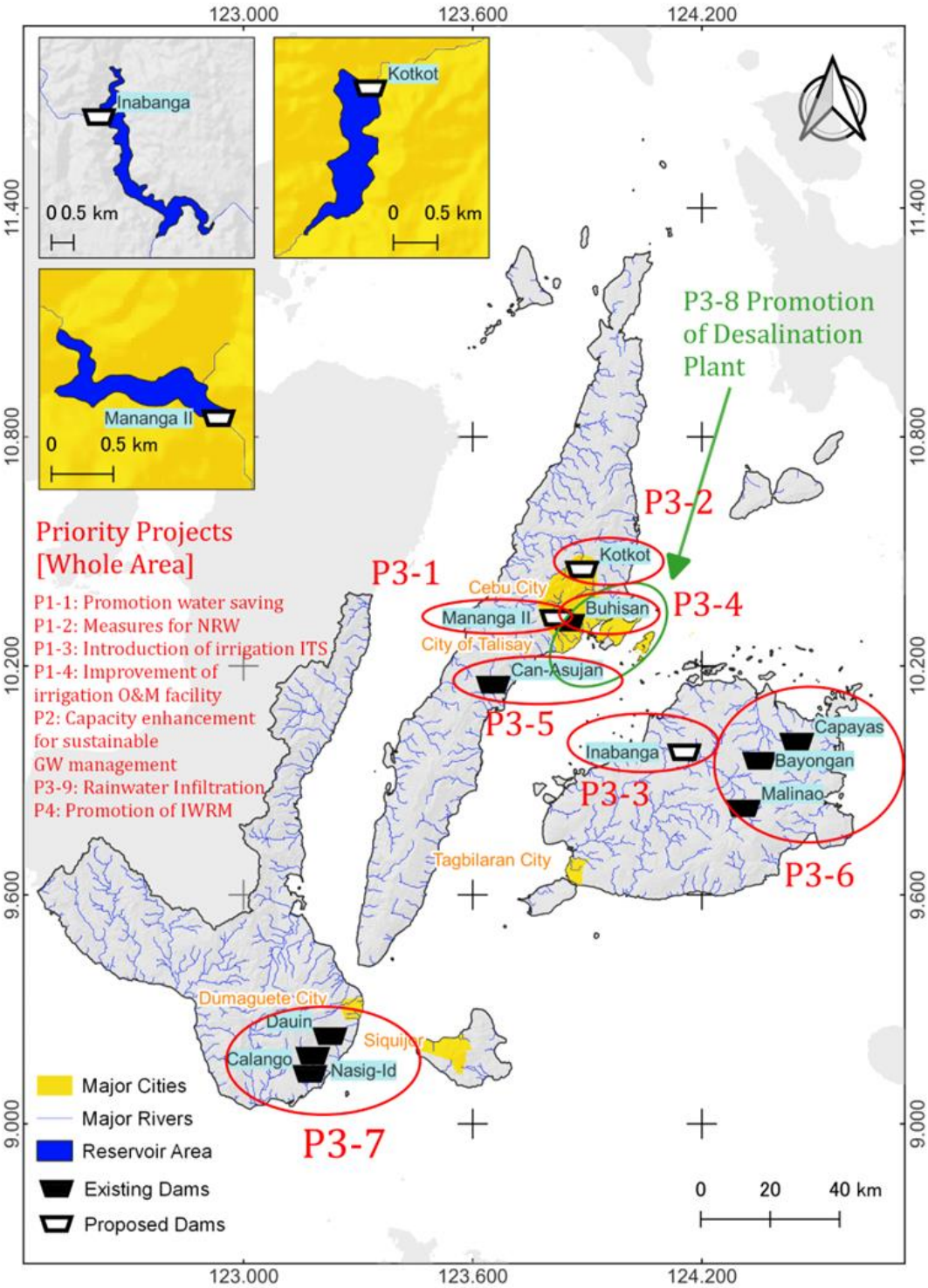
Annex G-3: Proposed Dams

[WRR VII]

Table G-1 List of Proposed Priority Dams (WRR VII)

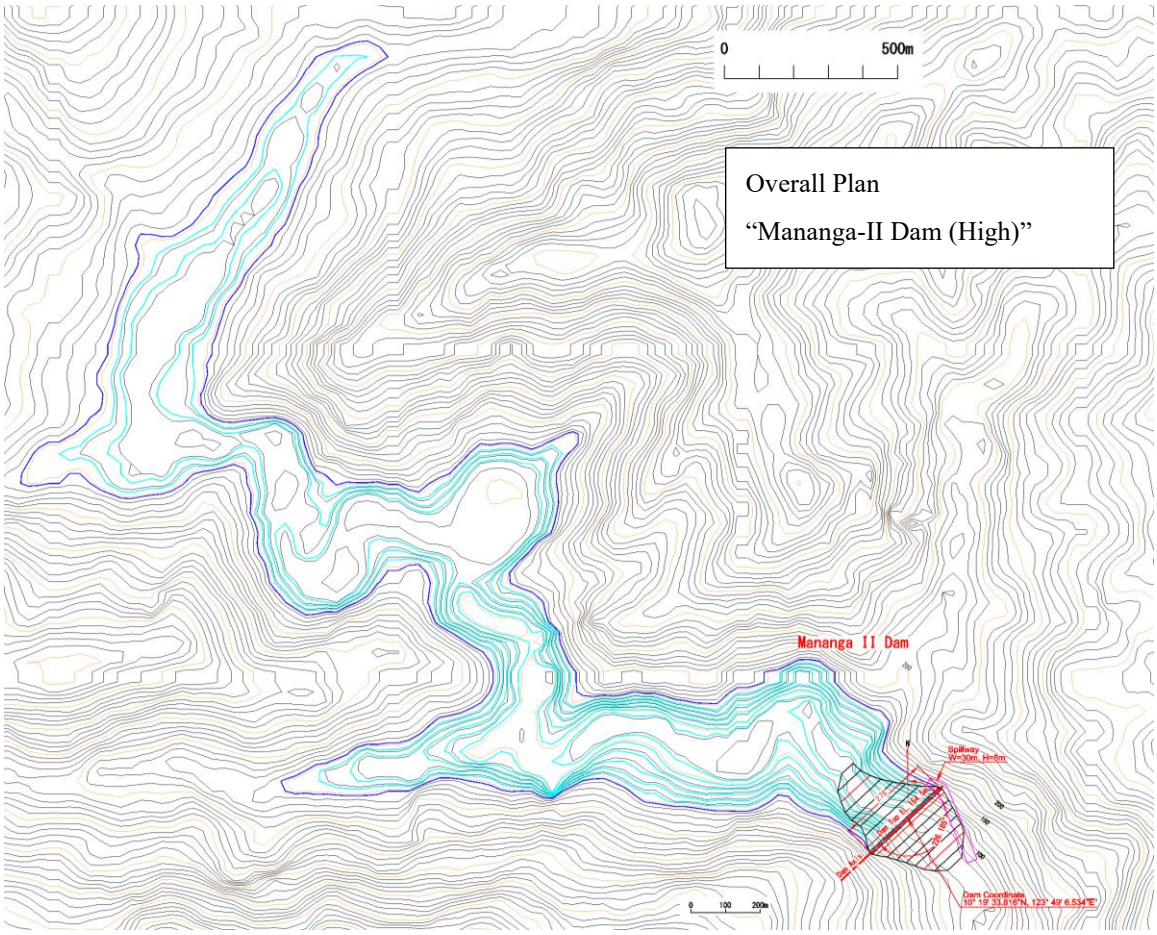
Name of Island	Cebu	Cebu	Cebu	Cebu	Bohol
Name of Dam	Mananga-II (High)	Mananga-II (Low)	Kotkot	Buhisan (Redevelopment)	Inabanga
Name of River	Mananga	(Same as left)	Kotkot	Kinalumsan	Inabanga
Catchment Area	68 sq.km	(Same as left)	19 sq.km	-	544 sq.km
Flood Discharge (100-Yr Design)	850 cu.m/sec	(Same as left)	300 cu.m/sec	-	2,360 cu.m/sec
Dam Type	Rockfill	(Same as left)	Rockfill	Concrete Arch	Rockfill
Dam Height (Approximately)	80m	40m	60m	31m	40m
Dam Top Elevation	EL.154.5m	EL.114.5m	EL.287.5m	EL.108.3m	EL.66.5m
Dam Crest Length	278m	167m	509m	65m	161m
Dam Volume	2.4 M.cu.m	0.4 M.cu.m	2.3 M.cu.m	-	0.4 M.cu.m
Upstream Slope ratio	1:3.0	(Same as left)	1:3.0	-	1:3.0
Downstream Slope ratio	1:2.5	(Same as left)	1:2.5	-	1:2.5
Foundation bedrock Elevation	EL.70.0m	(Same as left)	EL.220.0m	-	EL.20.0m
Foundation bedrock properties	good sedimentary rock outcrops	(Same as left)	good sedimentary rock outcrops	-	---
Channel bottom Elevation (Crest EL. Spillway)	EL.145.5m	EL.105.5m	EL.287.5m	-	EL.55.5m
Area of Resorvoir	130.8 ha	30.2 ha	61.5 ha	-	136.3 ha
Capacity of Reservoir	39.7 M.cu.m	5.8 M.cu.m	15.2 M.cu.m	0.23 M.cu.m (Current Status)	26.8 M.cu.m
Minimum Operation WL. (MOL)	WOL.88.1m	WOL.88.1m	WOL.239.2m	-	WOL.39.5m
Dead Storage Volume	0.67 M.cu.m	0.67 M.cu.m	0.27 M.cu.m	-	3.35 M.cu.m
Dam Coordinates (Latitude)	10° 19' 33.816"N	(Same as left)	10° 27' 11.566"N	10° 18' 48.708"N	9° 58' 25.346"N
Dam Coordinates (Longitude)	123° 49' 6.534"E	(Same as left)	123° 53' 8.469"E	123° 50' 54.672"E	124° 9' 13.869"E
Total Construction Cost	**4,715 M.PHP**	**781 M.PHP**	**4,624 M.PHP**	-	**859 M.PHP**
Dam Volume	2,375,254 cu.m	393,594 cu.m	2,329,518 cu.m	-	432,928 cu.m

Source: JICA Survey Team

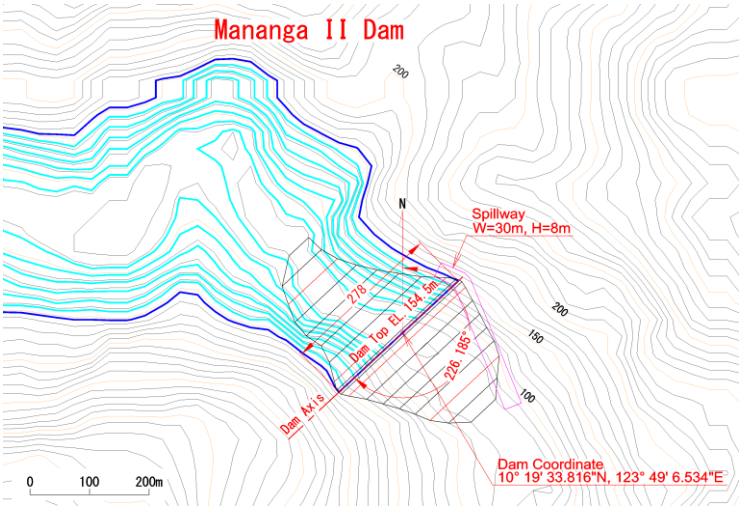


Source: JICA Survey Team

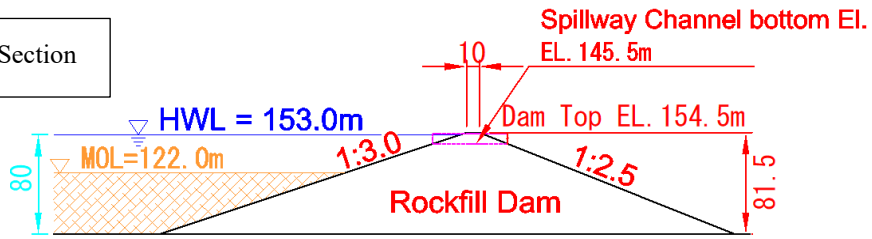
Figure G-1 Location Map of Proposed Priority Projects (WRR VII)



Dam-body Plan

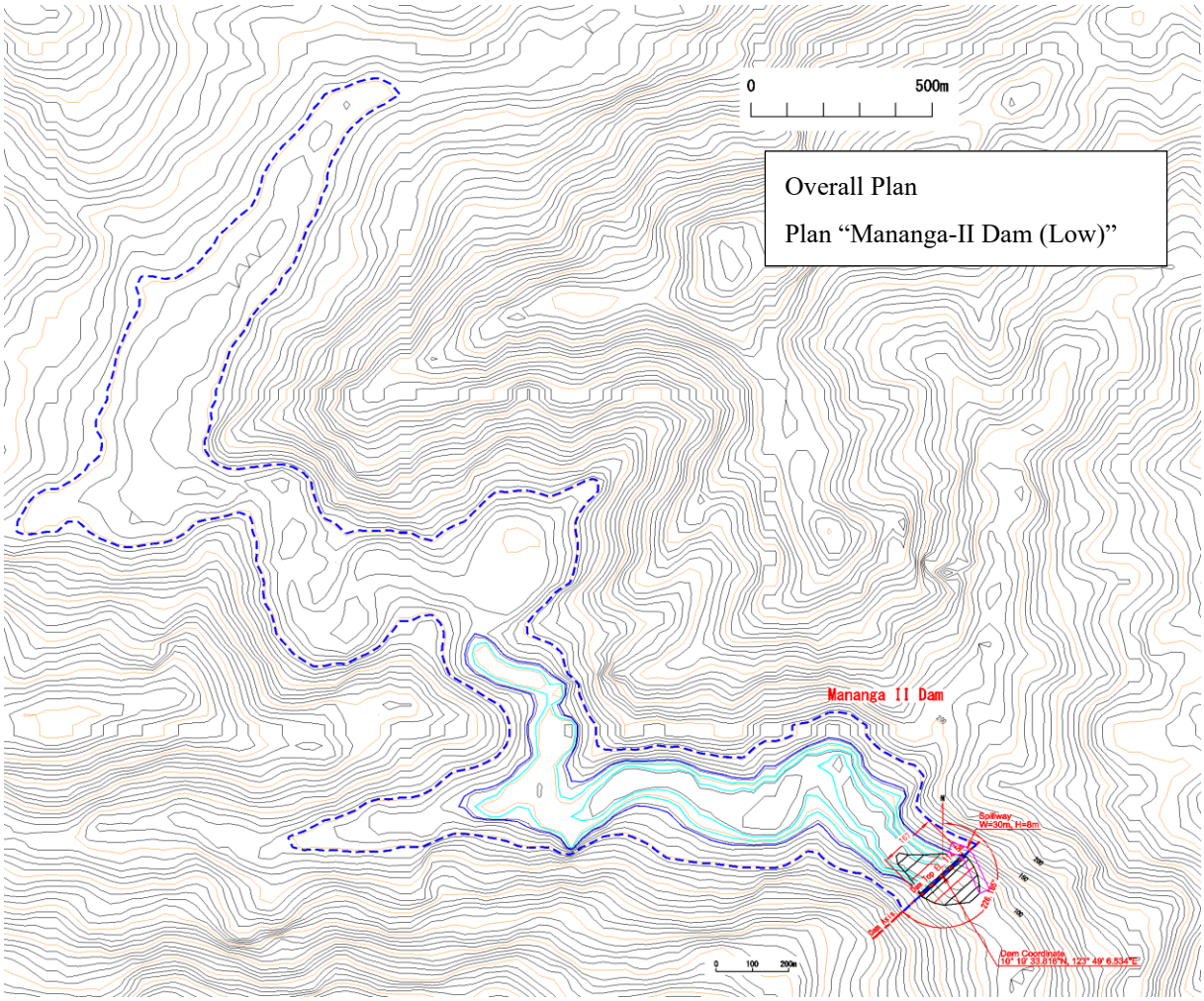


Standard Cross Section

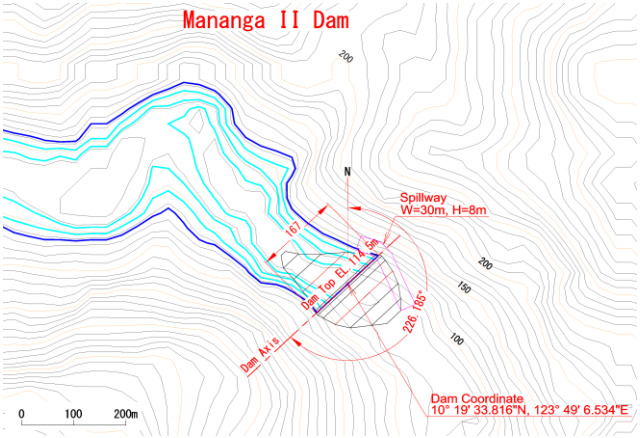


Source: JICA Survey Team

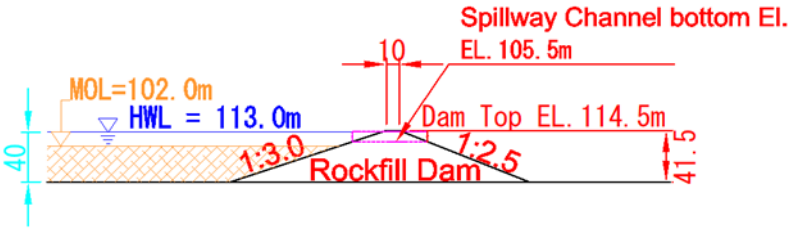
Figure G-2 Plan, Cross Section of "Mananga-II Dam (High)" [WRR VII]



Dam-body

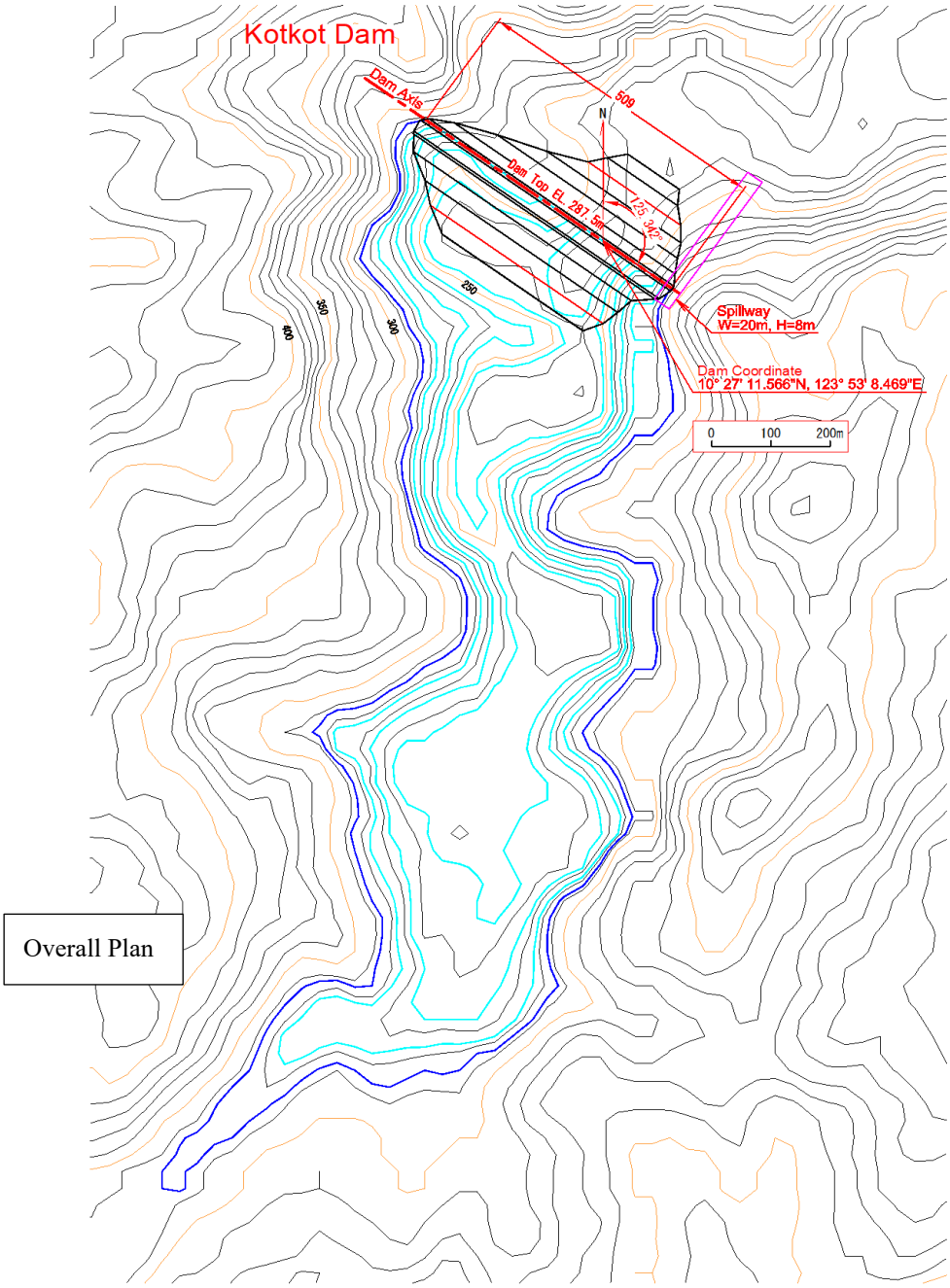


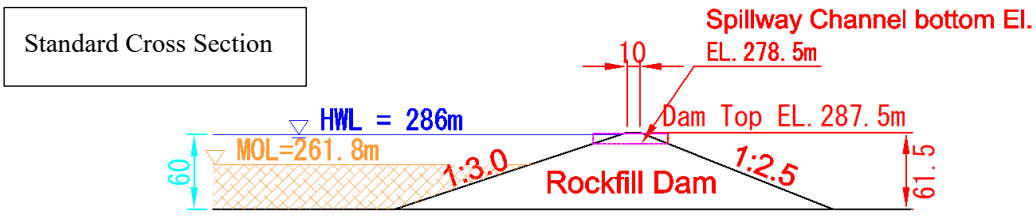
Standard Cross Section



Source: JICA Survey Team

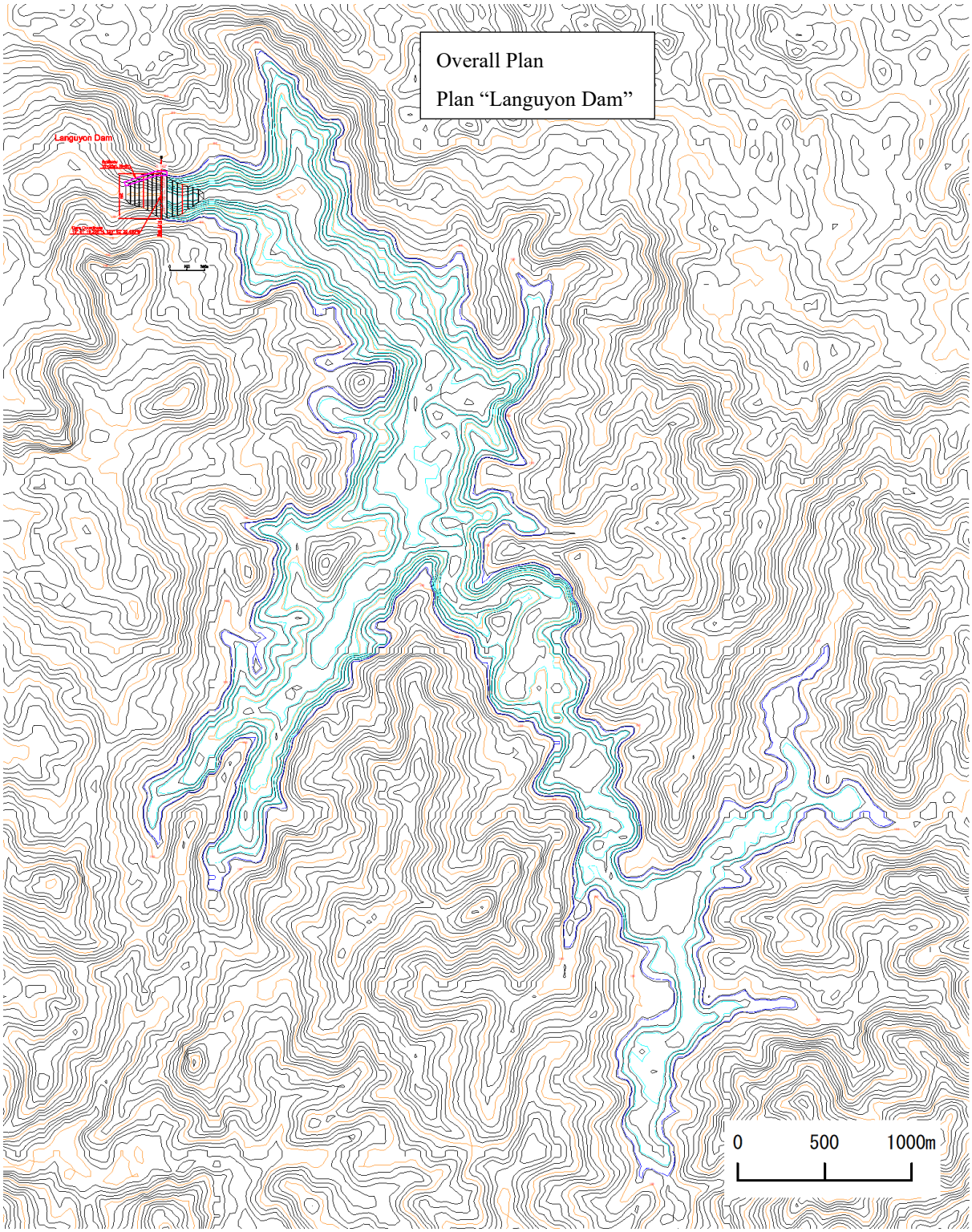
Figure G-3 Plan, Cross Section of "Mananga-II Dam (Low [Small])" [WRR VII]



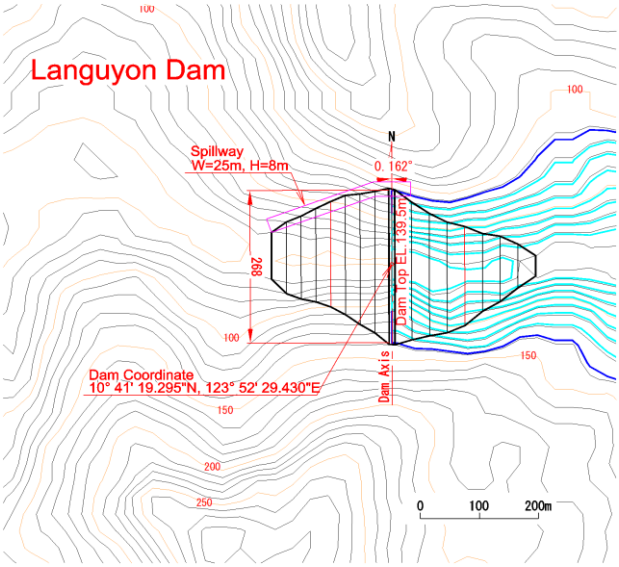


Source: JICA Survey Team

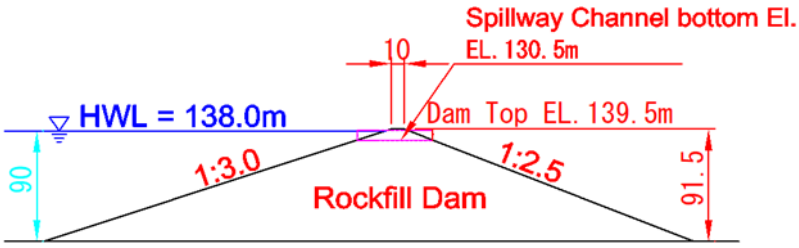
Figure G-4 Plan, Cross Section of "Kotkot Dam" [WRR VII]


Overall Plan
Plan "Languyon Dam"
Languyon Dam
0
500
1000m

Dam-body Plan

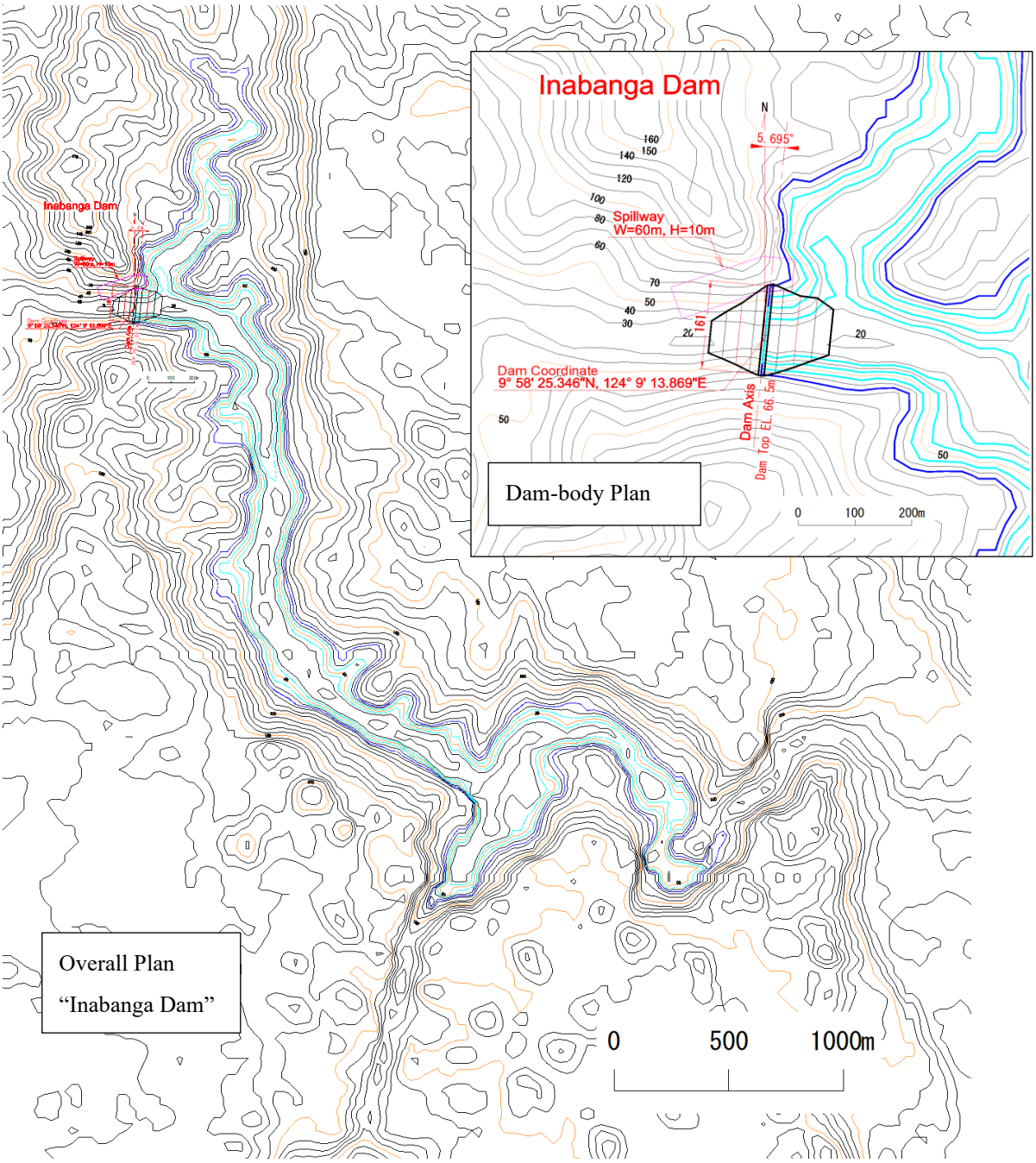


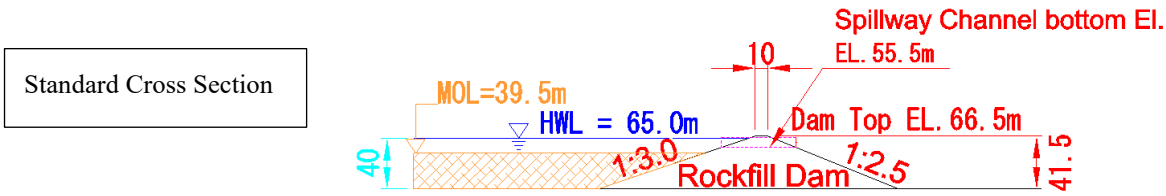
Standard Cross Section



Source: JICA Survey Team

Figure G-5 Plan, Cross Section of "Languyon Dam" [WRR VII]





Source: JICA Survey Team

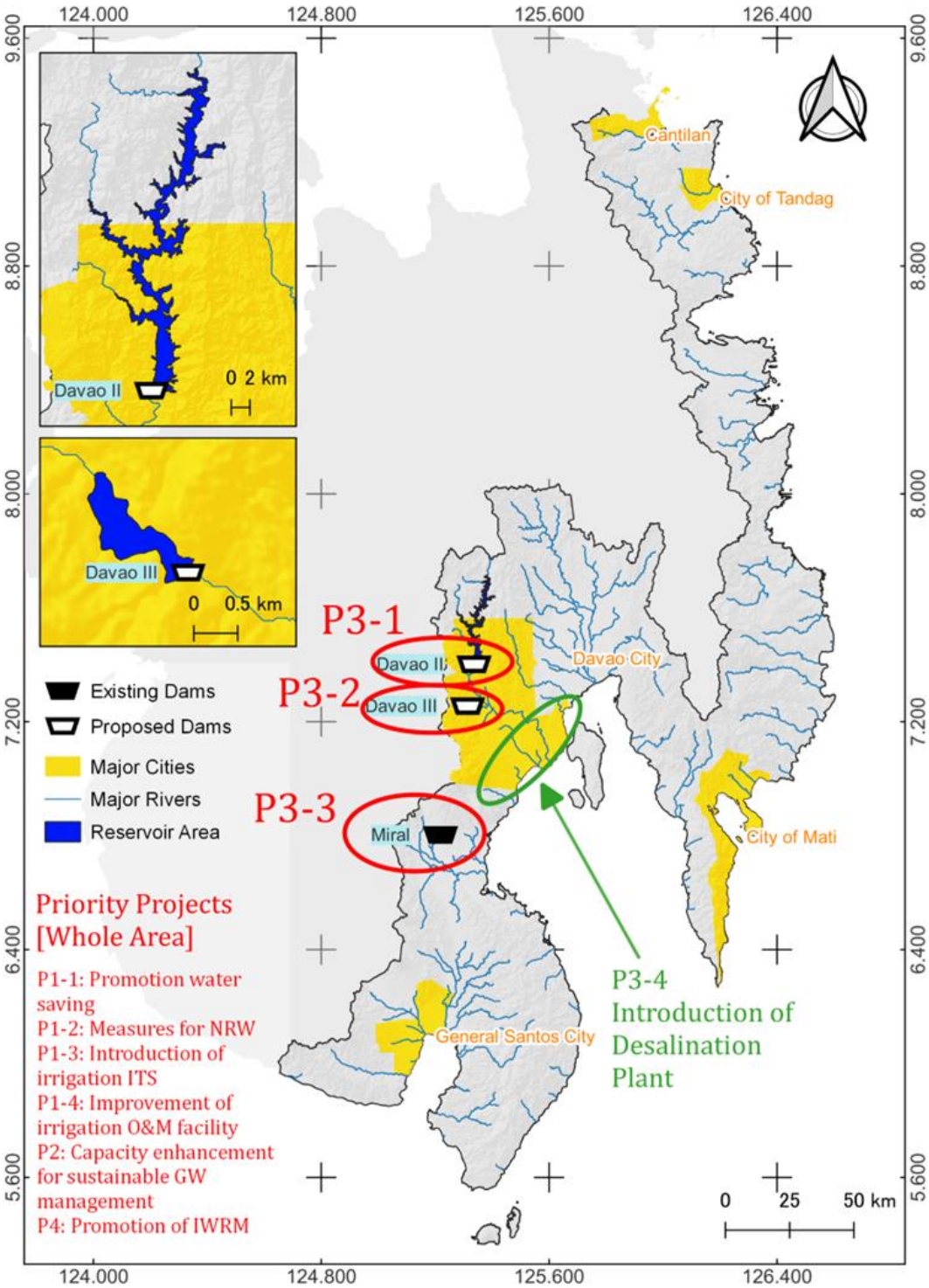
Figure G-6 Plan, Cross Section of "Inabanga Dam" [WRR VII]

［WRR XI］

Table G-2 List of Proposed Priority Dams (WRR XI)

Name of Island	Mindanao	Mindanao	Mindanao
Name of Dam	Davao-II	Davao-III	Davao-III (Low)
Name of River	Davao	Davao	(Same as left)
Catchment Area	814 sq.km	151 sq.km	(Same as left)
Flood Discharge (100-Yr Design)	2,510 cu.m/sec	1,100 cu.m/sec	(Same as left)
Dam Type	Rockfill	Rockfill	(Same as left)
Dam Height (Approximately)	130m	140m	62m
Dam Top Elevation	EL.437.5m	EL.499.5m	EL.421.5m
Dam Crest Length	707m	467m	270m
Dam Volume	12.9 M.cu.m	10.5 M.cu.m	1.2 M.cu.m
Upstream Slope ratio	1:3.0	1:3.0	(Same as left)
Downstream Slope ratio	1:2.5	1:2.5	(Same as left)
Foundation bedrock Elevation	EL.300.0m	EL.370.0m	(Same as left)
Foundation bedrock properties	bedrock	good sedimentary rock outcrops (mudstone)	(Same as left)
Channel bottom Elevation (Crest EL. Spillway)	EL.437.5m	EL.488.5m	EL.410.5m
Area of Resorvoir	6,125.6 ha	571.9 ha	56.1 ha
Capacity of Reservoir	2,537.7 M.cu.m	215.8 M.cu.m	11.5 M.cu.m
Minimum Operation WL. (Top of Dead Storage)	EL.340.2m	EL.429.8m	EL.408.4m
Dead Storage Volume (Sediment Yield 100%)	72.6 M.cu.m	19.6 M.cu.m	5.5 M.cu.m
Dam Coordinates (Latitude)	7° 24' 10.516"N	7° 15' 22.074"N	(Same as left)
Dam Coordinates (Longitude)	125° 20' 11.193"E	125° 18' 50.508"E	(Same as left)
Total Construction Cost	**25,684 M.PHP**	**20,844 M.PHP**	**2,314 M.PHP**

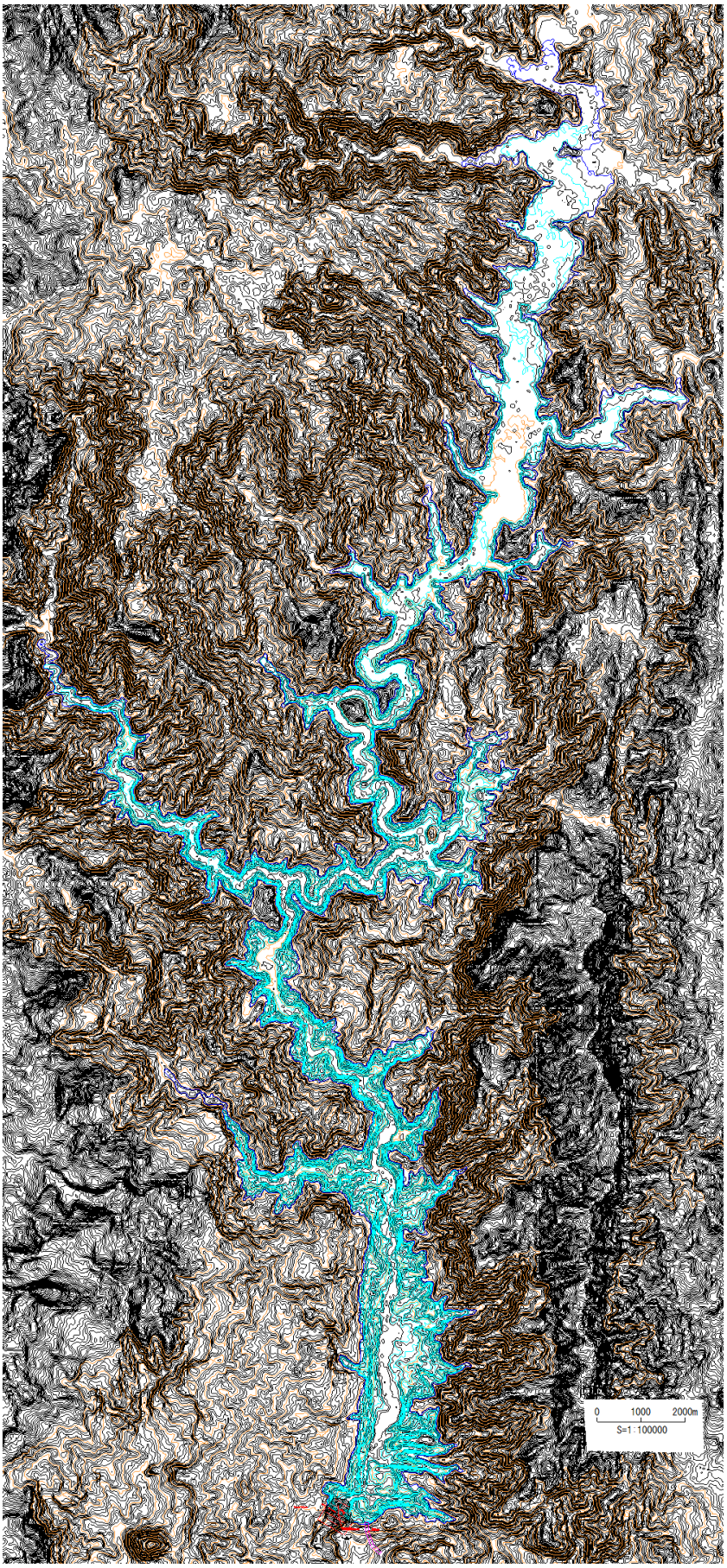
Source: JICA Survey Team

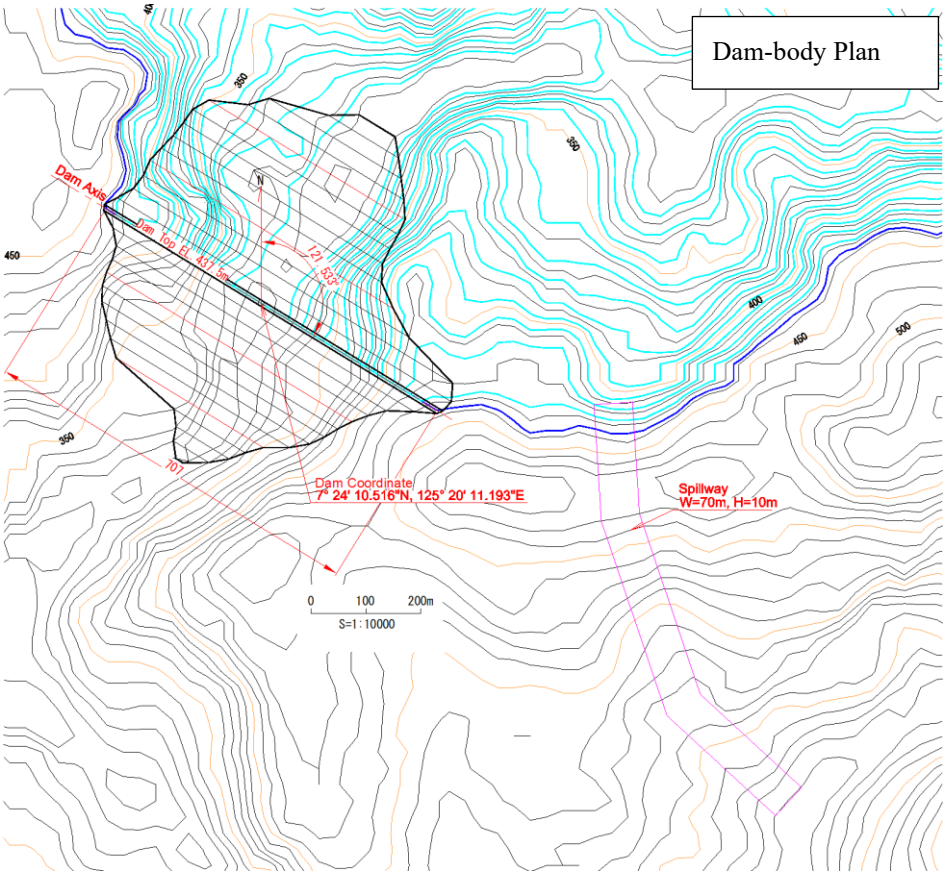


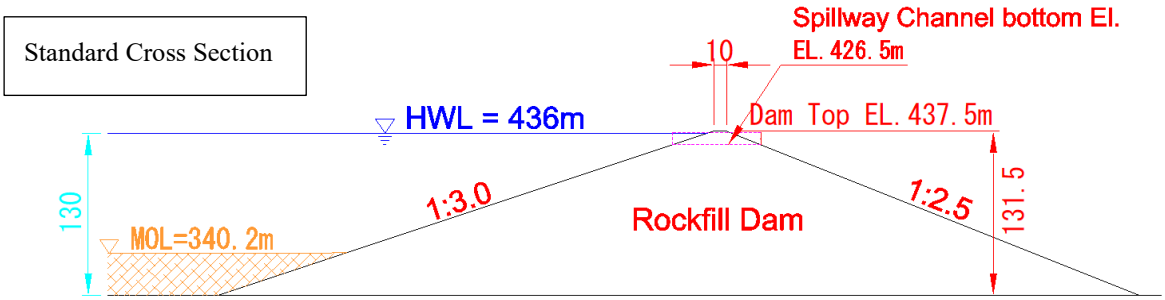
Source: JICA Survey Team

Figure G-7 Location Map of Proposed Priority Projects (WRR XI)

Overall Plan
"Davao-II"

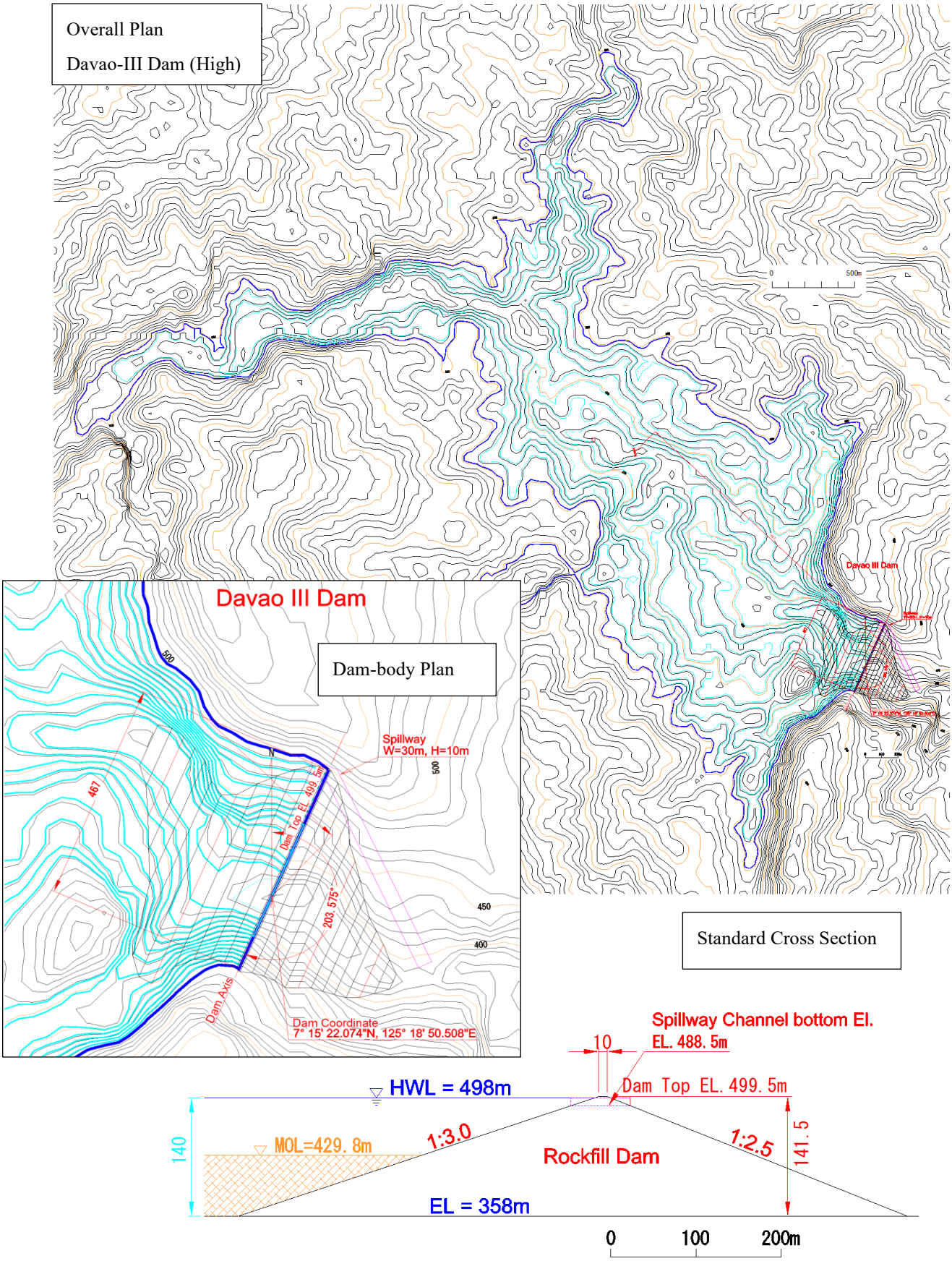






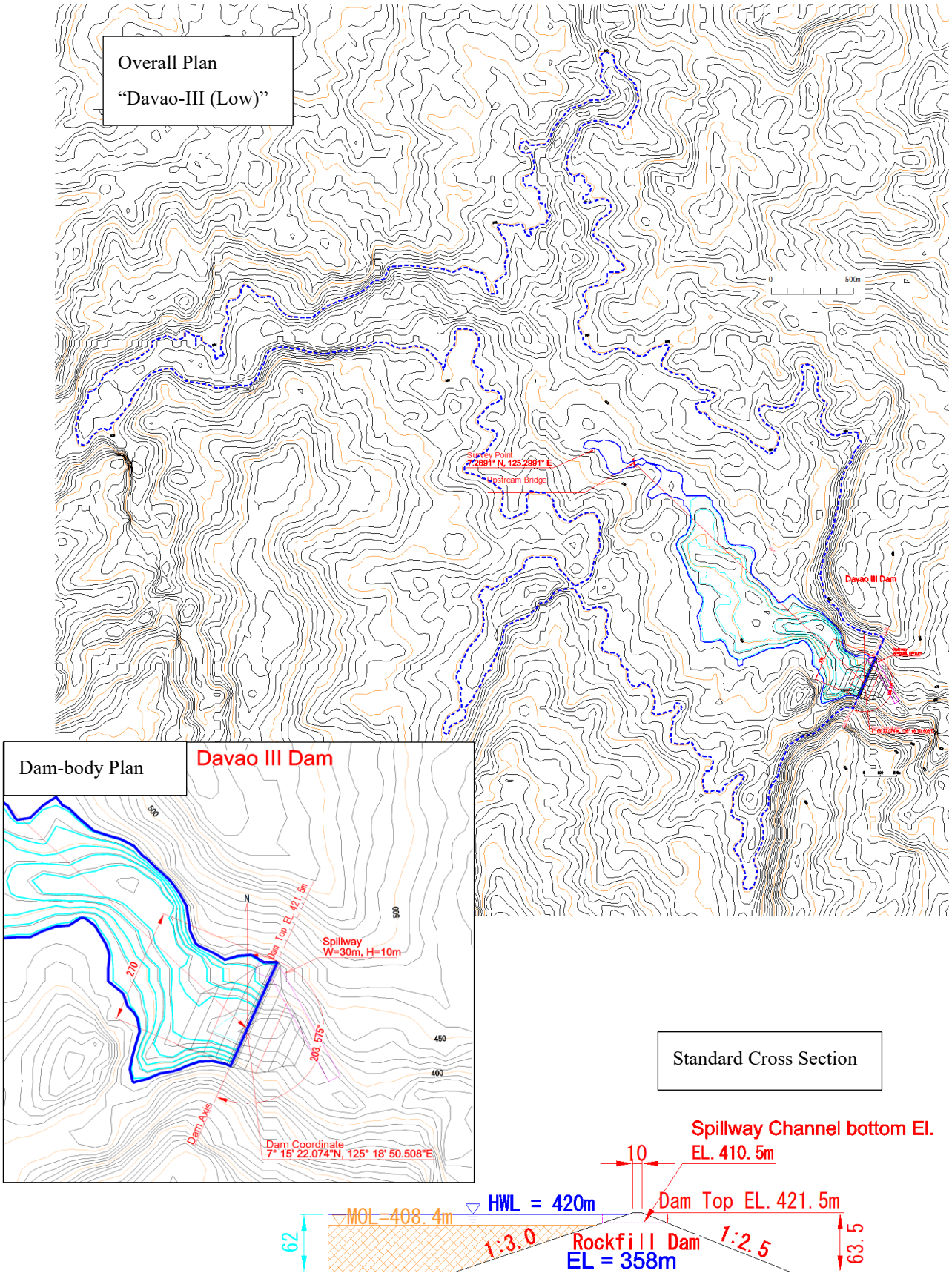
Source: JICA Survey Team

Figure G-8 Plan, Cross Section of "Davao-II Dam" [WRR XI]



Source: JICA Survey Team

Figure G-9 Plan, Cross Section of "Davao-III Dam (High)" [WRR XI]



Source: JICA Survey Team

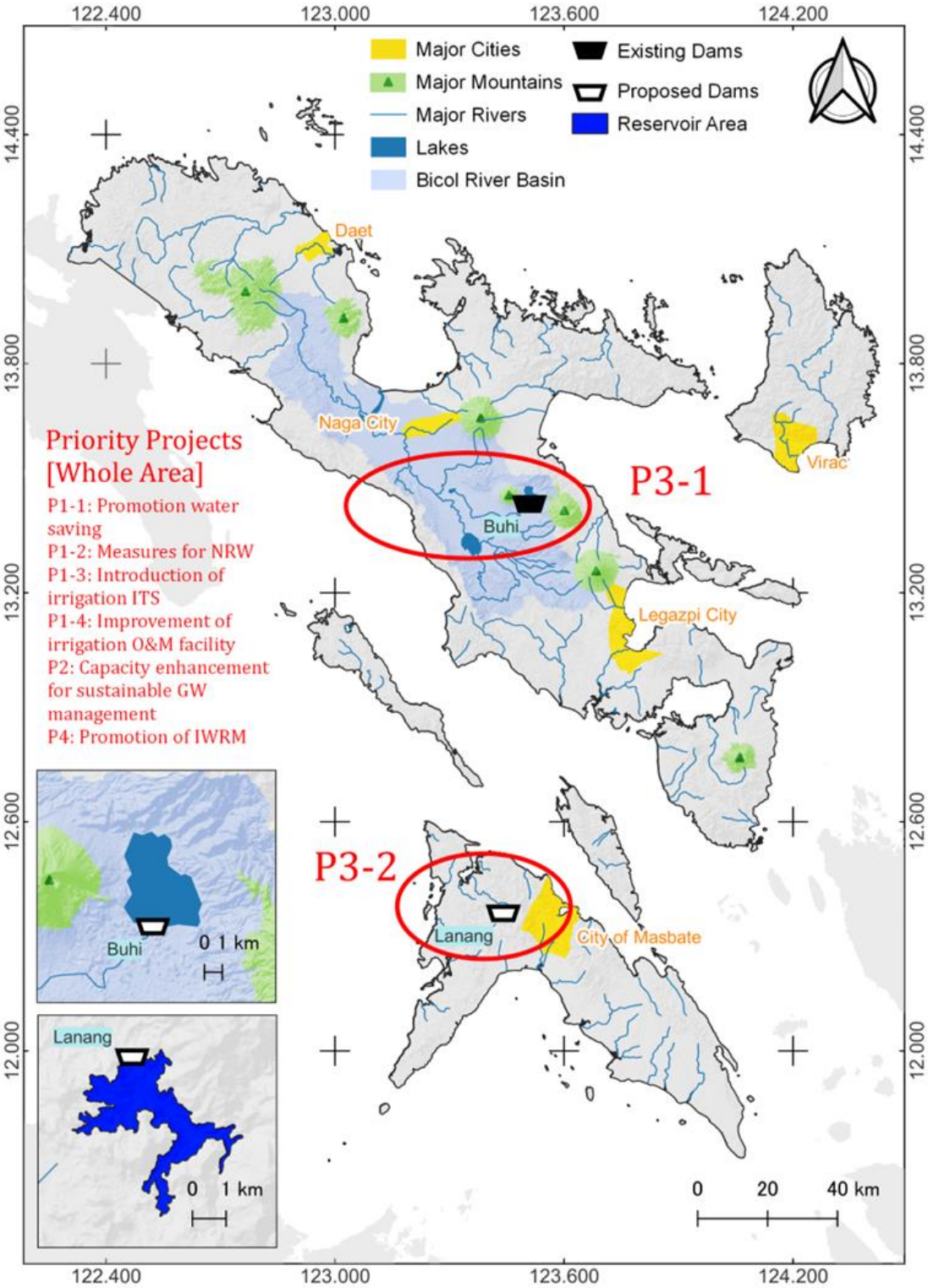
Figure G-10 Plan, Cross Section of "Davao-III Dam (Low)" [WRR XI]

[WRR V]

Table G-3 List of Proposed Priority Dams (WRR V)

Name of Island	Luzon	Masbate	Luzon
Name of Dam	Sipocot	Lanang	Buhi
Name of River	Bicol Sipocot	Lanang	Lake Buhi
Catchment Area	470 sq.km	53 sq.km	75 sq.km
Flood Discharge (100-Yr Design)	5,030 cu.m/sec	730 cu.m/sec	1,850 cu.m/sec
Dam Type	Rockfill	Rockfill	Control Wier
Dam Height (Approximately)	40m	60m	20m
Dam Top Elevation	EL.49.5m	EL.126.5m	---
Dam Crest Length	327m	561m	(Spiliway) 50m (Gate) 10m
Dam Volume	0.8 M.cu.m	2.9 M.cu.m	7,000 cu.m
Upstream Slope ratio	1:3.0	1:3.0	垂直
Downstream Slope ratio	1:2.5	1:2.5	1:0.8
Foundation bedrock Elevation	EL.10.0m	EL.60.0m	---
Foundation bedrock properties	---	good sedimentary rock outcrops	---
Channel bottom Elevation (Crest EL. Spillway)	EL.36.5m	EL.117.5m	---
Area of Resorvoir	3,172.9 ha	657.3 ha	15～18 sq.m
Capacity of Reservoir	446.0 M.cu.m	153.8 M.cu.m	---
Minimum Operation WL. (Top of Dead Storage)	EL.29.1m	EL.110.1m	---
Dead Storage Volume (Sediment Yield 100%)	48.8 M.cu.m	76.9 M.cu.m	---
Dam Coordinates (Latitude)	13° 46' 54.611"N	12° 21'39.473"N	(Control Structure) 13° 25'58"N
Dam Coordinates (Longitude)	122° 56' 28.007"E	123° 26'23.356"E	(Control Structure) 123° 30'34"E
Total Construction Cost	**1,558 M.PHP**	**5,706 M.PHP**	**837 M.PHP**

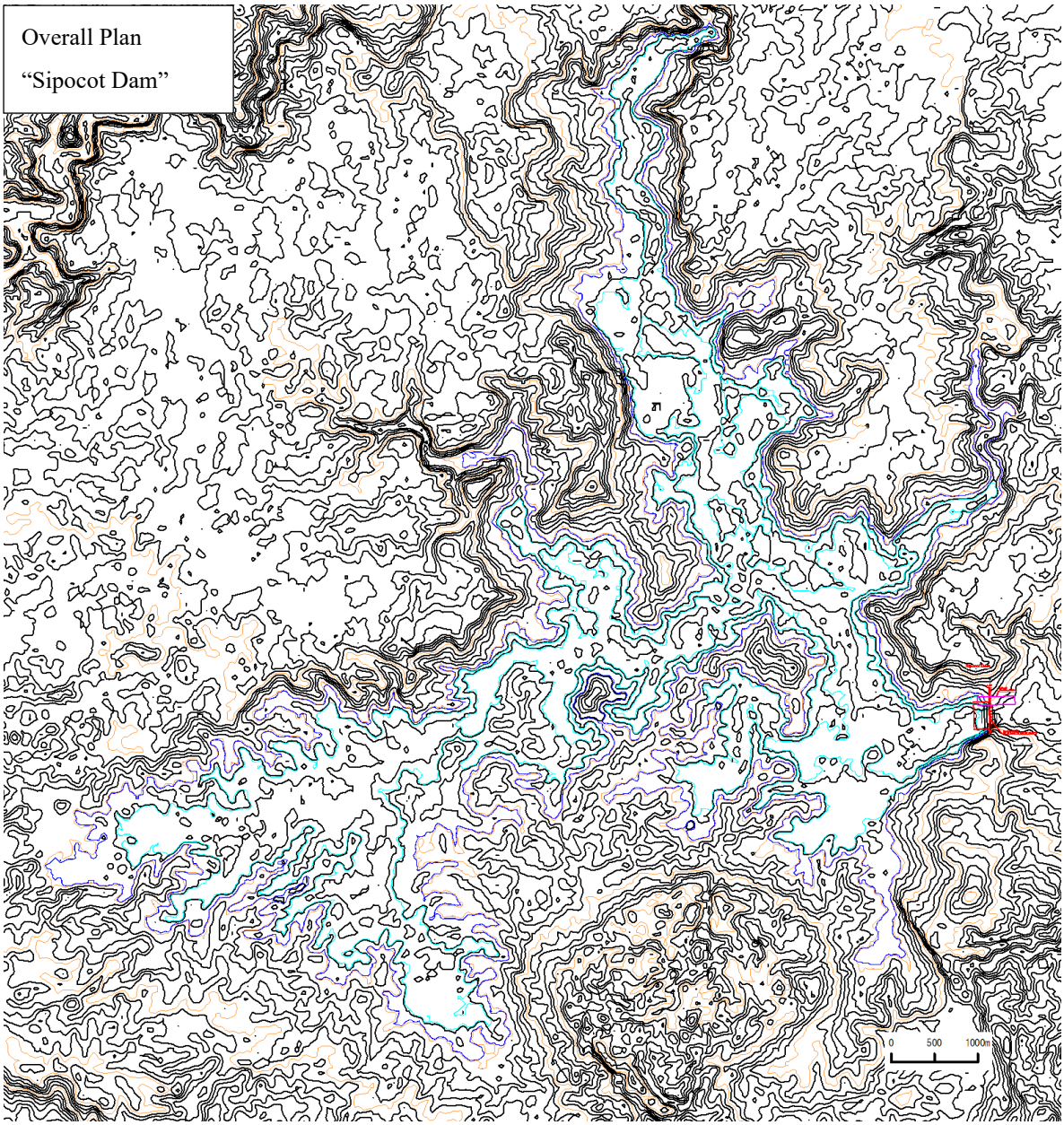
Source: JICA Survey Team



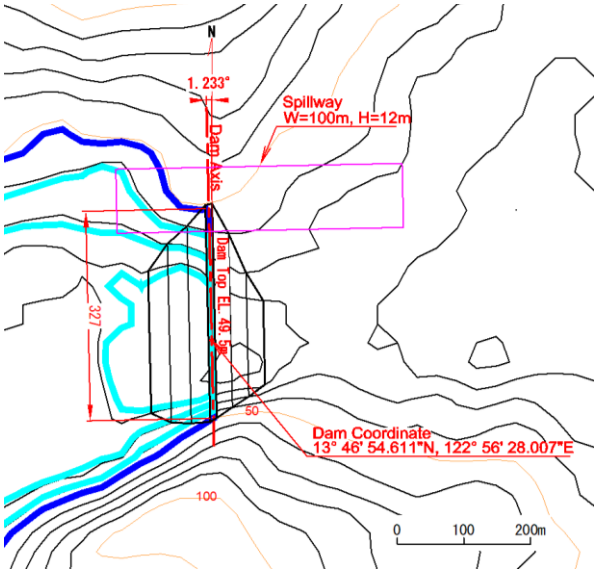
Source: JICA Survey Team, Mountain data from © OpenStreetMap Contributors

Figure G-11 Location Map of Proposed Priority Projects (WRR V)

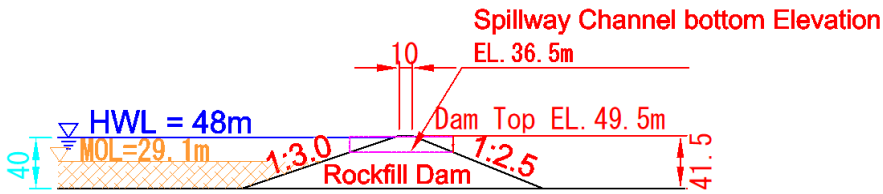
Overall Plan
"Sipocot Dam"



Dam-body Plan



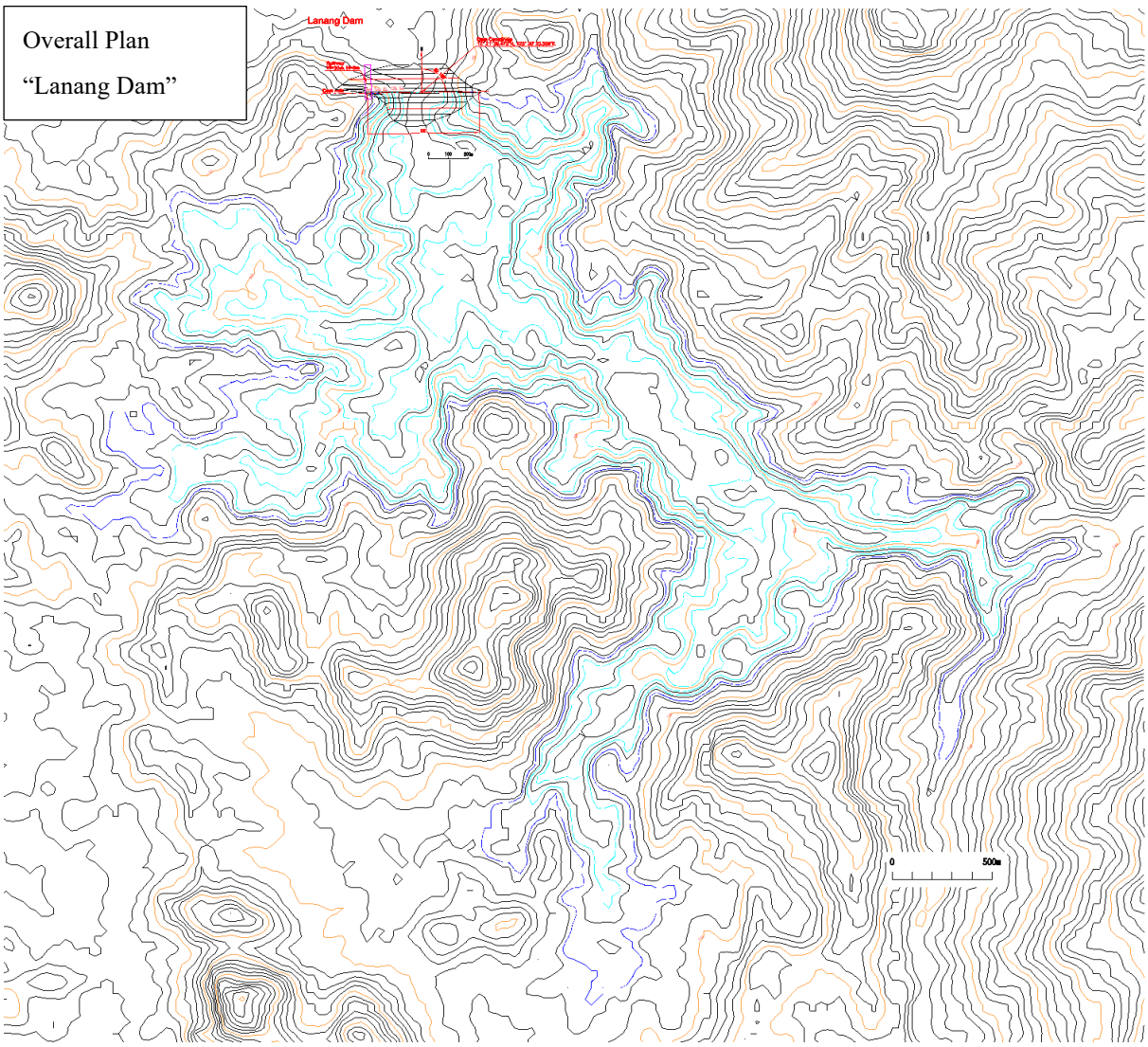
Standard Cross Section



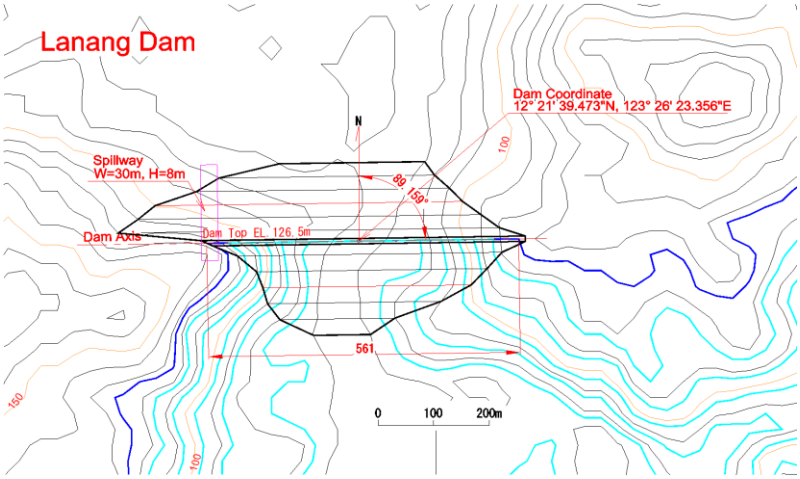
Source: JICA Survey Team

Figure G-12 Plan, Cross Section of "Sipocot Dam" [WRR V]

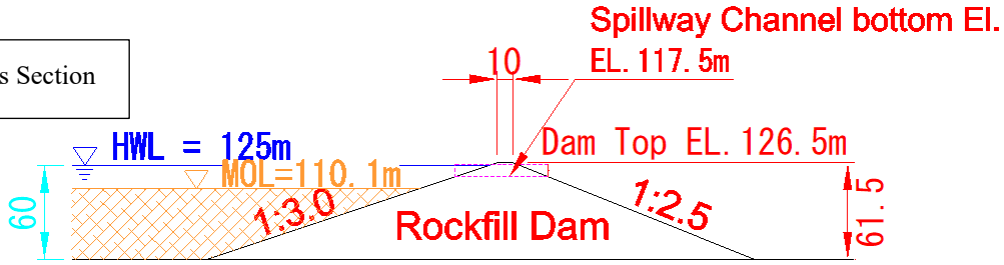
Overall Plan
"Lanang Dam"



Dam-body Plan



Standard Cross Section



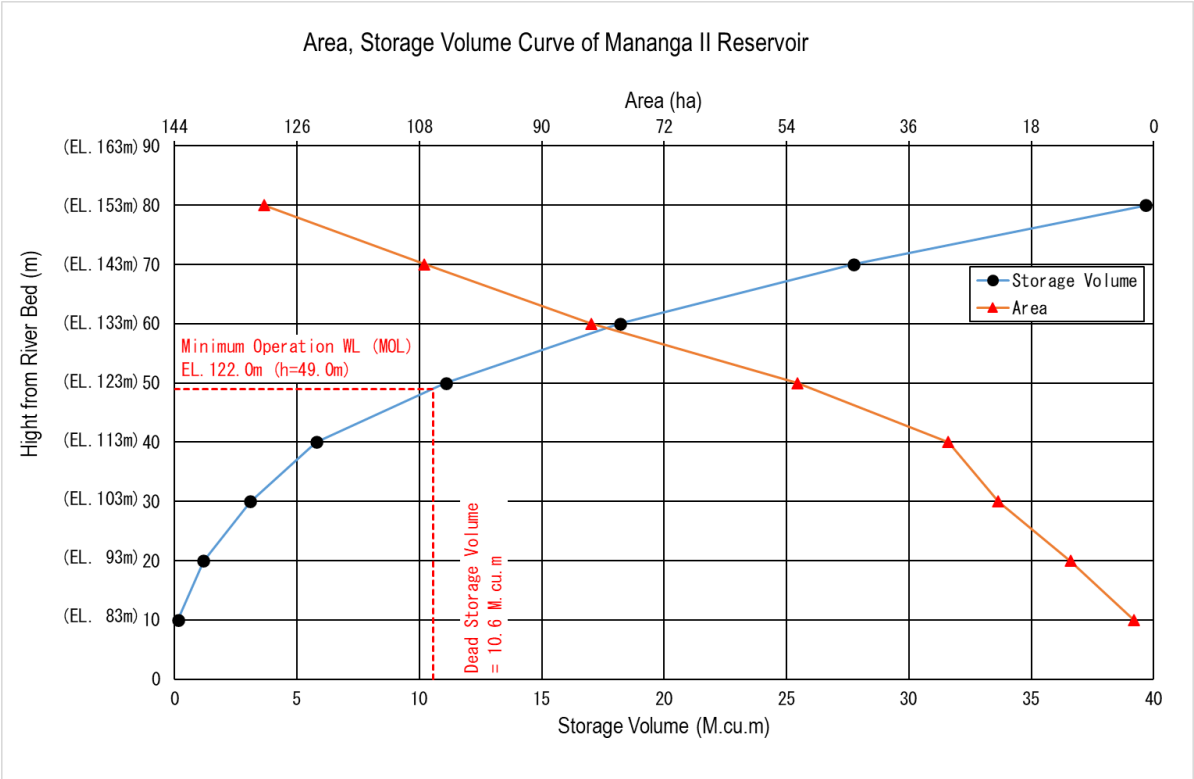
Source: JICA Survey Team

Figure G-13 Plan, Cross Section of "Lanang Dam" [WRR V]

Table G-4 Reservoir Area and Cumulative Storage Capacity by Reservoir Level of Mananga-II Dam [WRR VII]

Resorvoir Depth	Area of Resorvoir	Cumulative Capacity of Resorvoir
(m)	(ha)	(M.cu.m)
80	130.8	39.7
70	107.3	27.8
60	82.8	18.2
50	52.4	11.1
40	30.2	5.8
30	22.9	3.1
20	12.2	1.2
10	2.9	0.1

Source: JICA Survey Team



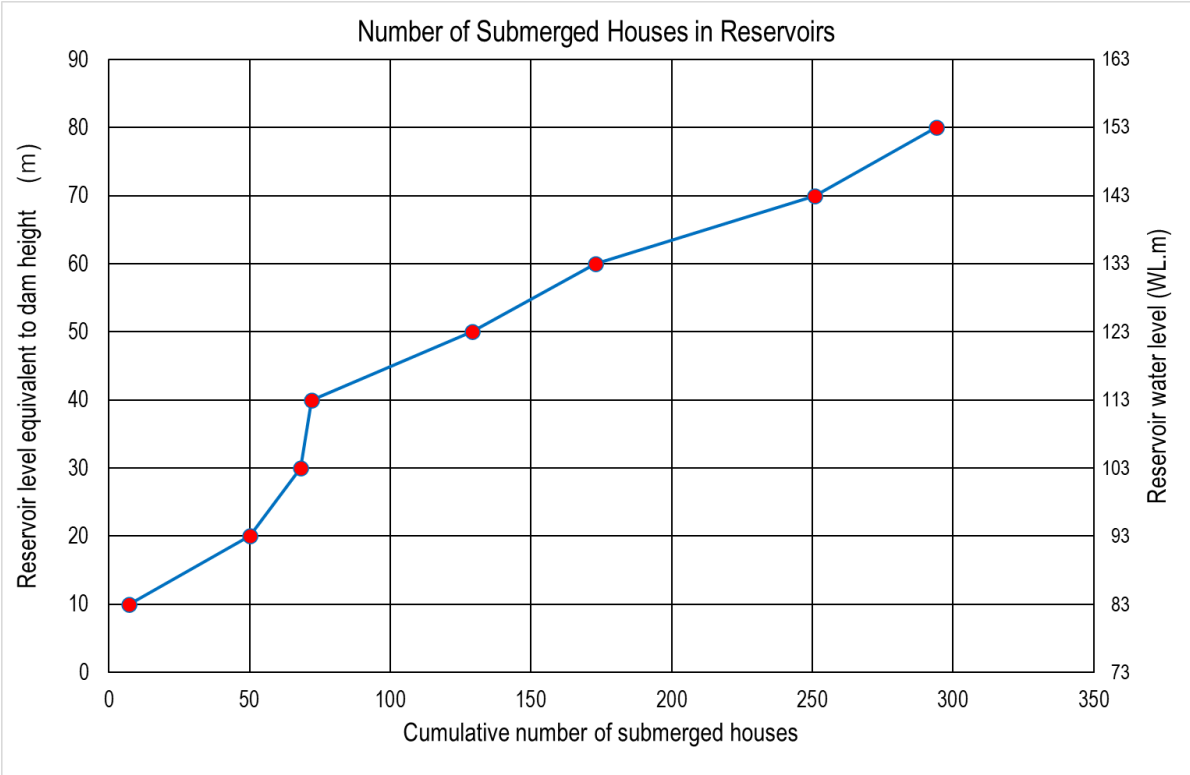
Source: JICA Survey Team

Figure G-14 Area, Storage Volume Curve of Mananga II Reservoir [WRR VII]

Table G-5 Cumulative number of Submerged houses by Reservoir Level of Mananga-II Dam [WRR VII]

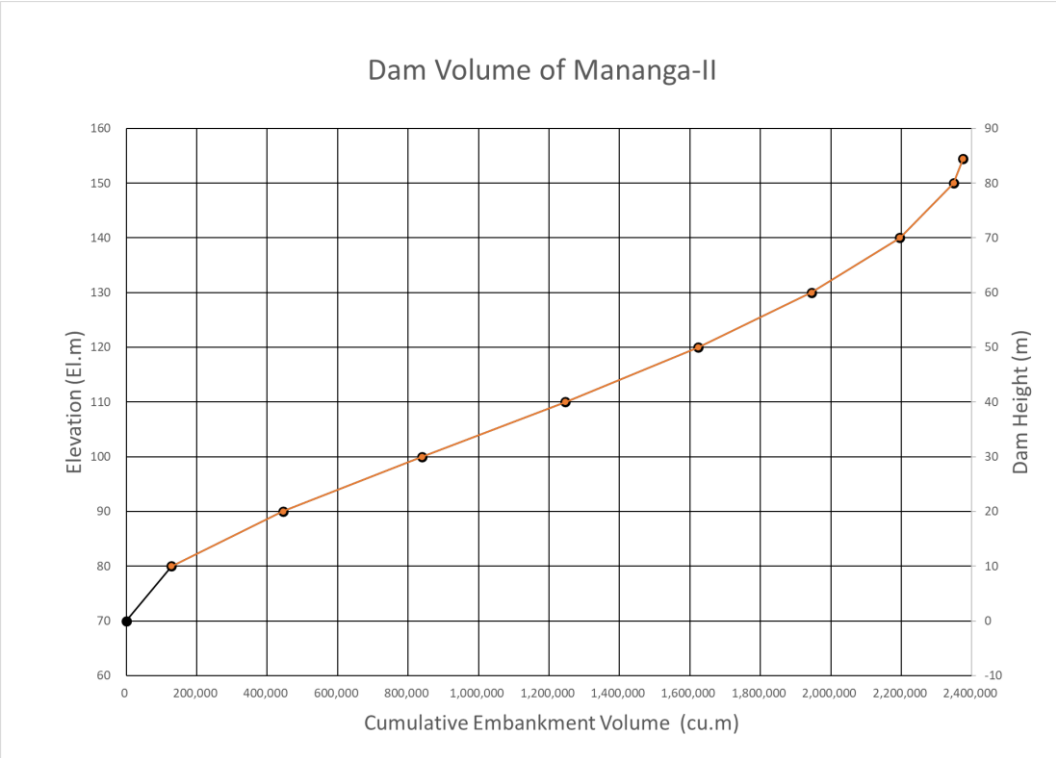
Resorvoir Depth	Cumulative number of Submerged houses
(m)	(ha)
80	294
70	251
60	173
50	129
40	72
30	68
20	50
10	7

Source: JICA Survey Team



Source: JICA Survey Team

Figure G-15 Cumulative number of Submerged houses by Reservoir Level of Mananga-II Dam [WRR VII]



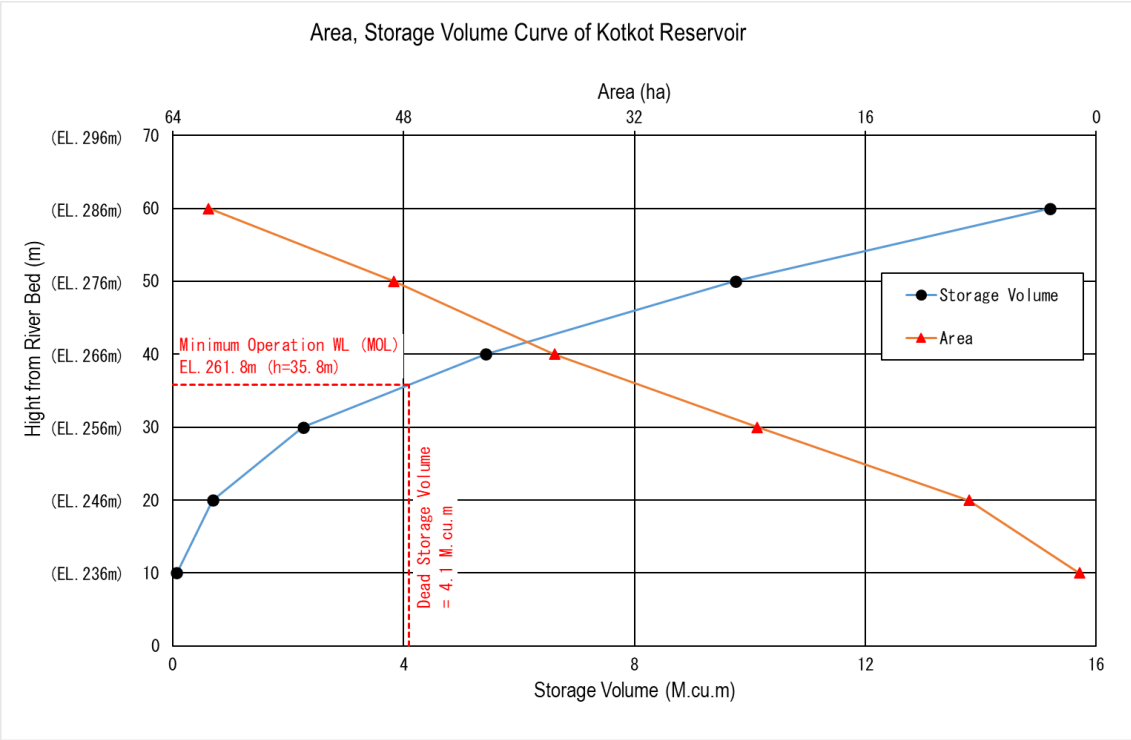
Source: JICA Survey Team

Figure G-16 Embankment volume by dam height of Mananga-II Dam [WRR VII]

Table G-6 Reservoir Area and Cumulative Storage Capacity by Reservoir Level of Kotkot Dam [WRR VII]

Resorvoir Depth	Area of Resorvoir	Cumulative Capacity of Resorvoir
(m)	(ha)	(M.cu.m)
60	15.2	61.5
50	9.7	48.7
40	5.4	37.5
30	2.3	23.5
20	0.7	8.8
10	0.1	1.2

Source: JICA Survey Team



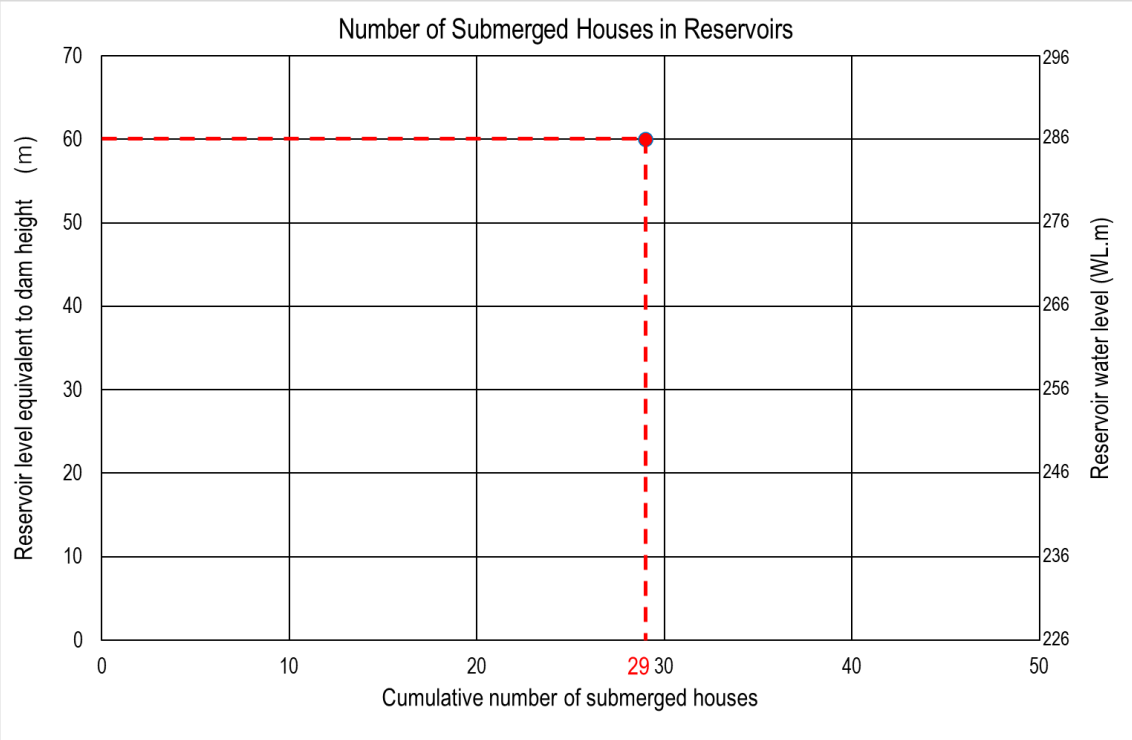
Source: JICA Survey Team

Figure G-17 Area, Storage Volume Curve of Kotkot Reservoir [WRR VII]

Table G-7 Cumulative number of Submerged houses by Reservoir Level of Kotkot Dam [WRR VII]

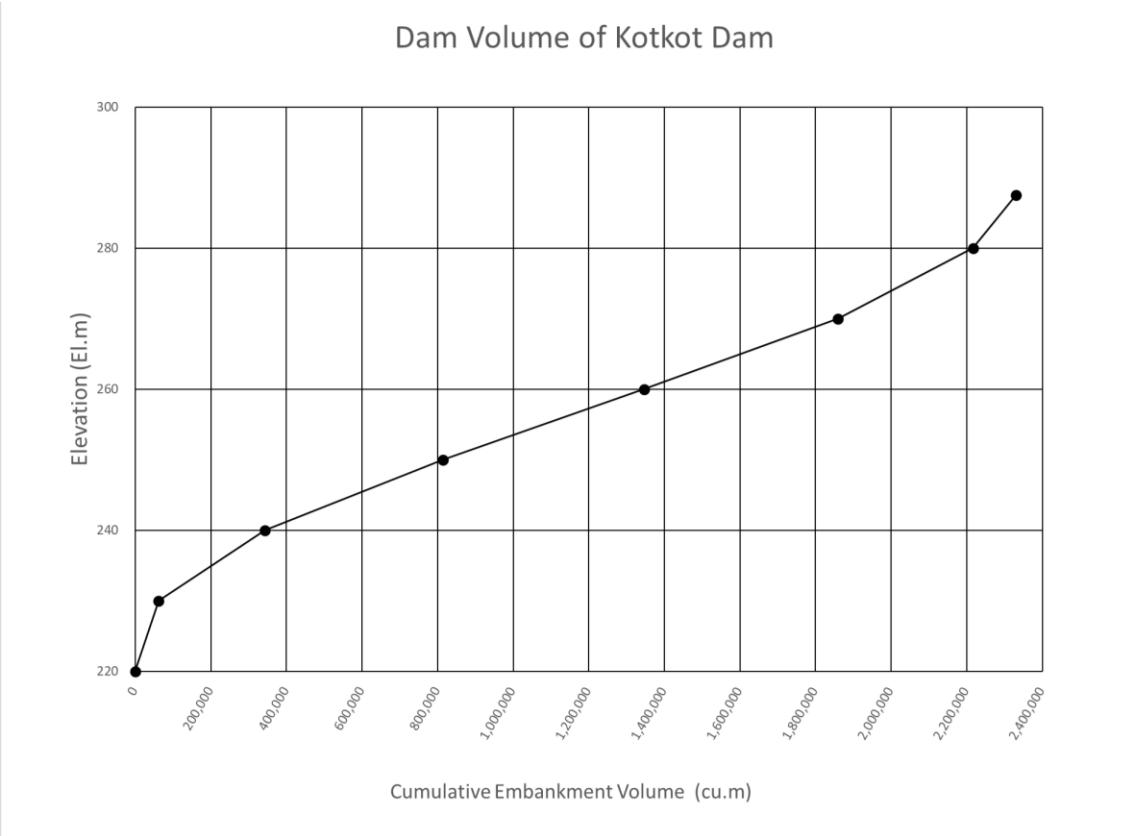
Resorvoir Depth	Cumulative number of Submerged houses
(m)	(ha)
60	29

Source: JICA Survey Team



Source: JICA Survey Team

Figure G-18 Cumulative number of Submerged houses by Reservoir Level of Kotkot Dam [WRR VII]



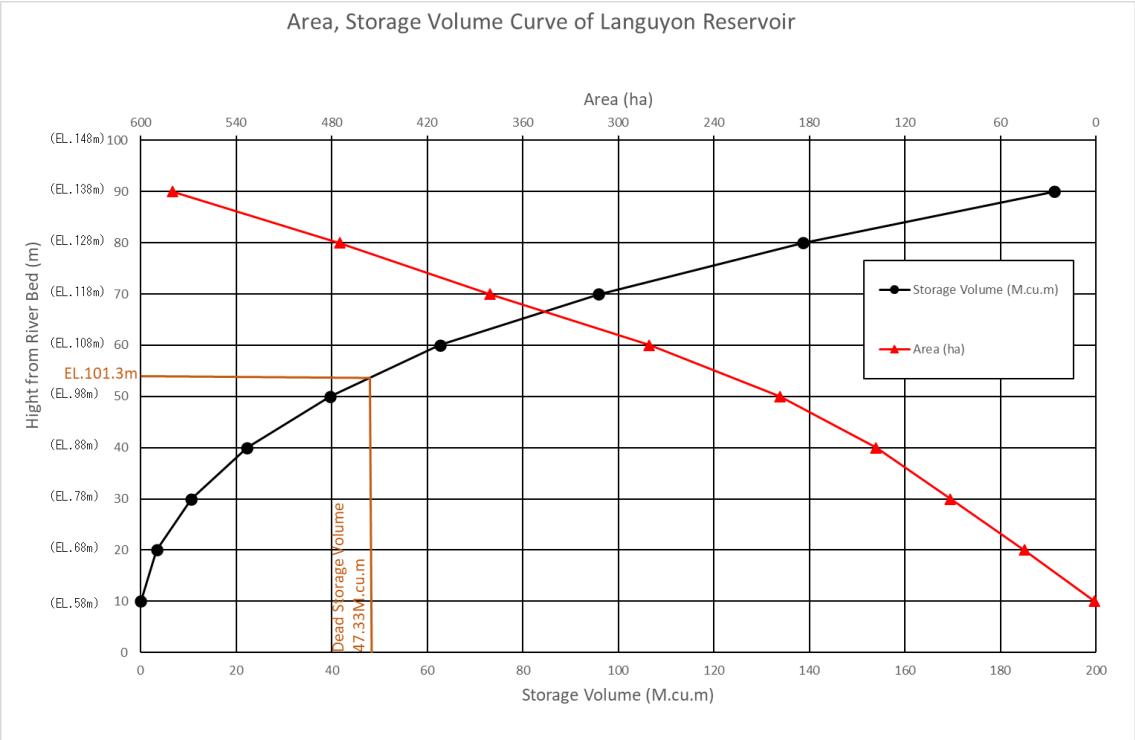
Source: JICA Survey Team

Figure G-19 Embankment volume by dam height of Kotkot Dam [WRR VII]

Table G-8 Reservoir Area and Cumulative Storage Capacity by Reservoir Level of Languyon Dam [WRR VII]

Resorvoir Depth	Area of Resorvoir	Cumulative Capacity of Resorvoir
(m)	(ha)	(M.cu.m)
90	579.7	191.2
80	475.1	138.6
70	380.5	95.9
60	280.6	62.7
50	198.7	39.7
40	138.2	22.3
30	91.6	10.6
20	45.0	3.4
10	0.8	0.0

Source: JICA Survey Team



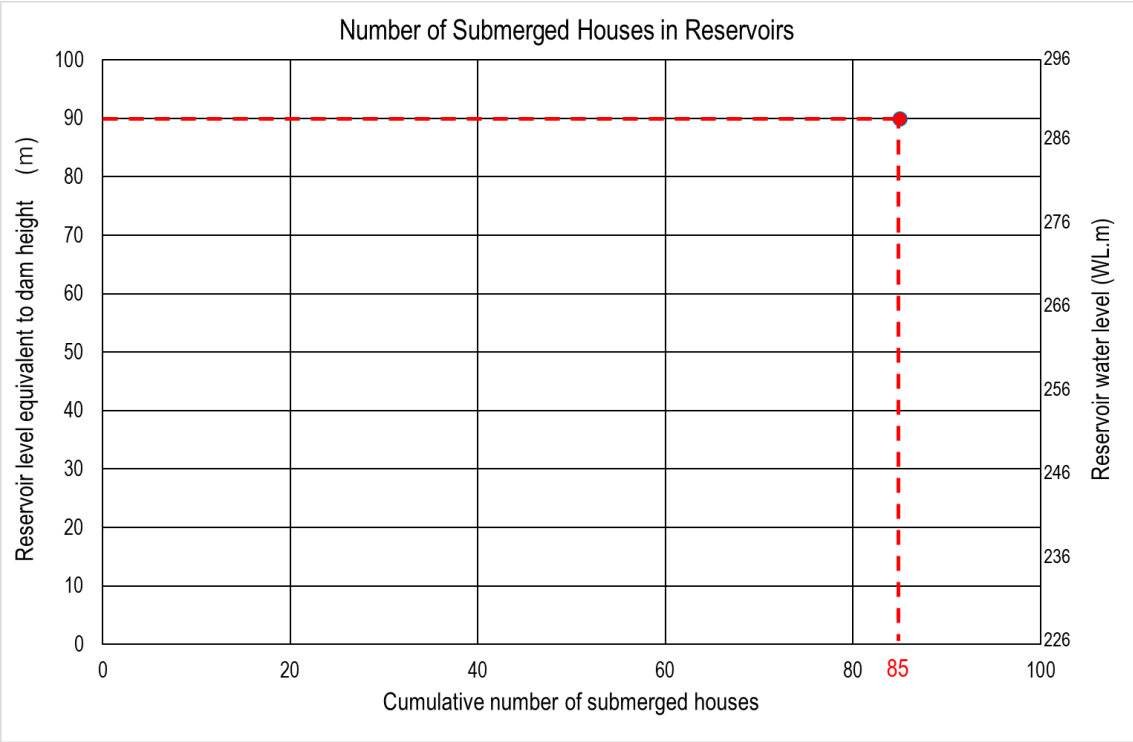
Source: JICA Survey Team

Figure G-20 Area, Storage Volume Curve of Languyon Reservoir [WRR VII]

Table G-9 Cumulative number of Submerged houses by Reservoir Level of Languyon Dam [WRR VII]

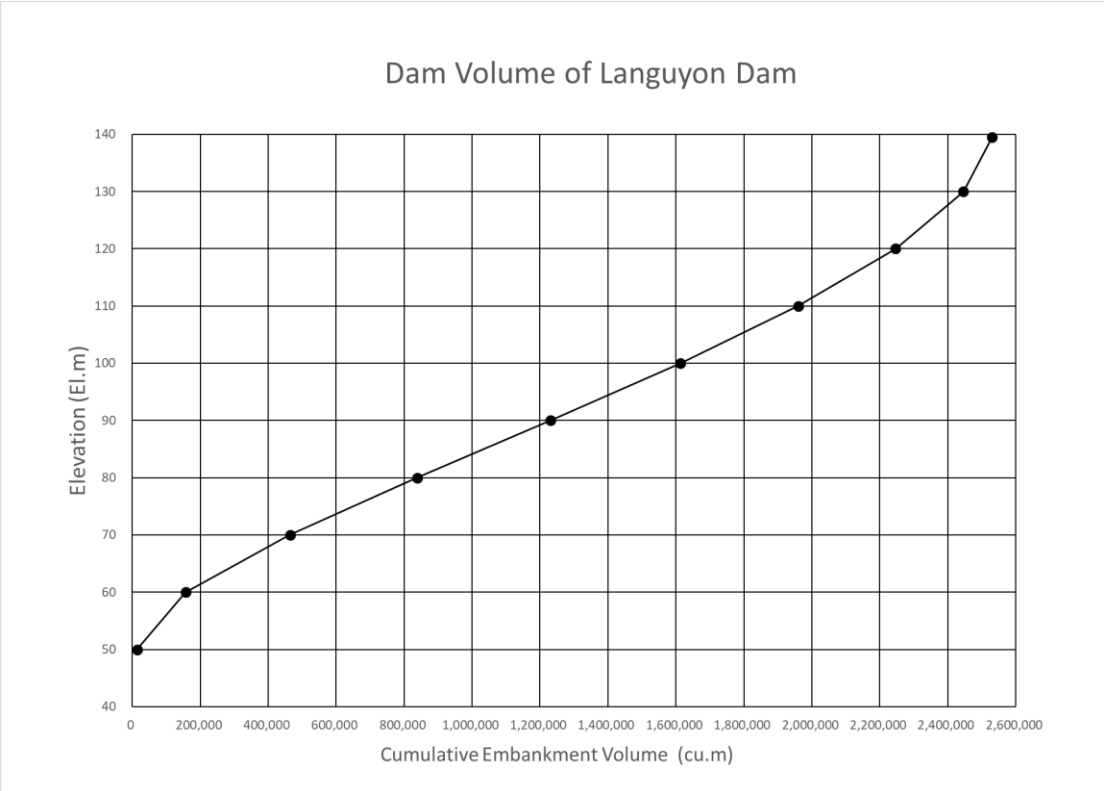
Resorvoir Depth	Cumulative number of Submerged houses
(m)	(ha)
90	85

Source: JICA Survey Team



Source: JICA Survey Team

Figure G-21 Cumulative number of Submerged houses by Reservoir Level of Languyon Dam [WRR VII]



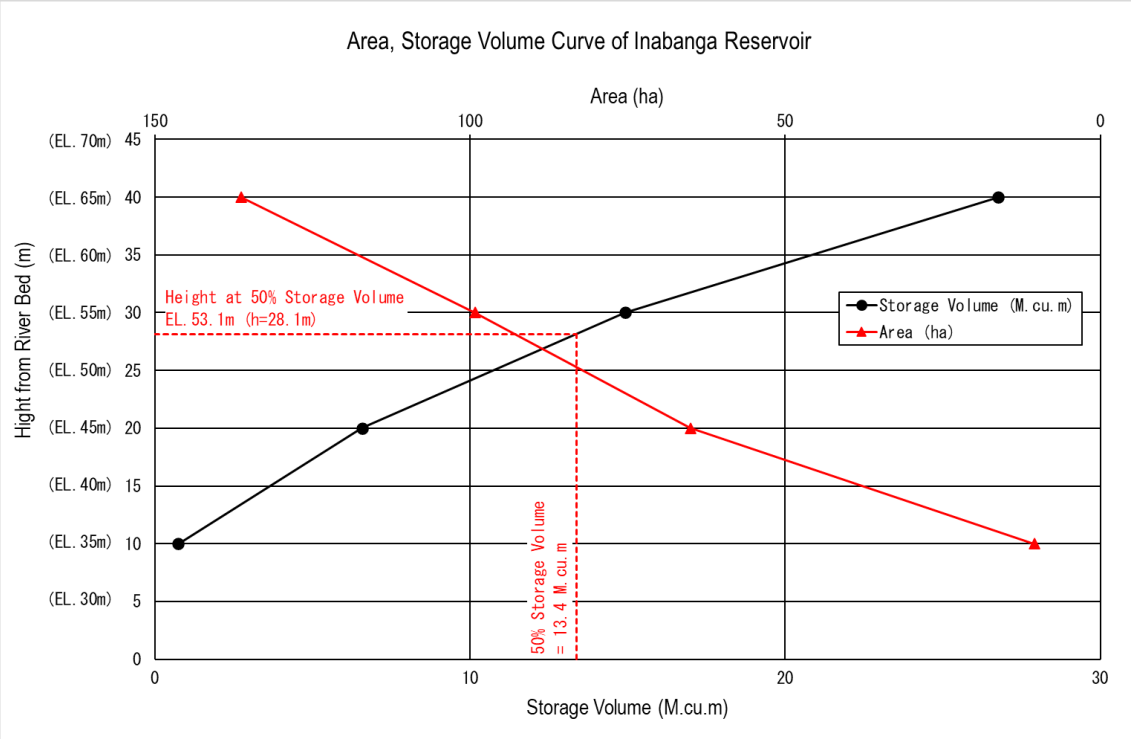
Source: JICA Survey Team

Figure G-22 Embankment volume by dam height of Languyon Dam [WRR VII]

Table G-10 Reservoir Area and Cumulative Storage Capacity by Reservoir Level of Inabanga Dam [WRR VII]

Resorvoir Depth	Area of Resorvoir	Cumulative Capacity of Resorvoir
(m)	(ha)	(M.cu.m)
40	136.3	26.8
30	99.2	14.9
20	65.0	6.6
10	10.5	0.7

Source: JICA Survey Team



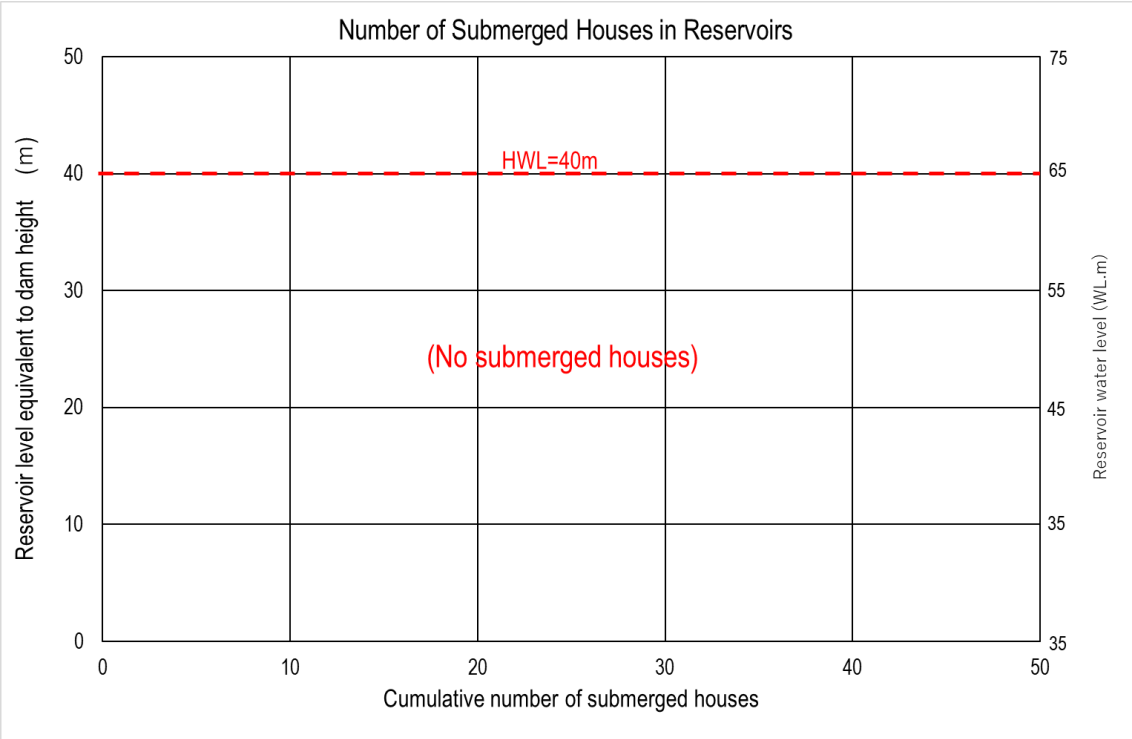
Source: JICA Survey Team

Figure G-23 Area, Storage Volume Curve of Inabanga Reservoir [WRR VII]

Table G-11 Cumulative number of Submerged houses by Reservoir Level of Inabanga Dam [WRR VII]

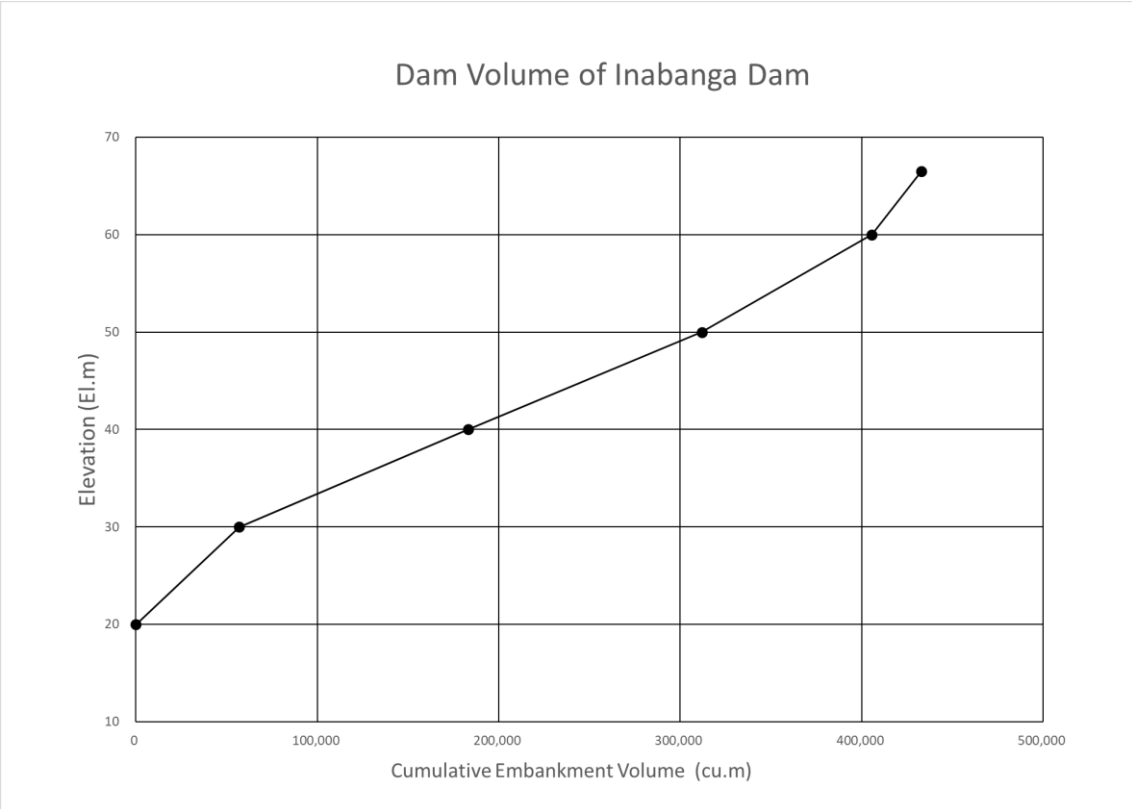
Resorvoir Depth	Cumulative number of Submerged houses
(m)	(ha)
40	0

Source: JICA Survey Team



Source: JICA Survey Team

Figure G-24 Cumulative number of Submerged houses by Reservoir Level of Inabanga Dam [WRR VII]



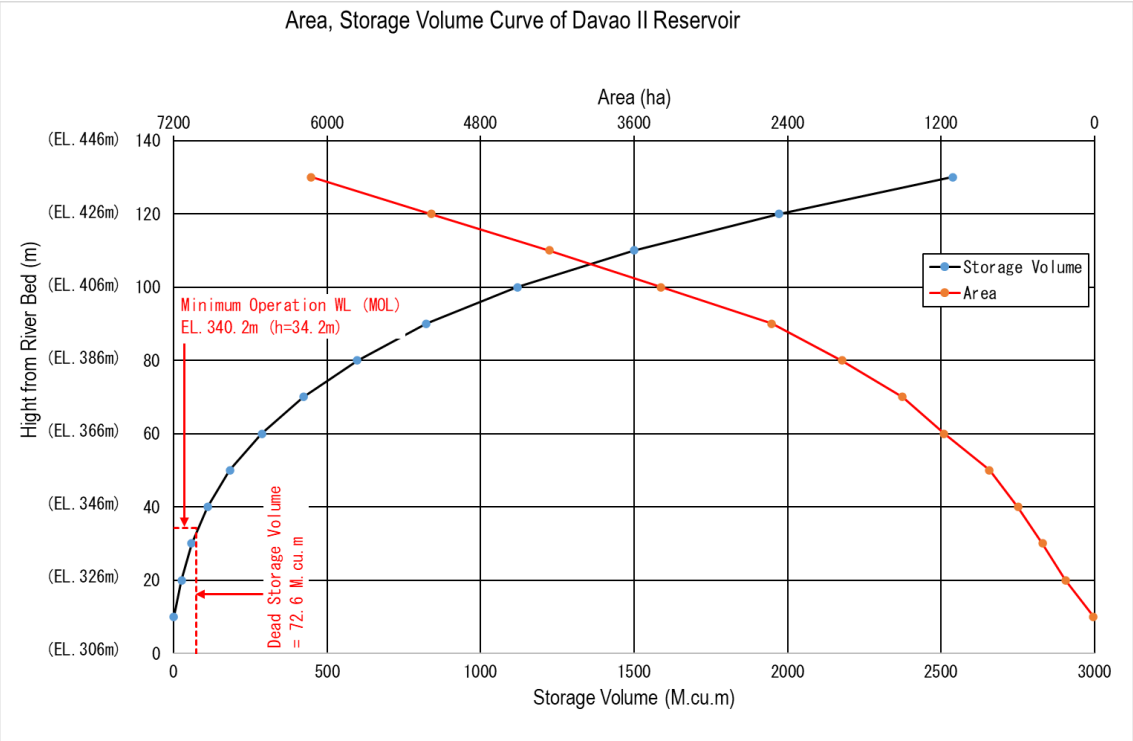
Source: JICA Survey Team

Figure G-25 Embankment volume by dam height of Inabanga Dam [WRR VII]

Table G-12 Reservoir Area and Cumulative Storage Capacity by Reservoir Level of Davao-II Dam [WRR XI]

Resorvoir Depth	Area of Resorvoir	Cumulative Capacity of Resorvoir
(m)	(ha)	(M.cu.m)
130	6,125.6	2,537.7
120	5,185.4	1,972.0
110	4,262.7	1,500.1
100	3,388.0	1,119.3
90	2,522.7	822.7
80	1,974.6	597.8
70	1,502.0	422.7
60	1,176.9	287.1
50	820.5	183.2
40	596.7	109.9
30	405.9	58.7
20	226.7	25.6
10	8.4	0.7

Source: JICA Survey Team



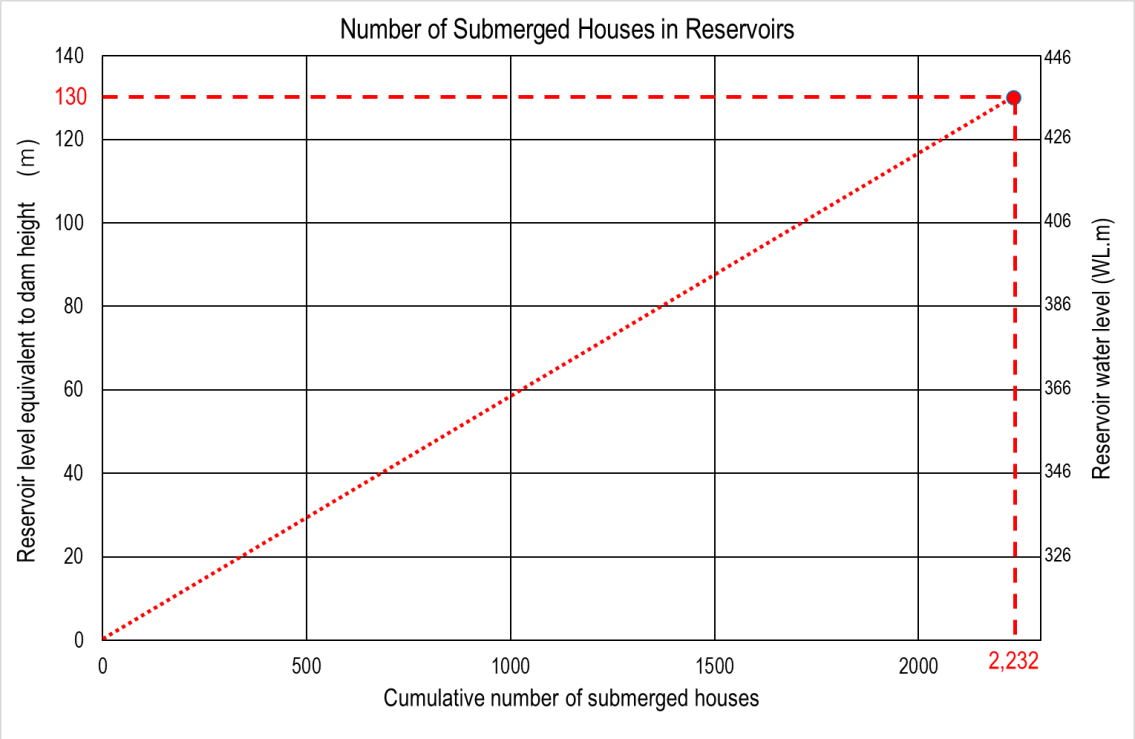
Source: JICA Survey Team

Figure G-26 Area, Storage Volume Curve of Davao-II Reservoir [WRR XI]

Table G-13 Cumulative number of Submerged houses by Reservoir Level of Davao-II Dam [WRR XI]

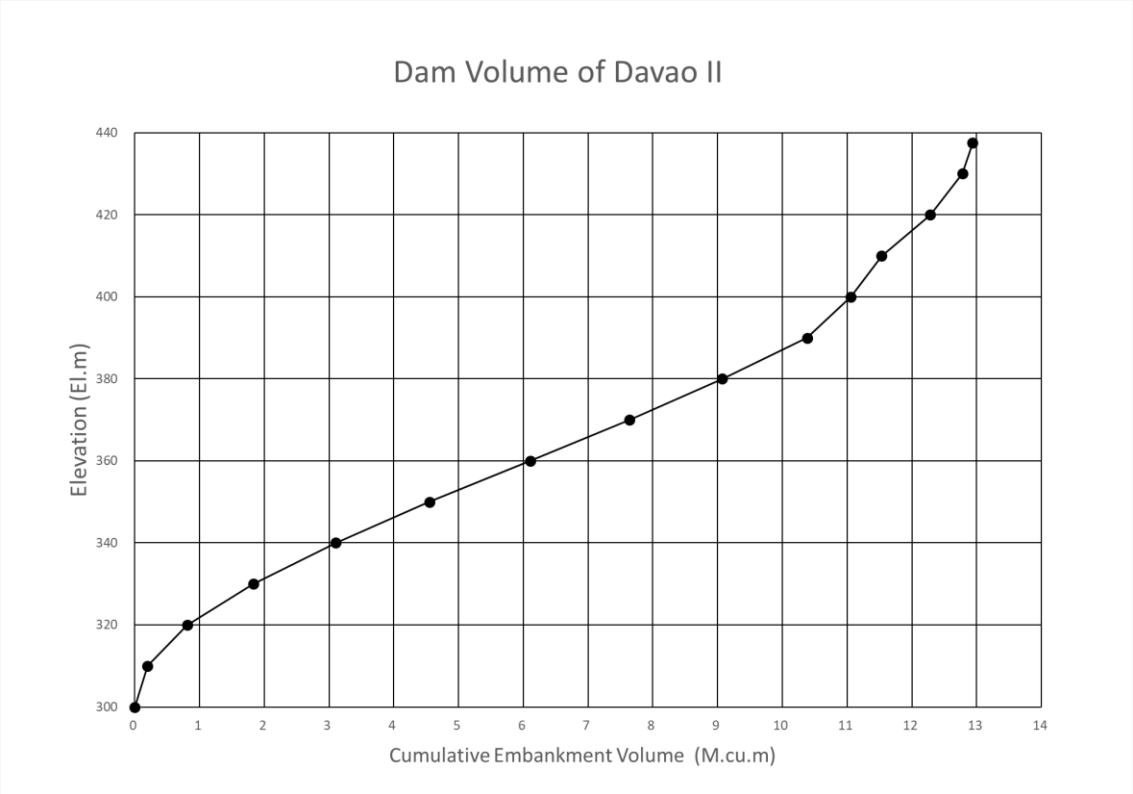
Resorvoir Depth	Cumulative number of Submerged houses
(m)	(ha)
130	2232

Source: JICA Survey Team



Source: JICA Survey Team

Figure G-27 Cumulative number of Submerged houses by Reservoir Level of Davao-II Dam [WRR XI]



Source: JICA Survey Team

Figure G-28 Embankment volume by dam height of Davao-II Dam [WRR XI]

Table G-14 Reservoir Area and Cumulative Storage Capacity by Reservoir Level of Davao-III Dam (High) [WRR XI]

Resorvoir Depth	Area of Resorvoir	Cumulative Capacity of Resorvoir
(m)	(ha)	(M.cu.m)
140	571.9	215.8
130	457.2	162.1
120	365.5	120.1
110	295.6	87.1
100	230.9	61.3
90	158.5	39.9
80	116.9	26.2
70	79.9	16.4
60	50.1	9.6
50	35.5	5.3
40	22.0	2.4
30	8.4	1.0
20	4.5	0.2
10	0.4	0.0

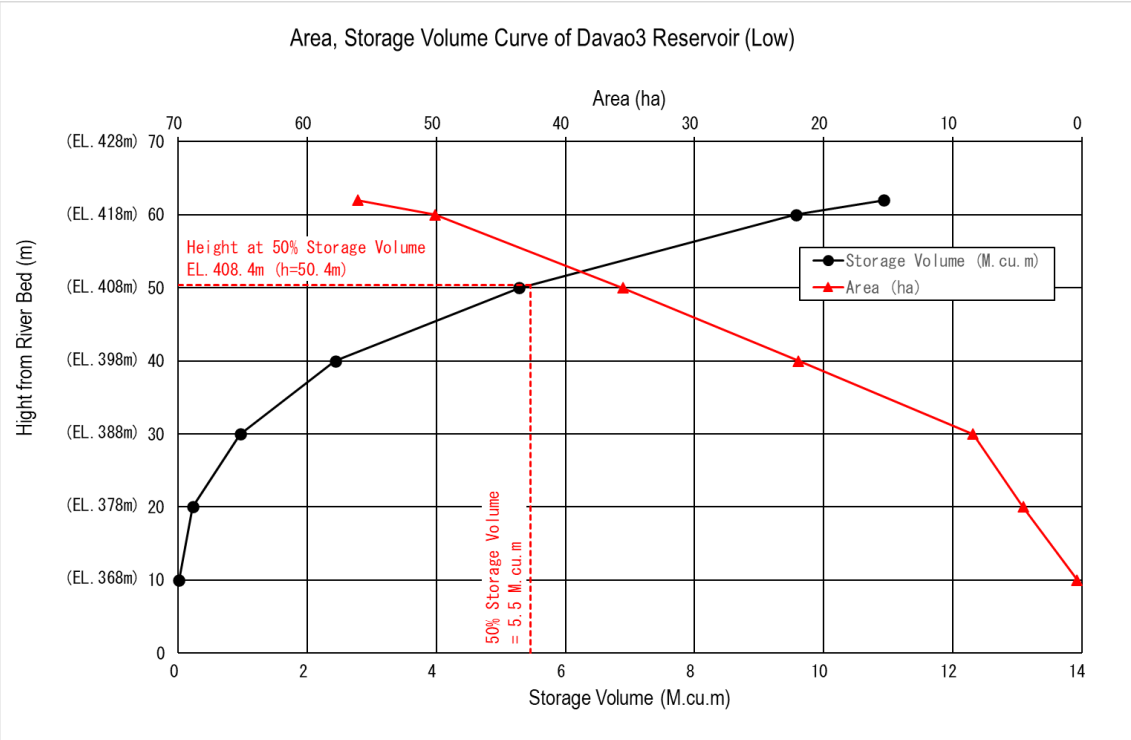
Source: JICA Survey Team

Table G-15 Reservoir Area and Cumulative Storage Capacity by Reservoir Level of Davao-III Dam (Low [Small]) [WRR XI]

Resorvoir Depth	Area of Resorvoir	Cumulative Capacity of Resorvoir
(m)	(ha)	(M.cu.m)
62	56.1	10.9
60	50.1	9.6
50	35.5	5.3
40	22.0	2.4
30	8.4	1.0
20	4.5	0.2
10	0.4	0.0

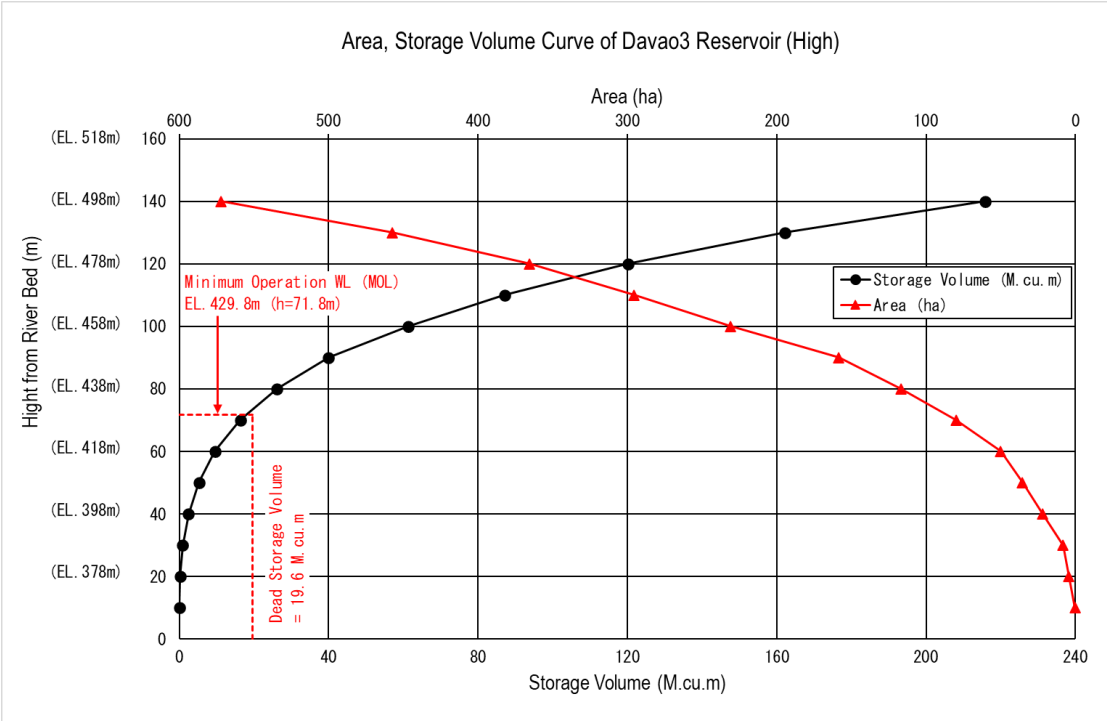
Source: JICA Survey Team

Figure G-29 Area, Storage Volume Curve of Davao-III Reservoir (High) [WRR XI]



Source: JICA Survey Team

Figure G-30 Area, Storage Volume Curve of Davao-III Reservoir (Low [Small]) [WRR XI]

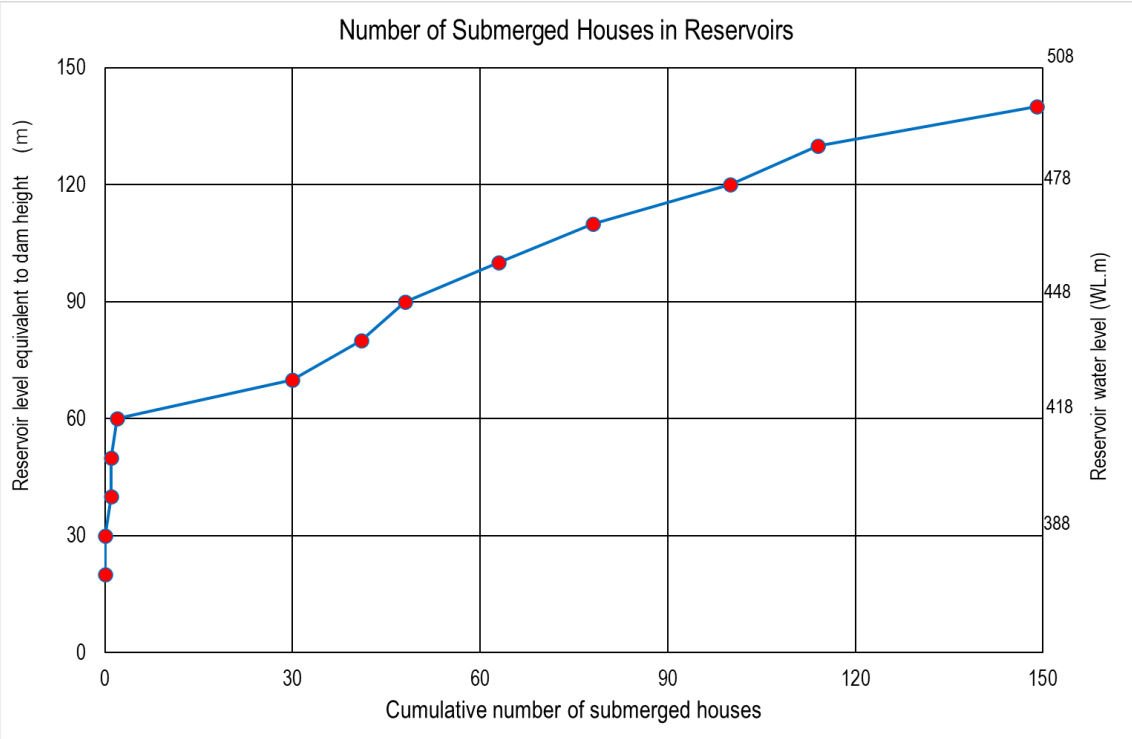


Source: JICA Survey Team

Table G-16 Cumulative number of Submerged houses by Reservoir Level of Davao-III Dam [WRR XI]

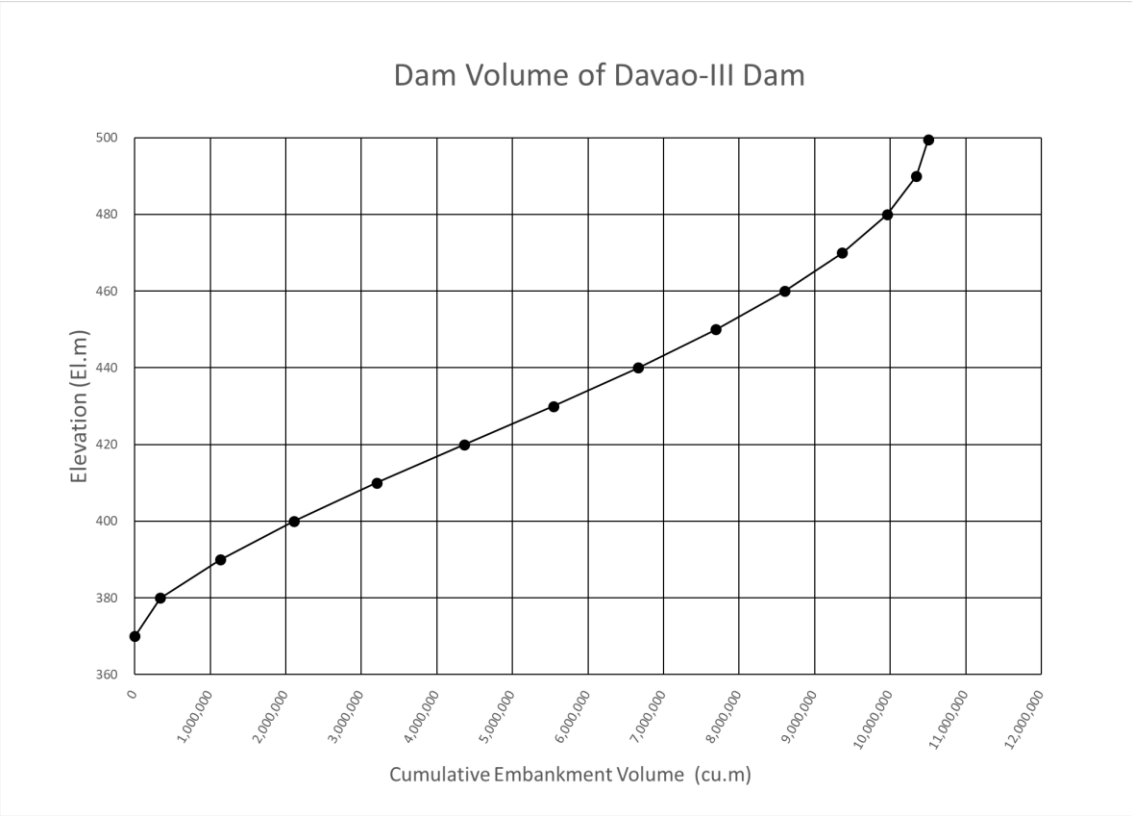
Resorvoir Depth	Cumulative number of Submerged houses
(m)	(ha)
140	149
130	114
120	100
110	78
100	63
90	48
80	41
70	30
60	2
50	1
40	1
30	0
20	0

Source: JICA Survey Team



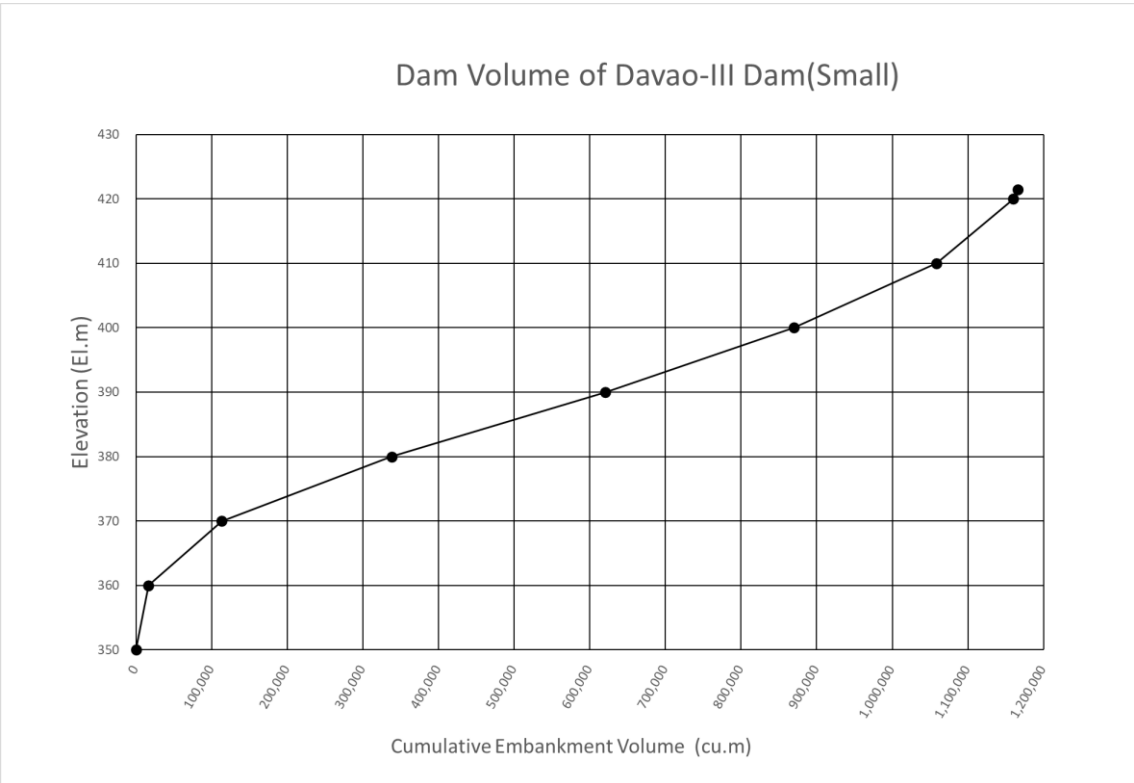
Source: JICA Survey Team

Figure G-31 Cumulative number of Submerged houses by Reservoir Level of Davao-III Dam [WRR XI]



Source: JICA Survey Team

Figure G-32 Embankment volume by dam height of Davao-III Dam (High) [WRR XI]



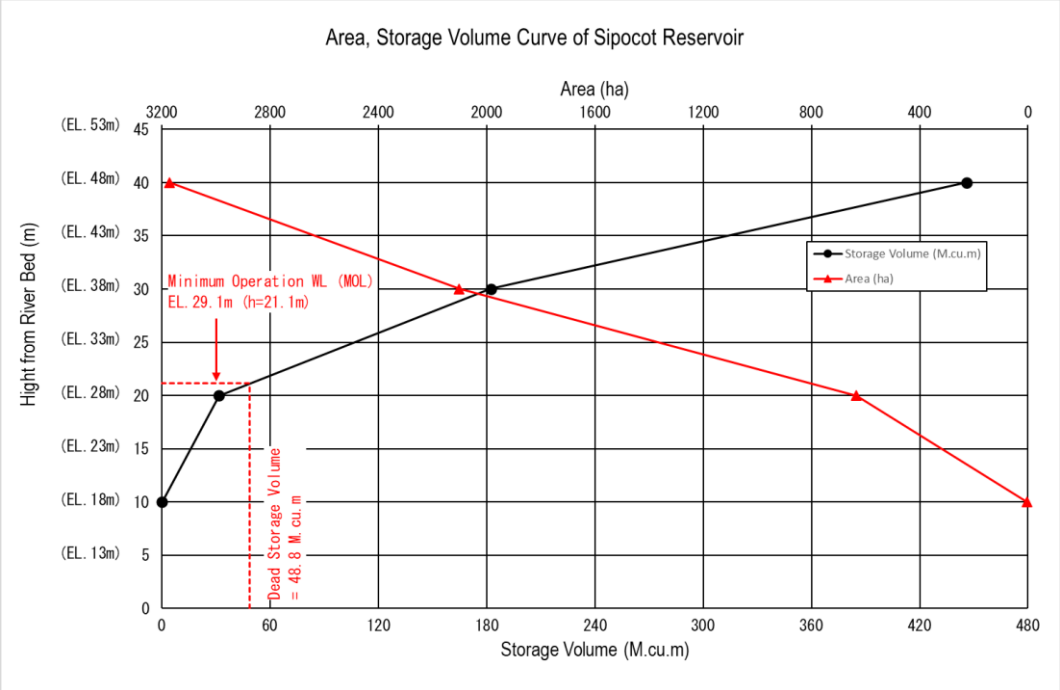
Source: JICA Survey Team

Figure G-33 Embankment volume by dam height of Davao-III Dam (Low [Small]) [WRR XI]

Table G-17 Reservoir Area and Cumulative Storage Capacity by Reservoir Level of Sipocot Dam [WRR V]

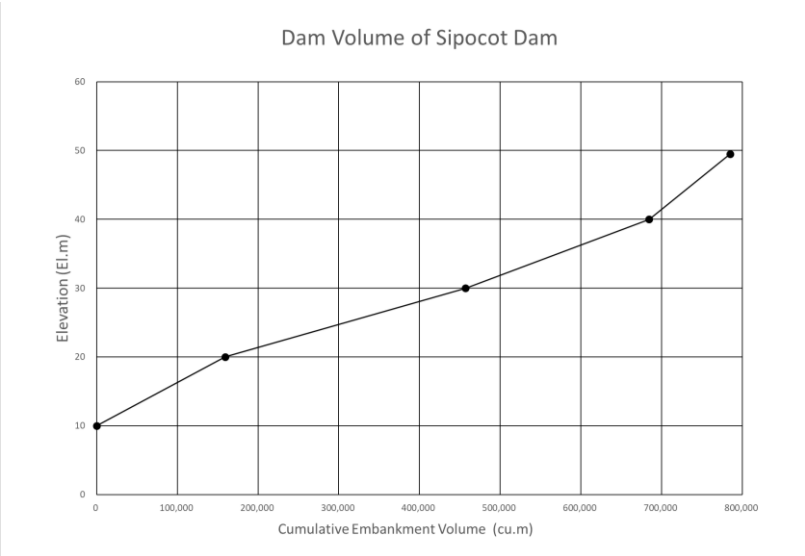
Resorvoir Depth	Area of Resorvoir	Cumulative Capacity of Resorvoir
(m)	(ha)	(M.cu.m)
40	3,172.9	446.0
30	2,100.8	182.3
20	634.4	31.7
10	2.9	0.1

Source: JICA Survey Team



Source: JICA Survey Team

Figure G-34 Area, Storage Volume Curve of Sipocot Reservoir [WRR VII]



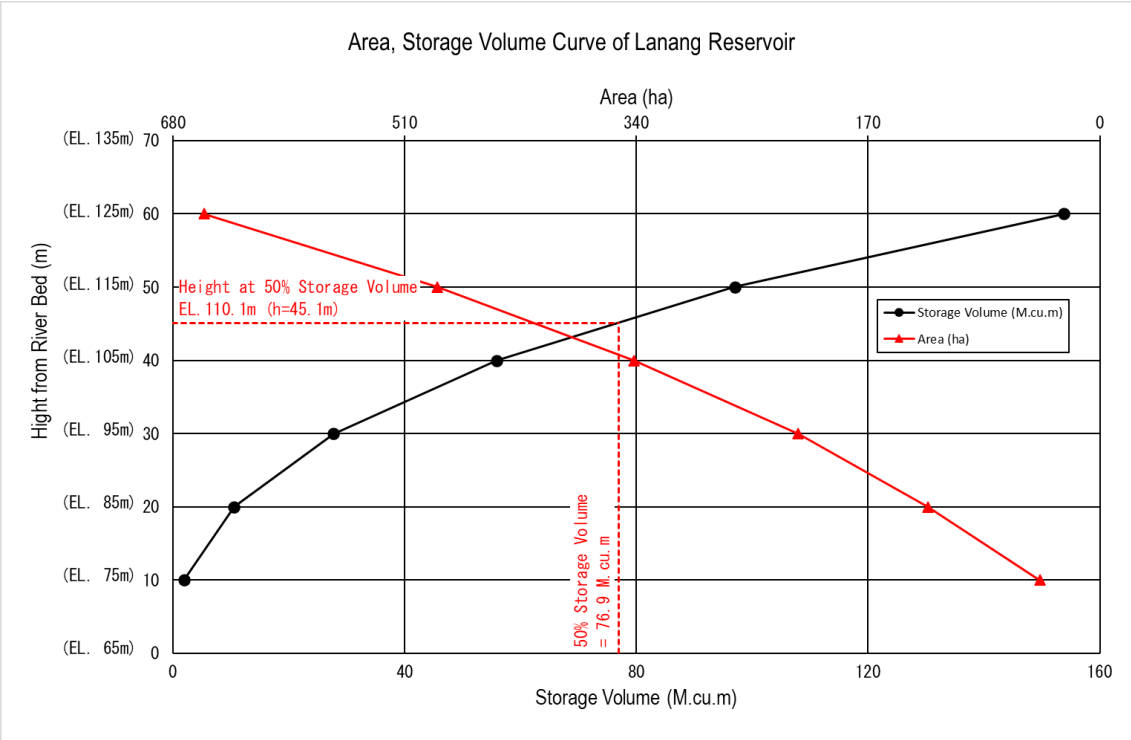
Source: JICA Survey Team

Figure G-35 Embankment volume by dam height of Sipocot Dam [WRR V]

Table G-18 Reservoir Area and Cumulative Storage Capacity by Reservoir Level of Lanang Dam [WRR V]

Resorvoir Depth	Area of Resorvoir	Cumulative Capacity of Resorvoir
(m)	(ha)	(M.cu.m)
60	657.3	153.8
50	486.1	97.0
40	342.0	55.9
30	221.3	27.7
20	126.3	10.6
10	44.1	1.9

Source: JICA Survey Team



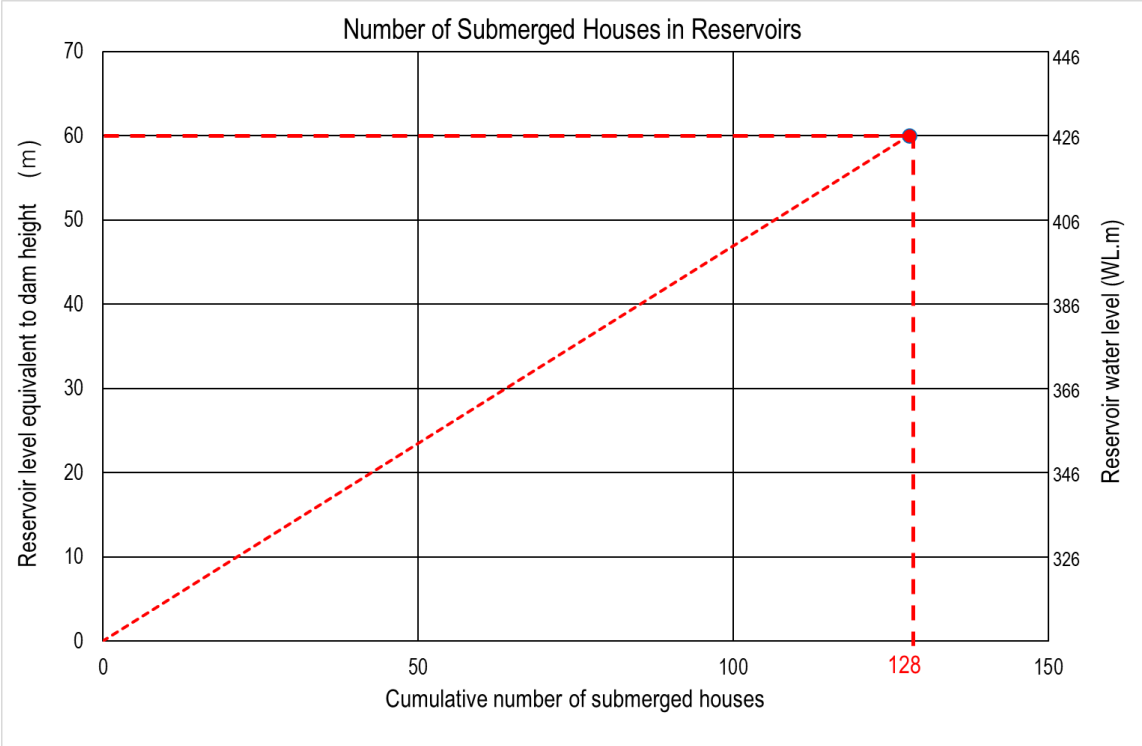
Source: JICA Survey Team

Figure G-36 Area, Storage Volume Curve of Lanang Reservoir [WRR V]

Table G-19 Cumulative number of Submerged houses by Reservoir Level of Lanang Dam [WRR V]

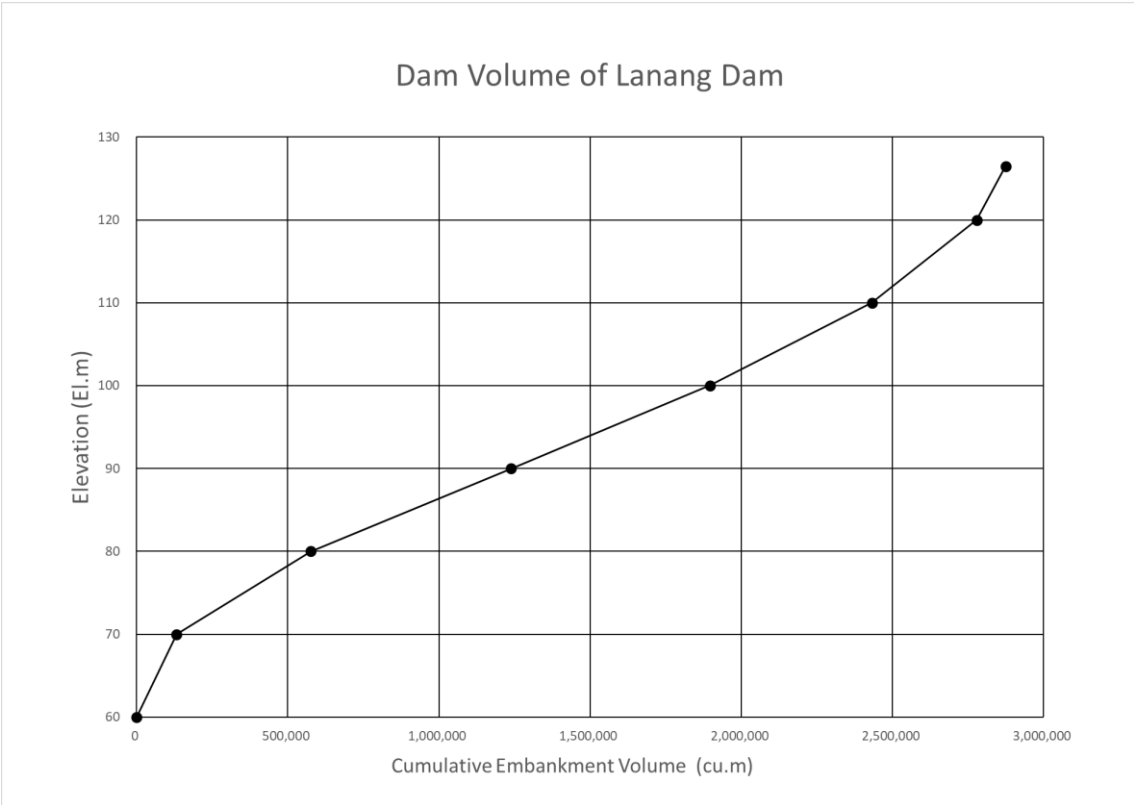
Resorvoir Depth	Cumulative number of Submerged houses
(m)	(ha)
60	128
0	0

Source: JICA Survey Team



Source: JICA Survey Team

Figure G-37 Cumulative number of Submerged houses by Reservoir Level of Lanang Dam [WRR V]



Source: JICA Survey Team

Figure G-38 Embankment volume by dam height of Lanang Dam [WRR V]

ANNEX H

Summary of Planned Flood Control Structural Measures in the Selected 5 River Basins

(1) Central Cebu River Basin

(2) Davao River Basin

(3) Tagum-Libuganon River Basin

(4) Buayan-Malungon River Basin

(5) Bicol River Basin

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Annex H: Summary of Planned Flood Control Structural Measures

In this Annex H, proposed flood control structural measures in the current flood risk management master plans (FRMMPs) are summarized for the focused five watersheds as explained in the section of flood risk management of Chapter 3 in the Main Report, namely (1) Central Cebu River Basin (WRR VII), (2) Davao River Basin (WRR XI), (3) Tagum- Libuganon River Basin (WRR XI), (4) Buayan-Malungon River Basin (WRR XI), and (5) Bicol River Basin (WRR V). The reason why planned structural measures are summarized is that they will affect river flow pattern, sediment transportation, river morphology, water quality, groundwater recharge, etc. Therefore, it is important to consider the planned river projects in formulating a water resources development and management plan. If planned river projects are not coordinated well among various stakeholders relevant to flood risk management, irrigation, water supply, hydropower etc., it is also important to enhance the coordination or to integrate the river projects as a part of the Integrated Water Resources Management. In addition to the proposed flood control structures in the focused watersheds, the following components are also summarized for better understandings; 1) Summary of the Current FRMMP, 2) Design Discharge, 3) Existing River Structures, 4) Proposed Structural Measures, 5) Potential Flood Control Dams. As a result of reviewing the current FRMMPs, no flood control dam is planned in short- or mid-term or priority projects, but some dams are proposed in long-term or potential projects as multi-purpose dams or climate change adaptation measures. Accordingly, such potential flood control dams are also summarized.

H-1. Central Cebu River Basin

1) Summary of the Current FRMMP

The current FRMMP for the Central Cebu River Basin is summarized in Table H-1-1.

Table H-1-1 Summary of the Current FRMMP for Central Cebu River Basin

River Basin Name	Central Cebu River Basin
Drainage Area (km^2)	679 *1
Estimated Population (thousand people) and Estimated Year	1,780 (2018) *1
Latest M/P	DPWH (2018) *2
Target Year	Next 10 years
Target Flood Level	50 or 100-year flood depending on the size of drainage area *3
Design Flood Discharge	Kotkot River: 450 m^3/s (100 year), Butuanon River: 740 m^3/s (100 year), Mananga River: 1,120 m^3/s (100 year), etc.
Consideration of CCI *4 on rainfall	Incorporate a 10% increase in rainfall intensity in the design
Consideration of CCI *4 on sea level rise	Not specifically described
No. of Existing Flood Control Dam	0
No. of Potential Flood Control Dam	4 *5

*1) The values of "Drainage Area" and "Estimated Population" are quoted from the website of River Basin Control Office (https://riverbasin.denr.gov.ph/main/index)
*2) DPWH, 2018, "Comprehensive Study for a Metro Cebu Integrated Flood and Drainage System Master Plan"
*3) If the drainage area is less than 40 km^2, the target flood level is 50-year flood. Otherwise, it is 100-year flood.
*4) CCI: Climate Change Impacts
*5) Dams were studied as an alternative countermeasure, but they were not adopted in the FRMMP.

Source: JICA Survey Team

2) Design Discharge

Table H-1-2 shows the design discharge of the four rivers in the Central Cebu River Basin. According to the current FRMMP, target safety level is set based on the protection level suggested in the DPWH's Design Guidelines, Criteria and Standards (DGCS) Volume III (2015). That is to say, the target safety level is set at 100-year flood for the watershed over 40 km^2 drainage area and it is set at 50-year flood for the watershed below 40 km^2 drainage area.

Table H-1-2 Design Discharge of the Rivers in the Central Cebu River Basin

River Basin Name	Area	Target Safety Level	Design Discharge	Dam Plan
Kotkot	80 km^2	100-year flood	443 m^3/s	New dam plans for irrigation, water supply, flood control are separately under development.
Butuanon	61 km^2	100-year flood	739 m^3/s	New dam plans for water supply, flood control are separately under development.
Kinalumsan	16 km^2	50-year flood	257 m^3/s	Upgrading of existing Buhisan Dam is studied.
Mananga	85 km^2	100-year flood	1,114 m^3/s	New dam plans for water supply, flood control are separately under development.

Source: prepared by JICA Survey Team based on DPWH, 2018, Comprehensive Study for a Metro Cebu Integrated Flood and Drainage System Master Plan

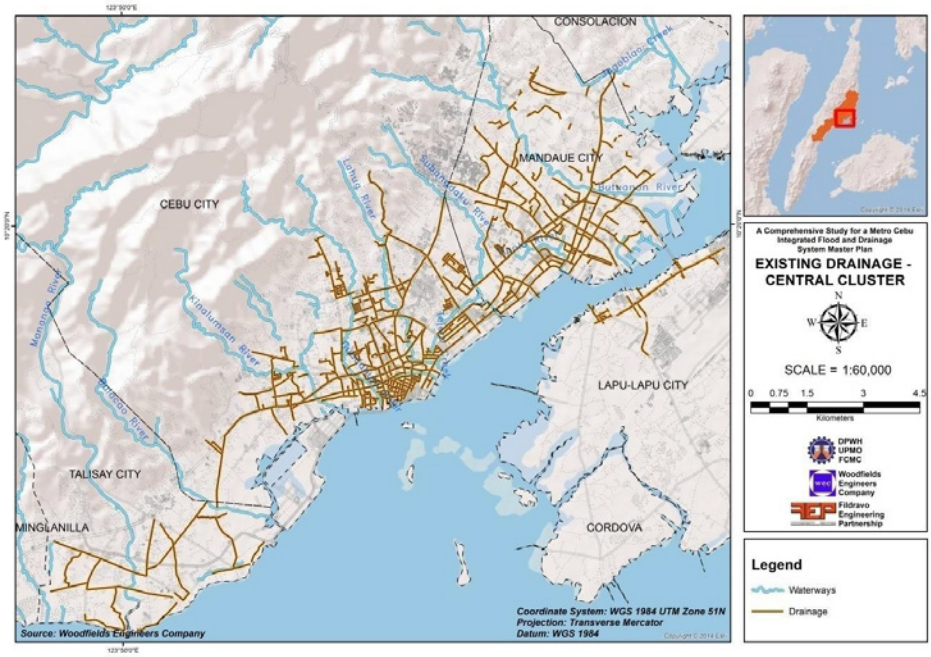
3) Existing River Structures

There is no existing flood control dam but, there are several agricultural weirs (they are often called as small dams in the Philippines) in the Central Cebu River Basin. Table H-1-3 shows the small dams constructed by the National Irrigation Administration (NIA) for irrigation purposes. As a characteristic of the Central Cebu River Basin, drainage system across the rivers is developed as illustrated in Figure H-1-1.

Table H-1-3 Existing Small Dams for Irrigation in the Central Cebu River Basin

Name of System	Municipality/ River Basin	Cong. Disrict	Farmer Beneficiaries	Service Area	Irrigated Area	
					Wet	Dry
Mojon-Pook Candayo CIS	Talisay/Mananga	1st	47	25	25	25
Owak-San Isidro CIS	Asturias/Balamban	3rd	219	600	440	400
Arpili-Buanoy CIS	Balamban	3rd	38	128	66	60
Cambinocot CIS	Cebu City/Kotkot	North	31	17	15	15
Lusaran CIS	Cebu City/ Combado-LUsaran	North	23	15	15	15
Pinton CIS	Cebu City/coastal	North	28	10	9	9
Lower Sudlon II CIS	Cebu City/Mananga	South	36	15	15	15
Upper Sudlon II CIS	Cebu City	South	35	30	30	26
Calajoan CIS	Minglanilla	1st	15	10	10	10
Campo 8 CIS	Minglanilla	1st	25	8	5	5
Cuanos CIS	Minglanilla	1st	10	7	7	3
Magsico CIS	Minglanilla	1st	10	4	3	2
Tubod II PIS	Minglanilla	1st	22	10		
Yati PIS	Liloan	5th		30		
Abucayan IS	Balamban	3rd		7	7	7

Source: DENR, 2017, Formulation of an Integrated River Basin Management and Development Master Plan for Cebu River Basin, Main Report p.7-3

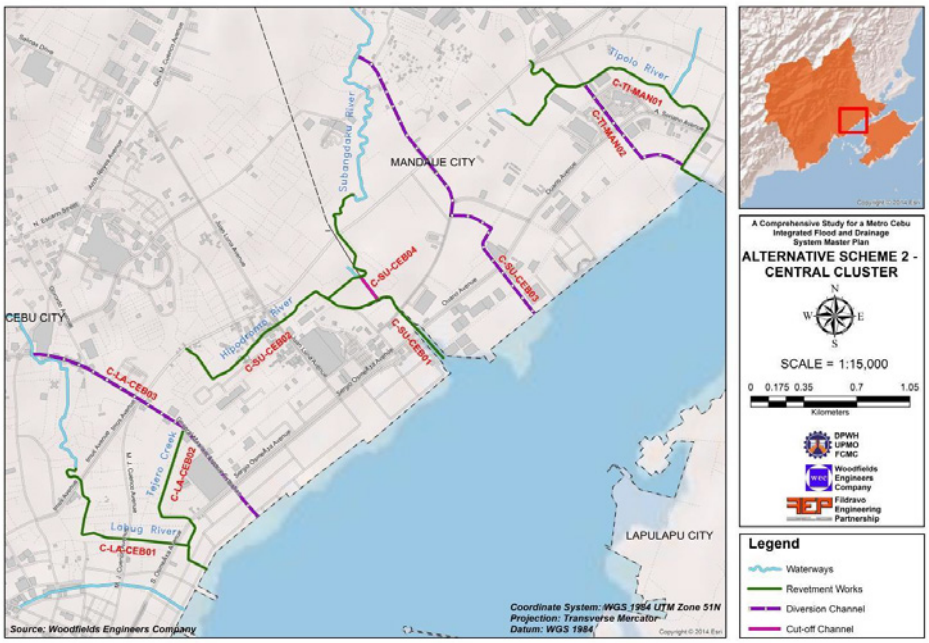


Source: DPWH, Comprehensive Study for a Metro Cebu Integrated Flood and Drainage System Master Plan, 2018, Vol.II-B p.3-12

Figure H-1-1 Existing Drainage System in the Central Cebu River Basin

4) Proposed Structural Measures

Proposed structural measures in the current FRMMP are river improvement works including river widening and dredging and construction of diversion channels and additional drainage mains. Figure H-1-2 shows an example of proposed diversion channels.



Source: DPWH, Comprehensive Study for a Metro Cebu Integrated Flood and Drainage System Master Plan, 2018, Vol.II-B p.5-6

Figure H-1-2 Example of Proposed Diversion Channels in the Central Cebu River Basin

5) Potential Flood Control Dams

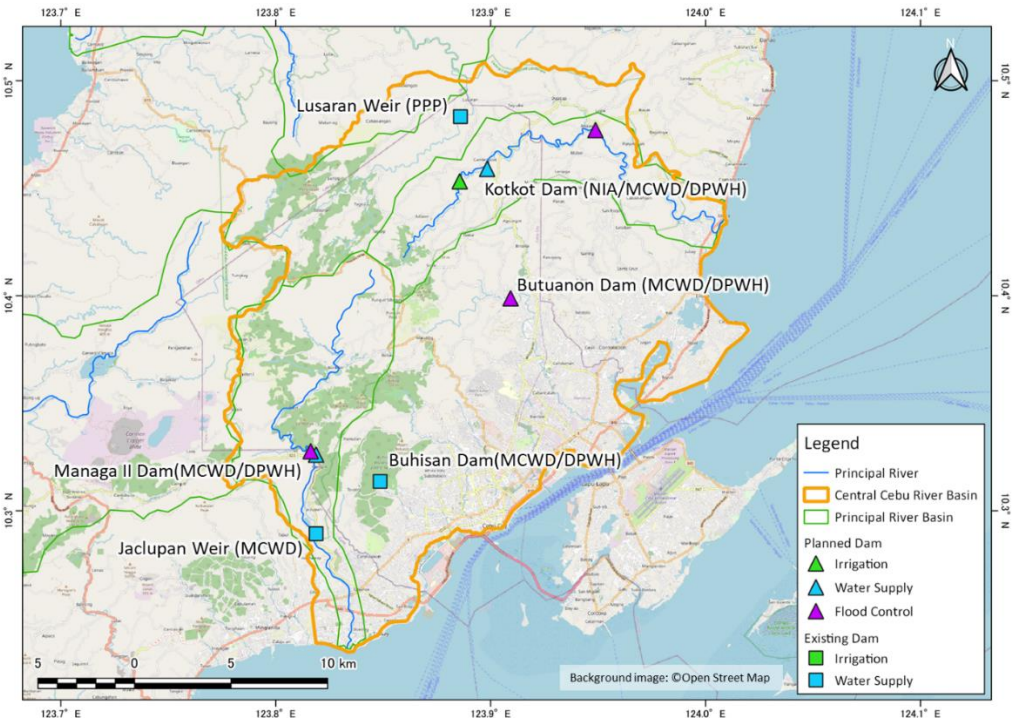
Flood control dams were studied in the current FRMMP as a viable option, however, none of them are adopted without economical evaluation. In the Central Cebu River Basin, totally 4 dams were studied in the current FRMMP. Their summary and location are shown in Table H-1-4 and Figure H-1-3. More details are described in the following subsections.

Table H-1-4 Summary of Potential Flood Control Dams in Central Cebu River Basin

Dam Name	Dam Height	Crest Length	Storage Volume	Remarks
Kotkot Dam	29.5 m	110 m	6 MCM	• New dams are also proposed along the same river from NIA and MCWD, seperately.
Butuanon Dam	18 m	320 m	2 MCM	• MCWD also has a plan for water supply dam along the Butuanon River.
Buhisan Dam (upgrading of existing dam)	31 m	65 m	0.1 MCM	• Upgrading of the existing Buhisan Dam is proposed to add flood control function. • Existing dam was constructed with the storage volume of 500,000 m^3, but the current volume is only up to 12,000 m^3 due to sedimentation. • Existing access road to the dam is too narrow to transport heavy machinery.
Mananga II Dam	70 m	370 m	31 MCM	• This dam was originally concepted in 1991 under ADB project as a water supply dam for Metro Cebu, but still not realized. • Location of dam body is slightly different between the proposed dam by MCWD and DPWH.

*NIA: National Irrigation Agency, MCWD: Metro Cebu Water District

Source: JICA Survey Team



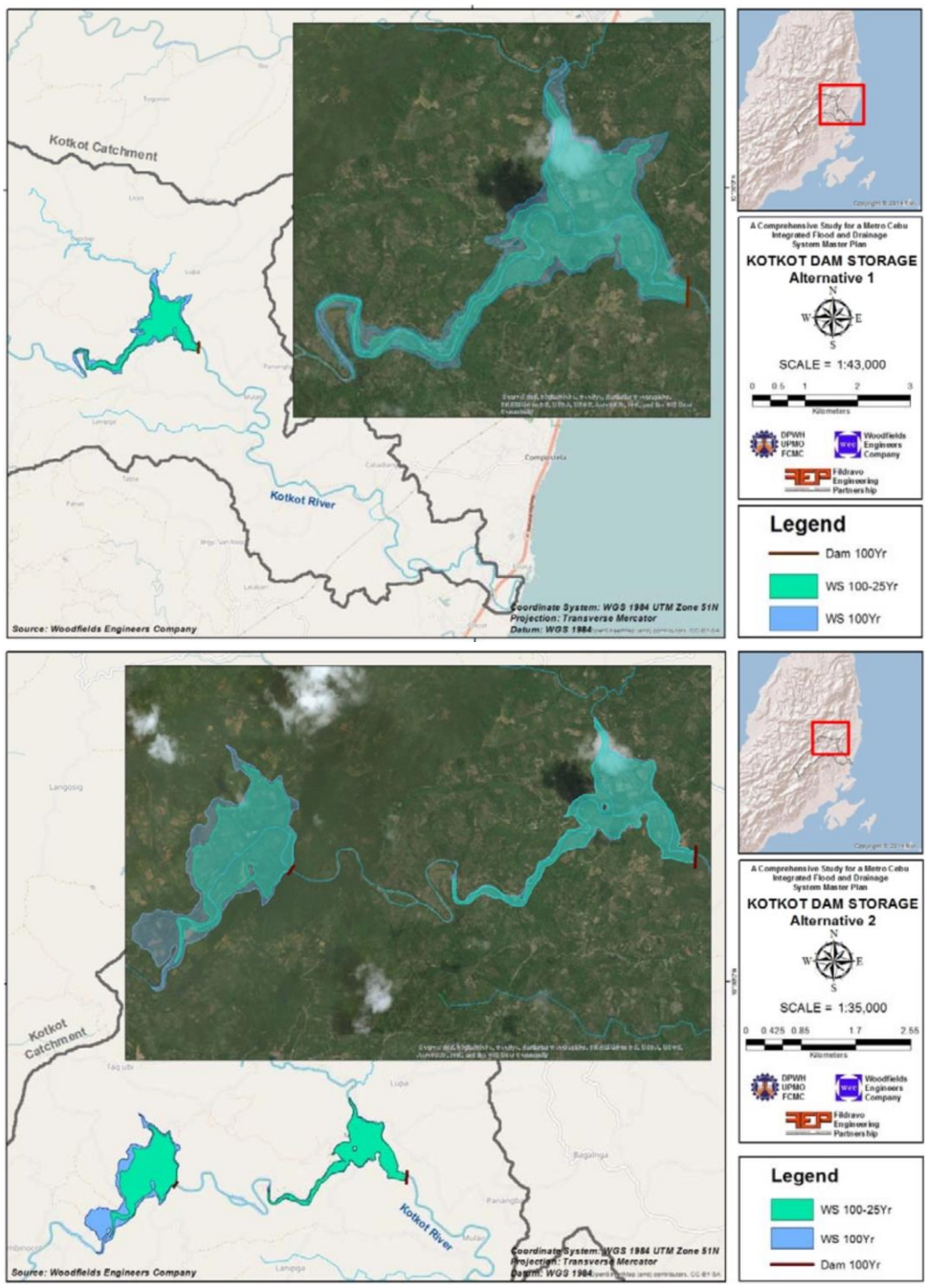
Source: JICA Survey Team

Figure H-1-3 Location of Existing/Potential Dams in Central Cebu River Basin

a) Kotkot Dam

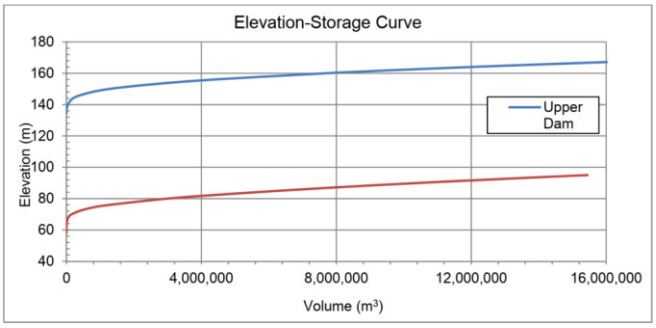
The proposed Kotkot Dam has two alternatives as illustrated in Figure H-1-4. Alternative 1 is composed of the Lower Dam only and Alternative 2 is the combination of Upper Dam and Lower Dam. The Upper Dam location is near the three-town boundaries of Cebu, Compostela and Consolacion, while the Lower Dam is located between Barangay Mulao (Compostela) and Barangay Mulao (Liloan).

The elevation-storage curve of Kotkot Dam is shown in Figure H-1-5. Under the condition that the dam partially stores 100-year flood by reducing the outflow equivalent to 25-year flood, the storage volume in Alternative 1 requires approximately 5.7 MCM, which corresponds to 84.5 m of water surface elevation. On the other hand, under the same condition, the storage volume of the Lower Dam and the Upper Dam in Alternative 2 requires approximately 1.8 MCM and 3.9 MCM, which corresponds to 80.5 m and 155.5 m of water surface elevation, respectively.



Source: DPWH, 2018, Comprehensive Study for a Metro Cebu Integrated Flood and Drainage System Master Plan, Vol.II-A p.5-27

Figure H-1-4 Proposed Location and Storage Area of Kotkot Dam
(up: Alternative 1, down: Alternative 2)



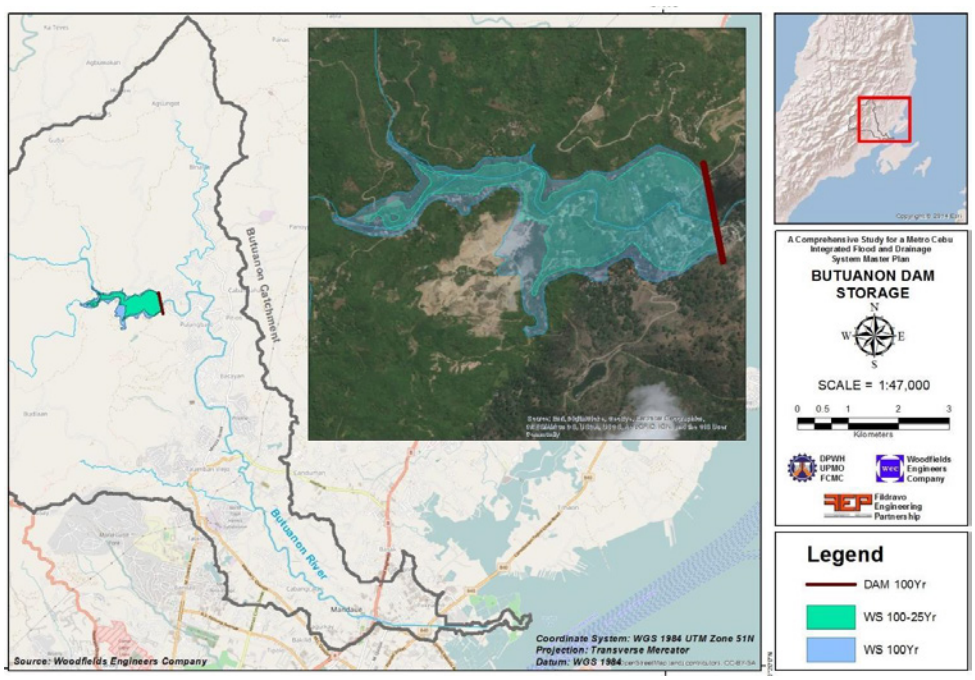
Source: DPWH, 2018, Comprehensive Study for a Metro Cebu Integrated Flood and Drainage System Master Plan, Vol.II-A p.5-28

Figure H-1-5 H-V (Elevation – Storage Volume) Curve of Kotkot Dam

b) Butuanon Dam

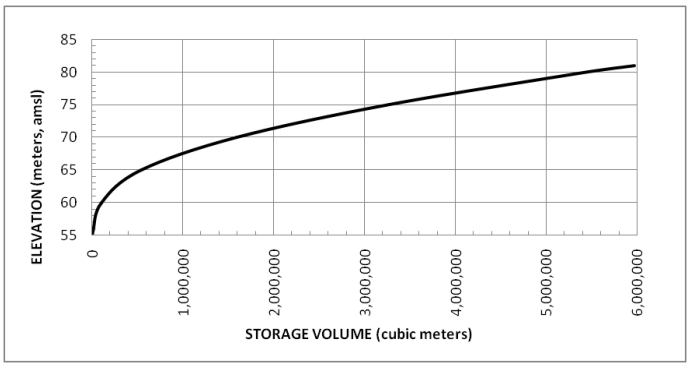
The proposed Dam in the Butuanon River Basin is located about 2.5 kilometers from the bridge at Talamban Road crossing the Butuanon River as illustrated in Figure H-1-6. The barangays affected by the proposed dam are the Barangay Pulangbato, Binaliw, and Sirao of Cebu City.

The elevation-storage curve of Butuanon Dam is shown in Figure H-1-7. Under the condition that the dam partially stores 100-year flood by reducing the outflow equivalent to 25-year flood, the storage volume requires approximately 2.4 MCM, which corresponds to 72.5 m of water surface elevation.



Source: DPWH, 2018, Comprehensive Study for a Metro Cebu Integrated Flood and Drainage System Master Plan, Vol.II-B p.5-22

Figure H-1-6 Proposed Location and Storage Area of Butuanon Dam



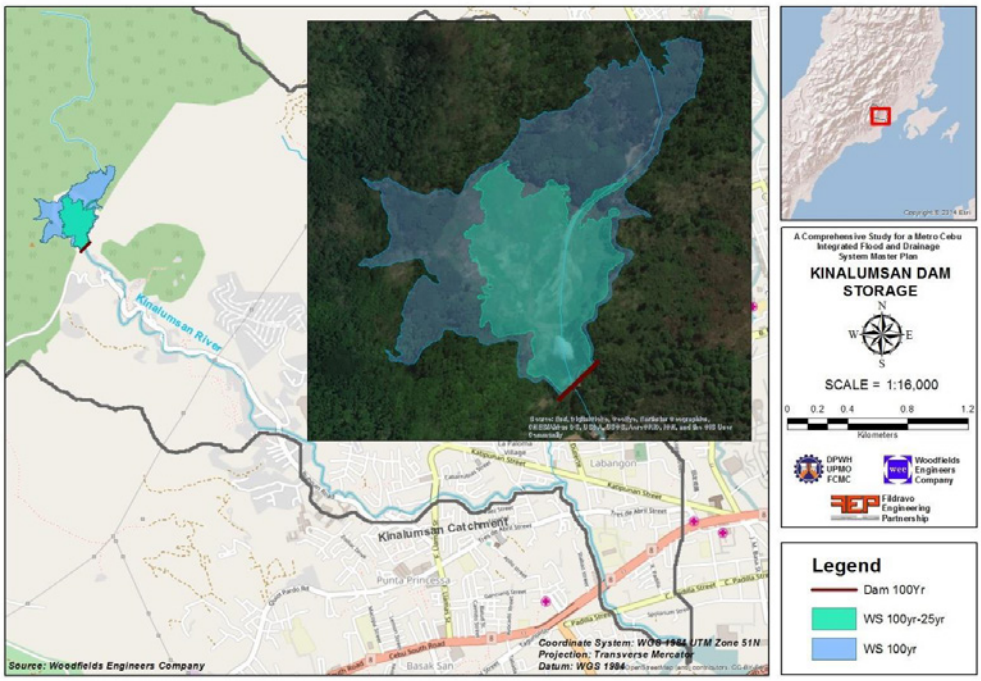
Source: DPWH, 2018, Comprehensive Study for a Metro Cebu Integrated Flood and Drainage System Master Plan, Vol.II-B p.5-22

Figure H-1-7 H-V (Elevation – Storage Volume) Curve of Butuanon Dam

c) Buhisan Dam

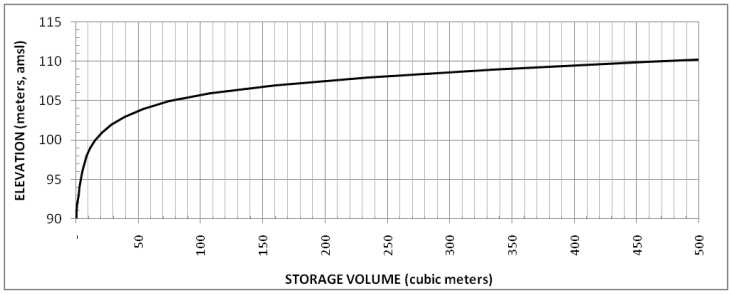
The Buhisan Dam located in the Kinalumsan River basin is the only dam that supplies surface water to Metro Cebu. In the FRMMP, the dam is proposed to be reconstructed in order to increase in store volume. The affected barangays of the flooded area for the proposed dam are the Barangay Buhisan and Barangay To-ong Pardo of Cebu City.

The elevation-storage curve of Buhisan Dam is shown in Figure H-1-9. Under the condition that the dam partially stores 100-year flood by reducing the outflow equivalent to 25-year flood, the storage volume requires approximately 0.12 MCM, which corresponds to 106.25 m of water surface elevation.



Source: DPWH, 2018, Comprehensive Study for a Metro Cebu Integrated Flood and Drainage System Master Plan, Vol.II-B p.5-21

Figure H-1-8 Proposed Location and Storage Area of Buhisan Dam



*The unit of storage volume is probably wrong. It should be thousand cubic meters.

Source: DPWH, 2018, Comprehensive Study for a Metro Cebu Integrated Flood and Drainage System Master Plan, Vol.II-B p.5-20

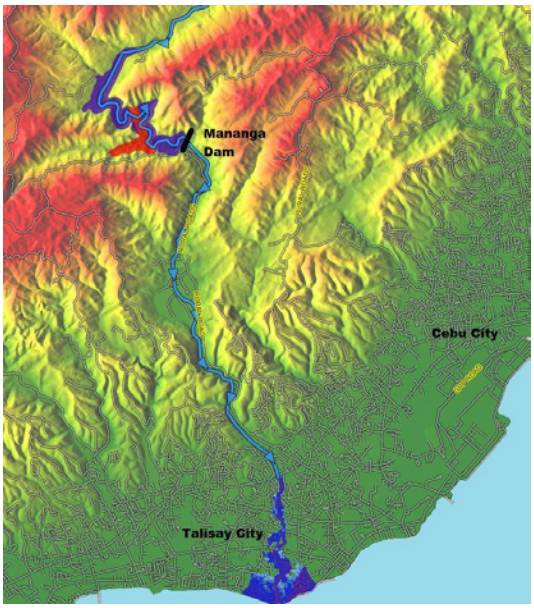
Figure H-1-9 H-V (Elevation – Storage Volume) Curve of Buhisan Dam

d) Mananga II Dam

The proposed Mananga Dam locates at around 9.8 kilometers from the bridge of N. Bacalso crossing the Mananga River as illustrated in Figure H-1-10. The affected barangays of the flooded area for the proposed dam are the Buot-Tapos Pardo of Cebu City and Camp IV of Talisay City.

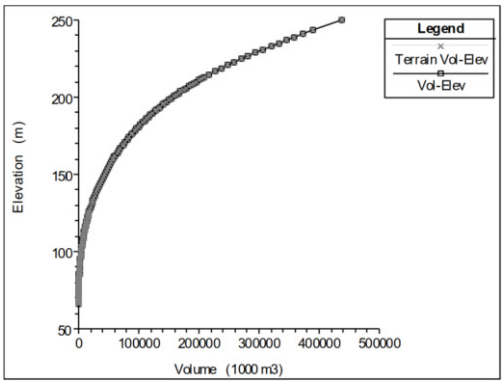
According to the FRMMP, the Mananga II dam has been proposed for construction as water supply structure to alleviate the increasing demand of Metro Cebu for a long time. Concepted in 1991 by Electrowatt Engineering under the Asian Development Bank as a water supply structure for Metro Cebu, a 90-meter dam was proposed to contain an estimate of 60 million cubic meters. Recent feasibility studies proposed the storage of smaller capacity with smaller dam height of 71 meters (Bechterl International, 2001) and 73 meters (Water Remind Study, 2006). These studies were also reflected in the JICA Study on 2010 and the Roadmap Study in 2015. However, due to the high infrastructure cost, the project remains to be implemented. The FRMMP investigated the proposed Managna II Dam as both flood control structure to mitigate flooding in Talisay City as well as a water supply structure as part of the Integrated Watershed Resources Management approach. The FRMMP took over the previous dimensions and location of the dam in the Road map Study 2015.

The elevation-storage curve of Mananga II Dam is shown in Figure H-1-11. The proposed dam with 70-meter height has a storage capacity of 30.8 MCM, which corresponds to 140.0 m of water surface elevation. As mentioned above, this storage volume was proposed based on water supply requirements. On the other hand, under the condition that the dam partially stores 100-year flood by reducing the outflow equivalent to 25-year flood, the storage volume requires approximately 2.8 MCM, which accounts for less than 10 percent of the total storage volume.



Source: DPWH, 2018, Comprehensive Study for a Metro Cebu Integrated Flood and Drainage System Master Plan, Vol.II-B p.5-17

Figure H-1-10 Location and Potential Flooded Area of Mananga II Dam



Source: DPWH, 2018, Comprehensive Study for a Metro Cebu Integrated Flood and Drainage System Master Plan, Vol.II-B p.5-18

Figure H-1-11 H-V (Elevation – Storage Volume) Curve of Mananga II Dam

H-2. Davao River Basin

1) Summary of the Current FRMMP

The current FRMMP for the Davao River Basin is summarized in Table H-2-1.

Table H-2-1 Summary of the Current FRMMP for the Davao River Basin

River Basin Name	Davao
Drainage Area*1	1,760 km^2
Latest FRMMP	JICA (2022) *2
Target Year	2045
Target Flood Level	100-year flood
Consideration of CCI *3 on rainfall	Incorporate a 10% increase in rainfall intensity in the design
Consideration of CCI *3 on sea level rise	+0.2 m from 2000 to 2045
Design Discharge	3,400 m^3/s at Waan Bridge (17 km upstream from the river mouth)
No. of Existing Flood Control Dam	0
No. of Potential Flood Control Dam	0

*1) Drainage area is quoted from the website of River Basin Control Office (https://riverbasin.denr.gov.ph/main/index)

*2) The FRMMP was formulated in the JICA Project, "Master Plan and Feasibility Study on Flood Control and Drainage in Davao City"
*3) CCI: Climate Change Impacts

Source: prepared by JICA Survey Team based on the latest FRMMP

2) Design Discharge

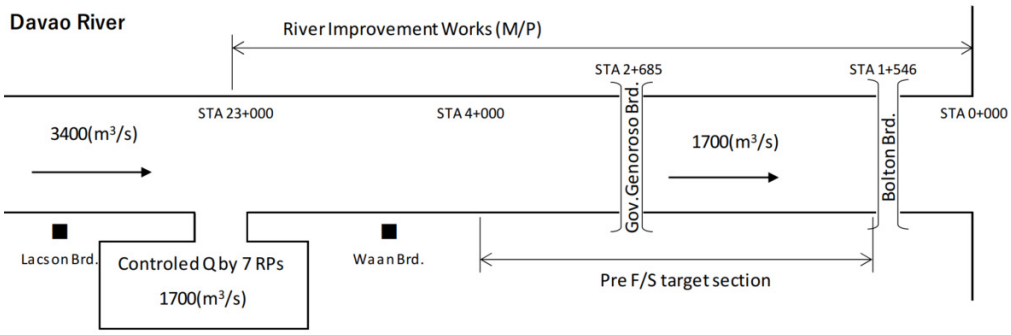
Design discharge of the Davao River targeting 100-year floods with climate change impacts is 3,400 m^3/s. As illustrated in the Figure H-2-1, the design peak discharge of 3,400 m^3/s at Waan Bridge is planned to be cut down to 1,700 m^3/s by seven (7) new retarding ponds (RPs).

Table H-2-2 Design Discharge of Davao River (with Climate Change Impacts)

River	Control Point		Target for F/P		Target for M/P	
	Name	Distance from river mouth	Design Level	Peak discharge (m^3/s)	Design Level	Peak discharge (m^3/s)
Davao	Waan Bridge	17km	100-year flood	3,400m^3/s	100-year flood	3,400m^3/s
Matina	Matina Pangi Bridge II	9.9km	100-year flood	440 m^3/s	100-year flood	440 m^3/s
Talomo	Mintal Bridge	13.4km	100-year flood	580 m^3/s	100-year flood	580 m^3/s

*F/P: Flamework Plan, M/P: Master Plan

Source: JICA, 2022, MP and FS Study on Flood Control and Drainage in Davao City, Draft Final Report Summary p.S-I-73

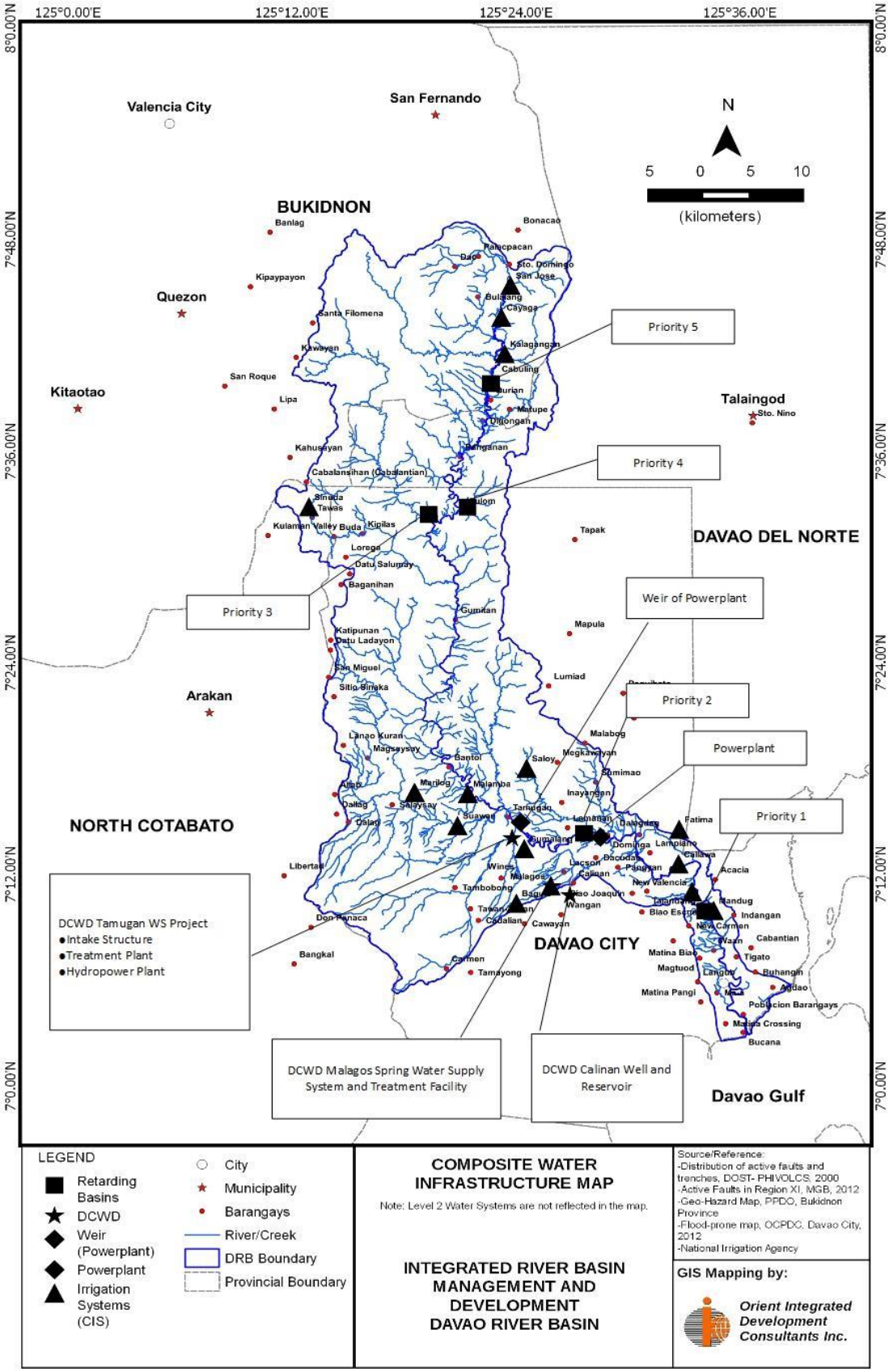


Source: JICA, 2022, MP and FS Study on Flood Control and Drainage in Davao City, Draft Final Report Summary p.S-I-266

Figure H-2-1 Design Flood Discharge Distribution of Davao River (100-yr floods)

3) Existing River Structures

Existing river structures in the Davao River Basin is illustrated in Figure H-2-2. There are existing several intake weirs for communal irrigation systems and water supply systems. Some hydropower plants and retarding basins are planned to be constructed in the Davao River Basin.

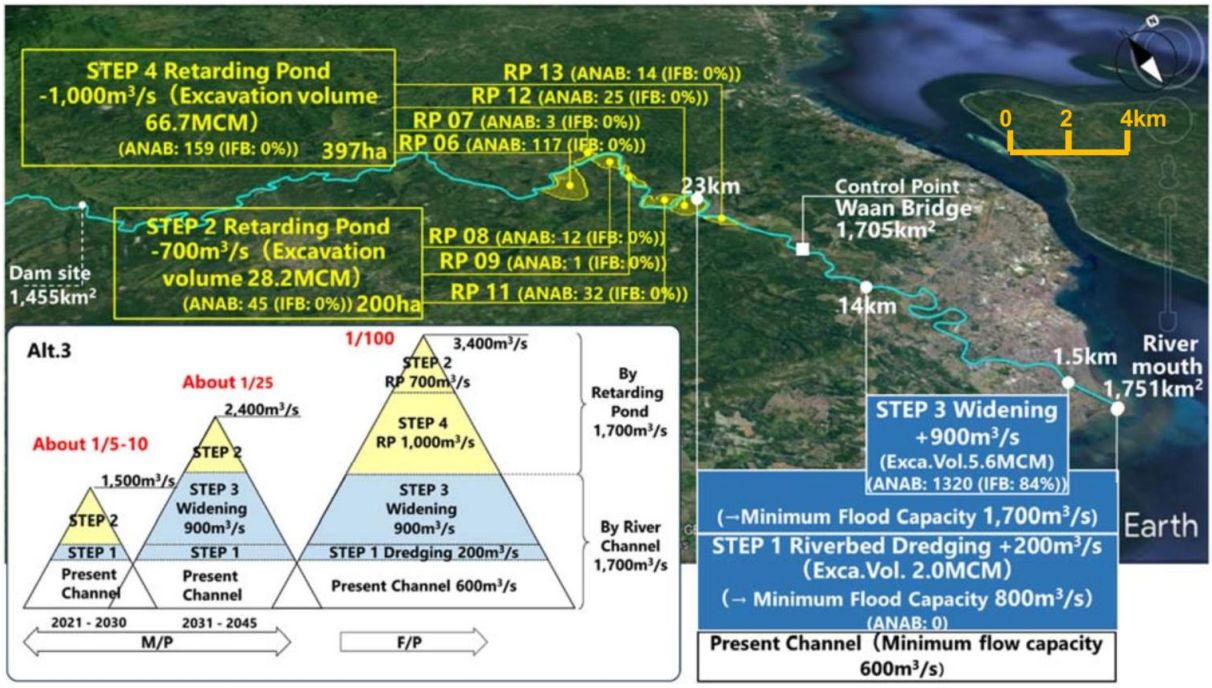


Source: DENR, 2015, Formulation of Davao River Basin Management and Development Plan, Main Report Vol.2 p.132

Figure H-2-2 Existing and Planned Water-Related Infrastructure in the Davao River Basin

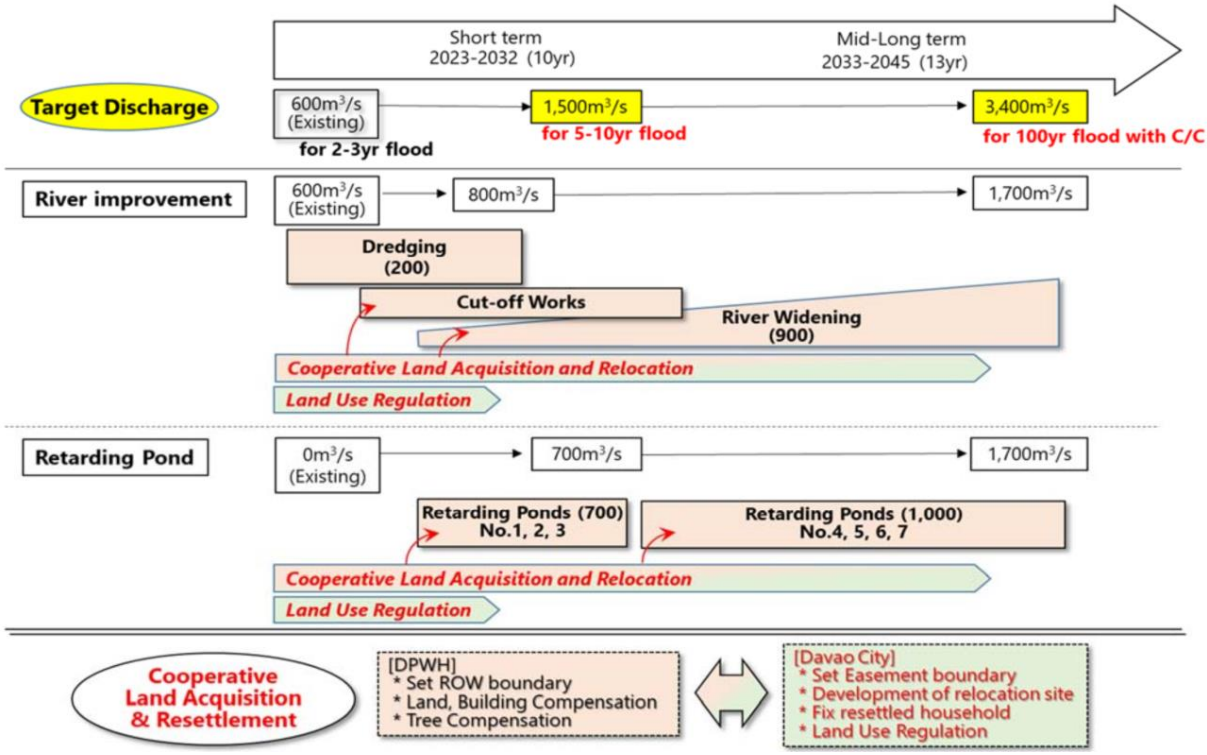
4) Proposed Structural Measures

As the study result of optimal combination of structural measures in the FRMMP, the strategy of proposed alternative 3 (Alt.3) was recommended as the best solution for flood risk reduction. Under the Alt.3 strategy, a certain level of flood control safety is ensured by river widening, dredging and retarding ponds. The flow capacity of the river channel will be increased from the current capacity 600 m^3/s to 1,700 or 2,000 m^3/s by the river widening and dredging, and the remaining discharge amount 1,700 m^3/s or 1,400 m^3/s will be accommodated by the detention facilities. Proposed structural measures and their implementation plan of Alt.3 are shown in Figure H-2-3 and Figure H-2-4.



Source: JICA, 2022, MP and FS Study on Flood Control and Drainage in Davao City, Draft Final Report Summary p.S-I-79

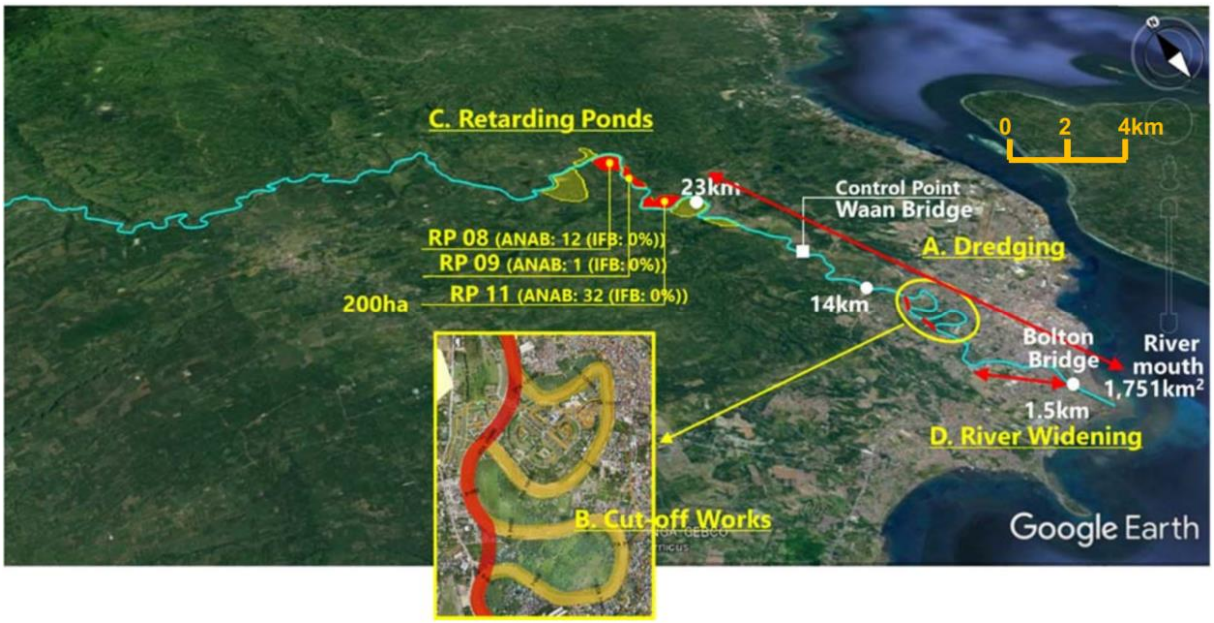
Figure H-2-3 Proposed Structural Measures (Alt.3) for the Davao River



Source: JICA, 2022, MP and FS Study on Flood Control and Drainage in Davao City, Draft Final Report Summary p.S-I-81

Figure H-2-4 Implementation Schedule (Alt.3) for the Davao River

In the proposed structural measures of Alt. 3, priority projects are also proposed in the FRMMP and further studied in the succeeding feasibility study as shown in Figure H-2-5 and Table H-2-3.



Source: JICA, 2022, MP and FS Study on Flood Control and Drainage in Davao City, Draft Final Report Summary p.S-I-158

Figure H-2-5 Location on Proposed Priority Projects for the Davao River

Table H-2-3 Contents of Proposed Priority Projects for the Davao River

	Sites	Content
A. Dredging	From river mouth to 23km	Dredging volume of about 2 million m^3
B. Cut-off works	7km to 13 km from river mouth	About 700m length in total, About 110m width
C. Installation of Retarding Ponds RP is number of retarding ponds	RP11 : about 24km from river mouth RP09 : about 27km from river mouth RP08 : about 29km from river mouth	Area、 Capacity RP11 : 0.76km^2, 3.80MCM RP09 : 0.39km^2, 1.95MCM RP08 : 0.85km^2, 4.25MCM
D. River Widening* (A part of widening works with 14km for M/P)	From Bolton Bridge (1.5km from river mouth) to 4km from river mouth	About 110m width

*: Only study at pre F/S level is carried out.

Source: JICA, 2022, MP and FS Study on Flood Control and Drainage in Davao City, Draft Final Report Summary p.S-I-158

5) Potential Flood Control Dams

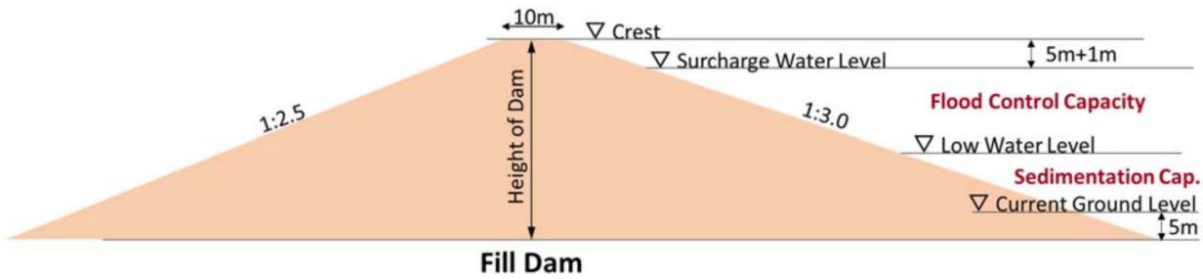
As there is no existing flood control dam in the Davao River Basin at present, a new dam for flood control purpose was studied in the FRMMP. The location of dam site is 62 km upstream from the river mouth and its catchment area is approximately 1,455 km^2 which accounts for 83 % of the entire Davao River Basin. The construction cost and social impacts are estimated as shown in Table H-2-4 under the condition of 1) protecting the designed flood only by the flood control dam, 2) present river flow capacity in the downstream accommodates at least 600 m^3/s, and 3) the dam height is required to be 54 m to store the remaining amount of the 100-year flood discharge (2,800 m^3/s).

As the result of economic, social and environmental evaluation of the dam, the dam construction was not recommended in the FRMMP because the construction cost is not economical and the reservoir area includes restricted areas that may have serious environmental and social impacts.

Table H-2-4 Estimation of Cost and Social Impact of the Proposed Dam

Outline of structure	Fill dam with 54m height (detention capacity is 115 million m^3)
Discharge amount to be accommodated	Approx. 2,800m^3/s (100% of remaining flood discharge of 100 year flood in case that estimated present river capacity of protected area is 600m^3/s)
Construction period	Appox. 20 years
Direct construction cost + land acquisition cost + compensation cost for building	Appox. 46 billion Php
Number of affected buildings (Relocation required)	Appox. 720 buildings
Period required for relocation	Appox. 8 years
Disadvantages / restrictions	The existing road will sink about 7.4 km length in total. Ponding area includes restricted area that may have serious environmental and social impacts.

Source: JICA, 2022, MP and FS Study on Flood Control and Drainage in Davao City, Draft Final Report p.I-3-34



Source: JICA, 2022, MP and FS Study on Flood Control and Drainage in Davao City, Draft Final Report p.I-3-34

Figure H-2-6 Assumed Dam Structure in the Study

H-3. Tagum-Libuganon River Basin

1) Summary of the Current FRMMP

The current FRMMP for the Davao River Basin is summarized in Table H-3-1.

Table H-3-1 Summary of the Current FRMMP for the Tagum-Libuganon River Basin

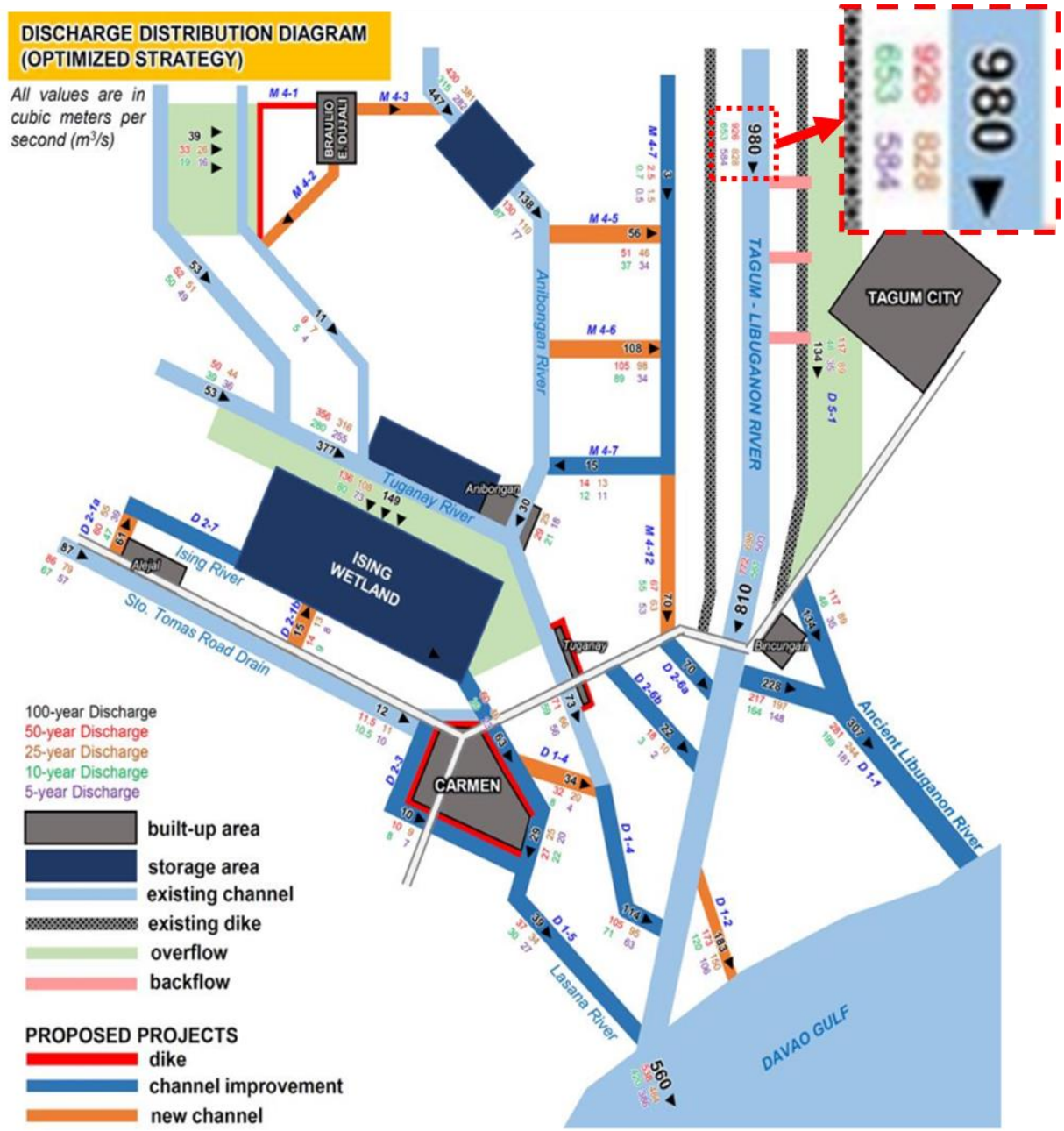
River Basin Name	Tagum-Libuganon
Drainage Area*1	3,119 km^2
Latest FRMMP	ADB (2020) *2
Target Year	2050
Target Flood Level	50-year flood
Consideration of CCI *3 on rainfall	50 percentile RIDF curve for each station provided by PAGASA was adopted
Consideration of CCI *3 on sea level rise	+0.2 m from 2020 to 2050
Design Discharge	926 m^3/s at upstream of Tagum City
No. of Existing Flood Control Dam	0
No. of Potential Flood Control Dam	2 *4

*1) Drainage area is quoted from the website of River Basin Control Office (https://riverbasin.denr.gov.ph/main/index)
*2) The FRMMP was formulated in the ADB Project, "Infrastructure Preparation and Innovation Facility (IPIF) Output 02 Water (Flood Control)"
*3) CCI: Climate Change Impacts
*4) Multi-purpose dams are proposed as an option in the long-term and within climate change adaptation plan coping also with drought and water scarcity events.

Source: prepared by JICA Survey Team based on the latest FRMMP

2) Design Discharge

Design discharge is not clearly described in the executive summary report of the FRMMP. However, the design flood discharge distribution diagram of Figure H-3-1 illustrates the design 50-year discharge at upstream of Tagum City as 926 m^3/s.



Source: ADB IPIF, 2020, FRMMP Tagum-Libuganon River Basin Final Executive Summary p.161

Figure H-3-1 Design Flood Discharge Distribution of Tagum-Libuganon River

3) Existing River Structures

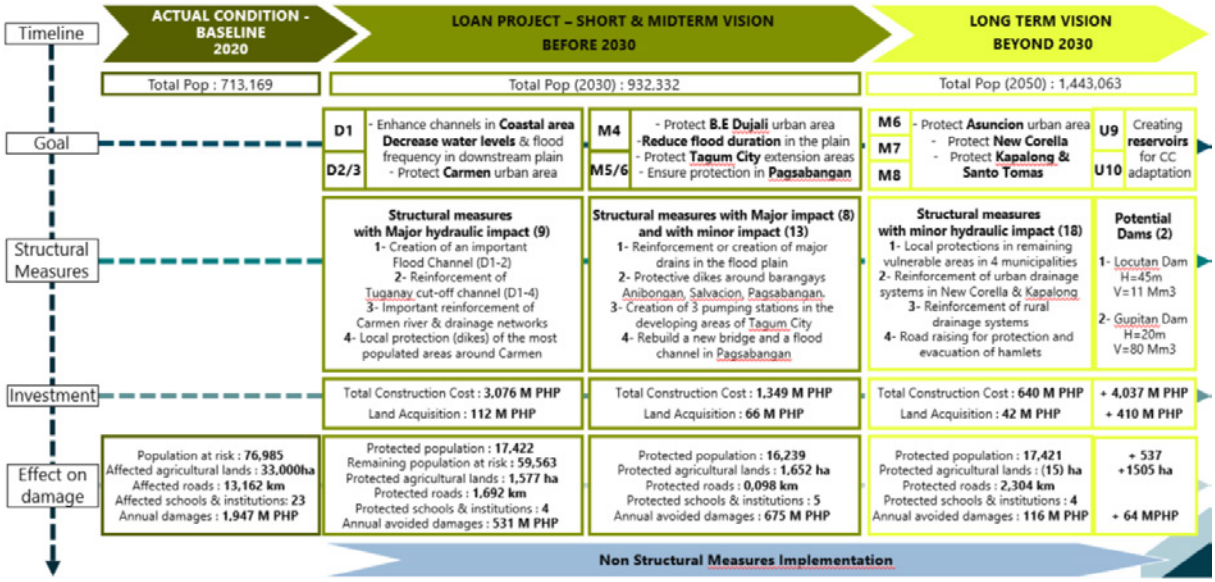
According to the current FRMMMP, a lot of road embankments, river dikes and irrigation channels have been constructed for a few decades. Figure H-3-2 illustrates most of the recently constructed structures, acting as flood defense structures, or alt least having influence on flow conditions.

Source: ADB IPIF, 2020, FRMMP Tagum-Libuganon River Basin Final Executive Summary p.28

Figure H-3-2 Existing Road Embankment and Dikes (red) and Irrigation Channel (Green)

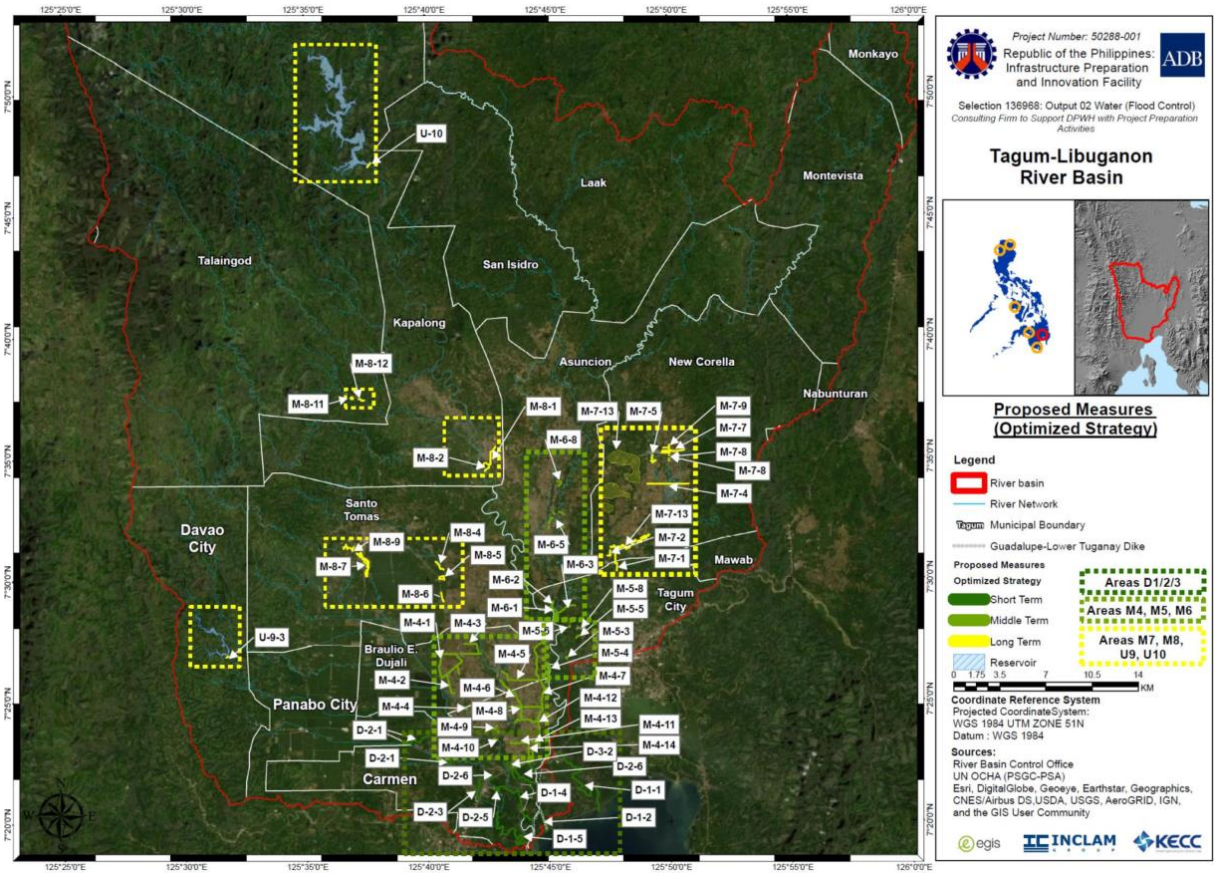
4) Proposed Structural Measures

Proposed structural measures were firstly selected based on the main three criteria, economic efficiency, social acceptability, and the balance between heavy engineering and nature-based solutions in the FRMMP. Secondly, the selected measures were evaluated and prioritized by Cost Benefit Analysis (CBA) and Multi-Criteria Analysis (MCA). Figure H-3-3 shows the recommended strategy for structural measures, and Figure H-3-4 illustrates the location of proposed measures, and Table H-3-2 describes the contents of proposed measures.



Source: ADB IPIF, 2020, FRMMP Tagum-Libuganon River Basin Final Executive Summary p.163

Figure H-3-3 Recommended Strategy in the Tagum-Libuganon River Basin



Source: ADB IPIF, 2020, FRMMP Tagum-Libuganon River Basin Final Executive Summary p.173

Figure H-3-4 Proposed Measures in the Tagum-Libuganon River Basin

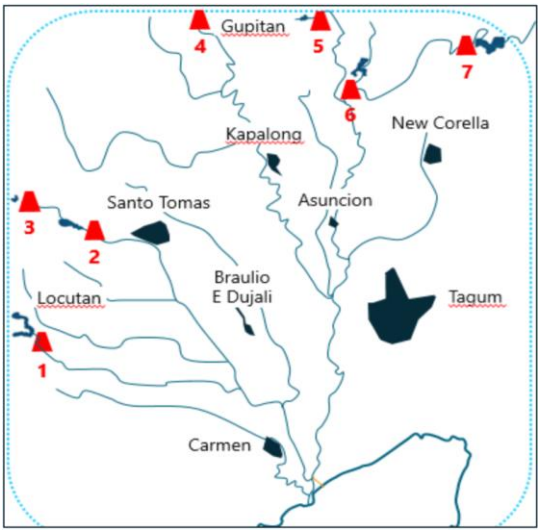
Table H-3-2 Proposed Structural Measures in the Tagum-Libuganon River Basin

Location*1	Proposed Structural Measures	Term*2
D-1-1	Reinforcement of Libuganon ancient river bed + creation of a Coastal spur dike	Short
D-1-2	Creation of an Overflow Channel	Short
D-1-4	Enlargement and deepening of Tuganay Cut-off channel + weir at the upstream section	Short
D-1-5	Rehabilitation of part of the Tuganay ancient River bed	Short
D-2-1	Capacity restoration of two existing bridges and connections to the drainage system	Short
D-2-3	Reinforce Western and Southern ring canal down to the Lasana River	Short
D-2-5	Create low dikes to prevent overflows towards urban areas	Short
D-2-6	Restore two ancient creeks and create drainage channels + create two bridges	Short
D-3-2	Local protection: mainly raising existing road + creation of two dikes sections	Short
M-4-1	Raising two existing roads and creating a dike to deviate flows	Middle
M-4-2	Enlarge and deepen existing drainage ditches + 4 bridges under road	Middle
M-4-3	Enlarge and deepen existing drainage ditch and create a wide drainage	Middle
M-4-8	Raise existing road and create a dike	Middle
M-4-10	Create canal + bridge	Middle
M-4-11/13	Improve transversal drainage capacity of the road	Middle
M-4-4	Restore and enhance existing levee as a dike (+40cm)	Middle
M-4-5/6	Create wide drainage ditches	Middle
M-4-7	Restore river bed and enhance capacity	Middle
M-4-9	Create a dike and raise a road	Middle
M-4-12	Create a drainage canal	Middle
M-4-14	Enhance existing canal + culvert	Middle
M-5-2	Reinforce ditch	Middle
M-5-3	Drainage ditch + dewatering system with associated pond 5000m3	Middle
M-5-4	Create a wide flood channel + relocate 2 households + San Miguel bridge rehabilitation	Middle
M-5-5	Create dike + dewatering system with associated pond 2000m3	Middle
M-5-6	Create pond 5000m3 + dewatering station + repair existing gate	Middle
M-5-8	Raising the level of the road	Middle
M-6-1	Rebuild old Pagsabangan bridge + create flood channel + 3 culverts	Middle
M-6-2	Create Dike	Middle
M-6-3	Raising the level of the road and Create a dike	Middle
M-6-5	Local dikes	Middle
M-6-6	Transversal dike	Middle
M-6-8	Raise existing road and create transversal dike	Middle
M-7-1	Create a local transversal dike	Long
M-7-2	Level up existing road (+ 60 cm maximum)	Long
M-7-4	Improve transversal drainage of existing road	Long
M-7-5	Restore existing creek and create flood channel	Long
M-7-6	Restore existing creek and create flood channel	Long
M-7-7	Enhance inner drainage	Long
M-7-8	Enhance drainage of the road	Long
M-7-9	Enlarge and deepen existing ditch + bridge	Long
M-8-1	Enhance urban drainage of Kapalong	Long
M-8-2	Restore at least downstream 2/3 of the ancient meander	Long
M-8-4	Raise existing road to act as a dike	Long
M-8-5	Restore and deepen existing drainage ditches	Long
M-8-6	Raise existing road	Long
M-8-9	River Bank Protection	Long
M-8-12	Enhance riverbank protection by dike + flap gate on outlet	Long
U-9-3	Multi-purpose Dam on Locutan River	Long
U10	Multi-purpose Dam in Barangay Gupitan	Long

*1: D: Downstream/ M: Midstream/ U: Upstream, *2: Short: 2020-2023, Middle: 2023-2030, Long: 2030-2050
Source: ADB IPIF, 2020, FRMMP Tagum-Libuganon River Basin Final Executive Summary p.165-167

5) Potential Flood Control Dams

As there is no existing flood control dam in the Tagum-Libuganon River Basin at present, totally seven new dams for flood control purpose were studied in the FRMMP. Figure H-3-5 illustrates the location of the potential seven dams and Table H-3-3 shows design reservoir storage volume and construction cost. According to the FRMMP, potential benefits in terms of flood risk reduction are not significant in vulnerable areas, apart for Dam 1 on the Locutan River, as a village (Colosas) a few kilometers downstream would thus be protected against floods, and for Dam 4 in Barangay Gupitan that will have a major impact in the whole Tagum-Libuganon valley with its 80 MCM storage capacity. Such dams would also reduce the gross water volume towards the plain and above all would be relevant strategic water resources for the urban area, specifically around Carmen for Locutan Dam. Thus, only Locutan and Gupitan Dams are incorporated as long-term measures in the FRMMP.



Source: ADB IPIF, 2020, FRMMP Tagum-Libuganon River Basin Final Executive Summary p.138

Figure H-3-5 Location of Potential Dams in the Tagum-Libuganon River Basin

Table H-3-3 Estimation of Reservoir Storage Volume and Cost of the Studied Dams

	Volume (Mm^3)	Price M PhP
Dam 1 Locutan	11	2,875
Dam 2	7	1,940
Dam 3	1	329
Dam 4 Gupitan	80	2,142
Dam 5	1	378
Dam 6	7	1,935
Dam 7	18	4,921

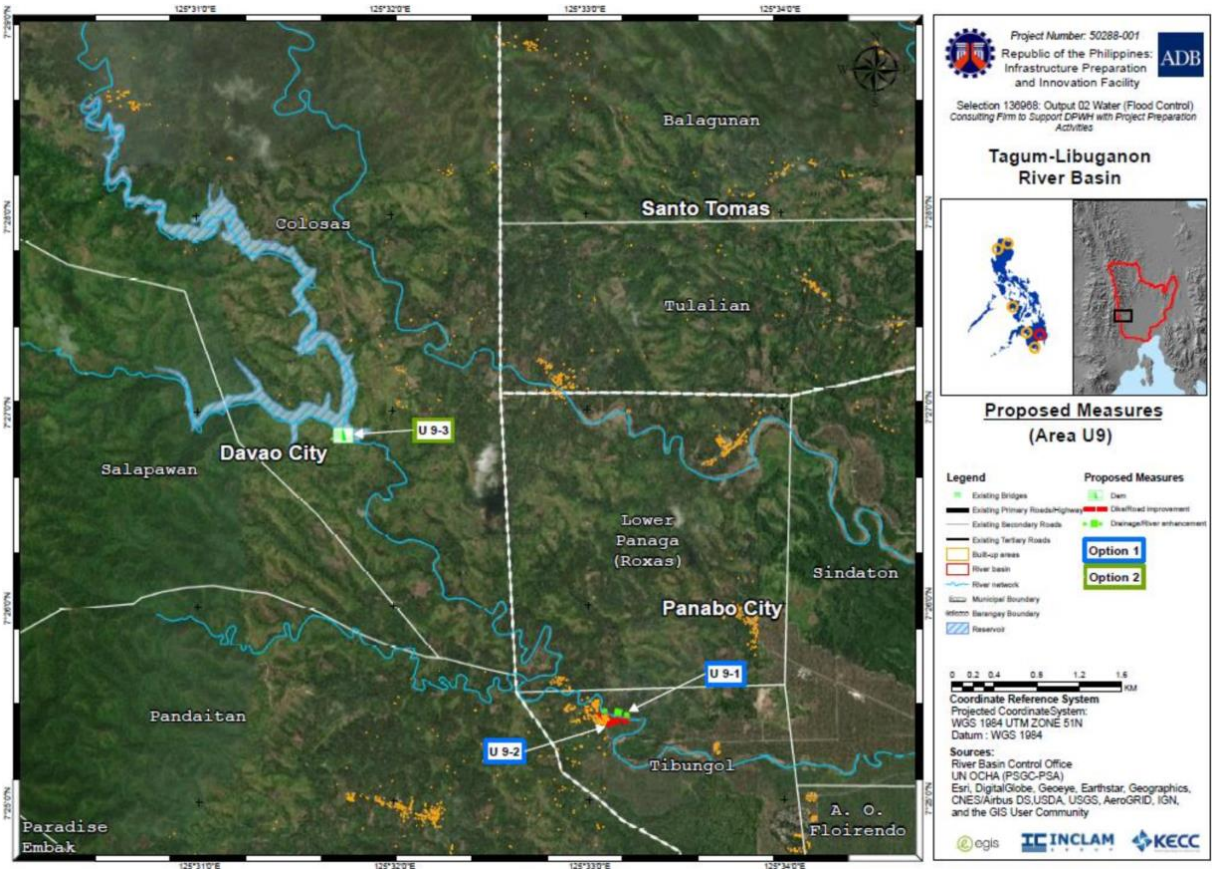
Source: ADB IPIF, 2020, FRMMP Tagum-Libuganon River Basin Final Executive Summary p.138

Potential two multi-purpose dams, Locutan and Gupitan Dams, are summarized in the Table H-3-4. According to the FRMMP, those dams would provide fresh water for the South of the Province and greatly reduce flood risk for Colosas, partly for Carmen (Locutan Dam) and

Kapalong and partly for Tagum City (Gupitan Dam). Nevertheless, their results of Cost Benefit Analysis indicated very bad cost efficiency while considering only benefits in terms of flood management. If synergies are found among stakeholders, in particular drinkable water suppliers and irrigators unions, the implementation of a multi-purpose dam may be studied in detail as these benefits were not studied neither in the Cost Benefit Analysis nor in the Multi-Criteria Analysis. Therefore, these dams are proposed for the long term vision of Davao Region development and climate change adaptation.

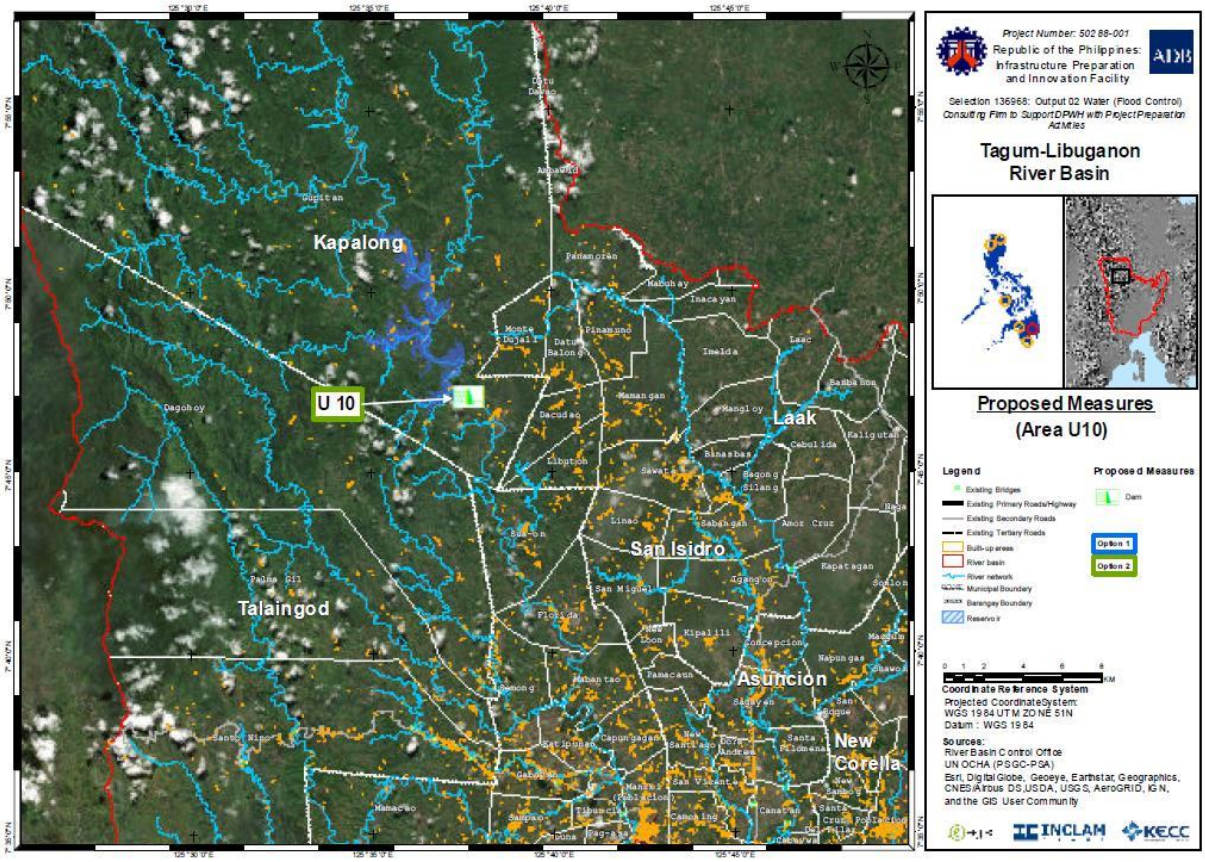
Table H-3-4 Summary of Potential Two Multi-Purpose Dams

Dam Name	Dam Height	Crest Length	Dam Storage	Estimated Cost	Environmental and Social Impacts
Locutan Dam	45 m	N/A	11 MCM	2,875 M PhP	• Not specifically described
Gupitan Dam	20 m	N/A	80 MCM	2,142 M PhP	• More than 400 houses will be under the water reservoir level, a remaining number of around 100 households will be strongly impacted. • With a surface of 8 km^2, around 68 ha of agricultural land (mainly perennial crops) will be unavailable.



Source: ADB IPIF, 2020, FRMMP Tagum-Libuganon River Basin Final Executive Summary p.121

Figure H-3-6 Location of Potential Locutan Dam



Source: ADB IPIF, 2020, FRMMP Tagum-Libuganon River Basin Final Executive Summary p.123

Figure H- 3-7 Location of Potential Gupitan Dam

H-4. Buayan-Malungon River Basin

1) Summary of the Current FRMMP

The current FRMMP for the Davao River Basin is summarized in Table H-4-1.

Table H-4-1 Summary of the Current FRMMP for the Buayan-Malungon River Basin

River Basin Name	Buayan-Malungon
Drainage Area*1	1,505 km^2
Latest FRMMP	ADB (2020) *2
Target Year	2050
Target Flood Level	50-year flood
Consideration of CCI *3 on rainfall	Not specifically described
Consideration of CCI *3 on sea level rise	Not specifically described
Design Discharge	1,985 m^3/s at the confluence of Buayan River and Maribulan River
No. of Existing Flood Control Dam	0
No. of Potential Flood Control Dam	1 *4

*1) Drainage area is quoted from the website of River Basin Control Office (https://riverbasin.denr.gov.ph/main/index)
*2) The FRMMP was formulated in the ADB Project, "Infrastructure Preparation and Innovation Facility (IPIF) Output 02 Water (Flood Control)"
*3) CCI: Climate Change Impacts
*4) Multi-purpose dams are proposed as an option in the long-term and within climate change adaptation plan coping also with drought and water scarcity events.

Source: JICA Survey Team

2) Design Discharge

Design discharge is not clearly described in the executive summary report of the FRMMP. However, flood peak discharges are described for several return periods at representative locations under present condition as shown in Table H-4-2. The 50-year discharge for the target flood level at the Buayan River downstream (ID: P12) is 1,985 m^3/s from the table.

Table H-4-2 Peak Discharge (m^3/s) for Several Return Periods

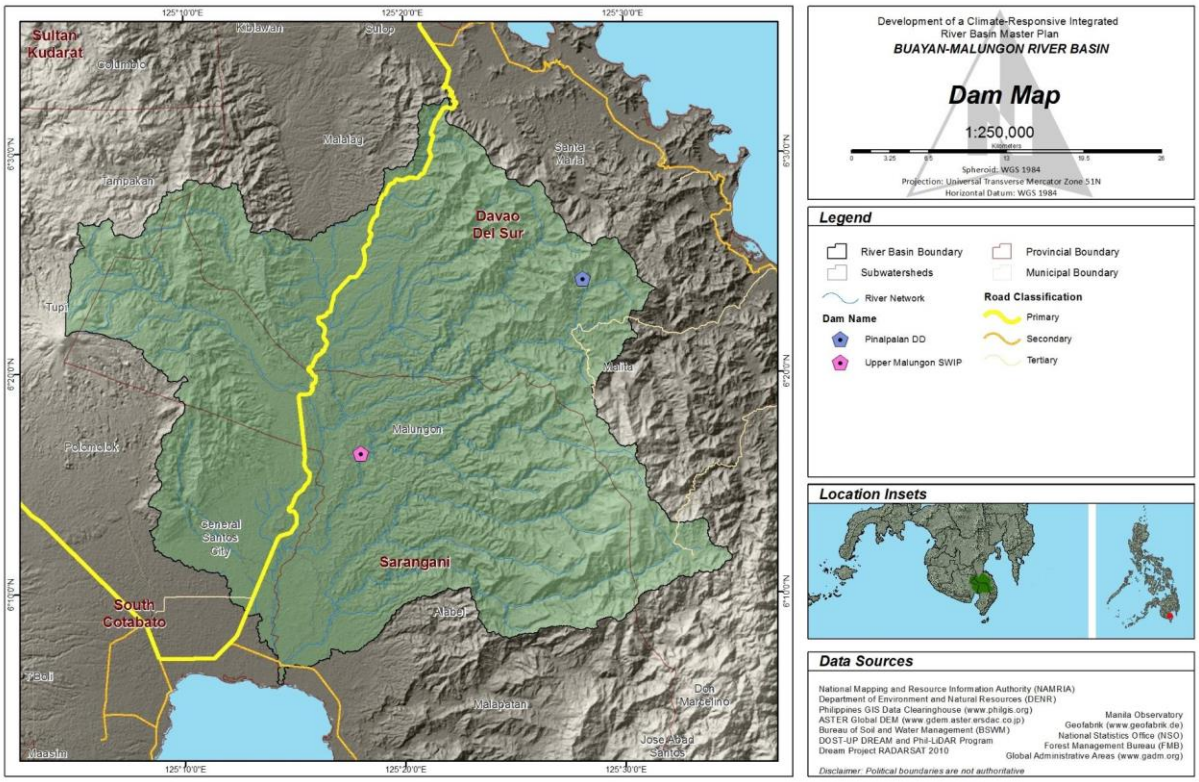
Id	Calculation point	Area (km^2)	Coordinates		Return period (years)				
			Latitude	Longitude	5	10	25	50	100
P1	Buayan River upstream the confluence with the Malungon River	215.3	751.49	695.80	136	214	333	431	537
P2	Malungon River upstream the confluence with the Buayan River	403.2	751.50	695.80	313	467	689	867	1,058
P3	Buayan River downstream the confluence with the Malungon River	618.6	751.50	695.80	446	676	1,011	1,285	1,574
P4	Dumolog River upstream the confluence with the Buayan River	294.4	749.10	686.00	158	239	357	454	557
P5	Buayan River downstream the confluence with the Dumolog River	943.5	748.30	686.00	519	796	1,206	1,542	1,899
P6	Tinagacan Bridge	104.8	747.30	686.70	68	109	171	223	280
P7	Latian River upstream the confluence with the Maribulan River	155.4	752.83	681.30	49	80	129	172	219
P8	Maribulan River upstream the confluence with the Latian River	142.1	752.84	681.30	20	34	58	79	104
P9	Maribulan River downstream the confluence with the Latian River	297.4	752.84	681.20	68	112	184	247	317
P10	Buayan River upstream the confluence with the Maribulan River	1,157	748.09	676.40	567	879	1,344	1,730	2,145
P11	Maribulan River upstream the confluence with the Buayan River	366.8	748.11	676.40	76	128	215	293	379
P12	Buayan River downstream the confluence with the Maribulan River	1,524.0	748.09	676.40	633	988	1,531	1,985	2,477

Note: Coordinates are expressed in km, WGS 84, UTM Zone 51 P. Latitude is E and longitude is N.

Source: ADB IPIF, 2020, FRMMP Buayan-Malungon River Basin Final Executive Summary p.53

3) Existing River Structures

According to the integrated river basin master plan developed by DENR in 2017, there exists two dams in the Buayan-Malungon River Basin as shown in Figure H-4-1. Pinalpalan dam is located in the Municipality of Malita in Daval del Sur. Another dam under Small-Water Impounding Program (SWIP) is located in the Municipality of Malungon, Sarangani.

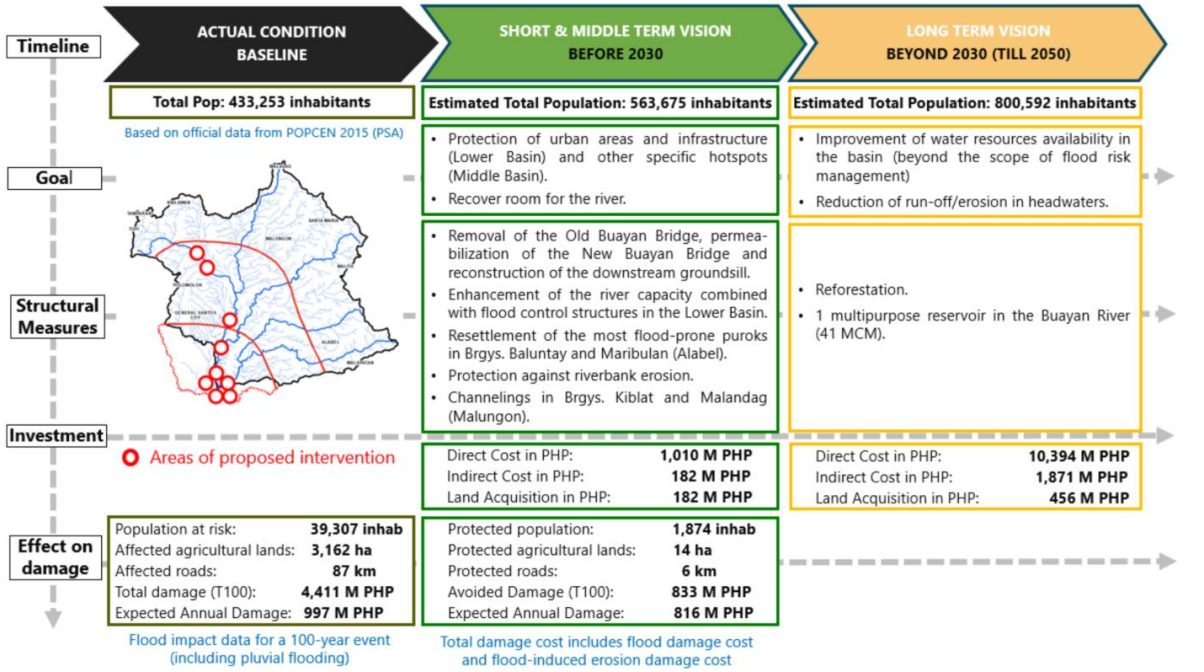


Source: DENR, 2017, Climate-Responsive Integrated Master Plan for Buayan-Malungon River Basin, Main Report Vol.2 p.208

Figure H-4-1 Existing Dams in the Buayan-Malungon River Basin

4) Proposed Structural Measures

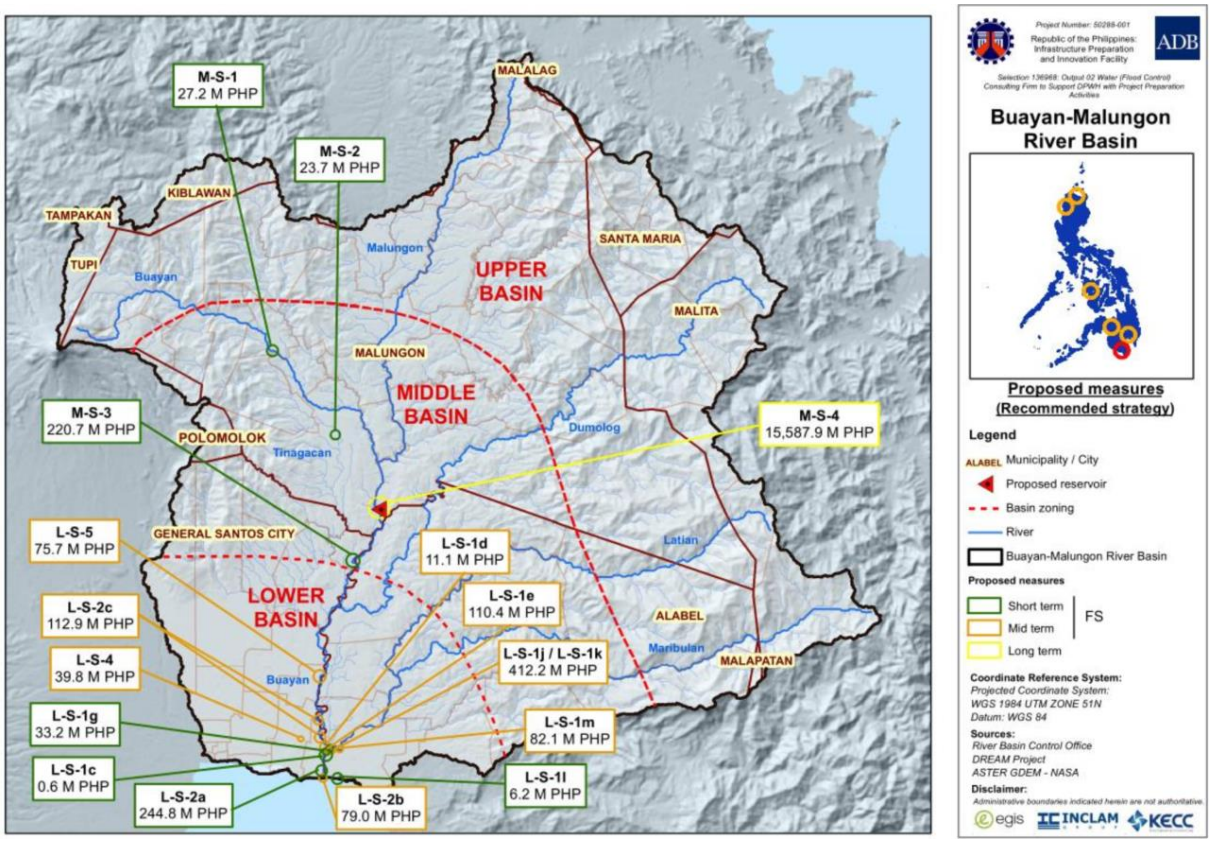
To select structural measures in the FRMMP, the primary purpose is to prevent the occurrence of human losses, i.e. reducing potential flood damages in urban and populated areas. Firstly, measures aimed at achieving this purpose shall be prioritized over those protecting other areas and assets, and/or mitigating flood impacts on them. Secondly, the measures were selected based on technical priority, that is to say, how significantly affect the overall hydrological and hydraulic behavior of the Buayan-Malungon River Basin for reducing flood risks. Finally, the selected measures were evaluated and prioritized by Cost Benefit Analysis (CBA) and Multi-Criteria Analysis (MCA). Figure H-4-2 shows the recommended strategy for structural measures, and Figure H-4-3 illustrates the location of proposed measures, and Table H-4-3 describes the contents of proposed measures.



Note: The total population currently, in 2030, and 2050 are estimated based on the official reference provided by the last population census (POPCEN 2015, PSA). Land use covers and other geospatial data used are also dated in 2015.

Source: ADB IPIF, 2020, FRMMP Buayan-Malungon River Basin Final Executive Summary p.110

Figure H-4-2 Recommended Strategy in the Buayan-Malugon River Basin



Source: ADB IPIF, 2020, FRMMP Buayan-Malungon River Basin Final Executive Summary p.122

Figure H-4-3 Proposed Measures in the Buayan-Malugon River Basin

Table H-4-3 Proposed Structural Measures in the Buayan-Malugon River Basin

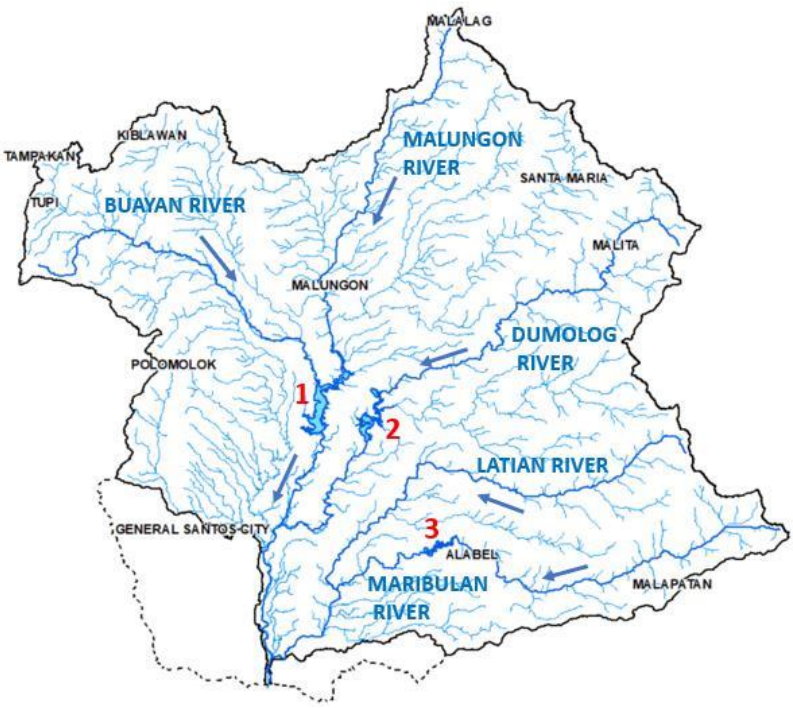
Location*1	Proposed Structural Measures	Term*2
M-S-1	Channeling upstream the Kiblat Bridge, Brgy. Kiblat (Malungon)	Short
M-S-2	Channeling along the urban area in Brgy. Malandag (Malungon)	Short
M-S-3	Spur dikes and riverbank protection in the meander in Brgy. Batomelong (GSC)	Short
L-NS-1	Resettlement in Brgys. Baluntay and Maribulan (Alabel)	Short
L-S-1c	Removal of the existing dikes in the Buayan River (right bank)	Short
L-S-1d	Natural embankment along the second terrace of the Buayan River right bank	Middle
L-S-1e	Removal of the Old Buayan Bridge	Middle
L-S-1g	Rehabilitation of the Buayan Bridge groundsill	Short
L-S-1j L-S-1k	Permeabilization of both sides of the New Buayan Bridge /Elevation of the Sarangani-Davao del Sur Coastal Road (left bank)	Middle
L-S-1l	Coastal gabion walls in Purok Fabricante, Brgy. Maribulan (Alabel)	Short
L-S-1m	Riverbank protection in the Maribulan meander bend	Middle
L-S-2a	Earthen dike along the right bank of the Buayan River mouth	Short
L-S-2b	Jetties on each side of the Buayan River mouth	Middle
L-S-2c	Construction of spur dikes in Brgys. Buayan and Ligaya (GSC)	Middle
L-S-4	Enhancement of the hydraulic capacity of the Baluan Creek	Middle
L-S-5	Construction of a revetment in Brgy. Ligaya (GSC)	Middle
M-S-4	Buayan River reservoir	Long

*1: D: Downstream/ M: Midstream/ U: Upstream, *2: Short: 2020-2023, Middle: 2023-2030, Long: 2030-2050
Source: prepared by JICA Survey Team based on ADB IPIF, 2020, FRMMP Buayan-Malungon River Basin Final Executive Summary p.111-112

5) Potential Flood Control Dams

As there is no existing flood control dam in the Buayan-Malungon River Basin at present, a preliminary study for potential mid- to large-scale reservoirs was conducted in the FRMMP. As a result, three dam site candidates were proposed as illustrated in the Figure H-4-4. Table H-4-4 summarizes the main characteristics of these potential reservoirs and their potential effects on downstream.

The FRMMP concluded that reservoirs seem not to be an optimal solution in terms of flood risk reduction in the Buayan-Malungon River Basin. Technically, all of the proposed reservoirs are inefficient from a flood risk management standpoint and do not solve the flooding issues (Maribulan River and Dumolog River) or do not solve them in a sufficient way (Buayan River). Economically, they are not cost-effective, because the construction costs turned out to be extraordinarily high comparing to the expected benefits. In addition, there also exist potentially adverse environmental impacts. Anyway, in the case of the reservoir in the Buayan River, a multi-purpose dam could be an option as part of a climate change adaptation and mitigation strategy in the Buayan-Malungon River Basin. It would help to store water (during the rainy season) to cope with water shortages (during the dry season) or even droughts while providing a certain capacity to reduce —although not solve— the current flood issues downstream.



Source: ADB IPIF, 2020, FRMMP Buayan-Malungon River Basin Final Executive Summary p.91

Figure H-4-4 Location of Studied Potential Dams in the Buayan-Malugon River Basin

Table H-4-4 Estimation of Reservoir Storage Volume and Cost of the Studied Dams

Main characteristics	River		
	Buayan	Dumolog	Maribulan
Location	Brgys. Malandag, Banahaw, Tamban (Malungon)	Brgy. Domolok (Alabel)	Brgy. Alegria (Alabel)
Volume (hm^3)	41	25	7
Catchment area (km^2)	720	252.2	120.8
Reservoir extension (km^2)	3.7	1.7	0.5
Height (m)	32.0	39.8	39.8
Crest length (m)	916	165	114
Inflow (T100) (CMS)	1,574	500	90
Outflow (T100) (CMS)	138	0	0
Cost (M PHP)	15,588	5,929	4,891
Effects downstream the Old/New Buayan Bridge	Noticeable (-1 m) but not enough to completely solve the existing problem	Negligible (-0.2 m)	None (~0 m)
Comments	More or less efficient as a dry dam, but less if combined with other uses.	Very limited effect downstream.	Small catchment area. Almost no downstream effect.

Note: T100 stands for the 100-year return period. Source: IPIF Output 2 Consultant, 2020

Source: ADB IPIF, 2020, FRMMP Buayan-Malungon River Basin Final Executive Summary p.91-92

H-5. Bicol River Basin

Not like the above 4 river basins, the current FRMMP of Bicol River Basin (BRB) formulated by DENR in 2015 does not include detailed hydrological and hydraulic analyses nor alternate solution analysis and not fulfill general master plan level study. The last master plan level study for BRB would be "The Basin Plan for the Water Resources Development and Management (BPWRDM)" by NEDA and World Bank in 2003 or "Bicol River Basin Flood Control and Irrigation Development Project (FCIDP)" by DPWH and ADB in 1992. The most of proposed structural measures in both plans, however, are still not realized. Therefore, history and present conditions of flood risk management in the BRB are studied as described in the subsection 6) in this survey.

1) Summary of the Current FRMMP

The current FRMMP for the Bicol River Basin is summarized in Table H-5-1.

Table H-5-1 Summary of the Current FRMMP for the Bicol River Basin

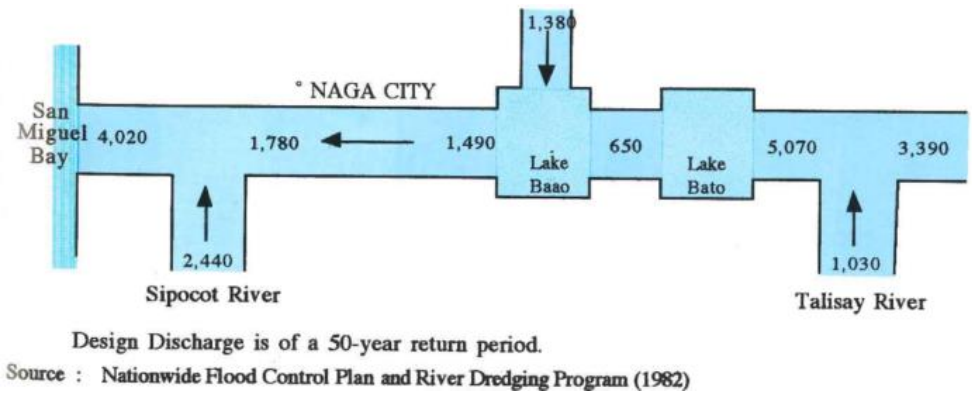
River Basin Name	Bicol River Basin
Drainage Area (km^2)	3,171 *1
Estimated Population (thousand people) and Estimated Year	2,011 (2010) *1
Latest FRMMP and Formulated Year	DENR (2015) *2
Target Year	2030
Target Flood Level	5- or 10-year flood*3
Design Flood Discharge	Not clearly described
Consideration of CCI *4 on rainfall	Not clearly described
Consideration of CCI *4 on sea level rise	Not clearly described
No. of Existing Flood Control Dam	0
No. of Potential Flood Control Dam	0

*1) The values of "Drainage Area" and "Estimated Population" are quoted from the website of River Basin Control Office (https://riverbasin.denr.gov.ph/main/index)
*2) DENR, 2015, "Integrated Bicol River Basin Management and Development Master Plan"
*3) In the latest FRMMP (DENR, 2015), the target flood level is not clarified. In the previous FRMMPs (WB, 2003/ ADB, 1992), the target flood level was set at 5 or 10-year flood.
*4) CCI: Climate Change Impacts

Source: prepared by JICA Survey Team based on the latest FRMMP

2) Design Discharge

Design discharge is not described in the current FRMMP. An old example of design discharge is shown in Figure H-5-1. This design discharge was proposed by the Nationwide Flood Control Plan and River Dredging Program in 1982.

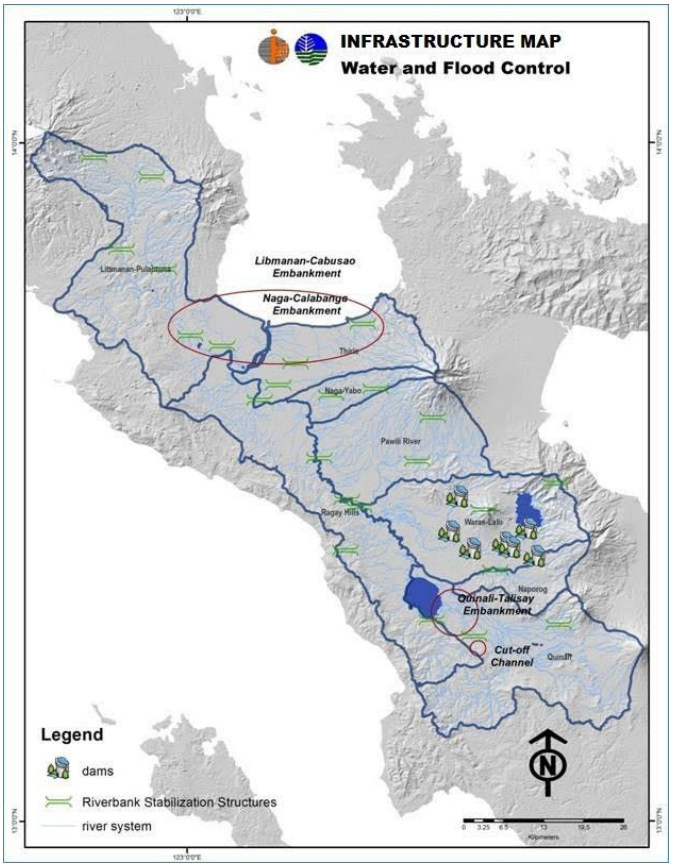


Source: JICA, 1997, "Rivers in the Philippines"

Figure H-5-1 Design Flood Discharge Distribution of Bicol River (50-yr floods)

3) Existing River Structures

There exists irrigation system diversion weirs and barrages, flood diversion spillways (cut-off channel), river dikes, seawalls in the Bicol River Basin as illustrated in Figure H-5-2.



Source: DENR, 2015, Formulation of an Integrated Bicol River Basin Management and Development Master Plan, Vol. 2 Main Report, p. 55

Figure H-5-2 Existing River Structures in the Bicol River Basin

4) Proposed Structural Measures

As of 2022, the 7 priority projects as illustrated in Figure H-5-3 are going to be implemented as phase 1 project based on the feasibility study and detailed engineering design conducted by DPWH Region 5. Among the seven priority projects, the Libmanan-Cabusao Embankment, Balatas Retarding Basin and the Nabua Ring Dike are located in Camarines Sur Province and the remaining four sites of Nagasgasan Retarding Basin, San Francisco-Cabilogan Retarding Basin, Quinali Diversion Channel and Quinali-Talisay Embankment are located in Albay Province.

Source: DPWH, 2022, The Feasibility Study and Detailed Engineering Design for the Proposed Flood Control Projects in Bicol River Basin, Project Briefer

Figure H-5-3 Locations of Priority Flood Control Projects in the Bicol River Basin

5) Potential Flood Control Dams

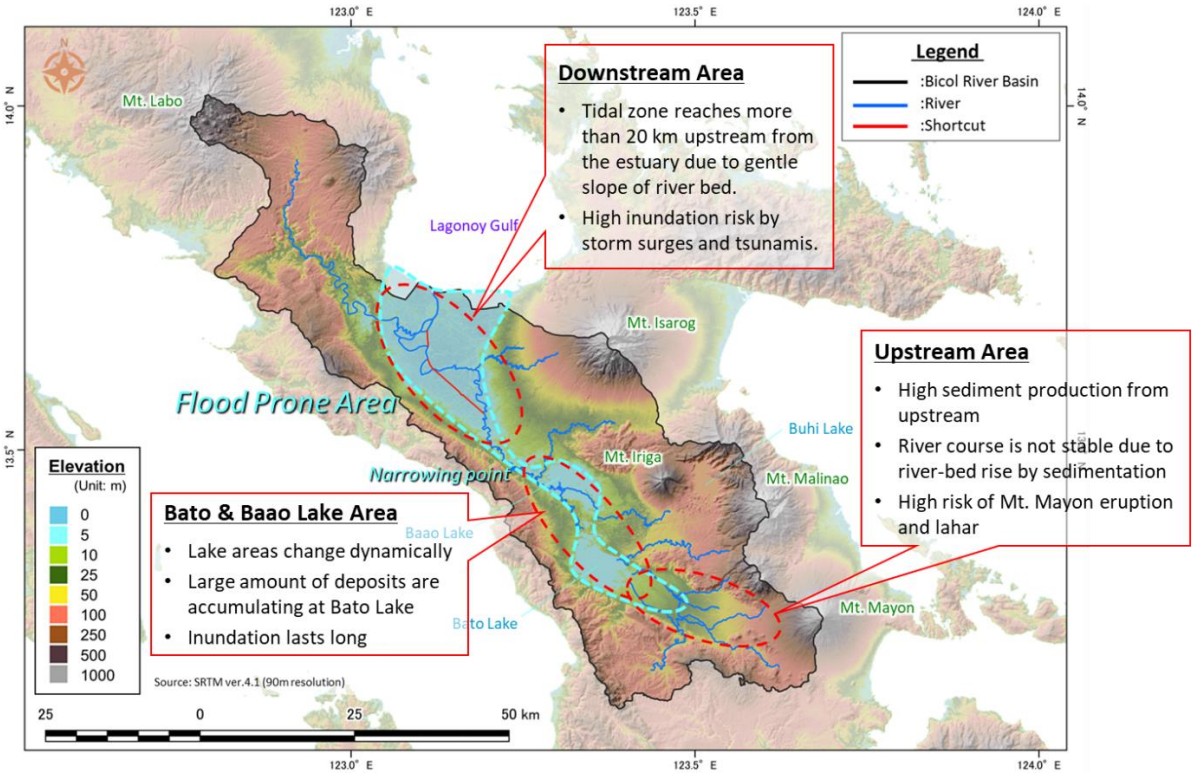
As a result of reviewing the current and past several FRMMPs, there is no existing and planned flood control dam in the Bicol River Basin.

6) History and Present Conditions of Flood Risk Management

Flooding has been a big constraint against the development of the Bicol River Basin (BRB) for a long time, but it still be a big issue. According to DENR (2015)[1], about 1,900 hectares of built-up areas and 37,800 hectares of agricultural lands, mostly irrigated rice fields, will be affected by a one in 25-year return period of flooding. People suffers from frequent floods

[1] DENR, Integrated Bicol River Basin Management and Development Master Plan, 2015, Vol.2 Main Report

caused by the combined effect of regular passage of typhoons and natural low elevation of the Bicol Plain. In addition -, the situation of flooding is getting worse by river bed rise due to large sediment inflow from the Bicol River upstream and the impacts of climate change. Figure H-5-4 illustrates physical characteristics of the BRB. In the upstream area of the Bicol River, siltation of main waterways is a main issue. There are two active volcanos in the Bicol River Basin, namely Mt. Iriga and Mt. Mayon. In particular, Mt. Mayon is the most active volcano in the Philippines (Mayon volcano has erupted 11 times even after 1968; 78, 84, 93, 2000, 01, 06, 09, 13, 14, 18.), and frequently erupts volcanic ash, pyroclastic material and lava. Large amount of volcanic sediments then flow into the upstream Bicol River System. Such deposits rise the river bed, which makes it easier to cause flooding and change the river course.



Source: JICA Survey Team

Figure H-5-4 Physical Characteristics of the Bicol River Basin

Most of sediments flown into the Bicol River upstream finally accumulate in Lake Bato, a natural lake in the midstream of the Bicol River. Lake Bato and Lake Baao play a very important role for flood risk reduction in the downstream by attenuating the peak discharge significantly. However, storage capacity of Lake Bato and Lake Baao decrease by sedimentation. According to World Bank (2003)[2], the FCIDP[3] estimates the sediment load from Mt. Mayon in the Quinali River to be of the order of 480,000 tons per year. On the other

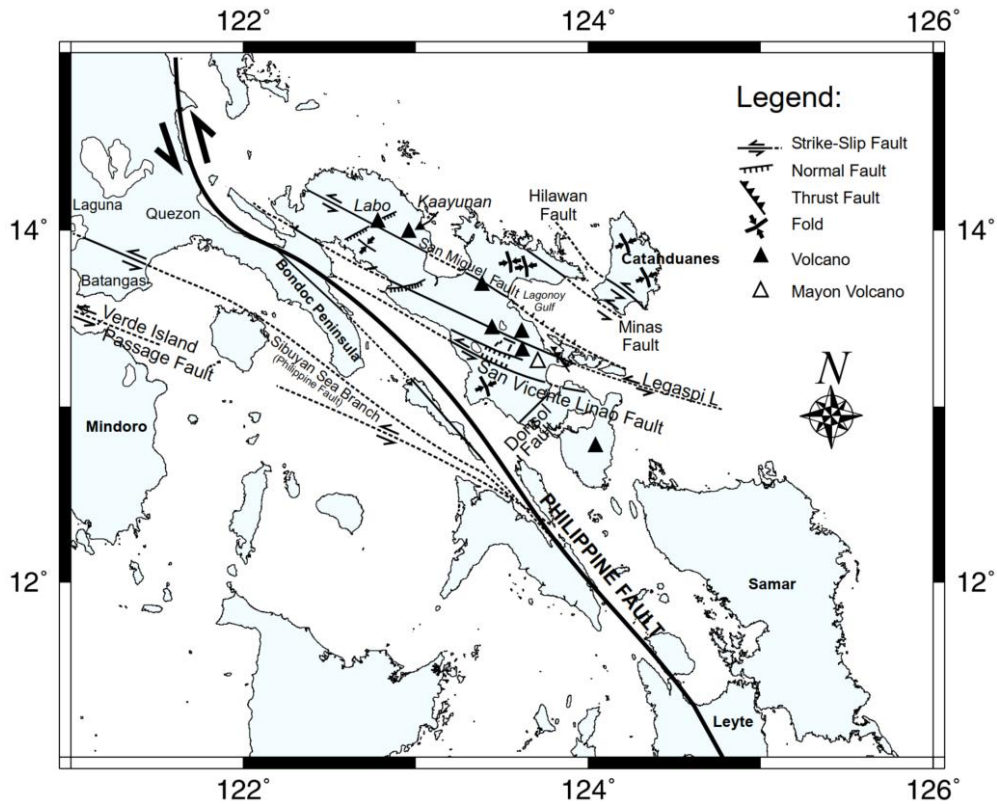
[2] World Bank, The Basin Plan for the Water Resources Development and Management, 2003, Final Report Vol.2 Main Report p.4-12
[3] Asian Development Bank, Bicol River Basin Flood Control and Irrigation Development Project, 1989-1992

hand, the World Bank study estimated the annual sediment load in Lake Bato as 1,000,000 tones based on hydrographic survey in the study and reported that the sediment load had increased because Mt. Mayon had erupted several times after the FCIDP study. The area of lakes changes dramatically depending on the season. Due to very gentle slope of river bed and existence of river narrowing section in the downstream of Lake Baao, the stored water in the lake cannot discharge quickly. Accordingly, floodwaters are stored in Lake Bato and Lake Baao with their area expanding, and flooding in the area lasts long.

The Bicol River downstream is characterized by its very gentle river-bed slope and adjacent large floodplain. Most of the floodplain is below 5m elevation and under the high risk of flooding by high-tide, storm-surge and tsunami. Sea level rise induced by climate change is also huge threat to the area. To increase drainage capacity of the lower Bicol River, three shortcuts were built in 1988.

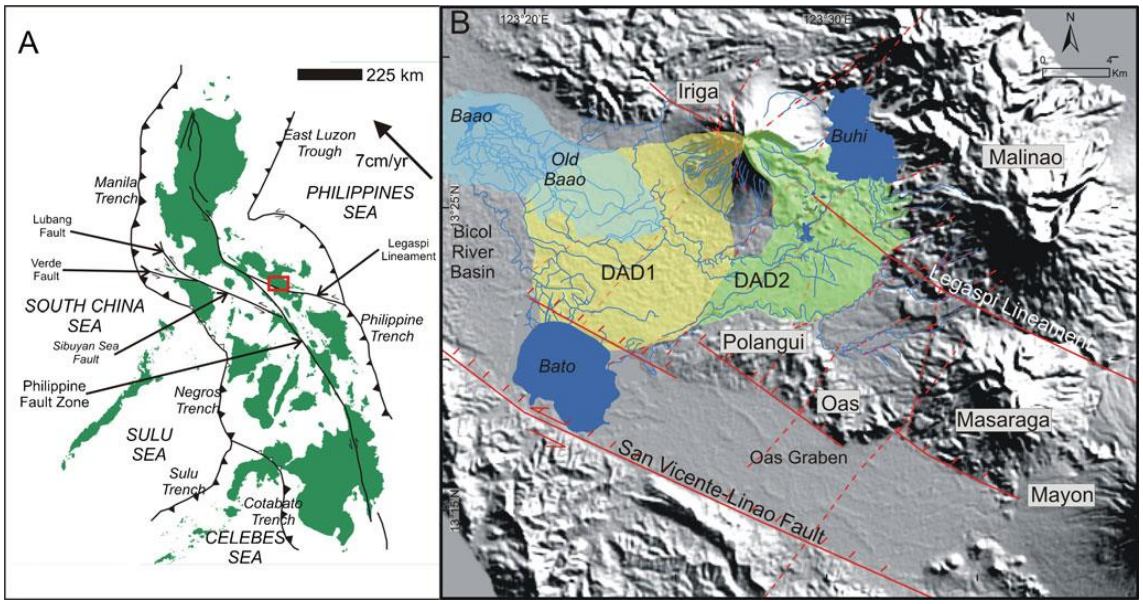
In addition to the eruption risk of Mayon Volcano, there is another risk of mass movement. According to DENR (2015)[1], the major tectonic features relevant to the BRB include the Philippine Trench and the Philippine Fault. The Philippine Trench corresponds to the offshore morphological expression of the subduction of the Philippine Sea Plate beneath the Philippine Arc. The trace of the trench is about 180 to 210 kilometers east of the easternmost edges of the BRB. Subduction along this structure correlates with the belt of volcanoes, which include Mt. Labo, Mt. Isarog, Mt. Iriga, Mt. Malinao and Mt. Mayon. The central section of the Philippine Fault and its splays passes near and through the BRB as shown in Figure H-5-5. From northeast to southwest, these splays include the San Miguel Fault, Legaspi Lineament and the San Vicente Linao Fault. It is said that spectacular collapse scar of Mt. Iriga was possibly created in 1628 AD by a 1.5-km^3 debris avalanche. The debris avalanche deposit (DAD) covered 70 km^2 and dammed the Barit River to form Lake Buhi. The collapse has been ascribed to a nonvolcanic trigger related to a major strike-slip fault under the volcano. Pauican et al. (2012)[4] identified a similar size, older DAD to the southwest of the edifice that originated from a sector oblique to the underlying strike-slip fault as illustrated in Figure H-5-6. Lagmay et al. (2005)[5] pointed that in volcanoes overlying faults, subsequent fault movement forms fractures that propagate through the volcanic edifice. This structural response leads to instability that may be followed eventually by gravitational failure. The authors then revealed the existence of fractures along its western and eastern flanks on Mayon's slope based on their field investigation. Pauican et al. (2012)[4] reported that Iriga can serve as a model for other volcanoes, such as Mayon, that stand in sedimentary basins undergoing transtensional strike-slip faulting. To sum it up, Mt. Mayon could potentially generate a slope failure like the past events of Mt. Iriga due to the fault's activity.

[4] E.M.R. Paguican et al., Bull Volcanol 74:2067–2081, 2012, "Volcano-tectonic controls and emplacement kinematics of the Iriga debris avalanches (Philippines)"
[5] A.M.F. Lagmay et al., Journal of Volcanology and Geothermal Research 144, 2005, "Structural setting of the Bicol Basin and kinematic analysis of fractures on Mayon Volcano, Philippines"



Source: A.M.F. Lagmay et al., Journal of Volcanology and Geothermal Research 144, 2005, "Structural setting of the Bicol Basin and kinematic analysis of fractures on Mayon Volcano, Philippines", p.23–36 Fig.4

Figure H-5-5 Map of the Central Segment of the Philippine Fault



Source: E.M.R. Paguican et al., Bull Volcanol 74:2067–2081, 2012, "Volcano-tectonic controls and emplacement kinematics of the Iriga debris avalanches (Philippines)", Fig.1

Figure H-5-6 Topographic Map of Mt. Iriga and Vicinity Showing DAD and Regional Faults

As mentioned above, such complicated situation makes it difficult to address the flood problems in the BRB and there is no apparent solution to the problems without extensive and large-scale structural measures including dredging works. Table H-4-4 shows past FRM plans for the BRB.

Table H-5-2 Past FRM Plans for the Bicol River Basin

No.	Project Name	Period	Type (Implementing Agency)
1	Survey for River Improvement and Dredging Project	1974	M/P (OTCA)
2	Nationwide Flood Control Plan and River Dredging Program	1982	M/P (MPW/OECF)
3	Flood Control Plan for the Bicol River Basin	1983	M/P (MPW)
4	Bicol River Basin Flood Control and Irrigation Development Project (FCIDP)	1989-92	F/S, D/D (DPWH/ADB)
5	The Basin Plan for the Water Resources Development and Management (BPWRDM)	2002-03	M/P (NEDA/WB)
6	Integrated Bicol River Basin Management and Development Master Plan (IMDMP)	2015	M/P (DENR)
7	The Proposed Flood Control Projects in Bicol River Basin	ongoing	F/S, D/D (DPWH)

OTCA: Overseas Technical Cooperation Agency, Japan/ MPW: Ministry of Public Works/ OECF: Overseas Economic Cooperation Fund of Japan (JBIC)/ DPWH: Department of Public Works and Highways/ NEDA: National Economic and Development Authority/ WB: World Bank/ DENR: Department of Environment and Natural Resources

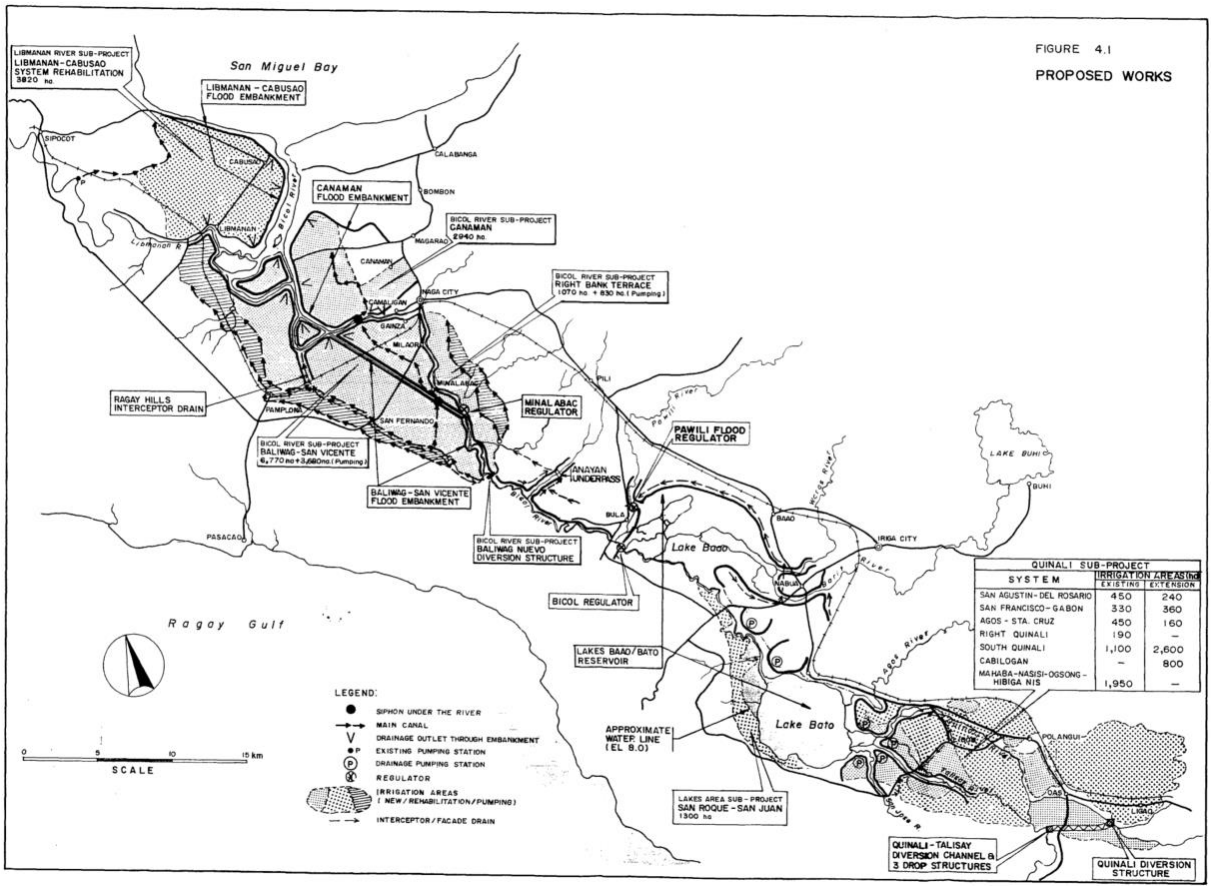
Source: JICA Survey Team

Proposed flood control structures by both FCIDP (1992) and BPWRDM (2003) focus on the development of the natural Lake Baao and Lake Bato for attenuation of floods as illustrated in Figure H-1-7 and Figure H-1-8. In particular, FCIDP proposed to utilize Lake Baao as much as possible to give it large space by enclosing the north side of the lake with new embankment. The dike alignment of the lake east side intends to also draw flood water from the Pawili River. This measure would have greatly reduced peak discharge in the downstream, on the other hand, its implementation required resettlement from around Lake Baao and large construction cost. Consequently, the measure was not realized. Likewise, FCIDP proposed the two major flood control structures: one is near Oas where the Quinali River will be diverted through a new channel to the Talisay River, and the other is at Minalabac where a closure embankment will control and protect the Naga reach of the river. FCIDP proposed a number of effective flood mitigation works aiming at protecting residential and irrigated land from 5-year flood, however, most of the proposed measures were not realized.

In contrast to FCIDP, BPWRDM recommended minimum flood mitigation works to protect build-up areas against 10-year flood and to left agricultural areas open and adapted to the flooding regime. Continuous dike system is only proposed for the upstream of Lake Bato and the downstream of the Bicol River. The rest sections are left as they are or protected by ring (partial) dikes. BPWRDM also proposed to utilize existing facilities, such as Lake Buhi regulator and local roads along rivers. Although some of the proposed measures in BPWRDM

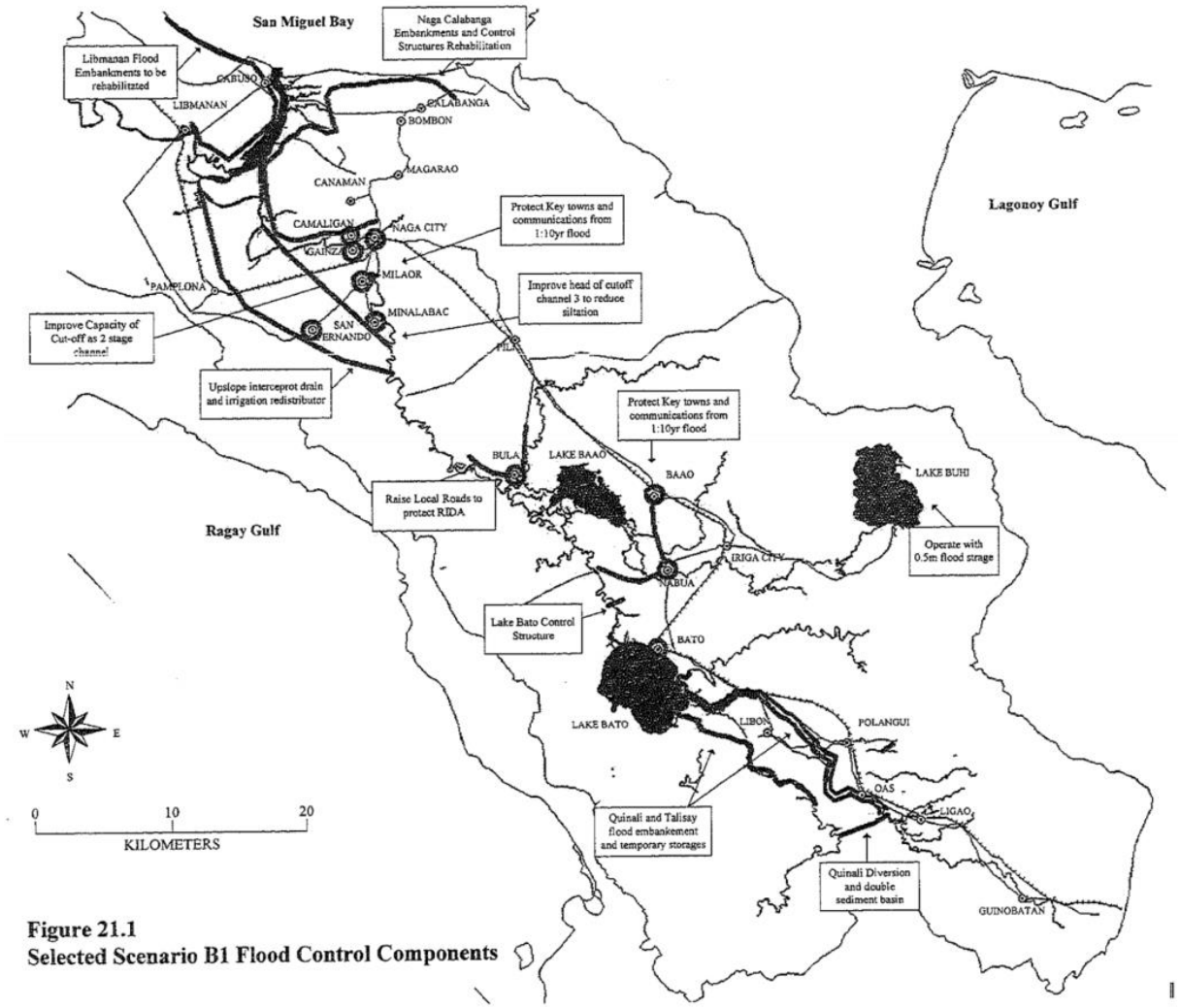
have not been realized, the plan is to a basis of succeeding FRM master plan and feasibility study.

Integrated Bicol River Basin Management and Development Master Plan (IMDMP) was formulated by DENR in 2015. This master plan is basically not for developing new flood control or water resources management strategies but for rationalizing and integrating existing all plans and projects within the watershed from the integrated water resources management point of view. On the other hand, this IMDMP newly identified the 12 possible sites for retarding basin as illustrated in Figure H-5-9. The proposed retarding basins for flood mitigation have not been developed based on general master-plan level study including hydrological and hydraulic analysis, cost benefit analysis and multi-criteria analysis, but they are further studied in the current feasibility study and detailed engineering design conducted by DPWH.



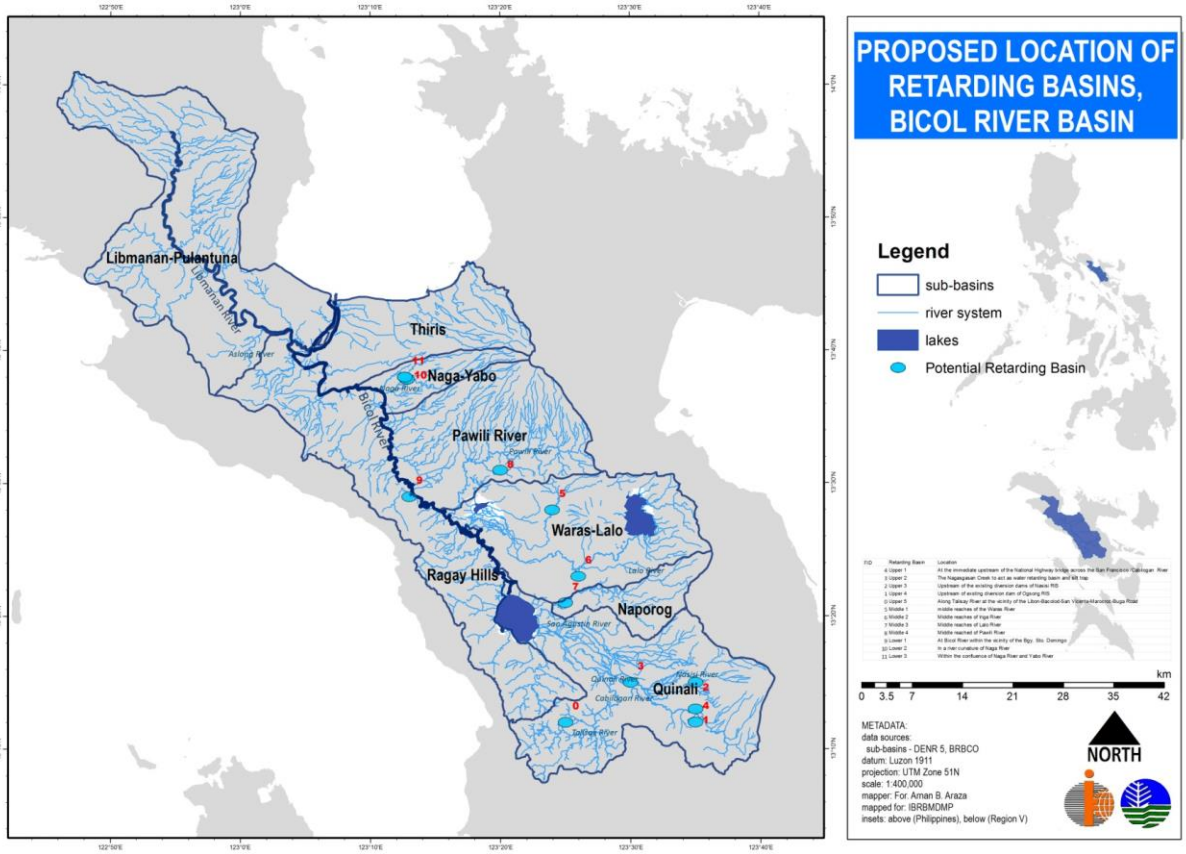
Source: ADB, Bicol River Basin Flood Control and Irrigation Development Project, 1992, Updated Feasibility Report

Figure H-5-7 Proposed Flood Control and Irrigation Development Projects by FCIDP



Source: WB, The Basin Plan for the Water Resources Development and Management, 2003, Vol.2 Main Report p.F54

Figure H-5-8 Proposed Flood Control Projects by BPWRDM



Source: DENR, Integrated Bicol River Basin Management and Development Master Plan, 2015, Vol.2 Main Report p.94

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ANNEX I

Environmental and Social Consideration

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ANNEX I-1 POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

I-1.1 Framework on Environment

I-1.1.1 Policy and Legal Framework on Environment

(1) General Policies

(a) The 1987 Constitution

The 1987 Constitution provides that the State shall protect and advance the right of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature. It further provides that the State shall protect and promote the right to health of the people and instill health consciousness among them.

(b) Presidential Decree No. 1151: Philippine Environmental Policy

Presidential Decree No. 1151 or the Philippine Environmental Policy declared that it was the continuing policy of the State (a) to create, develop, maintain and improve conditions under which man and nature can thrive in productive and enjoyable harmony with each other, (b) to fulfill the social, economic and other requirements of present and future generations of Filipinos, and (c) to insure the attainment of an environmental quality that is conducive to a life of dignity and well-being.

It directed all agencies and instrumentalities of the national government, including government-owned or controlled corporations, as well as private corporations and entities to prepare, file and include in every action, project or undertaking which significantly affects the quality of the environment a detail statement on (a) the environmental impact of the proposed action, project or undertaking; (b) any adverse environmental effect which cannot be avoided should the proposal be implemented; (c) alternative to the proposed action; (d) a determination that the short-term uses of the resources of the environment are consistent with the maintenance and enhancement of the long-term productivity of the same; and (e) whenever a proposal involve the use of depletable or non-renewable resources, a finding must be made that such use and commitment are warranted.

(c) Presidential Decree No. 1152: Philippine Environment Code

The Philippines Environment Code was issued to establish specific environment management policies and prescribe environment quality standards. The section on Water Quality Management was to prescribe management guidelines aimed to protect and improve the quality of Philippine water resources through a) classification of Philippine waters; b) establishment of water quality standards; c) protection and improvement of the quality of Philippine water resources, and d) responsibilities for surveillance and mitigation of pollution incidents.

The Philippine waters shall be classified according to their best usage. In classifying said waters, the following, among others, shall be taken into account: a) the existing quality of the body of water at the time of classification; b) the size, depth, surface area covered, volume, direction, rate of flow, gradient of stream; and c) the most beneficial uses of said bodies of water and lands bordering them for residential, agricultural, commercial, industrial, navigational, recreational, and aesthetic purposes.

Where the quality of water has deteriorated to a degree where its state will adversely affect its best usage, the government agencies concerned shall take such measures as may be necessary to upgrade the quality of such water to meet the prescribed water quality standards.

(2) Watershed Management

(a) Presidential Decree No.705: Revised Forestry Code, as amended

The Revised Forestry Code, as amended (Presidential Decree No.705, as amended) is the law that governs the management, utilization, protection, and rehabilitation of the country's forest lands, including watersheds and reservations. It defined several key terms related to watersheds including critical watershed which is defined as a drainage area of a river system supporting existing and proposed hydro-electric power, irrigation works or domestic water facilities needing immediate protection or rehabilitation. It also defined a watershed reservation as a forest land reservation established to protect or improve the conditions of the water yield thereof or reduce sedimentation.

The Code further provided that the President may establish within any lands of the public domain, forest reserve and forest reservation for the national park system, for preservation as critical watersheds, or for any other purpose, and modify boundaries of existing ones. Critical watersheds, national parks and established experimental forests shall not be subject to commercial logging or grazing operations.

(b) Republic Act No. 7586: NIPAS Act, as amended by Republic Act No. 11038 (E-NIPAS)

Republic Act No. 7586 established the National Integrated Protected Areas System or the NIPAS. Its amendment in 2018 led to the establishment of 94 additional protected areas, the strengthening of institutional arrangements for the management of protected areas as well as additional prohibited acts and increased penalties for violations of prohibited acts.

The System encompasses ecologically rich and unique areas and biologically important public lands that are habitats of rare and threatened species of plants and animals, biogeographic zones, and related ecosystems, whether terrestrial, wetland or marine which are designated as 'protected areas.'

All areas or islands in the Philippines proclaimed, designated, or set aside, pursuant to a law, presidential decree, presidential proclamation, or executive order as xxx watershed xxx identified before the effectivity of the Act or still to be identified, are designated as initial components of the System.

Protected area refers to identified portions of land and/or water set aside by reason of their unique physical and biological significance, managed to enhance biological diversity, and protected against destructive human exploitation.

(i) Management Plan

A management plan is to be formulated for each protected area that will as the basic long-term framework plan for the management of the protected area and guide in the preparation of its annual operations plan and budget. The plan Is to be harmonized with the Ancestral Domain Sustainable Development and Protection Plan (ADSDPP) required under RA 8371, the respective Comprehensive Land Use Plans (CLUPs) of local governments required under Local Government Code (RA 7160) and other local plans.

The NIPAS Act, as amended provides that proponent of development projects and activities with potentially significant adverse impacts as determined by the Environmental Management Bureau (EMB), whether or not these projects or activities are included in the management plan of the protected area are required to secure an Environmental Compliance Certificate (ECC) in accordance with the Philippine Environment Impact Statement (EIS) System. For development projects and activities that are not environmentally critical, an initial environmental examination (IEE) shall be undertaken instead of a full-blown EIA. The prior clearance from the Protected Area Management Board (PAMB) should be secured before any project or activity may be undertaken by any project proponent. The submission of the PAMB clearance, among others, is required before an ECC is issued to a project proponent.

(ii) Energy Resources

In case of exploration for energy resources, it may be allowed in protected areas only for the purpose of gathering data and information and only if such activity is carried out with the least damage to surrounding areas. Surveys for nonrenewable energy projects shall be conducted only in accordance with a program approved by the DENR, and the result of such surveys shall be made available to the public and submitted to the President who shall make the appropriate recommendations to Congress. The development and operation of nonrenewable energy projects are prohibited in areas categorized as strict nature reserves and natural parks.

In case of renewable energy projects, it may be allowed within the protected area by the PAMB with the concurrence of the DENR Secretary. Renewable energy projects, which shall be located outside the strict protection zones, are required to undergo the EIA as provided by law and are to adopt reduced impact technologies so as not to be detrimental to ecosystem functions, biodiversity, cultural practices and traditions.

(iii) Protected Area Management Board

There is a Protected Area Management Board (PAMB) in each protected area. The PAMB is a multi-sectoral body which oversees the management of the protected area. It approves the management plan of the protected area and ensures its harmonization and integration with other plans such as the ADSDPP, land use plan and other development plan and its implementation. It likewise approves policies, plans, and programs, proposals, agreements, and other related documents for the management of the protected area.

(iv) Facilities and Special Uses Within the Protected Area

The NIPAS Act, as amended required that an inventory of all existing facilities such as xxx water systems, transmission lines xxx, and irrigation facilities within the protected area be conducted and that the inventory of facilities with corresponding descriptions and an assessment report containing the appropriate recommendations be submitted to the DENR Secretary.

The PAMB, with the assistance of the DENR, may impose conditions for the continuous operation of a facility found to be detrimental to the protected area until its eventual relocation. If the conditions are violated, the owner of the facility shall be made liable pursuant to the provisions of the NIPAS Act, as amended. Existing facilities allowed to remain within the protected area shall be charged a reasonable fee by the PAMB based on existing guidelines.

Special uses may be allowed within protected areas except in strict protection zones and strict nature reserves. The PAMB may recommend the issuance of tenurial instrument subject to compliance to ECC and payment of corresponding user fee equivalent to five percent (5%) of the zonal value of commercial land within the nearest barangay or municipality where the project is located multiplied by the area of development plus one percent (1%) value of improvement as premium. The activity shall not be detrimental to ecosystem functions and biodiversity, and cultural practices and traditions.

Protected areas, or its portions, under the jurisdiction of government instrumentalities other than the DENR remains in the jurisdiction of said department or government instrumentality. The DENR shall retain its oversight function over such protected areas, and the concerned agency shall provide annual reports on the management of said areas focusing on the conservation of the biodiversity therein.

(c) Executive Order No. 224: Watersheds Managed by the National Power Corporation

The National Power Corporation has jurisdiction and control over watersheds surrounding the reservoir of plants and/or projects constructed or proposed to be constructed.

It currently manages eleven watershed areas with a total land area of 485,199 hectares through its Watershed Management Department. These watersheds, which support power generation, domestic

water supply and irrigation, are managed through rehabilitation, protection, and resources development.

It undertakes rehabilitation programs like reforestation and agroforestry and performs watershed protection through foot patrolling and law enforcement in partnership with the law enforcement agencies, local government units and stakeholders. These programs are funded through the Universal Charge-Environmental Charge as approved by the Energy Regulatory Commission.

(d) Republic Act No. 8371: Indigenous Peoples Rights Act (IPRA)

The Indigenous Peoples Rights Act is the law that recognizes, protects, and promotes the rights of indigenous cultural communities/indigenous peoples. The State recognizes the applicability of customary laws governing property rights or relations in determining the ownership and extent of ancestral domain.

(i) Ancestral Domains

Ancestral Domains refer to all areas generally belonging to ICCs/IPs comprising lands, inland waters, coastal areas, and natural resources therein, held under a claim of ownership, occupied or possessed by ICCs/IPs, by themselves or through their ancestors, communally or individually since time immemorial, continuously to the present except when interrupted by war, force majeure or displacement by force, deceit, stealth or as a consequence of government projects or any other voluntary dealings entered into by government and private individuals/corporations, and which are necessary to ensure their economic, social and cultural welfare. It shall include ancestral lands, forests, pasture, residential, agricultural, and other lands individually owned whether alienable and disposable or otherwise, hunting grounds, burial grounds, worship areas, bodies of water, mineral and other natural resources, and lands which may no longer be exclusively occupied by ICCs/IPs but from which they traditionally had access to for their subsistence and traditional activities, particularly the home ranges of ICCs/IPs who are still nomadic and/or shifting cultivators.

(ii) Rights of ICCs/Ips

Under the IPRA, the rights of ownership and possession of ICCs/IPs to their ancestral domains are recognized and protected. These rights shall include the Right of Ownership or the right to claim ownership over lands, bodies of water traditionally and actually occupied by ICCs/IPs, sacred places, traditional hunting and fishing grounds, and all improvements made by them at any time within the domains. It is also comprised of the Right to Develop Lands and Natural Resources which include the right to develop, control and use lands and territories traditionally occupied, owned, or used; to manage and conserve natural resources within the territories and uphold the responsibilities for future generations; to benefit and share the profits from allocation and utilization of the natural resources found therein; the right to negotiate the terms and conditions for the exploration of natural resources in the areas for the purpose of ensuring ecological, environmental protection and the conservation measures, pursuant to national and customary laws. It also includes the right to an informed and intelligent participation in the formulation and implementation of any project, government or private, that will affect or impact upon the ancestral domains and to receive just and fair compensation for any damages which they may sustain as a result of the project; and the right to effective measures by the government to prevent any interference with, alienation and encroachment upon these rights. These rights are subject to property rights within the ancestral domains already existing and/or vested upon effectivity of the Act.

The law also recognizes and protect the Right to Safe and Clean Air and Water. It provides that the ICCs/IPs shall have access to integrated systems for the management of their inland waters and air space.

(iii) Critical Watersheds and Ancestral Domains

The law further provides that ancestral domains or portions thereof, found to be necessary for xxx critical watersheds as determined by appropriate agencies with the full participation of the ICCs/IPs concerned shall be maintained, managed, and developed for such purpose. The ICCs/IPs concerned shall be given the responsibility to maintain, develop, protect, and conserve such areas with the full and effective assistance of government agencies. The ICCs/IPs may decide to transfer the responsibility over the areas and said decision must be made in writing. The transfer shall be temporary and will ultimately revert to the ICCs/IPs in accordance with a program for technology transfer. No ICCs/IPs shall be displaced or relocated for the purpose without the written consent of the specific persons authorized to give consent.

(iv) Concessions, Licenses, and other Agreements

With regards to the issuance, renewal or grant of any concession, license or entering into a production-sharing agreement, the law provides that all departments and other governmental agencies are strictly enjoined from doing the same without the prior certification from the NCIP that the area affected does not overlap with any ancestral domain. No certification shall be issued by the NCIP without the free and prior informed and written consent of ICCs/IPs concerned.

Further, no department, government agency or government-owned or -controlled corporation may issue new concession, license, lease, or production sharing agreement while there is a pending application for a CADT. The ICCs/IPs shall have the right to stop or suspend, in accordance with this Act, any project that has not satisfied the requirement of this consultation process.

(e) NCIP Administrative Order No. 3 Series of 2012 Revised Guidelines on Free and Prior Informed Consent and Related Processes

The Administrative Order provides for the requirements and processes for the exercise of the Free and Prior Informed Consent (FPIC) and the issuance of the Certificate of Precondition.

(3) Environmental Impact Assessment

(a) Presidential Decree No. 1586

The Philippine Environmental Impact Statement (EIS) System was established under Presidential Decree No. 1586. It was founded and based on the environmental impact statement required, under Presidential Decree No. 1151, of all agencies and instrumentalities of the national government, including government-owned or controlled corporations, as well as private corporations, firms, and entities, for every proposed project and undertaking which significantly affect the quality of the environment.

It provided that no person, partnership, or corporation shall undertake or operate any such declared environmentally critical project or area without first securing an Environmental Compliance Certificate (ECC).

(b) Proclamation No. 2146

Proclamation No. 2146 proclaimed and identified environmentally critical projects and environmental critical areas that are within the scope of the Environmental Impact Statement System. Major dams and major power plants (including hydroelectric and geothermal) are among the identified environmentally critical projects. Environmentally critical areas, include, among others, national parks, watershed reserves, wildlife preserves and sanctuaries; areas which are traditionally occupied by cultural communities or tribes; areas classified as prime agricultural lands; recharged areas of aquifers; water bodies characterized by one or any combination of the following conditions: a. tapped for domestic purposes; b. within the controlled and/or protected areas declared by appropriate authorities; c. which support wildlife and fishery activities.

(c) Administrative Order No. 42 (2002)

Administrative Order No. 42 (2002) authorized, in addition to the Secretary of the DENR, the Director and the Regional Directors of the Environmental Management Bureau to grant or deny the issuance of the Environmental Compliance Certificate (ECC).

(d) DENR Administrative Order No. 30, Series of 2003

To further rationalize and streamline the implementation of the Philippine Environmental Impact Statement (EIS) System, the DENR issued Department Administrative Order No. 30 series of 2003. It provided for the scope of the EIS system, the categories of projects under the EIS system, the requirements for securing an ECC or Certificate of Non-Coverage (CNC), the EIA process in relation to the project planning cycle and the EIS system procedures. It also provided for the monitoring of projects with ECCs, coordination with other government agencies and other organizations and fines, penalties, and sanctions.

(e) EMB Memorandum Circular No. 2014-05: Revised Guidelines for Coverage Screening and Standardized Requirements under the Philippine EIS System

EMB MC 2014-05 is the Revised Guidelines for Coverage Screening and Standardized Requirements under the Philippine EIS System. It is intended to provide clearer and updated technical definitions of ECAs and description of activities or undertakings that are projected to have significant impacts to the environment and therefore covered by the EIS System.

ECPs are categorized as Category A while Category B are projects that are not classified as Category A but are likewise deemed to significantly affect the quality of the environment. An ECC has to be secured for projects categorized as Category A and Category B.

- Category A – projects or undertakings which are classified as ECPs under Proclamation No. 2146 (1981), Proclamation No. 803 (1996), and other projects that may later be declared as such by the President. Proponents of these projects implemented after 1982 are required to secure an ECC.
- Category B - projects or undertakings that are not classified as ECP under Category A, but which are likewise deemed to significantly affect the quality of the environment by virtue of being located in Environmentally Critical Area (ECA), as declared under Proclamation 2146 and according to the parameters set forth in the guidelines. Proponents of these projects implemented from 1982 onwards are required to secure an ECC.
- Category C – projects or undertakings not falling under Category A or B which are intended to directly enhance the quality of the environment or directly address the existing environmental problems.
- Category D – projects or undertakings which are deemed unlikely to cause significant adverse impact on the quality of the environment according to the parameters set forth in the Screening Guidelines. These projects are not covered by the EIS System and are not required to secure an ECC.

The Screening stage is the stage where it is determined if a project is covered or not covered by the PEISS. If a project is covered, screening further determines what document type the project should be prepared to secure the needed approval, and what the rest of the requirements. The Revised Guidelines for Coverage Screening and Standardized Requirements under the Philippine EIS System (Annex A) provides for the following:

(f) Revised Procedural Manual DENR Administrative Order No. 30, Series of 2003

The Revised Procedural Manual (RPM) Department Administrative Order No. 30, Series of 2003, gives an overview of the Philippine EIS System (PEISS) and provides the basic policy and operating principles of the PEISS.

It defines an Environmental Impact Assessment (EIA) as a process and how it best serves as a planning and decision-making tool. The EIA Process is situated in relation to the project cycle, to other environmental laws and to other regulatory agencies/units who exercise their own mandates over the project proposal. The RPM also provides for the Procedural Requirements of the EIA Process and describes the detailed steps and requirements per stage of the EIA process, which include Screening, Scoping, Conduct of EIA Study and Report Preparation, EIA Report Review and Evaluation, Decision Making, and Monitoring, Validation and Evaluation/Audit.

The RPM defined the Environmental Impact Assessment (EIA) as a "process that involves predicting and evaluating the likely impacts of a project (including cumulative impacts) on the environment during construction, commissioning, operation and abandonment. It also includes designing appropriate preventive, mitigating and enhancement measures addressing these consequences to protect the environment and the community's welfare". As a basic principle, EIA is used to enhance planning and guide decision-making. In the Manual, the EIA is primarily presented in the context of a requirement to integrate environmental concerns in the planning process of projects at the feasibility stage. Through the EIA Process, adverse environmental impacts of proposed actions are considerably reduced through a reiterative review process of project siting, design and other alternatives, and the subsequent formulation of environmental management and monitoring plans.

It is stated in the RPM that it is inherent upon the EIA Process to undertake a comprehensive and integrated approach in the review and evaluation of environment-related concerns of government agencies (GAs), local government units (LGUs) and the general public. The subsequent EIA findings shall provide guidance and recommendations to these entities as a basis for their decision-making process.

The Summary Flowchart of the EIA Process is also provided in the RPM. The flowchart indicates which stages are project proponent driven, DENR-EMB driven, proponent-driven but outside the EIA process as requirements are under the mandate of other entities and public involvement.

(g) Other Issuances

EMB MC 2011-02 clarified that renewable energy projects listed under Group 2, Annex -2-1b of the revised procedural manual shall apply to all renewable energy resources defined under Section 4 (uu) of the Renewable Energy Act (RA 9513) – which include, among others, biomass, solar, wind, geothermal, ocean energy, and hydropower conforming with internationally accepted norms and standards on dams, and other emerging renewable energy technologies.

MC 10-2002 Clarification to DENR MC 2010-14 and other EIS policies (issued on September 1, 2010) – for projects with high impact due to the geohazard status of the proposed location (i.e., housing project on critical slopes, high rise buildings, dams, etc.) the EIA study shall include the identification of the geohazards in the area.

I-1.1.2 Administrative Framework on Environment

(1) General Administrative Framework on Environment

Table I-1.1 Summary of Mandates and Functions of Environment-related Government Agencies/Bodies

Agency	Mandate/Functions
DENR	- primary government agency responsible for the conservation, management, development and proper use of the environment and natural resources of the country. - regional offices
FMB	- recommend policies and/or programs for the effective protection, development, occupancy, management and conservation of forest lands and watersheds, reforestation and rehabilitation of critically denuded/degraded forest reservations, improvement of water resource use.

Agency	Mandate/Functions
	- advise the regional offices in the implementation of these policies and/or programs and develops plans, programs, operating standards, and administrative measures to promote the Bureau's objectives and functions. - assist in the monitoring and evaluation of forestry and watershed development projects to ensure efficiency and effectiveness.
BMB	- formulate and recommend policies, guidelines, rules and regulations for the establishment and management of an Integrated Protected Areas System - assist in the monitoring and assessment of the management of the Integrated Protected Areas System - provide technical assistance to the regional Offices in the implementation of programs for these areas.
EMB	- recommend possible legislations, policies and programs for environmental management and pollution control. - formulate environmental quality standards such as the quality standards for water, air, land, noise, and radiations. - recommend rules and regulations for environmental impact assessments and provides technical assistance for their implementation and monitoring. - formulate rules and regulations for the proper disposition of solid wastes, toxic and hazardous substances
NCIP	- primary government agency responsible for the formulation and implementation of policies, plans and programs to promote and protect the rights and well-being of the ICCs/IPs and the recognition of their ancestral domains as well as the rights thereto - issue appropriate certification as a pre-condition to the grant of permit, lease, grant, or any other similar authority for the disposition, utilization, management, and appropriation thereof or any part or portion of the ancestral domain taking into consideration the consensus approval of the ICCs/IPs concerned
NPC	- government-owned-and-controlled corporation mandated to undertake the development of hydroelectric generation of power - manage 11 watersheds, which support power generation, domestic water supply and irrigation through rehabilitation, protection, and resources development
DPWH	- Preparation of the national program on sewerage and septage management in coordination with the DENR, LGUs and other concerned agencies
DOH	- responsible for the promulgation, revision, and enforcement of drinking water quality standards
DILG	- Establish and prescribe rules, regulations and other issuances implementing laws on public order and safety; - general supervision over local governments and the promotion of local autonomy and community empowerment and monitor compliance thereof - program operations manual for the National Sewerage and Septage Management Program (NSSMP), DILG is tasked to assists in the - dissemination of information and capacity building of HUCs/LGUs in the country concerning NSSMP as well as to facilitate LGU compliance
LGUs	- share the responsibility in the management and - improvement of water quality within their territorial jurisdictions (see RA 9275 or Clean Water Act)
Barangay	- enforce laws and regulations relating to pollution control and protection of the environment
Municipality	- Mayor - enforce all laws and ordinances relative to the governance of the municipality, implement all approved policies, programs, projects, services and activities of the municipality, issue executive orders as are necessary for the proper enforcement and execution of laws and ordinances including the adoption of adequate measures to safeguard and conserve land, mineral, marine, forest, and other resources of the municipality - Sangguniang Bayan - approve ordinances and pass resolutions necessary for an efficient and effective municipal government, and in this connection shall (among others): Protect the environment and impose appropriate penalties for acts which endanger the environment, such as illegal logging and

Agency	Mandate/Functions
	smuggling of logs, slash and burn farming, and such other activities which result in pollution, acceleration of eutrophication of rivers and lakes, or of ecological imbalance; - provide for the establishment, maintenance, protection, and conservation of communal forests and water sheds, tree parks, greenbelts, mangroves, and other similar forest development projects.
City	- Mayor - enforce all laws and ordinances relative to the governance of the city and implement all approved policies, programs, projects, services, and activities of the city and shall (among others) adopt adequate measures to safeguard and conserve land, mineral, marine, forest, and other resources of the city - Sangguniang Panglungsod - enact ordinances, approve resolutions and appropriate funds for the general welfare of the city and its inhabitants and approve ordinances and pass resolutions necessary for an efficient and effective city government, and in this connection, shall (among others) protect the environment and impose appropriate penalties for acts which endanger the environment such as illegal logging and smuggling of logs, slash and burn farming, and such other activities which result in pollution, acceleration of eutrophication of rivers and lakes, or of ecological imbalance; - adopt a comprehensive land use plan for the city and reclassify land within the jurisdiction of the city, subject to the pertinent provisions of the Code; enact integrated zoning ordinances in consonance with the approved comprehensive land use plan, subject to existing laws, rules, and regulations. - approve ordinances which shall ensure the efficient and effective delivery of the basic services and facilities as provided for under Section 17 of the Code, - provide for the establishment, maintenance, protection, and conservation of communal forests and water sheds, tree parks, greenbelts, mangroves, and other similar forest development projects
Province	- Governor - Enforce all laws and ordinances relative to the governance of the province; implement all approved policies, programs, projects, services, and activities of the province; adopt adequate measures to safeguard and conserve land, mineral, marine, forest and other resources of the province, in coordination with the mayors of component cities and municipalities. - Sangguniang Panglalawigan - enact ordinances, approve resolutions, and appropriate funds for the general welfare of the province and its inhabitants; and shall (among others) protect the environment and impose appropriate penalties for acts which endanger the environment, such as illegal logging and smuggling of logs, slash and burn farming, and such other activities which result in pollution, acceleration of eutrophication of rivers and lakes, or of ecological imbalance - review the comprehensive land use plans and zoning ordinances of component cities and municipalities and adopt a comprehensive provincial land use plan - approve ordinances which shall ensure the efficient and effective delivery of the basic services and facilities as provided for under Section 17 and in addition to said services and facilities, adopt measures and safeguards against pollution and for the preservation of the natural ecosystem in the province, in consonance with approved standards on human settlements and environmental sanitation and facilitate or provide for the establishment and maintenance of a waterworks system or district waterworks for supplying water to inhabitants of component cities and municipalities, subject to applicable laws

Source: JICA Survey Team

(2) Organization Structure and Responsibility for the EIA

The Revised Procedural Manual for DAO 2003-30 discusses the EIA process in relation to the requirements of other government agencies and local government units. The EIA Process undertakes a comprehensive and integrated approach in the review and evaluation of environment-related concerns of government agencies (GAs), local government units (LGUs) and the general public. The subsequent EIA findings provide guidance and recommendations to these entities as a basis for their decision-making process.

a) An Inter-agency MOA on EIS Streamlining was entered into in 1992 by 29 government agencies wherein ECC of covered projects was agreed to be a pre-requisite of all other subsequent government approvals;

b) DENR Memo Circular No. 2007-08 issued on 13 July 2007 reiterates in effect the intent of the MOA and reinforces the role of the ECC/CNC as a guidance document to other agencies and LGUs, as follows:

   i) "No permits and/or clearances issued by other National Government Agencies and Local Government Units shall be required in the processing of ECC or CNC applications.

   ii) The findings and recommendations of the EIA shall be transmitted to relevant government agencies for them to integrate in their decision making prior to the issuance of clearances, permits and licenses under their mandates.

   iii) The issuance of an ECC or CNC for a project under the EIS System does not exempt the Proponent from securing other government permits and clearances as required by other laws. The current practice of requiring various permits, clearances and licenses only constrains the EIA evaluation process and negates the purpose and function of the EIA."

c) "Permits, licenses and clearances" are inclusive of other national and local government approvals such as endorsements, resolutions, certifications, plans and programs, which have to be cleared/approved or other government documents required within the respective mandates and jurisdiction of these agencies/LGUs.

d) Issues outside the DENR-EMB purview shall be considered and evaluated within the EIA review process but resolution shall be within the responsibility of the GA or the LGU.

The Revised Procedural Manual for DAO 2003-30 states that the final decision whether a project will be implemented or not lies either with the LGUs who have spatial jurisdiction over the project or with the lead government agency who has sectoral mandate to promote the government program where the project belongs, e.g., DOE for energy projects; DENR-MGB for mining projects

The EIA Process has six (6) sequential stages – Screening, Scoping, EIA Study and Report Preparation, EIA Review and Evaluation, Decision Making, and Post-ECC Monitoring, Validation and Evaluation/Audit stage. (See section on environment policies and legal for additional details on the EIA). Below is the summary of the roles and responsibilities of agencies, entities, local government units and other bodies and stakeholders in the EIA process:

Table I-1.2 Summary of the Roles and Responsibilities of Stakeholders in the EIA Process

Stakeholder	Roles and Responsibilities	Remarks
Project Proponent	- Screening, Scoping, EIA Study and Report Preparation	- These three stages are all proponent-driven.
Environmental Management Bureau (Central Office)	- Processes the ECC applications for Category A - Environmentally Critical Projects (ECPs) - EMB Director/DENR Secretary grants or deny the ECC application	- Once ECC/CNC is issued, the EIA recommendations are transmitted to the concerned GAs and LGUs to be considered in their decision-making process.
EMB Regional Office (in the region where the project is located)	- Processes the ECC applications for Category B, Category C and Category D projects	- Once ECC/CNC is issued, the EIA recommendations are transmitted to the concerned GAs and LGUs to be considered in their decision-making process.
NWRB	- Processes and issues permit for water permits - Participate in the public scoping - Participate in the public hearing and consultation - Consider the EIA recommendations in the decision-making process for the project	- ECC (for projects considered as Environmentally Critical Projects or projects located in Environmentally Critical Areas) or CNC from DENR -Regional Office -part of the requirements for

Stakeholder	Roles and Responsibilities	Remarks
		issuance of the water permits. (See Amended IRR of the Water Code)
Local Government Unit where the project is located	- Attend/ participate in the Information, Education and Communication (IEC) conducted by proponent; assist in identification of stakeholders - Participate in the public scoping. - Participate in public hearings or public consultations - Membership and participation in the Multi-partite Monitoring Team (MMT) - Consider the EIA recommendations in the decision-making process (issuance of permit/clearance, etc.) for the project	- Proponent to conduct IEC of LGUs. The IEC serves as a basis for preliminary identification of stakeholders and related issues in preparation for the Scoping proper - Note the requirements of Section 26 and Section 27 of the Local Government Code on the conduct of public consultations
Host Communities/Other Stakeholders	- Participate in the public scoping - Included in the conduct of the EIA Study and may serve as local expert sources, aides/guides and resource persons in primary data collection or as interviewers/ interviewees in the socio-economic/perception surveys which shall be used as the basis for the subsequent formulation of social development plans, IEC, monitoring plans and other - components of the environmental management plans. - Participate in public hearings or public consultations - Membership and participation in the Multi-partite Monitoring Team (MMT)	- Prior to the conduct of the Public Hearings or Public Consultations, Proponent is required to give copies of the full EIA Report to the EMB RO and host municipalities; copies of Executive Summary to the host barangays; and copies of Project Fact Sheets to other stakeholders for a well-informed participation in the hearing/consultation process.
DPWH	- Issues permits for Construction of dams, bridges, and other structures in navigable or floatable waterways; Cultivation of riverbeds, sand bars and tidal flats upon clearance from DENR; Construction of private levees, revetments and other flood control and river training works; and Restoration of river courses to former beds (see Section 32, Amended IRR of Water Code) - Participate in the public scoping - Participate in the public hearing and consultation - Consider the EIA recommendations in the decision-making process for the project	
DOE	- Processes and issues service contract (dam projects/hydropower projects) - see DO 002013-01-0011 Adopting Policies in Relation to Processing of Renewable Energy Service Contracts and Mandating the Adoption of Revised Templates for RESC - Participate in the public scoping - Participate in the public hearing and consultation - Consider the EIA recommendations in the decision-making process for the project	
NCIP	- Processing and issuance of Certificate Precondition for projects within ancestral domains of IPs/ICCs - Participate in the public scoping - Participate in the public hearing and consultation - Consider the EIA recommendations in the decision-making process for the project	- See NCIP AO No. 3 series of 2012 or the Revised Guidelines on the Exercise of FPIC and Related Processes
IP/ICCs	- Granting of Free and Prior Informed Consent (FPIC) for projects within their ancestral domains - Participate in the public scoping	- See NCIP AO No. 3 series of 2012 or the Revised Guidelines on the Exercise of FPIC and Related Processes

Stakeholder	Roles and Responsibilities	Remarks
	- Included in the conduct of the EIA Study and may serve as local expert sources, aides/guides and resource persons in primary data collection or as interviewers/ interviewees in the socio-economic/perception surveys which shall be used as the basis for the subsequent formulation of social development plans, IEC, monitoring plans and other components of the environmental management plans; - Participate in public hearings or public consultations; - Consider the EIA recommendations in the decision-making process for the project - Membership and participation in the Multi-partite Monitoring Team (MMT)	- Prior to the conduct of the Public Hearings or Public Consultations, Proponent is required to give copies of the full EIA Report to the EMB RO and host municipalities; copies of Executive Summary to the host barangays; and copies of Project Fact Sheets to other stakeholders for a well-informed participation in the hearing/consultation process.
PAMB/PAMO	- Issues PAMB Clearance for projects located within protected area - Participate in the public scoping - Participate in the public hearing and consultation - Membership and participation in the Multi-partite Monitoring Team (MMT)	- PAMB clearance required before issuance of ECC (see Sec. 12, RA No. 7586 as amended by RA No. 11038)
NIA	- Participate in the public scoping - Participate in the public hearing and consultation - Consider the EIA recommendations in the decision-making process for the project	
LWUA	- Participate in the public scoping - Participate in the public hearing and consultation - Consider the EIA recommendations in the decision-making process for the project	
NPC	- Issues Land Use Permit for geothermal, hydroelectric, renewable energy development/operation in reservations subject to its complete control and jurisdiction and areas and reservations being managed by virtue of MOA with other government agencies. (See NPC Circular No. 2011-010)	

Source: JICA Survey Team

I-1.2 Framework on Social

I-1.2.1 Policy and Legal Framework on Social

(1) The 1987 Constitution

The 1987 Constitution states the basic policy for land acquisition and involuntary resettlement. Article II, Section 10 of the 1987 Constitution provides that the State shall promote social justice in all phases of development. It also provides that private property shall not be taken for public use without just compensation.

It further provides that the State shall, by law, and for the common good, undertake, in cooperation with the private sector, a continuing program of urban land reform and housing which will make available at affordable cost, decent housing and basic services to under-privileged and homeless citizens in urban centers and resettlement areas. No resettlement of urban or rural dwellers shall be undertaken without adequate consultation with them and the communities where they are to be relocated.

(2) Republic Act No. 7160 (1991): Local Government Code of 1991

Under the Local Government Code, a local government unit may exercise the power of eminent domain for public use, or purpose or welfare for the benefit of the poor and the landless, upon payment of just compensation.

A city or municipality may, through an ordinance authorize the reclassification of agricultural lands and provide for the manner of their utilization in accordance with the requirements and qualifications of the Local Government Code and other laws, rules, and regulations.

The local government units shall continue to prepare their respective comprehensive land use plans enacted through zoning ordinances which shall be the primary and dominant bases for the future use of land resources in conformity with existing laws.

For a province, among the basic services and facilities it is tasked to provide are programs and projects for low-cost housing and other mass dwellings, except those funded by the Social Security System (SSS), Government Service Insurance System p. 172 (GSIS), and the Home Development Mutual Fund (HDMF).

(3) Republic Act No. 7279 (1992): Urban Development and Housing Act (UDHA) of 1992

The law states the policy of the State to undertake, in cooperation with the private sector, a comprehensive and continuing Urban Development and Housing Program. The Program cover all lands in urban and urbanizable areas, including existing areas for priority development sites, and in other areas that may be identified by the local government units as suitable for socialized housing. Exempt from the coverage of the act are lands used or set aside for parks, reserves for flora and fauna, forests and watersheds, and other areas necessary to maintain ecological balance or environmental protection, as determined and certified to by the proper government agency.

The law provides for the modes of acquisition of lands which include, among others, community mortgage, land swapping, land assembly or consolidation, land banking, donation to the Government, joint-venture agreement, negotiated purchase, and expropriation.

The LGUs are charged with the implementation of the Act in their respective localities, in coordination with the housing agencies, other government agencies, the private sector and other nongovernment organizations. A comprehensive land use plan for their respective localities shall be prepared in accordance with the provisions of the Act

The Act also outlines the legal basis for eviction and demolition for the government infrastructure projects. It mandates the local government units to relocate and resettle people living along danger areas (i.e., riverbanks, shorelines, and waterways) in coordination with National Housing Authority (NHA) which will provide relocation sites with sufficient basic services and facilities for the affected families.

The guidelines cover the provision of basic services & facilities in resettlement sites, livelihood support, meaningful participation & adequate social preparation for the affected households, close coordination between sending & host LGUs, grievance redress and related aspects.

(4) Republic Act No. 10752: The Right of Way Act

The law declared the State policy of ensuring that owners of real property acquired for national government infrastructure projects are promptly paid just compensation for the expeditious acquisition of the required right-of-way for the projects.

The term “national government projects” refer to all national government infrastructure projects and its public service facilities, engineering works and service contracts, including projects undertaken by government-owned and -controlled corporations, all projects covered by Republic Act No. 6957, as amended by Republic Act No. 7718 and other related and necessary activities, such as site acquisition, supply or installation of equipment and materials, implementation, construction,

completion, operation, maintenance, improvement, repair and rehabilitation, regardless of the source of funding.

The IRR of the Right of Way Act further defined national government projects to include the following: Irrigation, flood control and drainage systems; Water and debris retention structures and dams; Water supply, sanitation, sewerage, and waste management facilities); Other similar or related infrastructure works and services of the national government.

The government may acquire real property needed as right-of-way site or location for any national government infrastructure project through donation, negotiated sale, expropriation, or any other mode of acquisition as provided by law.

The Act also provided rules and guidelines on negotiated sale, expropriation proceedings and relocation of informal settlers. The Act also emphasized that in cases involving the acquisition of right-of-way site or location for any national government infrastructure project, the implementing agency shall take into account the ecological and environmental impact of the project. Before any national government project could be undertaken, the implementing agency shall consider environmental laws, land-use ordinances, and all pertinent provisions of Republic Act No. 7160.

The government, through concerned agencies, in coordination with the LGUs and implementing agencies concerned, shall establish and develop resettlement sites for informal settlers, including the provision of adequate basic services and community facilities, in anticipation of informal settlers that have to be removed from the right-of-way site or location of future infrastructure projects, pursuant to the provisions of Republic Act No. 7279. Whenever applicable, the concerned LGUs shall provide and administer the resettlement sites.

In case the expropriated land is occupied by informal settlers who refuse or are unable to demolish their structures and other improvements therein despite the writ of possession issued by the court under Section 6 the law, the court shall issue the necessary writ of demolition for the purpose of dismantling any and all structures found within the subject property. The implementing agency shall take into account and observe diligently the procedure provided for in Sections 28 and 29 of Republic Act No. 7279.

(5) Implementing Rules and Regulations of Republic Act No. 10752

The Implementing Rules and Regulations of Republic Act No. 10752 cover the acquisition of real properties needed as right-of-way, site or location for national government projects undertaken by any department, bureau, office, commission, authority, or agency of the national government, including any government-owned or controlled corporation or state college or university, authorized by law or its respective charter to undertake national government projects.

It provided the detailed guidelines on the different modes of acquisition of real properties needed as right-of-way, site or location of national government projects.

The IRR directed the implementing agencies to prepare and implement their own Manual of Procedure for RPW Acquisition (Manual) to provide clear, specific, and operational guidelines for the efficient acquisition of ROW for their infrastructure projects.

(6) Executive Order No. 1035 (1985): Procedures and Guidelines for the Expeditious Acquisition by the Government of Private Real Properties or Rights thereon for Infrastructure and Other Government Development Projects

The Executive Order provides for the procedures and guidelines for the expeditious acquisition of properties and rights by the government for infrastructure and other government projects.

(7) Executive Order No. 132

Provides for the procedures to be followed in the Acquisition of Private Property for Public Use and Creating Appraisal Committee. The membership of the Appraisal Committee provided in this EO was reconstituted under Executive Order No. 369 (1989)

(8) Republic Act No. 6389: Code of Agrarian Reforms

Republic Act No. 6389 amends Republic Act No. 3844 or the Agricultural Land Reform Code. It provides that agricultural lessee are entitled to disturbance compensation equivalent to five times the average of the gross harvests on the landholding during the last five preceding calendar years.

(9) Commonwealth Act No. 141: The Public Land Act (1936)

The Public Land Act provides for the classification & means of administration, expropriation, and disposition of alienable lands of the public domain. Under Section 112, lands awarded under the Act are subject to a right-of-way not exceeding sixty (60) meters in width for, among others, irrigation ditches, aqueducts, and similar works as the Government or any public or quasi-public service or enterprise, may reasonably require for carrying on their business, with damages for the improvements only.

(10) Presidential Decree No. 1067: The Water Code of the Philippines

The Water Code empowers NWRB and other agencies authorized to enforce the Code to enter upon private lands, with previous notice to the owner, for the purpose of conducting surveys and hydrologic investigations, and to perform such other acts as are necessary in carrying out their functions including the power to exercise the right of eminent domain.

(11) Republic Act No. 7835: Comprehensive & Integrated Shelter Financing Act of 1994

The law seeks to ensure continuous funding support to implement the government's programs for urban and rural housing, resettlement, the development of sites and services and renewal of areas. It provides for the intensified implementation of the vital components of the National Shelter Program requiring government budgetary assistance as the Resettlement Program.

The program involves land acquisition and site development by the National Housing Authority to generate serviced home lots for families displaced from sites earmarked for government infrastructure projects, those occupying danger areas such as water ways, esteros, railroad tracks and those qualified for relocation and resettlement assistance under Republic Act No. 7279.

(12) Republic Act No. 8371: Indigenous Peoples Rights Act

The Indigenous Peoples Rights Act is the law that recognizes, protects, and promotes the rights of indigenous cultural communities/indigenous peoples. The State recognizes the applicability of customary laws governing property rights or relations in determining the ownership and extent of ancestral domain.

No ICCs/IPs shall be displaced or relocated without their free and prior informed consent. The IPRA and the NCIP Administrative Order No. 3 series of 2012 or the Revised Guidelines on Free and Prior Informed Consent and Related Processes serve as guide in addressing issues related to the ICCs/IPs.

(13) Republic Act No. 9285: Alternative Dispute Resolution Act of 2004

The law institutionalizes the use of Alternative Dispute Resolution (ADR) systems and promotes the alternative mechanisms to resolve disputes outside of judicial litigation. The ADR system adopts such measures as mediation, conciliation, arbitration, or any combination of it to achieve speedy and efficient means of resolving cases pending before all courts.

(14) Republic Act No. 7192: Women in Development and Nation Building Act

The State recognizes the role of women in nation building and shall ensure the fundamental equality before the law of women and men. It declared the policy that the State shall provide women rights and opportunities equal to that of men. To attain the foregoing policy, the law provided, among others that: A substantial portion of official development assistance funds received from foreign governments and multilateral agencies and organizations shall be set aside and utilized by the

agencies concerned to support programs and activities for women; and All government departments shall ensure that women benefit equally and participate directly in the development programs and projects of said department, specifically those funded under official foreign development assistance, to ensure the full participation and involvement of women in the development process.

(15) Republic Act No. 9710: Magna Carta of Women

The State shall promote the empowerment of women and pursue equal opportunities for women and men and ensure equal access to resources and to development results and outcome. It shall endeavor to develop plans, policies, programs, measures, and mechanisms to address discrimination and inequality in the economic, political, social, and cultural life of women and men.

Women in marginalized sectors are guaranteed all civil, political, social, and economic rights recognized, promoted, and protected under existing laws including, but not limited to, the Indigenous Peoples Rights Act, the Urban Development and Housing Act, the Comprehensive Agrarian Reform Law and the Social Reform and Poverty Alleviation Act.

It further provides that the State develop housing programs for women that are localized, simple, accessible, with potable water, and electricity, secure, with viable employment opportunities and affordable amortization. Women should be consulted and be involved in community planning and development, especially in matters pertaining to land use, zoning, and relocation.

(16) Harmonized Gender and Development Guidelines for Project Development, Implementation, Monitoring and Evaluation (2nd Edition, Third Printing, December 2010)

The harmonized GAD guidelines seek to promote the twin goals of gender equality and women's empowerment. The guidelines aim to provide NEDA, ODA donors, Philippine government agencies, and development practitioners with a common set of analytical concepts and tools for integrating gender concerns into development programs and projects and help achieve gender equality in, and empower women through, projects and programs.

The GAD guidelines are designed for the use of those involved in developing, implementing, managing, and monitoring and evaluating development programs and projects in the Philippines. The guidelines are expected to assist government agencies and local government units (LGUs) not just in designing but also in implementing, managing, and monitoring and evaluating development interventions. The guidelines are likewise useful to ODA donors and their consultants for developing, managing, and monitoring and evaluating projects.

(17) DPWH Regulations and Issuances

DO No. 37 s. 2021 (May 6, 2021) Clarifying Department Order No. 110, Series of 2019 Particularly in Entering Compromise Agreement, Filing an Appeal, Motion for Reconsideration, Petition for Certiorari, or Other Legal Remedies in Court Case involving DPWH Right-of Way Acquisition

DO 152 s. 2017 Reissuance of Department Order No. 124, s. 2017, Directing the Use of the DPWH Right-of-Way Acquisition Manual by All Concerned. The Order directed the use and observance of the provisions of the updated DPWH ROW Acquisition Manual (DRAM), dated December 08,2017. The Order superseded Department Order No. 124, series of 2017. The DRAM has the following objectives:

a) To provide a working guide of the DPWH on the rules, procedures, and formats to be used by its different offices involved in ROW acquisition – namely, the Implementing Offices (IOs) which include the Unified Project Management Office (UPMO) Clusters and the Public-Private Partnership Service (PPPS) in the Central Office, Regional Offices (ROs), and District Engineering Offices (DEOs); and the support offices, including the Unified PMO ROW Task Force (URTF), Legal Service (LS), Planning Service (PS), Financial Service (FS), and Bureau of Design (BOD) in the CO, and their counterpart offices at the ROs and DEOs.

b) To serve as reference for property owners and PAPs on the rules and processes in ROW acquisition, including their basic rights and obligations.

c) To guide other concerned government entities – including the Office of the Solicitor General (OSG), Department of Justice (DOJ), Bureau of Internal Revenue (BIR), Department of Finance (DOF), key Housing Agencies, Department of Environment and Natural Resources (DENR), Department of Agrarian Reform (DAR), Department of Agriculture (DA), Department of National Defense (DND), Registers of Deeds, Local Government Units (LGUs), Courts, and Commission on Audit (COA), among others – and Official Development Assistance (ODA) Agencies - on ROW aspects that entail their active participation.

d) To provide reference for concerned Government Financial Institutions (GFIs) and Independent Property Appraisers (IPAs) in undertaking the appraisal of property needed for ROW.

The DRAM covers the entire ROW acquisition process – including (a) Project Feasibility Study with Environmental Impact Assessment and preparation of Preliminary ROW Action Plan (RAP) with property appraisal, (b) inclusion of the Project in the Medium-Term Infrastructure Program, (d) provision of appropriations in the General Appropriations Act (GAA), (e) Fund Release, (g) Detailed Engineering Design (DED) including Parcellary Surveys and preparation of Final RAP, (h) RAP Validation, (i) Actual ROW Acquisition through Donation, Negotiation, Expropriation, and Other Modes, (j) Payments, (k) Transfer of Title to the Republic, (l) Clearance of ROW, and (m) Management of ROW.

DO 124 s. 2017 (October 9, 2017) Directing the Use of the DPWH Right of Way Acquisition Manual. All concerned officials and offices of the Department were directed to use the DPWH ROW Acquisition Manual (DRAM), dated 12 September 2017. The Order superseded the Infrastructure ROW Procedural Manual, dated 01 April 2003, and Annex K, pages 45-53 (pertaining to ROW Payments) of Department Order No.70, series of 2017, and took effect on 15 November 2017.

The DRAM was issued to provide a clear, uniform, and user-friendly guide on the rules and procedures for the acquisition by the DPWH of right-of-way (ROW) for its infrastructure projects, in accordance with the provisions of Republic Act No. 10752 (ROW Act) and its Implementing Rules and Regulations to achieve a more effective and expeditious implementation of the projects.

The DRAM describes the step-by-step procedures of all the activities related to the acquisition and management of IROW, and integrates these activities, from the planning stage up to the management stage, in one smooth workflow.

(18) Land Acquisition, Resettlement, Rehabilitation and Indigenous People's Policy (LARRIPP) (3rd Edition) (2007)

The Land Acquisition, Resettlement, Rehabilitation and Indigenous Peoples' Policy or LARRIPPP provides the guidance to those preparing resettlement action plans (RAPs) and safeguard instruments for Indigenous Peoples (IPs) affected by all types of infrastructure projects implemented by the DPWH, whether foreign or locally funded.

The policy includes the principles and objectives of the involuntary resettlement policy, the legal framework, eligibility, compensation and entitlements, the indigenous peoples' policy framework, implementation procedures that ensure complaints are processed, public support and participation, and the provision of internal and external monitoring of the implementation of the RAP and safeguard instruments for IPs It includes the DPWH's Indigenous Peoples' Policy based on the Indigenous Peoples' Rights Act (IPRA) and the National Commission on Indigenous Peoples (NCIP) Administrative Order No. 1, series of 2006, or the Free and Prior Informed Consent Guidelines of 2006.

It should be noted that the NCIP has issued Administrative Order No. 3 series of 2012 or the Revised Guidelines on Free and Prior Informed Consent and Related Processes.

(19) Executive Order No. 72 (1993) Providing for the Formulation and Implementation of Comprehensive Land Use Plans of local Government Units.

Delineates the powers and responsibilities of the LGUs and national government body in the preparation and implementation of the comprehensive Land Use Plans.

(20) Executive Order No. 124 (1993)

Defines priority development areas for land conversion and provides for the institutional mechanisms and procedures for evaluation of priority development areas.

I-1.2.2 Administrative Framework on Social

Table I-1.3 Summary of Mandates and Functions of Agencies Involved in Involuntary Relocation and Resettlement

Agency	Mandate/Functions
NAPC	- Coordinating and advisory body for the implementation of the Social Reform Agenda (SRA). - Coordinate with different national and local government agencies and the private sector to assure full implementation of all social reform and poverty alleviation programs. - Coordinate with LGUs in the formulation of social reform and poverty alleviation programs for their respective areas in conformity with the National Anti-Poverty Action Agenda. - Recommend policy and other measures to ensure the responsive implementation of the commitments under the SRA. - Oversee, monitor, and recommend measures to ensure the effective formulation, implementation and evaluation of policies, programs and resource allocation and management of social reform and poverty alleviation programs.
DHSUD	- Primary national government entity responsible for the management of housing, human settlement, and urban development. - Formulate national housing and urban development policies, strategies, and standards. - Formulate housing policies and programs, such as public housing, in coordination with the attached agencies, for the homeless and underprivileged families. - Ownership and administration of government-owned lands, whether owned by the national government or any of its subdivisions, instrumentalities, or agencies, including GOCCs and their subsidiaries, which have not been used for the purpose for which they have been originally reserved or set aside for at least ten (10) years and identified by the Department as suitable for urban development, particularly for housing purposes. - Formulate and prescribe land use planning and zoning standards and regulations for the guidance of cities and municipalities in the formulation of their respective CLUPs.
NHA	- National agency mandated to engage in housing production for low-income families. It is under the administrative supervision of the DHSUD. - Resettlement Programs include the following: • For Informal Setter Families Affected by Infrastructure Project and those Living Along Danger Areas – The program addresses the requirements of families affected by government infrastructure projects and those living along danger areas. • Regional Resettlement Program – The program involves the implementation of local/regional resettlement projects as joint National Government-Local Government undertakings. It addresses resettlement requirements of Local Government Units (LGUs) outside Metro Manila involving families living along danger areas, those affected by government infrastructure projects, indigenous peoples, and former rebels.
DPWH	- Mandated to undertake, among others, the planning of infrastructure such as flood control, water resources projects and other public works, and the design, construction, and maintenance of major flood control systems. - One of the implementing agencies (IA) of Republic Act No. 10752 (Right of Way Act).
NCIP	- Primary government agency responsible for the formulation and implementation of policies, plans and programs to promote and protect the rights and well-being of the ICCs/IPs and the recognition of their ancestral domains as well as the rights thereto. - Mandated to protect and promote the interest and well-being of the ICCs/IPs with due regard to their beliefs, customs, traditions, and institutions. - Serve as the primary government agency through which ICCs/IPs can seek government assistance and as the medium, through which such assistance may be extended. - Formulate and implement policies, plans, programs, and projects for the economic, social, and cultural development of the ICCs/IPs and to monitor the implementation thereof. - Issue certificate of ancestral land/domain title. - Coordinate development programs and projects for the advancement of the ICCs/IPs and to oversee the proper implementation thereof. - Issue appropriate certification as a pre-condition to the grant of permit, lease, grant, or any other similar authority for the disposition, utilization, management, and appropriation thereof or any part or portion of the ancestral domain taking into consideration the consensus approval of the ICCs/IPs concerned.

Agency	Mandate/Functions
DSWD	- Provide assistance to LGUs, NGOs, other NGAs, POs, and members of civil society in implementing programs, projects, and services that will alleviate poverty and empower disadvantaged individuals, families, and communities. - Implement statutory and specialized programs which are directly lodged with the Department and/or not yet devolved to LGUs.
LGUs	- May exercise the power of eminent domain for public use, or purpose or welfare for the benefit of the poor and the landless, upon payment of just compensation. - Implement Republic Act No. 7279 in their respective localities, in coordination with the housing agencies, other government agencies, the private sector and other NGOs.

Source: JICA Survey Team

(1) National Anti-Poverty Commission (NAPC)

The NAPC was created under Republic Act No. 8425 and serves as the coordinating and advisory body for the implementation of the Social Reform Agenda (SRA). Among its powers and functions are to:

- Coordinate with different national and local government agencies and the private sector to assure full implementation of all social reform and poverty alleviation programs;
- Coordinate with local government units in the formulation of social reform and poverty alleviation programs for their respective areas in conformity with the National Anti-Poverty Action Agenda;
- Recommend policy and other measures to ensure the responsive implementation of the commitments under the SRA;
- Oversee, monitor, and recommend measures to ensure the effective formulation, implementation and evaluation of policies, programs and resource allocation and management of social reform and poverty alleviation programs.

(2) Department of Human Settlements and Urban Development (Republic Act No. 11201)

Republic Act No. 11201 created the Department of Human Settlements and Urban Development (DHSUD) through the consolidation of the Housing and Urban Development Coordinating Council (HUDCC) and the Housing and Land Use Regulatory Board (HLURB).

DHSUD acts as the primary national government entity responsible for the management of housing, human settlement, and urban development. It shall be the sole and main planning and policy-making, regulatory, program coordination, and performance monitoring entity for all housing, human settlement, and urban development concerns, primarily focusing on the access to and the affordability of basic human needs. Among the powers and functions of the Department are:

a) Formulation of a national housing and urban development policies, strategies and standards that are consistent with the Philippine Development Plan to promote social and economic welfare, in coordination and in consultation with national and local stakeholders, local government units (LGUs), and other government agencies;

b) Formulation of housing policies and programs, such as public housing, in coordination with the attached agencies, for the homeless and underprivileged families;

c) Ownership and administration of government-owned lands, whether owned by the national government or any of its subdivisions, instrumentalities, or agencies, including government-owned or -controlled corporations (GOCCs) and their subsidiaries, which have not been used for the purpose for which they have been originally reserved or set aside for at least ten (10) years and identified by the Department as suitable for urban development, particularly for housing purposes. The lands held in trust by the GOCCs for and on behalf of their members shall be excluded from the coverage hereof;

d) Formulation and prescription of land use planning and zoning standards and regulations for the guidance of cities and municipalities in the formulation of their respective CLUPs.

(3) National Housing Authority NHA

The National Housing Authority (NHA) is the national agency mandated to engage in housing production for low-income families. It is under the administrative supervision of the DHSUD. Its Resettlement Programs include the program the following:

- For Informal Setter Families Affected by Infrastructure Project and those Living Along Danger Areas – The program addresses the requirements of families affected by government infrastructure projects and those living along danger areas. It entails the provision of housing units, community facilities, socio-economic and other community support programs.
- Regional Resettlement Program – This program involves the implementation of local/regional resettlement projects as joint National Government-Local Government undertakings. It addresses resettlement requirements of Local Government Units (LGUs) outside Metro Manila involving families living along danger areas, those affected by government infrastructure projects, indigenous peoples, and former rebels.

(4) Department of Social Welfare and Development (DSWD)

The DSWD is mandated to provide assistance to local government units (LGUs), non-government organizations (NGOs), other national government agencies (NGAs), people's organizations (POs) and members of civil society in effectively implementing programs, projects, and services that will alleviate poverty and empower disadvantaged individuals, families and communities for an improved quality of life as well as implement statutory and specialized programs which are directly lodged with the Department and/or not yet devolved to LGUs.

(5) Department of Public Works and Highways

The Department of Public Works and Highways (DPWH) is one of the departments of the government undertaking major infrastructure projects. It is mandated to undertake, among others, the planning of infrastructure such as flood control, water resources projects and other public works, and the design, construction, and maintenance of major flood control systems.

It is one of the implementing agencies (IA) of The Right of Way Act or Republic Act No. 10752 which seeks to ensure that owners of real property acquired for national government infrastructure projects are promptly paid just compensation for the expeditious acquisition of the required right-of-way for the projects. It developed the DPWH Right of Way Acquisition Manual which provides a clear, uniform, and user-friendly guide on the rules and procedures for the acquisition by the DPWH of right-of-way (ROW) for its infrastructure projects, in accordance with the provisions of Republic Act No. 10752 (ROW Act) and its Implementing Rules and Regulations.

(6) Local Government Units

The local government units (LGUs) are charged with the implementation of Republic Act No. 7279 in their respective localities, in coordination with the various national housing agencies, the private sector and other non-government organizations. LGUs may also adopt the provisions of Republic Act No. 10752 for use in the acquisition of right-of-way for local government infrastructure projects. Subject to the provisions of Republic Act No. 7160 or the Local Government Code.

(7) National Commission on Indigenous Peoples (NCIP) Republic Act No. 8371

The National Commission on Indigenous Peoples (NCIP) is the primary government agency responsible for the formulation and implementation of policies, plans and programs to promote and protect the rights and well-being of the ICCs/IPs and the recognition of their ancestral domains as well as the rights thereto. The NCIP is mandated to protect and promote the interest and well-being

of the ICCs/IPs with due regard to their beliefs, customs, traditions, and institutions. It has, among others, the following powers and functions:

- To serve as the primary government agency through which ICCs/IPs can seek government assistance and as the medium, through which such assistance may be extended;
- To formulate and implement policies, plans, programs, and projects for the economic, social, and cultural development of the ICCs/IPs and to monitor the implementation thereof;
- To issue certificate of ancestral land/domain title;
- To coordinate development programs and projects for the advancement of the ICCs/IPs and to oversee the proper implementation thereof;
- To issue appropriate certification as a pre-condition to the grant of permit, lease, grant, or any other similar authority for the disposition, utilization, management and appropriation by any private individual, corporate entity or any government agency, corporation, or subdivision thereof on any part or portion of the ancestral domain taking into consideration the consensus approval of the ICCs/IPs concerned.

I-1.3 Strategic Environmental Assessment (SEA) Approach and Methodology

I-1.3.1 SEA Approaches of Other Funding Agencies

The following is a brief discussion on the processes and approaches on the conduct of SEA of some international organizations. This was undertaken to see how the SEA Survey Team can prepare an approach that can best be adopted for the preparation of the SEA for the National Resources Development and Management Plan for the Republic of the Philippines for possible funding under the Japan International Cooperation Agency (JICA).

Reviewed were the SEA approaches of the JICA, Asian Development Bank (ADB), World Bank Group, and Organization for Economic Cooperation and Development (OECD).

(1) Japan International Cooperation Agency

- JICA has been requiring SEA at the Master Plan and Feasibility Study levels at the early stages of project cycle for various long-term development projects that it aims to fund, since 2004. This was when the JICA Guidelines for Environmental and Social Considerations were formalized.
- The 2010 Guidelines provides the same definition of the SEA as contained in the 2004 Guidelines but there were no specific detailed discussions in the same guideline.
- A 2013 paper review of the JICA SEA implementation, mentioned a “standard procedure” but this does not appear in the 2010 Guidelines.
- The paper also mentioned that SEAs in JICA’s context are usually conducted as environmental and social consideration studies (ESCSs) within the master plan studies.

(2) Asian Development Bank

- SEA process and application is part of the 2012 Environmental Safeguards, A Good Practice Sourcebook, Draft Working Document. It is part of the chapter on Environmental Assessment Requirements for Various Financing Modalities.
- SEA is required when the project involves the development of or changes to policies, plans, or programs with likely significant regional or sectoral impacts.
- The document mentions that there are many different approaches and techniques for SEA and it is important to select an approach and method that is most appropriate for the type of

assessment being undertaken. It however adopts a common set of criteria essential for a successful SEA.

(3) The World Bank Group

- The World Bank follows the OECD definition of SEA as "analytical and participatory approaches to strategic decision-making that aim to integrate environmental considerations into policies, plans and programs, and evaluate the inter linkages with economic and social considerations" but it has no specific guidelines for SEA.
- A paper was published by the World Bank in September 2012, Strategic Environmental Assessment in the World Bank – Learning from Recent Experience and Challenges provided. The paper mentioned that in the World Bank, SEA is mainly but not exclusively known as SESA (strategic environmental and social assessment) to stress the inclusion and relevance of social issues as well as environmental ones.
- It also mentioned SEA/SESA as an umbrella term for assessment processes that aim to integrate environmental and social considerations into strategic decision making by using impact-centered approaches that originated in EIA practice or policy SEA approaches that are centered on institutions and systems for environmental and social management.
- SEAs are impact-centered approaches that best fit to integrate environmental considerations in plans and programs where environmental impacts and risks can be identified and predicted.
- Different types of SEAs include Regional and sectoral environmental assessments (REAs and sectoral EAs), policy EAs, country environmental analysis (CEA), and Hybrid SEAs that combine policy and impact centered SEA approaches.

(4) Organization for Economic Cooperation and Development

- OECD defines SEA as a range of "analytical and participatory approaches that aim to integrate environmental considerations into policies, plans and programs and evaluate the inter linkages with economic and social considerations".
- It allows the integration of environmental considerations – alongside social and economic aspects – into strategic decision making at all stages and tiers of development cooperation. SEA is not a substitute for traditional project impact assessment tools, but a complement to them.
- SEA maybe applied to:
  - National-level overarching strategies, programs, and plans
  - National Policy reforms and Budget Support programs
  - National sectoral policies, plans or programs, e.g., energy or health sector reform
  - Infrastructure investments plans and programs
  - National and sub-national spatial development plans and programs
  - Trans-national Plans and programs (including multi country plans and investment programs)
  - Guidance documents, checklists, outlines, and other guides are available in the 2006 OECD Applying Strategic Environmental Assessment, Good Practice Guidance for Development Cooperation.

I-1.3.2 SEA Application in the Philippines

Strategic Environmental Assessment (SEA) has been applied for plans, programs, and projects by multi-lateral and bilateral development agencies in the early 2000s.

Definitions/descriptions of SEA as contained in the various guidelines of some of these development agencies are briefly discussed below.

- Asian Development Bank (ADB) 2003 Environmental Assessment Guidelines: SEA is a systematic process for evaluating and anticipating the consequences of decisions taken prior to the project stage. Its purpose is to ensure that environmental considerations and alternatives are addressed as early as possible and on at par with economic and social factors in policy, plan or program development.
- ADB's 2012 Environmental Safeguards, A Good Practice Sourcebook, Draft Working Document contains the SEA process and application particularly on Environmental Assessment Requirements for Various Financing Modalities. SEA is required when the project involves the development of or changes to policies, plans, or programs with likely significant regional or sectoral impacts.
- Canadian International Development Agency (CIDA) 2004 SEA Handbook: SEA is the systematic and comprehensive process of evaluating the environmental effects of a policy, plan, or program and its alternatives. The emphasis is on examining environmental effects, but most SEAs may also identify significant economic and social effects."
- Organisation for Economic Co-operation and Development's Development Assistance Committee (OECD-DAC) 2006 Mentions that SEA is a range of analytical and participatory approaches that aim to integrate environmental considerations into plans, policies and programmes (PPPs) and evaluate the inter-linkages with economic and social considerations. It allows the integration of environmental considerations – alongside social and economic aspects – into strategic decision making at all stages and tiers of development cooperation. SEA is not a substitute for traditional project impact assessment tools, but a complement to them. SEA maybe applied to national-level overarching strategies, programmes and plans; national policy reforms and budget support programmes; national sectoral policies, plans or programmes, e.g., energy or health sector reform; infrastructure investments plans and programmes; national and sub-national spatial development plans and programmes; and trans-national plans and programmes (including multi country plans and investment programmes). Guidance documents, checklists, outlines, and other guides are available in the 2006 OECD Applying Strategic Environmental Assessment, Good Practice Guidance for Development Cooperation
- United Nations Economic Commission for Europe (UNECE) Protocol on SEA, 2010 states that SEA is the evaluation of the likely environmental, including health effects, which comprises the determination of the scope of an environmental report and its preparation, the carrying out of public participation and consultations, and the taking into account of the environmental report and the results of the public participation and consultations in a plan or programme. The UNECE Resource Manual to Support the Application of the Protocol on SEA further described SEA as a step-by-step procedure to analyze and communicate environmental and health considerations related to development strategies, plans and programmes prepared by the governments. These considerations are collected in consultation with relevant authorities and the public so that decision makers can compare all the pros and cons of each planning option.
- The World Bank Group follows the OECD definition of SEA as "analytical and participatory approaches to strategic decision-making that aim to integrate environmental considerations into policies, plans and programmes, and evaluate the inter linkages with economic and social considerations" but it has no specific guidelines for SEA. The 2012, Strategic Environmental Assessment in the World Bank – Learning from Recent Experience and Challenges mentioned that in the World Bank, SEA is mainly but not exclusively known as SESA (strategic environmental and social assessment) to stress the inclusion and relevance of social issues as well as environmental ones. SEA/SESA as an umbrella term for assessment processes that aim to integrate environmental and social considerations into strategic decision making by using impact-centered approaches that originated in EIA practice or policy SEA approaches that are centered on institutions and systems for environmental and social management. For the World Bank Group, different types of SEAs include Regional and sectoral environmental assessments (REAs and sectoral EAs), policy EAs, country environmental analysis (CEA), and Hybrid SEAs that combine policy and impact centered SEA approaches.

- The 2004 Japan International Cooperation Agency (JICA) Guidelines for Environmental and Social Considerations required SEAs at the Master Plan and Feasibility Study levels at the early stages of project cycle for various long-term development projects that it aims to fund. The 2010 Guidelines provides the same definition of the SEA as contained in the 2004 Guidelines but there were no specific detailed discussions in the same guideline. A 2013 paper review of the JICA SEA implementation, mentioned that SEAs in JICA's context are usually conducted as environmental and social consideration studies (ESCSs) within the master plan studies.

(1) Philippine Environmental Laws

In the Philippines, environmental laws and regulations were started to be developed and enforced in the mid-1970s. Among the key environmental laws that were the first to be enacted are the following:

- Code on Sanitation of the Philippines; Presidential Decree (PD) 856; 1975
- Marine Pollution Control Decree; PD 979; 1976
- National Pollution Control Decree; PD 984; 1976
- Philippine Environment Code; 1152; 1977
- Philippine Environmental Impact Statement System; PD 1586; 1978
- Philippine Environmental Policy; PD 1151; 1979

Most of these laws are still in effect, except for PD 984, which had been overtaken by the current major environmental pollution control laws, namely:

- Toxic Substances and Hazardous and Nuclear Waste Control Act; Republic Act (RA) 6969; 1990
- Clean Air Act; RA 8749; 1991
- Ecological Solid Waste Management Act; RA 9003; 2001
- Clean Water Act; RA 9275; 2004

(2) Environmental Assessment Regulations

The Philippines established a national EIA system in 1978 with PD 1586 or the Philippine Environmental Impact Statement System (PEISS) and in 1979 through the issuance of PD 1151 or the Philippine Environmental Policy. Both these laws are still applicable but with issuances of new and/or updated rules and regulations. The main implementer of these EIA laws is the Environmental Management Bureau, under the Department of Environment and Natural Resources (DENR-EMB).

(a) Philippine Environmental Policy

The Philippine Environmental Policy aims to protect the right of the people to a healthy environment through the requirement of environmental impact assessments and statements. It declares that it is a continuing policy of the State (a) to create, develop, maintain, and improve conditions under which man and nature can thrive in productive and enjoyable harmony with each other, (b) to fulfill the social, economic, and other requirements of present and future generations of Filipinos, (c) to ensure the attainment of an environmental quality that is conducive to a life of dignity and well-being.

This law requires that all agencies and instrumentalities of the national government, including all government owned and controlled corporations (GOCC) as well as private corporations and firms and entities shall prepare, file, and include in every action, project, or undertaking which significantly affects the quality of the environment a detailed statement on:

- the environmental impact of the proposed action, project, or undertaking;

- any adverse environmental effect which cannot be avoided should the proposal be implemented;
- alternative to the proposed action;
- a determination that the short-term uses of the resources of the environment are consistent with the maintenance and enhancement of the long-term productivity of the same; and
- whenever a proposal involves the use of depletable or nonrenewable resources, a finding must be made that such use and commitment are warranted.

(b) Philippine Environmental Impact Statement System (PEISS)

The PEISS aims to attain and maintain a rational and orderly balance between socio-economic growth and environmental protection. Key points of the law include:

- Declared environmentally critical projects (ECP) and projects in environmentally critical areas (ECA) are required to obtain an Environmental Compliance Certificate (ECC) before start of any work in the project site
- ECPs include heavy industries, resource extractive industries, infrastructure projects, golf course projects
- Environmentally Critical Areas include:
  - Areas declared by law as natural parks, watershed reserves, wildlife reserves, and sanctuaries
  - Areas set aside as aesthetic, potential tourist spots
  - Areas which constitute the habitat for any endangered or threatened species of indigenous Philippine wildlife (flora and fauna)
  - Areas of unique historical, archeological, geological or scientific interests
  - Areas which are traditionally occupied by cultural communities or tribes
  - Areas frequently visited and/or hard hit by natural calamities (geologic hazards, floods, typhoons, volcanic activity, etc.)
  - Areas of critical slope
  - Areas classified as prime agricultural lands
  - Recharged areas of aquifers
  - Waterbodies
  - Mangrove areas
  - Coral reefs
- Violators shall be punished by the suspension or cancellation of the environmental compliance certificate and/or fine for each violation.

These laws continue to be in effect, with the implementing rules and regulations being updated and revised to consider new developments in the country and globally.

(3) Strategic Environmental Assessment Application

On SEA application in the Philippines, there have been no formal integration of the SEA process into the Philippine laws, rules and regulations. The nearest that can probably be considered as such was the programmatic EIS, which was developed into an additional regulation on EIS in 1994, through DENR Administrative Order 11. This programmatic compliance procedures apply to: a) program consisting of a series of similar projects, or a project subdivided into several phases and/or stages whether situated in a contiguous area or geographically dispersed, such as energy projects;

b) project consisting of several components or cluster of projects co-located in a designated area such as an industrial estate or export processing zone; or c) the expansion of a program or project which may have significant impact on the environment. Programmatic EIS however was applied more as applicable to projects and not for plans and programs.

The most recent revision of the EIS implementing rules and regulations in July 2014 was contained in the Revised Guidelines for Coverage Screening and Standardized Requirements under the Philippine EIS System (EMB Memorandum Circular 005). This guideline continues to be the main implementing rules and regulations for EIA. In this EMB MC 005, programmatic EIS became more specific to be a documentation of comprehensive studies on environmental baseline conditions of a contiguous area, including the assessment of the carrying capacity of the area to absorb impacts from co-located projects. Thus, it was never in the context of SEA as internationally adopted.

Formalization of SEA however is still being pushed through various proposed legislations that were submitted to the Philippine Congress.

The latest bill that contains provisions on SEA is House Bill 7826 filed during the 17th Regular Session of the Philippine Congress, in 2018, entitled An Act to Establish the Philippine Environmental Assessment System and for Other Purposes. In that proposed bill, the environmental assessment system will cover SEA and EIA. SEA will be required for proposed policies, plans, or program when all of the following conditions exist:

- The proposal relates, but not limited to agriculture, forestry, fisheries, energy, health, resource extraction, infrastructure, transport, waste management, water management, tourism, coastal zone management, national, regional, provincial, and municipal planning or land use; and
- Implementation of the proposal may result in significant adverse environmental impact, including health and socio-economic impact.

The bill however had not been submitted in the 18th Congressional Session (2019-2022).

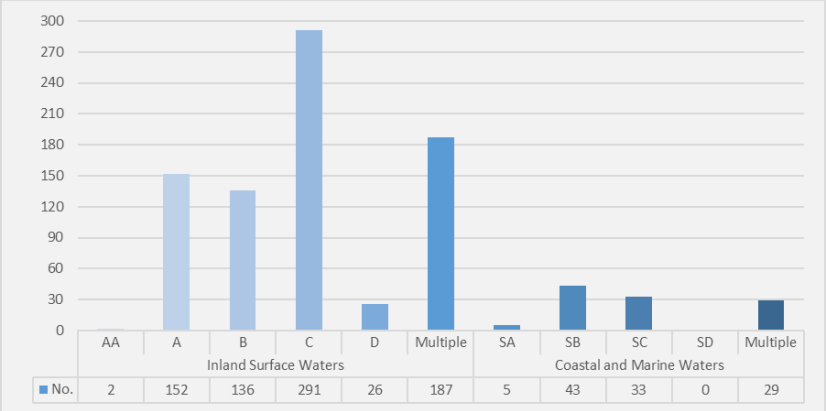
ANNEX I-2 ENVIRONMENTAL AND SOCIAL BASELINE DATA (NATIONAL)

I-2.1 Water Quality

I-2.1.1 Water Body Classification

As of 2019, Environmental Management Bureau (hereinafter referred to as "EMB") has classified 904 water bodies in the Philippines in terms of best usage and water quality. Out of these classified water bodies, 794 are inland surface waters (consisting of 780 rivers and 14 lakes), and 110 are coastal and marine waters. Source: DENR-EMB, 2019

Figure I-2.1 presents the classified water bodies in the Philippines per classification.



Source: DENR-EMB, 2019

Figure I-2.1 Classified Water Bodies in the Philippines per Classification

Since water bodies have several beneficial uses, some are classified differently per reach or portion. Out of the 794 classified water bodies, 216 have multiple classifications. These sum up to a total of 1,156 classifications. The distribution of water bodies per classification and beneficial use are shown in Table I-2.1 , and the regional distribution of classified water bodies is shown in Source: DENR-EMB, 2019

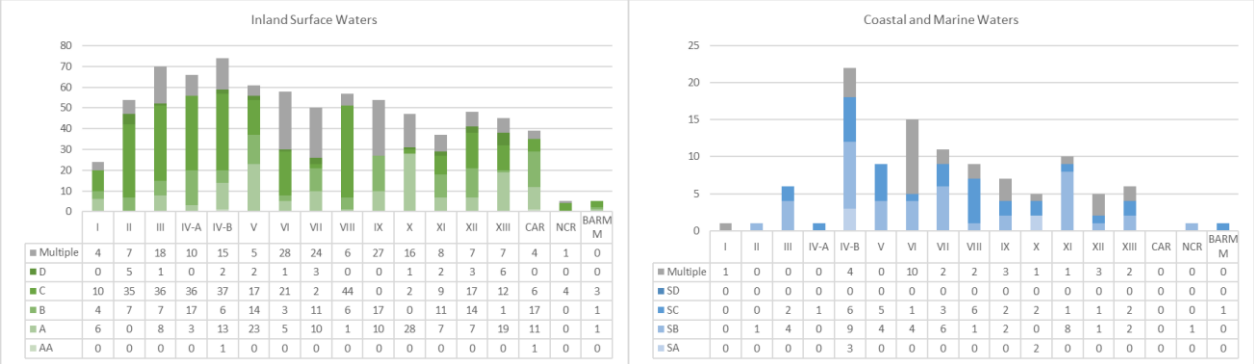
Figure I-2.2 .

Table I-2.1 Distribution of Water Bodies Per Classification and Beneficial Use

Classification	Beneficial Use	Number
INLAND SURFACE WATERS		
Class AA	Public Water Supply Class I – Intended primarily for waters having watersheds, which are uninhabited and/or otherwise declared as protected areas, and which require only approved disinfection to meet the latest PNSDW	7
Class A	Public Water Supply Class II – Intended as sources of water supply requiring conventional treatment (coagulation, sedimentation, filtration, and disinfection) to meet the latest PNSDW	279
Class B	Recreational Water Class I – Intended for primary contact recreation (bathing, swimming, etc.)	272
Class C	Fishery Water for the propagation and growth of fish and other aquatic resources Recreational Water Class II – For boating, fishing, or similar activities For agriculture, irrigation, and livestock watering	420
Class D	Navigable waters	38
	Number of Inland Surface Water Body Classifications	1,016
COASTAL AND MARINE WATERS		
Class SA	Protected Waters – Waters designated as national or local marine parks, reserves, sanctuaries, and other areas established by law (Presidential Proclamation 1801 and other existing laws), and/or declared as such by appropriate government agency, LGUs, etc.	10

	Fishery Water Class I – Suitable for shellfish harvesting for direct human consumption	
Class SB	Fishery Water Class II – Waters suitable for commercial propagation of shellfish and intended as spawning areas for milkfish (*Chanos chanos*) and similar species Tourist Zones – For ecotourism and recreational activities Recreational Water Class I – Intended for primary contact recreation (bathing, swimming, skin diving, etc.)	68
Class SC	Fishery Water Class III – For the propagation and growth of fish and other aquatic resources and intended for commercial and sustenance fishing Recreational Water Class II – For boating, fishing, or similar activities Marshy and/or mangrove areas declared as fish and wildlife sanctuaries	60
Class SD	Navigable waters	2
	Number of Coastal and Marine Water Body Classifications	140
	TOTAL NUMBER OF WATER BODY CLASSIFICATIONS	**1,156**

Source: EMB 2019 DENR Administrative Order No. 2016-08 (Water Quality Guidelines and General Effluent Standards)



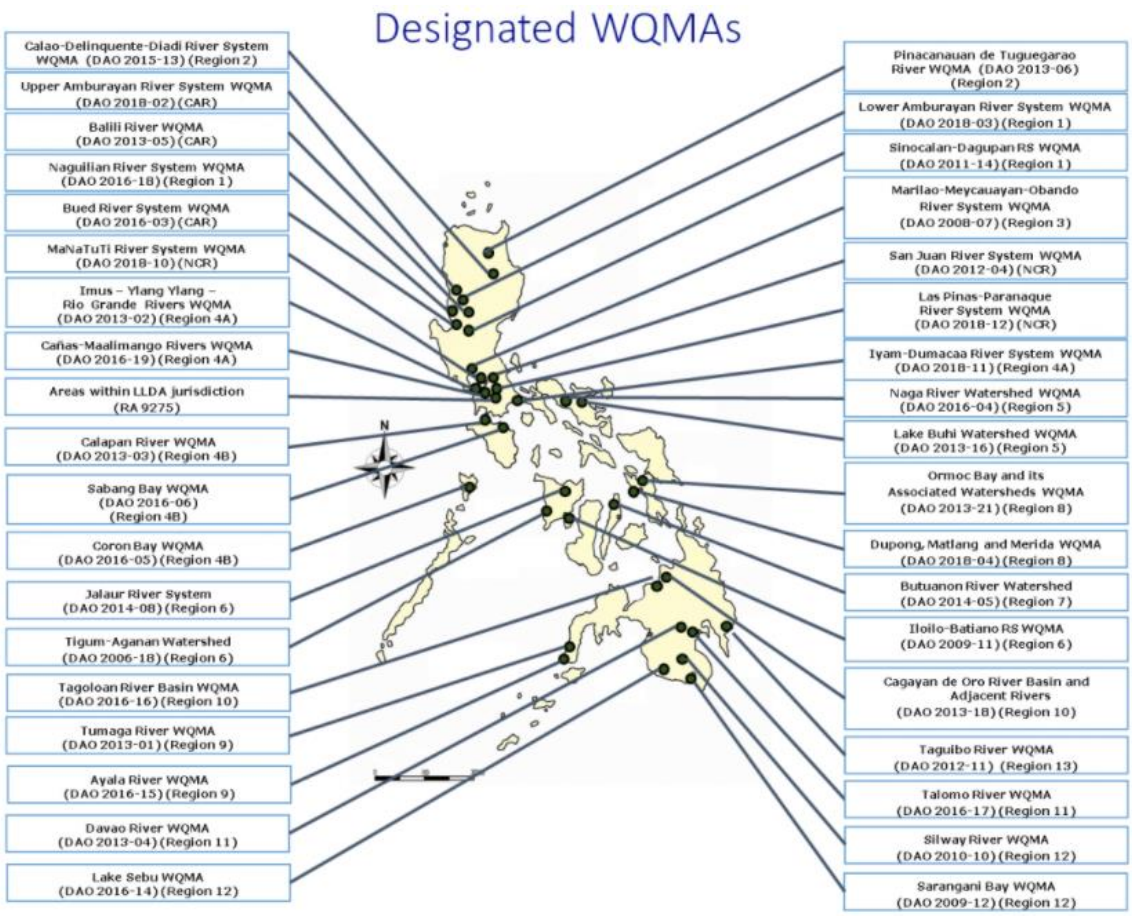
Source: DENR-EMB, 2019

Figure I-2.2 Regional Distribution of Classified Water Bodies

I-2.1.2 Water Quality Management Area

As per Section 5 of Republic Act 9275 also known as the Philippine Clean Water Act of 2004, the Department of Environment and Natural Resources (hereinafter referred to as "DENR") in coordination with the NWRB was tasked to designate certain areas as water quality management area (hereinafter referred to as "WQMA") using appropriate physiographic units such as watershed, river basins or WRR.

As of August 2018, there are 37 officially designated WQMAs, including the areas within the jurisdiction of Laguna Lake Development Authority (hereinafter referred to as "LLDA") which was designated as one management area by virtue of the RA 9275. Figure I-2.3 shows the map of designated WQMA.



Source: DENR-EMB

Figure I-2.3 Designated WQMA as of August 1, 2018

I-2.2 Natural Condition

I-2.2.1 Ecosystem

According to Ecosystems Research and Development Bureau of DENR, the Philippines has five major ecosystems which include forests, upland farms, grassland and degraded areas, coastal zone and freshwater, and urban areas.

Forests as defined by Forest Management Bureau (FMB) of DENR are land with an area of more than 0.5 hectare and tree crown cover of more than 10 percent. As of 2010, forests cover about 6.8 million hectares of the total land area of the country (Philippine Development Plan: PDP 2017-2022). The top three regions with the highest forest cover are Region 2 (1.04 million hectare), Region IV-B (0.92 million hectare), and CAR (0.77 million hectare).

For the quality of coastal and marine habitats, it is measured as excellent, good, fair, and poor. In 2016, 12,957.51 hectares of coral reefs were considered as excellent, 1,717.62 hectares as good, 171,762 hectares as fair, and 1,235,488.73 hectares as poor (PDP 2017-2022).

According to the PDP 2017-2022, the following key strategies will be adapted to sustain the provision of ecosystem services and meet both the present and future demand:

a) Intensify sustainable management of natural resources through the adoption of ridge-to-reef approach;

b) Expand sustainable resource-based enterprises; and

c) Mainstream ecosystem values into national and local development planning

In addition, these ecosystems are composed of species which are categorized according to the risk of becoming extinct. The IUCN Red List evaluates the conservation status of plant and animal species in the country. Table I-2.2 shows the total of all species in each IUCN Red List category by major taxonomic group.

Table I-2.2 Philippine Species in each IUCN Red List Category (April 2021)

Taxonomic Group	Total Assessed Species	Total Known Threatened Species (CR, EN & VU)	EX & EW	CR	EN	VU	NT	LR/CD	LC	DD
Actinopterygii	2463	66	0	16	7	43	15	0	2141	240
Agaricomycetes	2	1	0	0	1	0	0	0	1	0
Amphibia	114	27	0	1	12	14	21	0	58	8
Anthozoa	586	177	0	0	10	167	151	0	202	56
Arachnida	6	1	0	0	0	1	0	0	4	1
Aves	643	103	0	19	27	57	82	0	453	5
Bivalvia	22	2	0	0	0	2	0	0	9	6
Bryopsida	1	1	0	0	1	0	0	0	0	0
Cephalopoda	73	0	0	0	0	0	0	0	34	39
Chondrichthyes	100	41	0	6	14	21	20	0	19	20
Cycadopsida	6	5	0	3	1	1	1	0	0	0
Gastropoda	272	1	0	1	0	0	1	0	238	32
Gnetopsida	3	0	0	0	0	0	0	0	2	1
Holothuroidea	80	10	0	0	5	5	0	0	27	43
Hydrozoa	7	1	0	0	0	1	1	0	5	0
Insecta	336	128	0	11	72	45	24	0	158	22
Jungermanniopsida	2	1	0	0	1	0	0	0	1	0
Lecanoromycetes	1	0	0	0	0	0	0	0	1	0
Liliopsida	310	55	0	16	20	19	4	0	230	19
Magnoliopsida	1000	252	0	47	76	129	14	0	641	31
Malacostraca	161	19	0	1	2	16	0	0	95	47
Mammalia	235	42	0	6	15	21	16	0	135	42
Merostomata	3	1	0	0	1	0	0	0	0	2
Myxini	2	0	0	0	0	0	0	0	0	2
Pinopsida	25	9	0	1	4	4	3	0	12	1
Polypodiopsida	19	0	0	0	0	0	0	0	19	0
Reptilia	244	41	0	6	15	20	17	0	140	44

Note: EX = Extinct; EW = Extinct in the Wild; CR = Critically Endangered; EN = Endangered; VU = Vulnerable; NT = Near Threatened; LR/CD = Lower Risk/Conservation Dependent; LC = Least Concern; DD = Data Deficient
Source: Integrated Biodiversity Assessment Tool (IBAT) (ibat-alliance.org)

I-2.2.2 Protected Area

As stated in the National Integrated Protected Areas System (NIPAS) Act of 1992, protected areas are defined as an identified portion of land and water set aside by reason of their unique physical and biological significance, managed to enhance biological diversity, and protected against destructive human exploitation. Protected areas in the Philippines are categorized as strict nature reserve, natural park, natural monument, wildlife sanctuary, protected landscapes and seascapes, and resource reserve.

Under the mandate of NIPAS Act, these protected areas implement ecotourism approaches and practices, thus, ensuring that travel benefits the environment, protected area management, communities that surround the protected area, businesses conducting various operations related to the park, and many other stakeholders.

The NIPAS Act has similar terminology with the IUCN categories. However, the definitions under the NIPAS Act do not exactly follow IUCN definitions. The consistency of the NIPAS Act with IUCN categories is shown in Table I-2.3 .

Table I-2.3 Comparative Features of Protected Area Categories under IUCN and the NIPAS Act

IUCN Category	NIPAS Act	Remarks
Ia. Strict Nature Reserve	Strict Nature Reserve	Most restrictive category under the NIPAS Act that allows only scientific use for the area
Ib. Wilderness Area		Included in strict nature reserve
II. National Park	Natural Park	Essentially similar; "national park" is a term used in the Philippine Constitution to designate a particular category of public lands that includes all protected areas, which is why it is not used as a category in the NIPAS Act
III. Natural Monument	Natural Monument	Essentially the same
IV. Habitat/Species Management Area	Wildlife Sanctuary	Essentially the same
V. Protected Landscape/Seascape	Protected Landscape/Seascape	The NIPAS Act emphasizes opportunities for recreation and tourism
VI. Managed Resource Protected Area	Natural Biotic Area	The NIPAS Act emphasizes opportunities of indigenous culture associated with the area

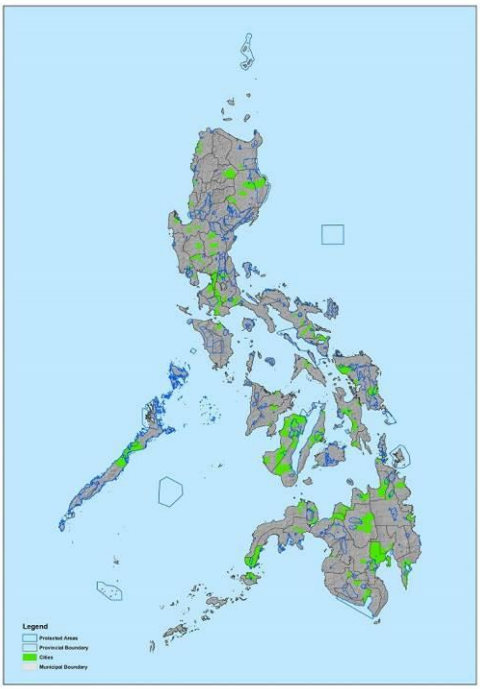
Source: IUCN-EPLP No. 81

As of 2019, BMB reported a total of 244 protected areas composed of about 7.76 million hectares which are under the Protected Area Development and Management Program. This major program of BMB covers the main in-situ measures to conserve biodiversity within and adjacent to protected areas pursuant to RA 7586 or the NIPAS Act of 1992 as amended by RA 11038 or the Expanded NIPAS (ENIPAS) Act of 2018. Among the 244 protected areas, 107 are legislated, 13 are proclaimed, and 124 are remaining initial components.

As presented, Region V has the greatest number of protected areas which is 25. It is followed by Regions III and IV-B with 24 and 23 protected areas, respectively. Meanwhile, Region IV-B covers the largest area of 2.34 million hectares. It is followed by Regions II and VII with 1.00 and 0.64 million hectares, respectively.

The distribution of the protected areas among the regions in the Philippines is summarized in Figure I-2.4 and the location map of the protected areas across the cities in the country is shown in Figure I-2.4.

Region	No. of Protected Areas	Area (million ha)
I	15	0.03
II	15	1.00
III	24	0.28
IV-A	22	0.23
IV-B	23	2.34
V	25	0.51
VI	14	0.21
VII	19	0.64
VIII	11	0.46
IX	14	0.31
X	12	0.14
XI	10	0.11
XII	5	0.38
XIII	12	0.41
ARMM	11	0.18
CAR	7	0.17
NCR	4	6.86 x 10-3
Offshore	1	0.36
Total	244	7.8



Source: Statistics (bmb.gov.ph)

Source: Biodiversity Management Bureau

Figure I-2.4 Distribution of the Protected Areas and Location Map of the Protected Areas

I-2.2.3 Groundwater

There is limited updated data on groundwater resources in the country. The following information is lifted from the Philippine Water Resources Account published in the PSA website. Initial estimates have shown that the total groundwater demand or withdrawal throughout the country grew from 4.3 billion cubic meters (BCM) in 1988 to 5.8 BCM in 1994, representing an average annual increase of 5.3%. The said demand covered the domestic, industrial, and commercial usage of water. Due to data limitations, the agricultural sector water demand was not included in the estimation. On the other hand, recharge (i.e., replenishment of the country's water resources through rain and other forms of precipitation) declined from 1.9 BCM in 1988 to 1.5 BCM in 1994 with an average annual rate of 3.7%. The preliminary results of the estimation revealed a continuing trend towards the depletion of the nation's stock of groundwater resources. As a result of over-extraction, saltwater has encroached upon the groundwater supply in several areas around the country, rendering water unsuitable for drinking.

I-2.2.4 Drought

Drought is a prolonged dry period in the natural climate cycle. It is considered as one of the significant natural disasters in the Philippines. The occurrence of drought is heavily influenced by the El Niño Southern Oscillation (ENSO) and its warm and dry phase, El Niño. In the Philippines the El Niño events are associated with the late onset and early finish of the rainy season, weak monsoons, and less tropical cyclone activity. The El Niño occurred throughout the Philippines, but the southern parts of the country are particularly affected.

As shown in Table I-2.4 , there have been 11 droughts recorded in the Philippines since 1968 which means that drought has impacted the country about every 4-5 years. The most recent drought which lasted for 18 months (started in February 2015 and ended in July 2016) caused damaged across 16 out of 18 regions (85% of the country).

Table I-2.4 Historical Droughts in the Philippines

Years of Drought	Areas Affected
1968 – 1969	Moderate to severe drought over most of the Philippines with Bicol region as most severely affected
1972 – 1973	Central Luzon, Palawan, Visayas, and Mindanao
1977 – 1978	All of Mindanao except Davao
October 1982 – September 1983	Western and Central Luzon, Southern Tagalog provinces, Northern Visayas, Bohol, and Western Mindanao; Moderate to severe drought affected most of Luzon, Negros Occidental, and Iloilo
October 1986 – September 1987	Severe drought affected Bicol region, Southern Negros, Cebu, and Western Mindanao; Severe drought affected mainland Luzon, Central Visayas, and Western Mindanao
October 1989 – March 1990	Drought affected Cagayan Valley, Panay Island, Guimaras, Palawan, and Southern Mindanao; Affected rice and corn area: 283,562 hectares; Major multipurpose water reservoirs reduced inflow
1991 – 1992	Severe drought affected Manila, Central and Western Visayas, and Cagayan Valley; Affected agricultural area: 461,800 hectares
1997 – 1998	About 70% of the Philippines experienced severe drought; About 292,000 hectares of rice and corn area completely damaged
May 2002 – March 2003	Severe drought affected Western Mindanao. Central Mindanao, Bicol, Eastern Visayas, Southern Tagalog and Northern Luzon moderately affected.
2009 – 2010	
February 2015 – July 2016	85% of provinces experienced drought. Iloilo, Guimaras, General Santos City, Isabela, Quirino, Bukidnon, Davao del Sur, Basilan, Bohol, and Cebu declared a state of calamity.

Source: National Drought Plan for the Philippines, April 2019

In the Philippines, the National Disaster Risk Reduction and Management Council (NDRRMC) is the highest organized and authorized body for disaster risk reduction in the country. The Philippine

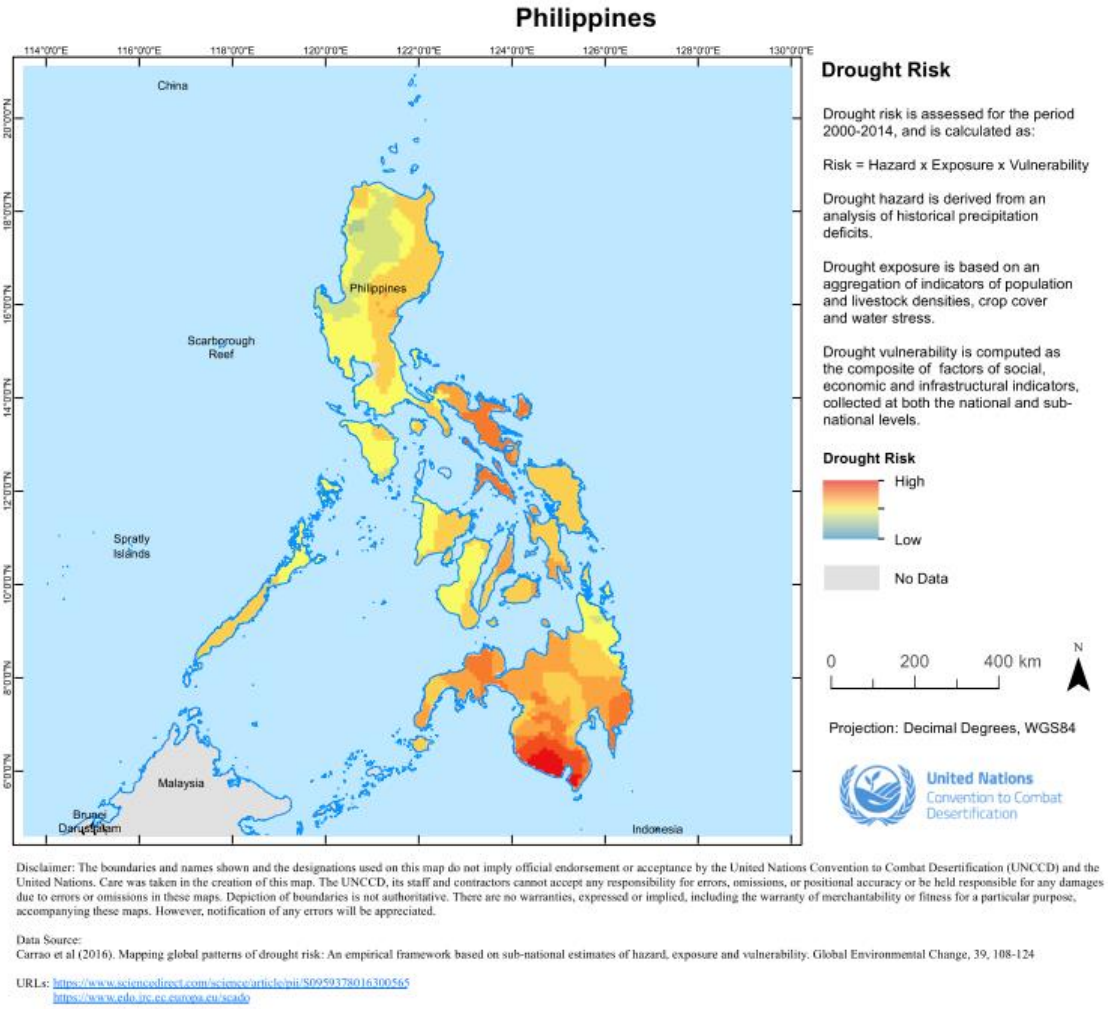
Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) monitors the meteorological drought (monthly climate assessment and outlook, season climate outlook and monthly drought and dry spell assessments) which use the Percentage of Normal Rainfall Index (PNRI) at provincial scale. PAGASA uses three categories defined as:

a) Drought – Three consecutive months of way below normal rainfall (>60% reduction from average rainfall); or Five consecutive months of below normal rainfall (21-60% reduction from average rainfall).

b) Dry Spell – Three consecutive months of below normal rainfall (21-60% reduction from average rainfall); or Two consecutive months of way below normal rainfall (>60% reduction from average rainfall).

c) Dry Condition – Two consecutive months of below normal rainfall (21-60% reduction from average rainfall).

Also, a drought risk assessment was completed by the Joint Research Centre of the European Commission which uses a global-scale top down data driven approach that is consistent and applicable to all regions in the world. The drought risk in the Philippines is shown in Figure I-2.5 . As shown in the drought risk map, the eastern portion of the country has medium to high risk. The regions which have the highest risks are the Bicol region in Luzon and the whole Mindanao region.



Source: National Drought Plan for the Philippines, April 2019

Figure I-2.5 Drought Risk in the Philippines

I-2.2.5 Saltwater Intrusion (Uprush)

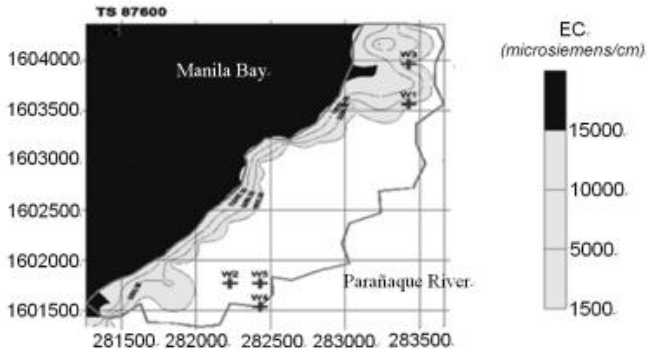
Saltwater intrusion occurs near an ocean coastal area wherein saltwater from the ocean intrudes or contaminates the freshwater aquifer. This happens when freshwater is being withdrawn at a faster rate that it can be replenished resulting to a decrease in the overall hydrostatic pressure.

Based on several studies conducted by the NWRB, there are certain areas in the country which experience a decline in groundwater. Metro Manila and surrounding areas exhibit lowering of groundwater in 1991 and 2004 studies. Other areas in the country which have been detected a decline in groundwater are Bacolod, Bacoor, Dasmarinas and Tawi-Tawi.

According to the Philippines' Climate Change Risk Profile (USAID, 2017), the water quality of about 25 percent of the coastal areas in Luzon, Visayas and Mindanao has been affected by saltwater intrusion of coastal aquifers. It is also expected that saltwater intrusion was increased by the sea level rise.

(1) Luzon (Manila Bay and Parañaque River)

In 2010, a 3D finite element method was performed to generate a saltwater intrusion model for an aquifer bounded by Manila Bay and Parañaque River. The model projected that after 10 years the aquifer will be affected by a severe saltwater intrusion from the Manila Bay. Figure I-2.6 shows the salinity concentration of the aquifer after 10 years.



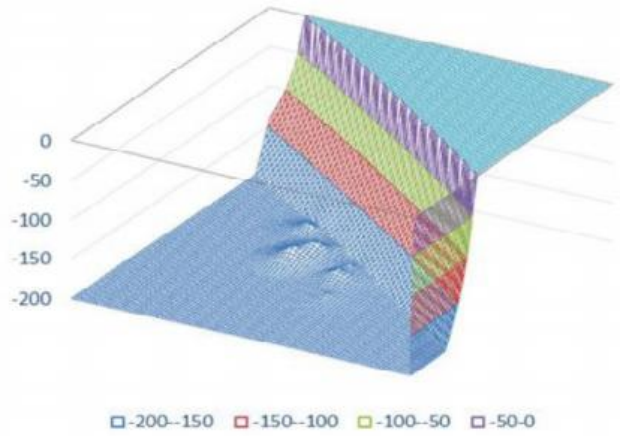
Source: Environmental Engineering Research, 2010

Figure I-2.6 Salinity Concentration of the Aquifer after 10 Years

As seen from the figure, the electrical conductivity (EC) of greater than 1,500 µs/cm were considered as areas being encroached by landward movement of seawater. Moreover, areas with large volume extraction of groundwater will be affected by severe saltwater intrusion. The salinity may come to cover the whole aquifer due to continual slow penetration of saltwater into the aquifer.

(2) Visayas (Cebu City and Guimaras Island)

In 2009 and 2014, three-dimensional drawdown contour maps were produced to simulate the drawdown condition of ten representative wells considering the effects of well interference in Cebu City. The study resulted to three of the 10 wells are contaminated, while two are threatened. Figure I-2.7 presents the saltwater uprush due to maximum abstraction.



Unit: m
Source: Investigation of the State and Condition of Saltwater Intrusion in Cebu City Aquifers, 2014

Figure I-2.7 Saltwater Uprush due to Maximum Abstraction

As shown in the figure above, the interface converged with parts of the uprush due to the maximum abstraction of the wells. This also shows that the abstraction rates which will exceed the computed maximum pumping rate will yield to a more pronounced uprush and movement of the interface. In

addition, if all operation wells will contribute to the uprush, the occurrence of saltwater-freshwater interface is possible to move landward.

(3) Mindanao (Northern)

In 2019, a research was conducted to determine more comprehensively the multidimensional indicators of adaptive capacity of rural farming households to seawater intrusion. Seawater intrusion in the region specifically in the farming districts occurs during high tide or coastal flooding. In this case, the water allocated for each farming district may not be enough to drain the seawater in the rice plots. This situation may be experienced in the next decades unless corrective adaptation measures are implemented to reduce the impact of seawater intrusion on rice-farming households.

ANNEX I-3 ENVIRONMENTAL AND SOCIAL BASELINE DATA IN WRR VII

I-3.1 Social Environment in WRR VII

I-3.1.1 Ethnicity

The PSA defined ethnicity as a sense of belonging to an ethnic group. Ethnic group is consanguine in nature, meaning, the ties are reckoned by blood and traced through the family tree. Thus, ethnicity refers to the household member's identity, by blood or consanguinity and not by choice nor by adoption/confirmation for any ethnic group nor indigenous peoples (IPs).

I-3.1.2 Local Economy

Central Visayas is the 4th largest economy by Region in the Philippines with PHP 1.129 trillion, translating to 6.5% of the National GDP, according to the Philippine Statistics Authority (PSA). The economic activities of Central Visayas are predominantly service- and industry-oriented rather than agriculture.

The National Economic and Development Authority (NEDA) Central Visayas Regional Physical Framework Plan (RPFP) for 2003 to 2030 presented the region's economic structure per province.

(1) Cebu

Serves as the center of economic activities in the province is Metro Cebu, where majority of the population is also concentrated. It is designated as the premier industrial, commercial, and service center in Central Visayas – hosting various manufacturing industries, shopping centers, educational institutions, financial institutions, and service-oriented institutions that cater to the needs of the people in the region as well as other provinces in Southern Philippines. Five of the eight proclaimed Special Economic Zones (SEZs) in WRR VII are located in Metro Cebu.

The province is also home to shipbuilding companies which stated operations in 1993. These shipbuilding companies have produced bulk carriers and fast-craft ferries which are also exported. In addition, major exports of Cebu are electronics, industrial goods and equipment, and furniture.

(2) Bohol

Predominantly an agricultural province. The economy is also supported by home-based industries, which consists of micro and cottage types of industries. Further, tourism is another industry, which has steadily gained influence on the province's economy due to its famous tourist attractions. Other industrial products of Bohol consist of fashion accessories, shell craft, woodcraft, processed food, ceramic craft, hand-made paper, and novelty items.

Bohol also serves as the food source of Central Visayas, which accounts for 45% of its land area to agriculture. Primary agriculture products such as rice and coconut are grown in the province. Further, livestock and poultry are also produced in the province through livestock farms. Similarly, fishing industry consists of deep-sea fishing, municipal fishing, and inland fishing.

The central business district of Bohol is Tagbilaran City, which also serves as the center of education of the province.

(3) Negros Oriental

The economy of Negros Oriental is mostly agriculture-based. Majority of the agricultural products in Negros Oriental are focused on plantation-type of crops such as sugarcane and coconut. Bais City serves as the host for many of the sugar mills that process sugarcanes produced by the province.

Tourism is also a growing industry in the province. Negros Oriental's attractions include dolphin and whale watching, scuba diving, mountain trekking, and world-class golf courses.

(4) Siquijor

With its limited land area is not a significant producer of agricultural crops. Developments in fishing and tourism are considered to be the potential economic drivers of Siquijor. Its major fishing grounds include the Siquijor Sea, South Tañon Strait, Bohol Strait, and Mindanao Sea. For tourism, its attractions include the 201-year old stone church convent, pristine beaches, and caves.

I-3.1.3 Land Use and Utilization of Local Resources

The region has a total land area of 15,886 square kilometers (km2) (3,922,200 acres) accounting for 5% of the country's total land area. About 36% is classified as forestland and 64% alienable and disposable land. Agricultural land covers around 32%.

I-3.1.4 Historic Site / Culture Heritage

Republic Act No. 10066, otherwise known as the "National Cultural Heritage Act of 2009" was enacted in 2010 to provide protection, preservation, and promotion of the nation's cultural heritage. This enabled the National Commission for Culture and the Arts (NCCA) to establish the Philippine Registry of Cultural Property (PRECUP). The PRECUP is the repository of all culture properties of the Philippines that were deemed important to cultural heritage.

Central Visayas is currently home to 650 historical, tangible, and intangible cultural properties recorded in the PRECUP-TALAPAMANA. The table below highlights the declared marked structures and important cultural properties in the Central Visayas Region.

Table I-3.1 Declared Marked Structures and Important Cultural Properties in Central Visayas

Official Name	Location	City/ Municipality	Declaration/ Classification	Type
The Cross of Magellan	Barangay Santo Niño	Cebu City	Marked Structure, NHCP; Registered Property, Cebu City	Tangible-Immovable
Antonio Pigafetta Monument | Antonio Pigafetta (1496–1535) Marker	Plaza Independencia, A. Pigafetta Street, Barangay San Roque	Cebu City	Marked Structure, NHCP; Work of National Artist for Visual Arts Abdulmari Asia Imao; Registered Property, Cebu CIty	Tangible-Immovable
Minor Basilica of the Holy Child of Cebu | Church and Convent of Santo Niño Marker	Barangay Santo Niño	Cebu City	National Historical Landmark, NHCP; Registered Property, Cebu City	Tangible-Immovable
Colon Street | Daang Colon Marker	Colon corner Mabini Streets, Barangay Santo Niño	Cebu City	Marked Structure, NHCP; Registered Property, Cebu City	Tangible-Immovable
Magsaysay Monument | Inscription on the Magsaysay Monument Dedication	Plaza Independencia, Barangay San Roque	Cebu City	Marked Structure, NHCP; Registered Property, Cebu City	Tangible-Immovable
Metropolitan Cathedral and Parish Church of Saint Vitalis and of the Guardian Angels of Cebu | Katedral ng Cebu Marker	P. Burgos Street	Cebu City	Marked Structure, NHCP; Registered Property, Cebu City	Tangible-Immovable
Old Presidencia Building of Dumaguete	Santa Catalina Street	Dumaguete City	Important Cultural Property, National Museum; Registered Property, Dumaguete City, Negros Oriental	Tangible-Immovable
Talisay Landing Marker	Poblacion	Talisay City	Marked Structure, NHCP; Local Cultural Property - Heritage	Tangible-Immovable

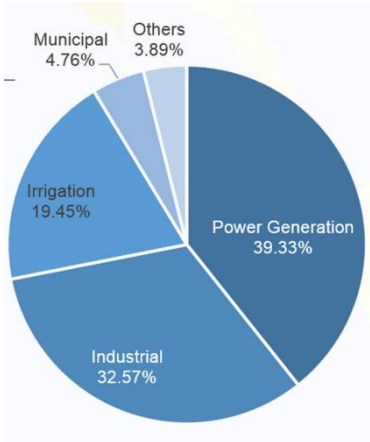
Official Name	Location	City/ Municipality	Declaration/ Classification	Type
			Monuments, Sites and Zones of the City of Talisay, Cebu (per 3rd SP Ordinance No. 2009-14)	
Casa Gorordo Historical Landmark	Barangay Pari-an	Cebu City	National Historical Landmark, NHCP; Registered Property, Cebu City	Tangible-Immovable
Matilde Bradford Memorial Church Historical Landmark	85 Osmeña Boulevard, Barangay Santa Cruz	Cebu City	National Historical Landmark, NHCP; Registered Property, Cebu City	Tangible-Immovable
University of San Carlos	Barangay Talamban	Cebu City	Marked Structure, NHCP; Registered Property, Cebu City	Tangible-Immovable
Parish Church of Saint Michael the Archangel of Jagna | Simbahan ng Jagna Marker		Jagna	Marked Structure, NHCP; Local Cultural Property - Cultural Treasures of Jagna (per Municipal Ordinance G.O.7-06-2006)	Tangible-Immovable
Parish Church of Santo Tomas de Villanueva of Pardo | Simbahan ng Pardo Marker	Cebu South Road, Pardo	Cebu City	Marked Structure, NHCP; Registered Property, Cebu City	Tangible-Immovable
Fort San Pedro | Unang Kasunduan ng Kapayapaan sa Pilipinas Marker	Barangay San Roque	Cebu City	Marked Structure, NHCP; Registered Property, Cebu City	Tangible-Immovable

Source: NCCA TALAPAMANA Visayas (2021)

I-3.1.5 Present Uses of Surface Water including Water Supply

(1) Water Use

As shown in the water resource utilization of Central Visayas in the following figure, the water use in Central Visayas was estimated at 4,715 MCM annually. Of this, about 1,854 MCM (39.33%) is allocated for power generation, 917.22 MCM (19.45%) for irrigation sector, 224.6 MCM (4.76%) for municipal/domestic sector and 1,535.7 MCM (32.57%) for industrial sector.



Source: Central Visayas Water Supply and Sanitation Databook and Regional Roadmap

Figure I-3.1 Figure: Central Visayas Water Resource Utilization

(2) Water Supply

About 85% of Central Visayas' population in 2015 had access to safe water sources. This translates to around 1,458,700 households. As presented in the following table, about 48.5% of the population in 2015 has Level III service connection, about 14.6% has Level II connections and about 22.1% has access to Level I.

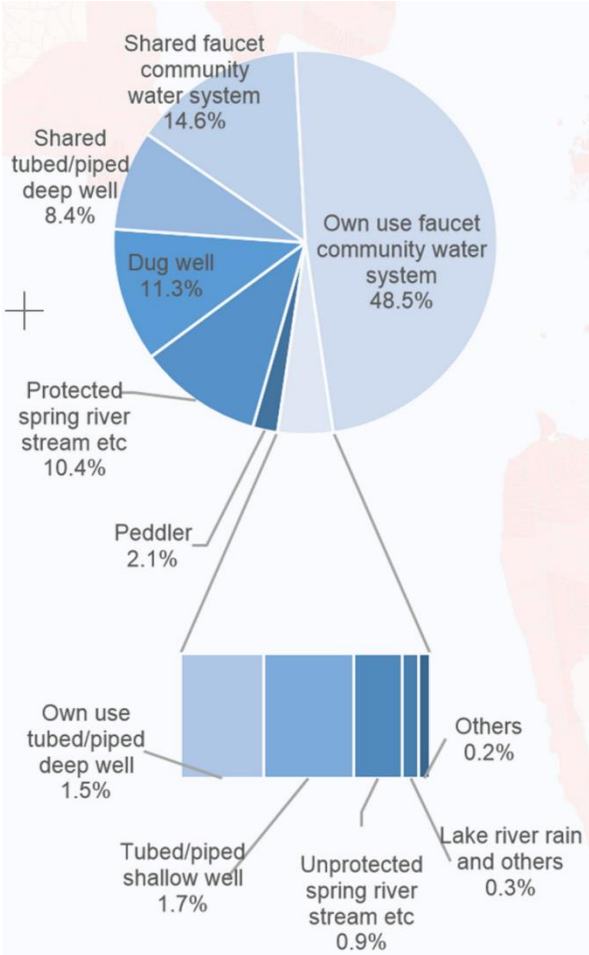
Table I-3.2 Central Visayas Access to Water Supply

Level of Service	Central Visayas
Level III	48.5%
Level II	14.6%
Level I (Safe Source)	22.1%
Subtotal (Safe Source)	85.2%
Level 1 (Unsafe Sources)	14.8%
Total	100.0%

Source: Central Visayas Water Supply and Sanitation Databook and Regional Roadmap

The following figure shows the main sources of water supply of Central Visayas in 2015. Majority of the sources are own use faucet community water system (48.5%).

As shown in the following table, the province of Negros Oriental has the highest access to water supply (90.7%) while Cebu, the province with the highest population base in Central Visayas, has the least percentage of access to water supply (33.1%). Furthermore, about 90.5% of the highly urbanized cities (HUCs) in Cebu has access to water supply.



Source: Central Visayas Water Supply and Sanitation Databook and Regional Roadmap

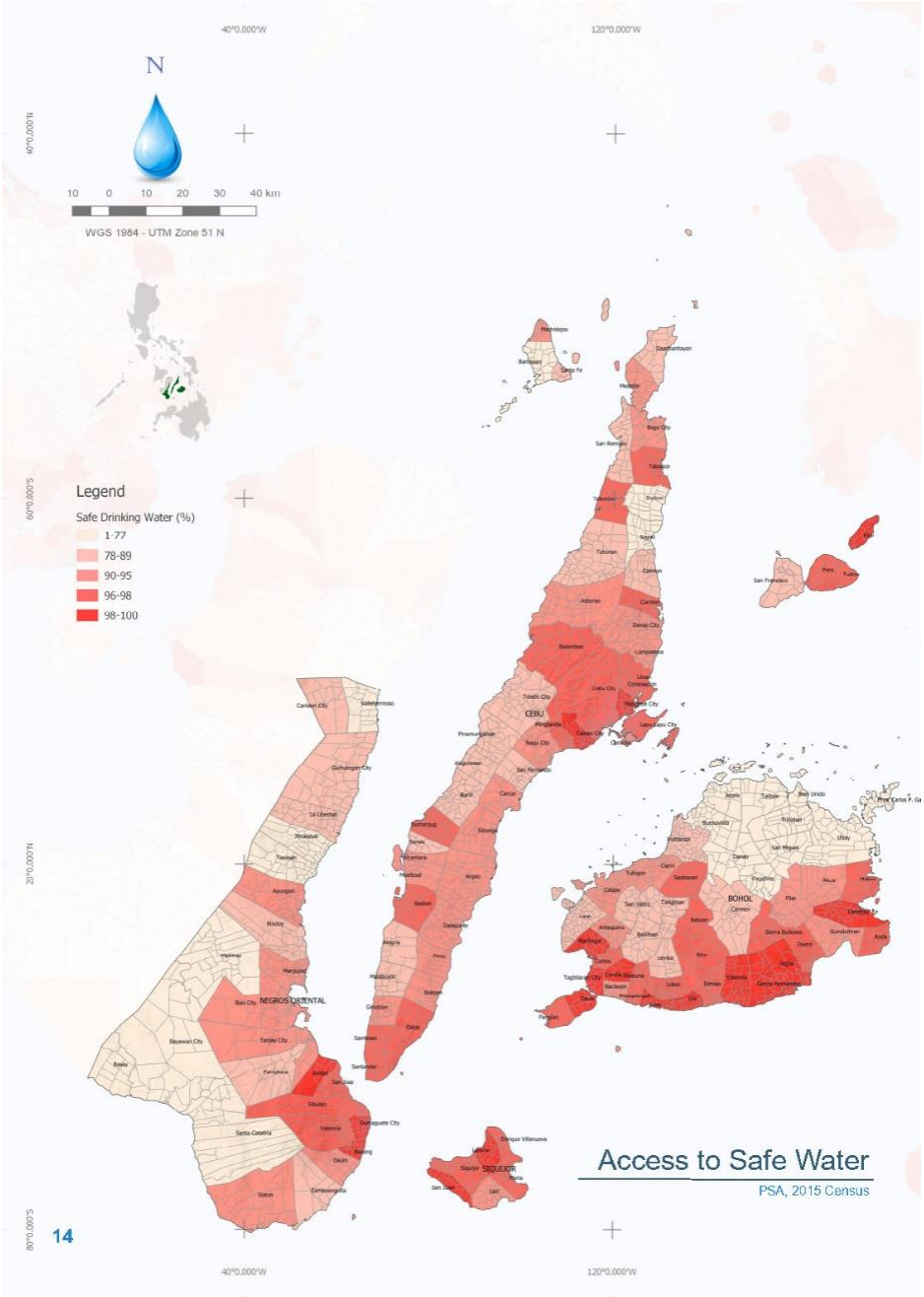
Figure I-3.2 Central Visayas Main Sources of Water Supply

Table I-3.3 Access to Water Supply per Province/HUC

Level of Service	Access to Safe Water Supply
Bohol	74.6%
Cebu	33.1%
Negros Oriental	90.7%
Siquijor	76.2%
Cebu, Mandaue and Lapu-Lapu Cities	90.5%

Source: Central Visayas Water Supply and Sanitation Databook and Regional Roadmap

The following figure shows a map of the access to safe water of Central Visayas in 2015.



Source: Central Visayas Water Supply and Sanitation Databook and Regional Roadmap

Figure I-3.3 Figure: Central Visayas Access to Safe Water

I-3.1.6 Sanitation

About 71.6% of Central Visayas' population in 2015 had access to improved sanitation. Open defecation is a major problem in Central Visayas. As shown in the following table, the region's open defecation rate is around 8.48% which is considered as the fourth highest open defecation rate, next to Eastern Visayas, Bicol Region, and ARMM.

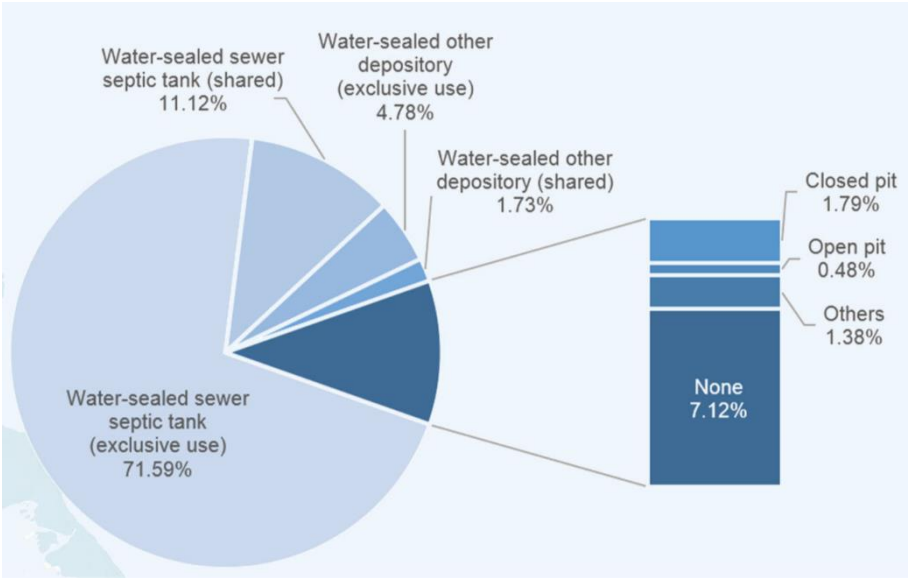
Table I-3.4 Central Visayas Access to Sanitation

Sanitation Coverage	Central Visayas
Improved Sanitation	71.58%
Basic Sanitation	19.44%
Unimproved Sanitation	0.50%

Open Defecation	8.48%
Total	100.0%

Source: Central Visayas Water Supply and Sanitation Databook and Regional Roadmap

The following figure shows the percentage of households of Central Visayas per type of sanitation facilities in 2015. Majority of households have exclusive use water-sealed sewer septic tank (71.59%).



Source: Central Visayas Water Supply and Sanitation Databook and Regional Roadmap

Figure I-3.4 Households in Central Visayas with Access to Sanitation Facilities

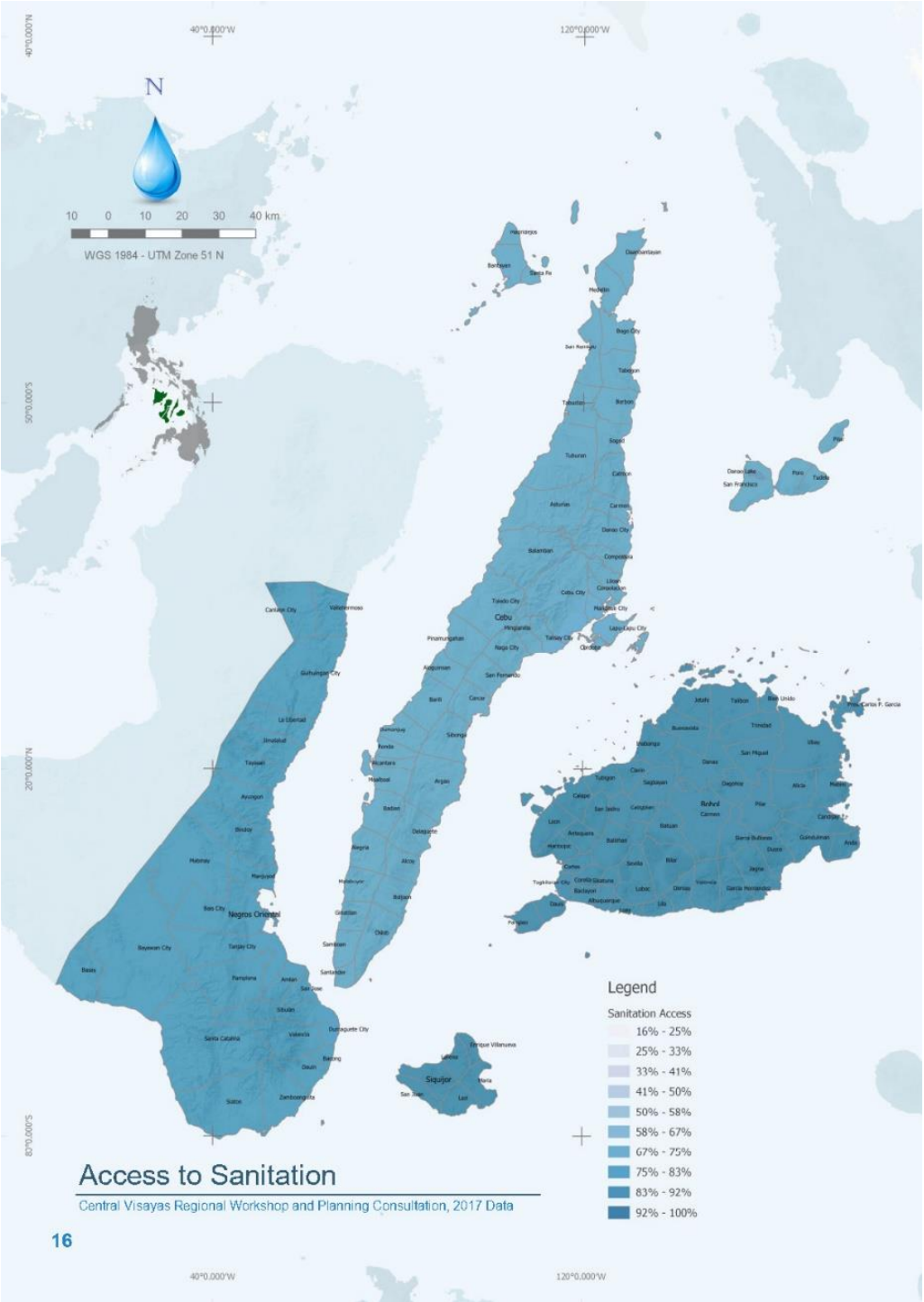
As shown in Table 22, Siquijor registers the highest access to basic sanitation (90.01%). Cebu, the province with the highest population base in Central Visayas, has the least percentage of households with sanitary toilets (73.20%).

Table I-3.5 Access to Sanitation Facilities per Province/HUC

Level of Service	HHs with Sanitary Toilets	HHs with Complete Basic Sanitation Facilities
Bohol	88.29%	52.30%
Cebu	73.20%	43.05%
Negros Oriental	*	*
Siquijor	90.01%	35.95%
Cebu City	83.33%	83.33%
Lapu-Lapu City	78.93%	78.93
Mandaue City	92.85%	*

Note: * - No data
Source: Central Visayas Water Supply and Sanitation Databook and Regional Roadmap

The following figure shows a map of the access to sanitation of Central Visayas in 2017. The data on access to sanitation at the provincial level were gathered during the regional consultation and planning workshop. In addition, there are septage treatment plants (SpTPs) in the municipality of Cordoba, and the cities of Dumaguete, Bayawan, Naga and Cebu.



Source: Central Visayas Water Supply and Sanitation Databook and Regional Roadmap

Figure I-3.5 Central Visayas Access to Sanitation

I-3.2 Natural Environment

I-3.2.1 Protected Area

As stated in the National Integrated Protected Areas System (NIPAS) Act of 1992, a protected area is defined as an identified portion of land and water set aside by reason of their unique physical and biological significance, managed to enhance biological diversity, and protected against destructive

human exploitation. Protected areas in the Philippines are categorized as strict nature reserve, natural park, natural monument, wildlife sanctuary, protected landscapes and seascapes, and resource reserve.

Under the mandate of NIPAS Act, these protected areas implement ecotourism approaches and practices, thus, ensuring that travel benefits the environment, protected area management, communities that surround the protected area, businesses conducting various operations related to the park, and many other stakeholders.

According to the DENR Region VII, WRR VII has a total of 24 protected areas. These protected areas cover approximately 642 barangays with a total land area of 590,420 ha. Among the protected areas, two are legislated, 10 are under E-NIPAS and 12 as initial component. The list and distribution of protected areas in the region are summarized in the table below:

Table I-3.6 List of Protected Areas in WRR VII

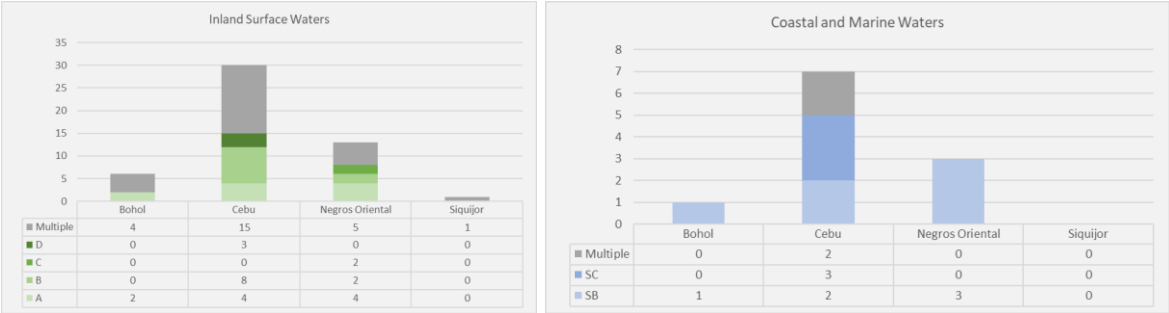
Protected Area	Category
Bohol	
Rajah Sikatuna Protected Landscape (RSPL)	E-NIPAS
Talibon Group of Islands Protected Landscape/Seascape (TGIPLS)	E-NIPAS
Alburquerque-Loay-Loboc Protected Landscape/Seascape (ALLPLS)	E-NIPAS
Panglao Island Protected Seascape (PIPS)	E-NIPAS
Chocolate Hills Natural Monument (CHNM)	E-NIPAS
Calape Group of Islands Wilderness Area and MSFR	Initial Component
Cabilao-Sandingan Islands MSFR	Initial Component
Inabanga-Buenavista MSFR & Inabanga Group of Islands WA	Initial Component
Loboc Watershed Forest Reserve	Initial Component
Alijawan-Cansuhay-Anibongan River Watershed Forest Reserve	Initial Component
Tubigon Group of Islands Wilderness Area and MSFR	Initial Component
Clarin Group of Islands Wilderness Area	Initial Component
Candijay-Anda-Mabini MSFR & Candijay Group of Islands WA	Initial Component
Pres. Carlos P. Garcia MSFR & Pres. Carlos P. Garcia Group of Islands MSFR	Initial Component
Getafe Group of Islands MSFR and WA	Initial Component
Ubay MSFR (Areas 1 & 2) & WA	Initial Component
Cebu	
Central Cebu Protected Landscape (CCPL) – RA 9486	Legislated
Guadalupe Mabugnao-Mainit Hot Spring National Park (GMMHSNP) – RA 6429	Legislated
Olango Island Wildlife Sanctuary (OIWS)	E-NIPAS
Camotes Island Protected Landscape/Seascape (CIPLS)	E-NIPAS
Tanon Strait Protected Seascape	E-NIPAS
Bantayan Island Wilderness Area (BIWA)	Initial Component
Negros Oriental	
Apo Island Protected Landscape/Seascape (AIPLS)	E-NIPAS
Balinsasayao Twin Lakes Natural Park (BTLNP)	E-NIPAS

Source: DENR Region VII (https://r7.denr.gov.ph/images/DENR-7/REGIONAL_PROFILE/denr-7_profile-edwp.pdf)

I-3.2.2 Water Quality

(1) Water Body Classification

As of 2019, Environmental Management Bureau (EMB) has classified a total of 61 water bodies in Region VII (Central Visayas) in terms of best usage and water quality. Of these classified water bodies, 50 are inland surface waters and 11 are coastal and marine waters. The following figure presents the distribution of classified water bodies among the provinces of the Region.



Source: EMB, 2019

Figure I-3.6 Distribution of Classified Water Bodies per Province, 2019

Some water bodies have several beneficial uses and are classified differently per reach or portion. Of the 61 classified water bodies in the Region, 28 (i.e., 26 inland and two coastal/marine) have more than one classification. The following tables respectively present the inventory of water bodies in the Region according to their usage and classification.

Table I-3.7 Inventory of Classified Inland Surface Waters in Region VII, 2019

Classification	Intended Beneficial Use	Location and Name of Water Bodies
Class AA	Public Water Supply Class I – Intended primarily for waters having watersheds, which are uninhabited and/or otherwise declared as protected areas, and which require only approved disinfection to meet the latest PNSDW	Cebu: Ginabasan River
Class A	Public Water Supply Class II – Intended as sources of water supply requiring conventional treatment (coagulation, sedimentation, filtration, and disinfection) to meet the latest PNSDW	Bohol: Abatan River, Inabanga River, Ipil River, Loboc River, Manaba River, Matu-id River
		Cebu: Argao River, Bagatayam River, Balamban River, Bawo River, Cotcot River, Danao River, Ginabasan River, Guindarohan River, Languyon River, Luyang River, Mananga River, Tambul River
		Negros Oriental: Banica River, Bayawan River, Canaway/Candugay River, Cawitan River, Guihulngan River, La Libertad River, Ocoy River, Siaton River, Sicopong River, Tanjay River
		Siquijor: Señora River
Class B	Recreational Water Class I – Intended for primary contact recreation (bathing, swimming, etc.)	Bohol: Abatan River, Loboc River, Manaba River
		Cebu: Argao River, Balamban River, Bawo River, Bojo River, Can-Asujan River, Danao River, Dumanjug River, Dumlog River, Guadalupe River, Ilaya River, Kinalumsan River, Languyon River, Matutinao River, Naghalin River, Pangdan River, Sapangdaku River, Sinungkulan River, Sta. Ana River
		Negros Oriental: Banica River, Bayawan River, Guihulngan River, Ocoy River, Pagatban River, Sicopong River, Tanjay River, Tyabanan River
		Siquijor: Señora River
Class C	Fishery Water for the propagation and growth of fish and other aquatic resources Recreational Water Class II – For boating, fishing, or similar activities For agriculture, irrigation, and livestock watering	Bohol: Abatan River, Inabanga River, Manaba River
		Cebu: Bulacao River, Can-Asujan River, Guadalupe River, Guindarohan River, Kinalumsan River, Luyang River, Mahiga River, Pangdan River, Sapangdaku River
		Negros Oriental: Banica River, Panamangan River, Sicopong River
Class D	Navigable waters	Cebu: Bulacao River, Butuanon River, Cansaga River, Kinalumsan River, Lahug River, Mahiga River

Sources: DENR Administrative Order No. 2016-08 (Water Quality Guidelines and General Effluent Standards); EMB, 2019

Table I-3.8 Inventory of Classified Coastal and Marine Waters in Region VII, 2019

Classification	Intended Beneficial Use	Location and Name of Water Bodies
Class SA	Protected Waters – Waters designated as national or local marine parks, reserves, sanctuaries, and other areas established by law (Presidential Proclamation 1801 and other existing laws), and/or declared as such by appropriate government agency, LGUs, etc. Fishery Water Class I – Suitable for shellfish harvesting for direct human consumption	Cebu: Olango Channel, Toledo-Balamban Coastal Water
Class SB	Fishery Water Class II – Waters suitable for commercial propagation of shellfish and intended as spawning areas for milkfish (Chanos chanos) and similar species Tourist Zones – For ecotourism and recreational activities Recreational Water Class I – Intended for primary contact recreation (bathing, swimming, skin diving, etc.)	Bohol: Panglao Coastal Water
		Cebu: Hilutungan Channel, Olango Channel, Silot Bay, Toledo-Balamban Coastal Waters
		Negros Oriental: Coastal Water of Dumaguete City, North Bais Bay, South Bais Bay
Class SC	Fishery Water Class III – For the propagation and growth of fish and other aquatic resources and intended for commercial and sustenance fishing Recreational Water Class II – For boating, fishing, or similar activities Marshy and/or mangrove areas declared as fish and wildlife sanctuaries	Cebu: Coastal Water of Danao City, Cansaga Bay, Mactan Channel, Toledo-Balamban Coastal Water
Class SD	Navigable waters	No coastal and marine water body is classified under this category

Sources: DENR Administrative Order No. 2016-08 (Water Quality Guidelines and General Effluent Standards); EMB, 2019

(2) Water Quality Monitoring

As of 2019, Philippine water quality is assessed based on the set beneficial use as defined in the DENR Administrative Order No. (DAO) 2016-08 or the Water Quality Guidelines and General Effluent Standards of 2016. Of the 48 parameters defining the water quality guidelines, 10 are categorized as primary parameters or the minimum required to be monitored for each water body. The primary parameters monitored by EMB Region VII from 2014 to 2019 are listed in the following table.

Table I-3.9 Primary Parameters Monitored by EMB Region VII from 2014 to 2019

Water Quality Parameter	Check if monitored	
	Inland Surface Waters	Coastal & Marine Waters
Biochemical Oxygen Demand	/	
Chloride	/	
Color	/	
Dissolved Oxygen	/	/
Fecal Coliform	/	/
Nitrate	/	/
pH	/	
Phosphate	/	/
Temperature	/	
Total Suspended Solids	/	/

Reference: DENR Administrative Order No. 2016-08; Ireland Environmental Protection Agency (2001)

During the period 2014 to 2019, EMB Region VII monitored a total of 21 water bodies for classification; four (4) priority rivers; one (1) water quality management area (WQMA); two (2) priority recreational water; and 16 bathing beaches, all of which are listed in the following table.

Table I-3.10 Water Bodies Monitored by EMB Region VII from CY 2014-2019

Names of Programs and Water Bodies Monitored	Year(s) Monitored
Water Body Classification	
Bagatayam River	2015
Bulacao River	2015
Panglao Coastal Waters	2016
Bojo River	2017
Bawo River	2018
Can-asujan River	2018
Cansaga River	2018
Dumanjug River	2018
Dumlog River	2018
Ilaya River	2018
Kinalumsan River	2018
Lahug River	2018
Languyon River	2018
Matutinao River	2018
Mahiga River	2018
Naghalin River	2018
Pangdan River	2018
Senora River	2018
Sinungkulan River	2018
Sta. Ana River	2018
Tambul River	2018
Priority Rivers	
Argao River	2016-2019
Guadalupe River	2014-2019
Luyang River	2014-2019
Sapangdaku River	2014-2019
Water Quality Management Area	
Butuanon River	2014-2019
Priority Recreational Waters	
East Coast Mactan / Hilutungan Channel	2014-2019
Panglao Island Coastal Waters	2014-2019
Other Coastal and Marine Waters	
Liloan Coastal Waters	2014-2018
Oslob Coastal Waters	2019
Cansaga Bay	2017

Source: EMB Region VII

I-3.2.3 Air Quality

Air quality can be determined using five (5) air pollutants as criteria parameters namely; Particulate Matter (PM), Carbon Monoxide (CO), Oxides of Nitrogen (NOx), Oxides of Sulfur (SOx), and Volatile Organic Compounds (VOC's). These pollutants are used as criteria pollutants because most of these are usually present in any activity that generates air pollution and are detrimental to the health and welfare of the public.

Air pollution may occur from a variety of sources including natural occurrence such as volcanic activity and sand/dust storms which is common to areas in the Middle East. Anthropogenically, this air pollution comes from three (3) major sources namely; Stationary, Mobile, and Area sources. Stationary sources are sources of air pollution which are immobile or fixed structures emitting air pollutants. Examples of which are boilers and generator sets which are common to industrial facilities that involves processing and manufacturing of consumer-based products. Mobile sources are those from vehicular activities that use combustion process for mobility. Area sources are those sources that occur within a locale. These sources are usually too wide, too little, or too seldom in occurrence that it is difficult to quantify individually. Some of these include residential cooking, residential/non-residential/road constructions, structural fires, etc.

In order to quantify the level of air pollutants emitted with these sources, DENR-EMB is mandated to conduct an inventory of the five (5) criteria air pollutants every three (3) consecutive years. For the 2016-2018 emissions inventory, it was found out that mobile sources contributed the greatest number of air pollutants in the region. Second were the stationary sources, then followed by area sources.

In the region, there are more than 4,000 accounted including new and renewal application for the issued Permit to Operate (PO/PTO) by the Office. These stationary sources are composed of major industries such as power plants, cement plants, metal fabrication and steel processing plants, processing, and manufacturing industries (food and beverages), electronics manufacturing, agricultural plants (sugar/rice/corn/feed mills), hospitals, hotels, resort, construction industries, furniture industries, and other commercial and industrial establishments.

In 2019, a total of 843 both new and renewed Permit to Operate were issued by the Office to those companies or industries that have Air Pollution Source Equipment and Control Facilities (APSE/APCFs). EMB-7 has also observed source emission tests conducted by accredited third party testers and has been able to accomplish all monitoring reports for stack sampling observation checklist. However, at present, EMB-7 has not conducted stack sampling tests due to the breakdown of existing source emission testing equipment, lack of trained personnel and lack of budget for the purchase of new set of equipment. Nevertheless, the office still plans to revive the conduct of source emission test in the coming years.

I-3.2.4 Solid Waste including disposal (dumping) site

Solid waste management remains a major challenge in the region especially in urban areas. Improper waste disposal, inefficient wastes collection and lack of disposal facilities are among the main concerns. Republic Act No. 9003, also known as "Ecological Solid Waste Management Act of 2000", aims to address the growing problem of solid wastes in the country. The RA No. 9003 also includes necessary institutional mechanisms with the creation of National Solid Waste Management Commission (NSWMC) which shall oversee the implementation of solid waste management plans.1

According to NSWMC, WRR VII's waste generation in 2012 is at 2,605.68 tons/day and increases by 185.18 tons/day in 2016.

The Regional Development Council Central Visayas passed and approved a resolution enjoining the Environmental Management Bureau 7 and Provincial Governments for a more active and full coordination in facilitating the provision of necessary assistance to LGUs that have yet to complete and submit their 10-year solid waste management (SWM) plan. The region has a total of four provinces and 132 municipalities where 86 had approved 10-year SWM plan, 47 are for approval and three has no submission. The number of municipalities with approved, for approval or no submission of SWM plan per province is summarized below:

Table I-3.11 Status of 10-year SWM Plan in WRR VII

Province	Approved	For Approval	No Submission	Total
Bohol	34	14	1	49
Cebu	40	13	1	54
Negros Oriental	9	16	1	26
Siquijor	3	4	0	7
Total	86	47	3	136

Source: DENR Region VII (10-YEAR SOLID WASTE MANAGEMENT PLAN-web - Google Sheets)

The country has a total of 189 established sanitary landfills, 15 of which is located in the Central Visayas Region. In addition, there are 233 open dumpsites which are still operating in the country. Among the open dumpsites, 27 are in the region.2

Aside from the sanitary landfills and open dumpsites, there are eight registered TSD facilities who manages the hazardous wastes in the region. All facilities are located in the province of Cebu (see next Table).

[1] Philippines Solid Wastes at a Glance (November 2017).
[2] DENR, sanitary landfill operators step up partnership for effective solid waste management (January 2021)

Table I-3.12 List of Registered TSD Facilities in WRR VII

Name	Location	Category
Davao City Environmental Care, Inc.	Brgy. Paknaan, Mandaue City	B
Cebu Megalube Used Oil Recycle	Baha-Baaha, Tayud, Consolacion, Cebu	D
Medclean Management Solutions, Inc.	Cabancalan, Mandaue City	B
Enviro-Q-Trends Corporation	Brgy. Puente, Carmen, Cebu	C, D & E
Phil-Japan Metals & Refined Products Co., Inc.	Mactan Economic Zone 1, Lapu-Lapu City	D & E
RRDS Environmental Services, Inc.	Umapad, Mandaue City	D & F
Cebu Common Treatment Facility, Inc.	Inayawan, Cebu City	D, E & F
ARC Merchandising	Pamutongan, Jubay, Liloan, Cebu	F

Source: List-of-TSD-Facilities-March-2020-for-Posting.pdf (emb.gov.ph)

NSWMC projected the waste generation in the region per province as summarized in the table below. Cebu accounts for the greatest projected waste generation from 2020-2025 which is above one million tons/year. It is followed by Negros Oriental with above 200,000 tons/year, Bohol with above 100,000 tons/year and Siquijor with 10,000 tons/year.

Table I-3.13 Projected Waste Generation (tons/year) from 2020 to 2025 in WRR VII

Province	2020	2021	2022	2023	2024	2025
Bohol	188,000	190,000	191,000	193,000	195,000	197,000
Cebu	1,070,000	1,100,000	1,120,000	1,150,000	1,170,000	1,200,000
Negros Oriental	276,000	279,000	283,000	286,000	289,000	293,000
Siquijor	11,085	11,208	11,323	11,444	11,567	11,690
Total	1,545,085	1,580,208	1,605,323	1,640,444	1,665,567	1,701,690

Source: Microsoft Power BI

ANNEX I-4 ENVIRONMENTAL AND SOCIAL BASELINE DATA IN WRR XI

I-4.1 Social Environment

I-4.1.1 Ethnicity

The PSA defined ethnicity as a sense of belonging to an ethnic group. Ethnic group is consanguine in nature, meaning, the ties are reckoned by blood and traced through the family tree. Thus, ethnicity refers to the household member's identity, by blood or consanguinity and not by choice nor by adoption/confirmation for any ethnic group nor indigenous peoples (IPs).

This section will be updated accordingly.

I-4.1.2 Local Economy

The WRR XI is the 5th largest economy by Region in the Philippines with PHP 832.09 billion. translating to 4.96% of the National GDP in 2020, according to the Philippine Statistics Authority (PSA).

I-4.1.3 Land Use and Utilization of Local Resources

The region has a total land area of 15,886 square kilometers (km2) (3,922,200 acres) accounting for 5% of the country's total land area. About 36% is classified as forestland and 64% alienable and disposable land. Agricultural land covers around 32%

I-4.1.4 Historic Site / Culture Heritage

Davao is currently home to 378 historical, tangible, and intangible cultural properties recorded in the PRECUP-TALAPAMANA. The table below highlights the declared marked structures and important cultural property in Davao Region.

Table I-4.1 TALAPAMANA List of Marked Structures & Important Cultural Properties in WRR XI

Official Name	Location	City/ Municipality	Declaration/ Classification	Type
Andres Bonifacio Monument (Toril) | Andres Bonifacio (30 Nobyembre 1863-10 Mayo 1897) Marker	Toril District Hall Grounds, Toril	Davao City	Marked Structure, NHCP; Registered Property, Davao City	Tangible-Immovable
Ohta Kyozaburo Monument | Ohta Kyozaburo (1876-1917) Marker	Mintal Elementary School Grounds, Barangay Mintal	Davao City	Marked Structure, NHCP; Registered Property, Davao City	Tangible-Immovable
Davao City Hall	San Pedro Street	Davao City	Marked Structure, NHCP; Registered Property, Davao City	Tangible-Immovable
Port Santa Ana	Q. Boulevard	Davao City	Marked Structure, NHCP; Registered Property, Davao City	Tangible-Immovable
Filipinas Life Assurance Company Building - Davao City	Rizal Street, Barangay 3-A, Poblacion District	Davao City	Work of National Artist for Architecture Leandro V. Locsin; Registered Property, Davao City	Tangible-Immovable
Davao International Airport Terminal Building	Old Airport Road, Buhangin	Davao City	Work of National Artist for Architecture Leandro V. Locsin; Registered Property, Davao City	Tangible-Immovable
Davao Insular Hotel	Lanang	Davao City	Work of National Artist for Architecture Leandro V. Locsin; Registered Property, Davao City	Tangible-Immovable

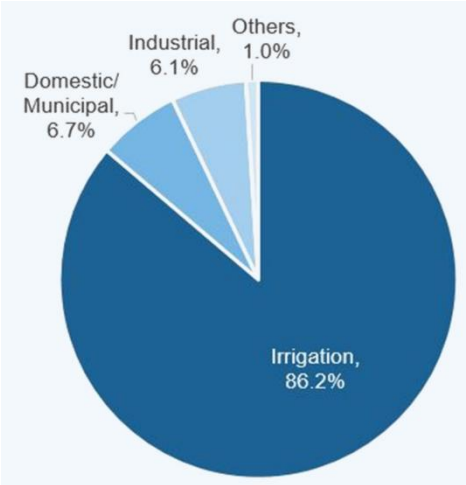
Official Name	Location	City/ Municipality	Declaration/ Classification	Type
Barangay Mintal Japanese Heritage SIte	Barangay Mintal, Tugbok District	Davao City	Local Cultural Property - Japanese Heritage Site, Davao City	Tangible-Immovable
Andres Bonifacio Monument (Toril) | Andres Bonifacio (30 Nobyembre 1863-10 Mayo 1897) Marker	Toril District Hall Grounds, Toril	Davao City	Marked Structure, NHCP; Registered Property, Davao City	Tangible-Immovable
Ohta Kyozaburo Monument | Ohta Kyozaburo (1876-1917) Marker	Mintal Elementary School Grounds, Barangay Mintal	Davao City	Marked Structure, NHCP; Registered Property, Davao City	Tangible-Immovable
Davao City Hall	San Pedro Street	Davao City	Marked Structure, NHCP; Registered Property, Davao City	Tangible-Immovable
Port Santa Ana	Q. Boulevard	Davao City	Marked Structure, NHCP; Registered Property, Davao City	Tangible-Immovable
Filipinas Life Assurance Company Building - Davao City	Rizal Street, Barangay 3-A, Poblacion District	Davao City	Work of National Artist for Architecture Leandro V. Locsin; Registered Property, Davao City	Tangible-Immovable
Davao International Airport Terminal Building	Old Airport Road, Buhangin	Davao City	Work of National Artist for Architecture Leandro V. Locsin; Registered Property, Davao City	Tangible-Immovable
Davao Insular Hotel	Lanang	Davao City	Work of National Artist for Architecture Leandro V. Locsin; Registered Property, Davao City	Tangible-Immovable
Barangay Mintal Japanese Heritage SIte	Barangay Mintal, Tugbok District	Davao City	Local Cultural Property - Japanese Heritage Site, Davao City	Tangible-Immovable

Source: NCCA TALAPAMANA Mindanao (2021)

I-4.1.5 Present Uses of Surface Water including Water Supply

(1) Water Use

As shown in the water resource utilization of Davao Region in Figure, the water use in Davao Region was estimated at 6,137.66 MCM annually based on awarded water permits as of 2017. Of this, about 2,290.78 MCM (59.20%) is allocated for power generation, 5,290.66 MCM (86.2%) for irrigation sector, 411.22 MCM (6.7%) for municipal/domestic sector and 61.38 MCM (1.0%) for industrial sector.



Source: Davao Region Water Supply and Sanitation Databook and Regional Roadmap

Figure I-4.1 Davao Region Water Resource Utilization, 2017

(2) Water Supply

About 91.44% of Davao Region's population in 2015 had access to safe water sources. This translates to around 1,057,000 households. As presented in the following table, about 39.9% of the population in 2015 has Level III service connection, about 14.6% has Level II connections and about 36.9% has access to Level I.

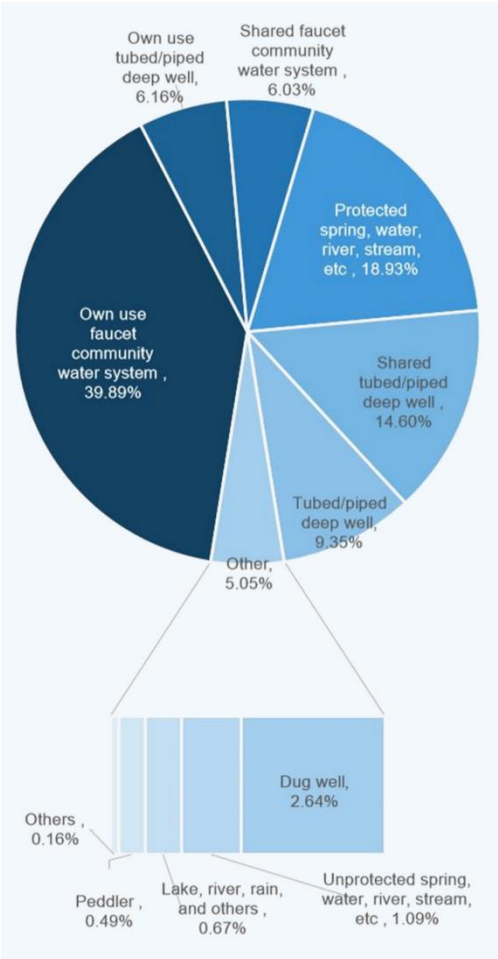
Table I-4.2 Davao Region Access to Water Supply

Level of Service	Davao Region
Level III	39.9%
Level II	14.6%
Level I (Safe Source)	36.9%
Subtotal (Safe Source)	91.4%
Level 1 (Unsafe Sources)	8.6%
Total	100.0%

Source: Davao Region Water Supply and Sanitation Databook and Regional Roadmap

The following figure shows the main sources of water supply of Davao Region in 2015. Majority of the sources are own use faucet community water system (39.89%).

As shown in the following table, the province of Davao del Sur has the highest access to water supply (94.0%) while Davao del Norte has the least percentage of access to water supply (56.5%). Furthermore, about 99.8% of Davao City (highly urbanized city (HUCs)) has access to water supply.



Source: Davao Region Water Supply and Sanitation Databook and Regional Roadmap

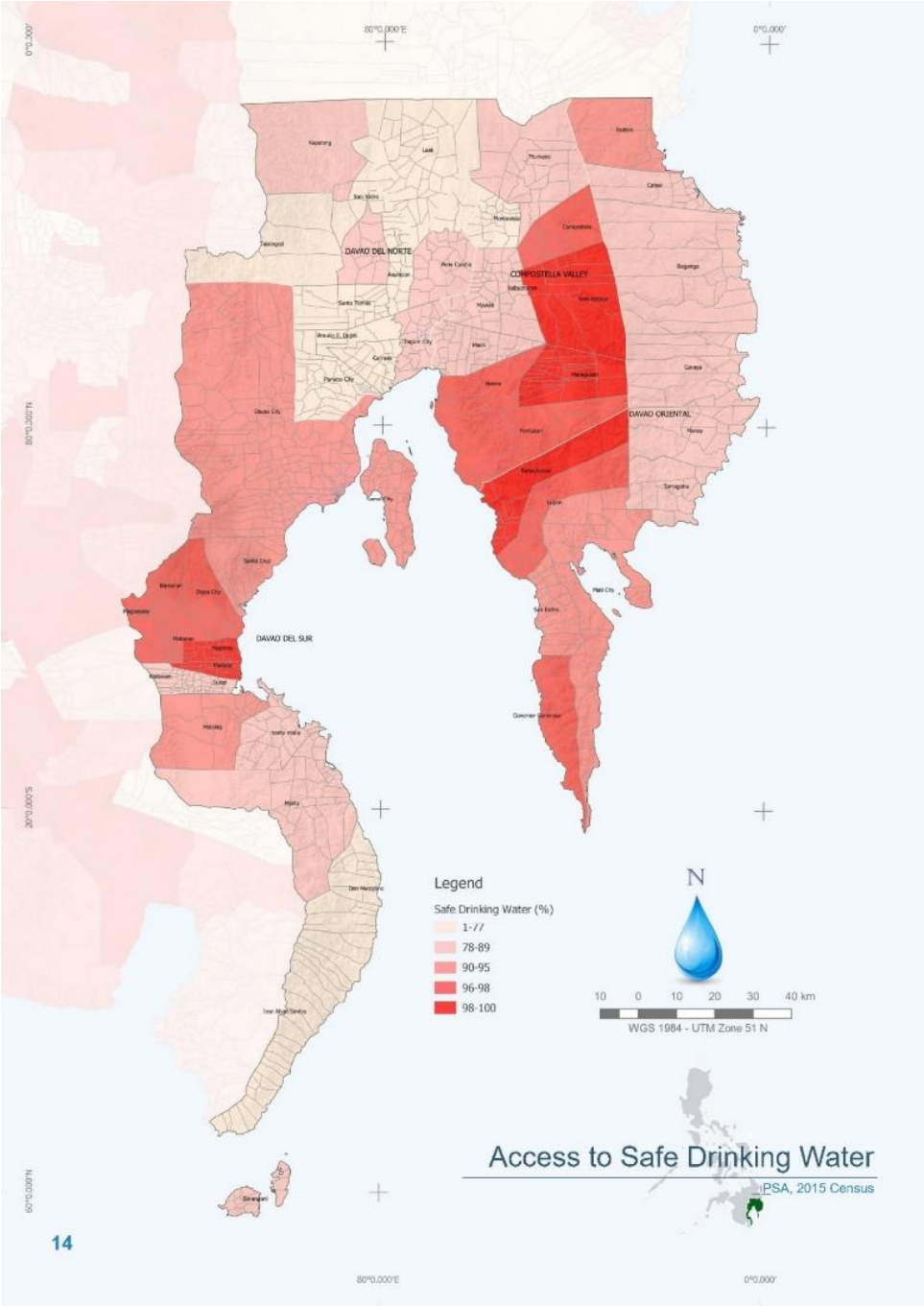
Figure I-4.2 Davao Region Main Sources of Water Supply

Table I-4.3 Access to Water Supply per Province/HUC

Level of Service	Access to Safe Water Supply
Compostela Valley	92.0%
Davao del Norte	56.5%
Davao del Sur	94.0%
Davao Oriental	93.0%
Davao Occidental	69.1%
Davao City	99.8%

Source: Davao Region Water Supply and Sanitation Databook and Regional Roadmap

The following figure shows a map of the access to safe water of Davao Region in 2015.



Source: Davao Region Water Supply and Sanitation Databook and Regional Roadmap

Figure I-4.3 Davao Region Access to Safe Water

I-4.1.6 Sanitation

About 70% of Davao Region's population in 2015 had access to improved sanitation. The region slightly trails behind in regard to basic sanitation and is almost on a par in terms of open defecation. As shown in the following table, the region's open defecation rate is around 1.33%.

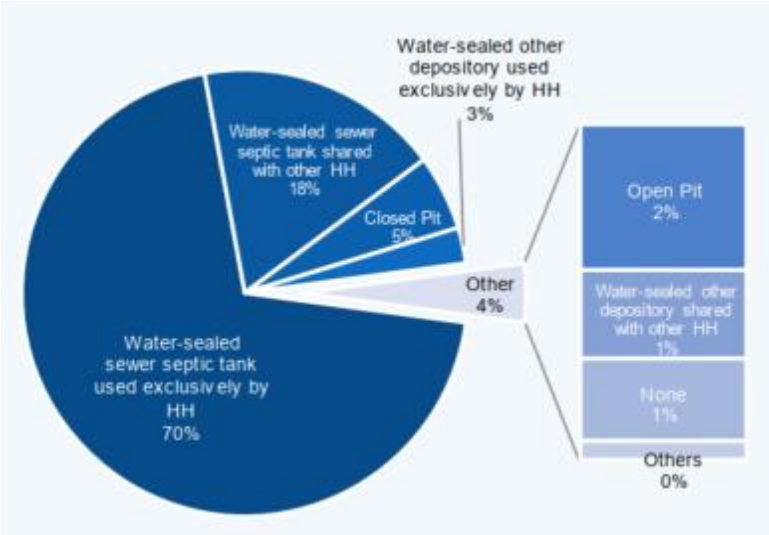
Table I-4.4 Davao Region Access to Sanitation

Sanitation Coverage	Davao Region
Improved Sanitation	69.93%
Basic Sanitation	26.94%
Unimproved Sanitation	1.80%
Open Defecation	1.33%
Total	100.0%

Source: Davao Region Water Supply and Sanitation Databook and Regional Roadmap

The following figure shows the percentage of households of Davao Region per type of sanitation facilities in 2015. Majority of households have exclusive use water-sealed sewer septic tank (70%).

As shown in the following table, Davao del Norte registered the highest access to basic sanitation (91.11%). Davao del Sur and Compostela Valley (both with the largest population) had the least percentage of households with sanitary toilets (77.28% and 81.54%).



Source: Davao Region Water Supply and Sanitation Databook and Regional Roadmap

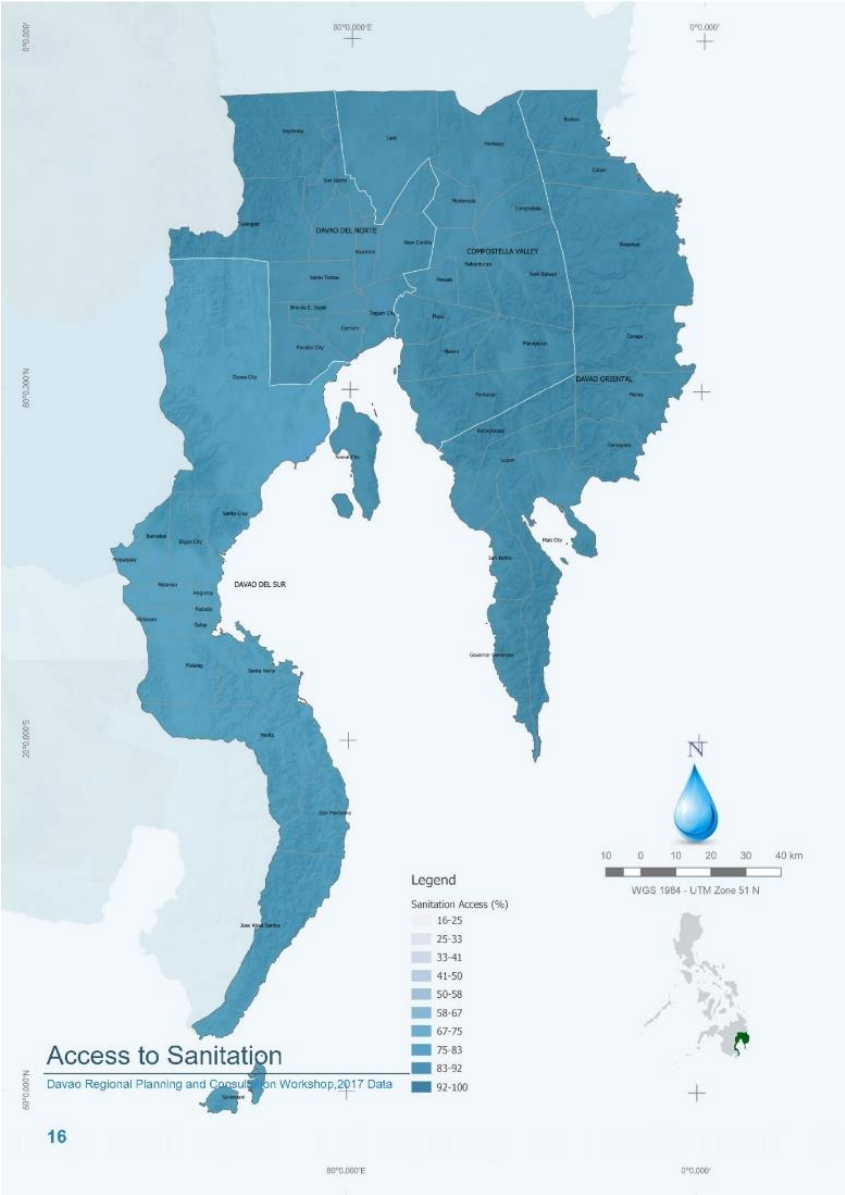
Figure I-4.4 Households in Davao Region with Access to Sanitation Facilities

Table I-4.5 Access to Sanitation Facilities per Province/HUC

Level of Service	HHs with Sanitary Toilets	HHs with Complete Basic Sanitation Facilities
Compostela Valley	81.54%	43.26%
Davao del Norte	91.11%	67.10%
Davao del Sur	77.28%	30.91%
Davao Oriental	84.88%	71.04%
Davao Occidental	*	*
Davao City	88.93%	88.18%

Note: * - No data | Source: Davao Region Water Supply and Sanitation Databook and Regional Roadmap

The following figure shows a map of the access to sanitation of Davao Region in 2017. The data on access to sanitation at the provincial level were gathered during the regional consultation and planning workshop. In addition, the only septage treatment plant (SpTPs) in the region is located on City of Davao.



Source: Davao Region Water Supply and Sanitation Databook and Regional Roadmap

Figure I-4.5 Davao Region Access to Sanitation

I-4.2 Natural Environment

I-4.2.1 Protected Area

As stated in the National Integrated Protected Areas System (NIPAS) Act of 1992, protected areas are defined as an identified portion of land and water set aside by reason of their unique physical and biological significance, managed to enhance biological diversity, and protected against destructive human exploitation. Protected areas in the Philippines is categorized as strict nature reserve, natural park, natural monument, wildlife sanctuary, protected landscapes and seascapes, and resource reserve.

Under the mandate of NIPAS Act, these protected areas implement ecotourism approaches and practices, thus, ensuring that travel benefits the environment, protected area management, communities that surround the protected area, businesses conducting various operations related to the park, and many other stakeholders.

According to the Department of Environment and Natural Resources (DENR) Biodiversity Management Bureau (BMB), the region has a total of 10 protected areas. These protected areas cover approximately a total land area of 104,256 ha. Among the protected areas, seven are legislated, one is proclaimed and two as initial component. The list and distribution of protected areas in the region are summarized in the table below:

Table I-4.6 List of Protected Areas in WRR XI

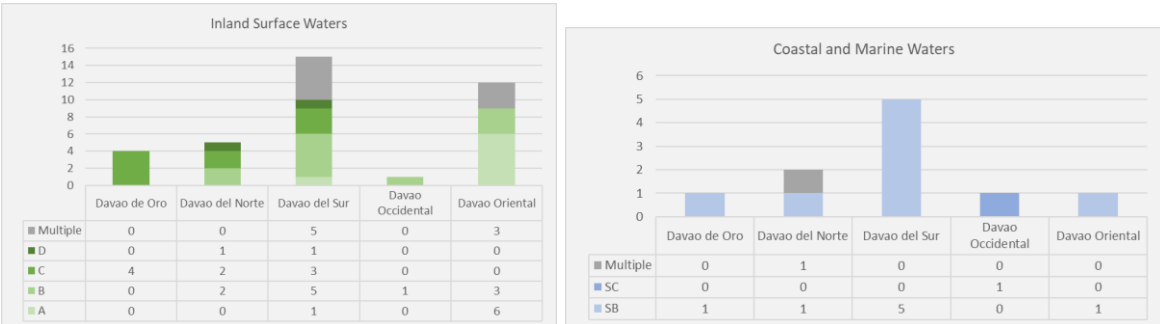
Protected Area	Province/City	Category
Mt. Apo Natural Park	Davao del Sur, Davao City	Legislated
Mt. Hamiguitan Range Wildlife Sanctuary	Davao Oriental	Legislated
Mabini Protected Landscape and Seascape	Compostela Valley	Legislated
Mainit Hotspring Protected Landscape	Compostela Valley	Legislated
Aliwagwag Protected Landscape	Davao Oriental, Compostela Valley	Legislated
Mati Protected Landscape	Davao Oriental	Legislated
Pujada Bay Protected Landscape & Seascape	Davao Oriental	Legislated
Baganga Protected Landscape	Davao Oriental	Proclaimed
Malagos Watershed Forest Reserve	Davao City	Initial Components
Mangrove From Baculin Point to Lakud Point, From Tanuip Point to Quinablangan Island and Samal Island	Davao	Initial Components

Source: DENR-BMB List of Protected Areas

I-4.2.2 Water Quality

(1) Water Body Classification

As of 2019, Environmental Management Bureau (EMB) has classified a total of 47 water bodies in Region XI (Davao Region) in terms of best usage and water quality. Of these classified water bodies, 37 are inland surface waters and 10 are coastal and marine waters. Figure presents the distribution of classified water bodies among the provinces of the Region.



Source: EMB, 2019

Figure I-4.6 Distribution of Classified Water Bodies per Province, 2019

Some water bodies have several beneficial uses and are classified differently per reach or portion. Of the 47 classified water bodies in the Region, nine have more than one classification. The following table presents the inventory of water bodies in the Region according to their usage and classification.

Table I-4.7 Inventory of Classified Inland Surface Waters in Region XI, 2019

Classification	Intended Beneficial Use	Location and Name of Water Bodies
Class AA	Public Water Supply Class I – Intended primarily for waters having watersheds, which are uninhabited and/or otherwise declared as protected areas, and which require only	Davao del Sur: Lipadas River (Mt. Apo Nat'l Park to Brgy. Baracayo)
		Davao Oriental: Baganga-Mahan-Ub River (Upstream)

	approved disinfection to meet the latest PNSDW	
Class A	Public Water Supply Class II – Intended as sources of water supply requiring conventional treatment (coagulation, sedimentation, filtration, and disinfection) to meet the latest PNSDW	Davao del Sur: Davao River (Stations 5-8 Upstream), Lipadas River (Brgy. Baracayo to Brgy. Bangkas), Sibulan River (Upstream), Tamugan River
		Davao Oriental: Baganga-Mahan-Ub River (Downstream), Baguan River, Caraga River, Casauman River, Cateel River, Dapnan River, Manurigao River, Quinonoan River, Sumlog River (Upstream Headwater)
Class B	Recreational Water Class I – Intended for primary contact recreation (bathing, swimming, etc.)	Davao del Norte: Saug River, Tuganay River
		Davao del Sur: Davao River (Stations 1-5 Downstream), Digos River (Stations 3-6 Upstream), Lasang River, Lipadas River (Midstream Brgy. Bangkas to Brgy. Alambre), Mainit River, Mal River, Malita River, Matina River (Stations 3-9 Upstream), Sibulan River (Downstream), Talomo River
		Davao Occidental: Lais River
		Davao Oriental: Baguan River, Bitanagan River, Mayo River, Pinatatagan River, Sumlog River (Midstream)
Class C	Fishery Water for the propagation and growth of fish and other aquatic resources Recreational Water Class II – For boating, fishing, or similar activities For agriculture, irrigation, and livestock watering	Davao de Oro: Agusan River, Kingking River, Matiao River, Naboc River
		Davao del Norte: Libuganon River, Tagum River, Hijo River
		Davao del Sur: Balutakay River, Bunawan River, Digos River (Stations 1-2 Downstream), Ilang River, Lipadas River (Downstream Brgy. Alambre to confluence with Davao Gulf), Matina River (Stations 1-2 Downstream)
		Davao Oriental: Sumlog River (Downstream)
Class D	Navigable waters	Davao del Sur: Padada River

Sources: DENR Administrative Order No. 2016-08 (Water Quality Guidelines and General Effluent Standards); EMB, 2019

Table I-4.8 Inventory of Classified Coastal and Marine Waters in Region XI, 2019

Classification	Intended Beneficial Use	Location and Name of Water Bodies
Class SA	Protected Waters – Waters designated as national or local marine parks, reserves, sanctuaries, and other areas established by law (Presidential Proclamation 1801 and other existing laws), and/or declared as such by appropriate government agency, LGUs, etc. Fishery Water Class I – Suitable for shellfish harvesting for direct human consumption	No coastal and marine water body is classified under this category
Class SB	Fishery Water Class II – Waters suitable for commercial propagation of shellfish and intended as spawning areas for milkfish (Chanos chanos) and similar species Tourist Zones – For ecotourism and recreational activities Recreational Water Class I – Intended for primary contact recreation (bathing, swimming, skin diving, etc.)	Davao de Oro: Kopiat Bay
		Davao del Norte: Coastal Water of Island Garden City of Samal, Davao Gulf
		Davao del Sur: Davao Gulf – Malalag Bay, Davao Gulf – Bago Aplaya, Davao Gulf – Coaco, Davao Gulf – Sta. Cruz Area, Davao Gulf to Punta Dumalag
		Davao Oriental: Mayo Bay
Class SC	Fishery Water Class III – For the propagation and growth of fish and other aquatic resources and intended for commercial and sustenance fishing	Davao del Norte: Davao Gulf
		Davao Occidental: Davao Gulf (Sta Ma – Malita)

Classification	Intended Beneficial Use	Location and Name of Water Bodies
	Recreational Water Class II – For boating, fishing, or similar activities Marshy and/or mangrove areas declared as fish and wildlife sanctuaries	
Class SD	Navigable waters	No coastal and marine water body is classified under this category

Sources: DENR Administrative Order No. 2016-08 (Water Quality Guidelines and General Effluent Standards); EMB, 2019

(2) Water Quality Monitoring

As of 2019, Philippine water quality is assessed based on the set beneficial use as defined in the DENR Administrative Order No. (DAO) 2016-08 or the Water Quality Guidelines and General Effluent Standards of 2016. Of the 48 parameters defining the water quality guidelines, 10 are categorized as primary parameters or the minimum required to be monitored for each water body. The primary parameters monitored by EMB Region XI from 2014 to 2019 are listed in Table.

Table I-4.9 Primary Parameters Monitored by EMB Region XI from 2014 to 2019

Water Quality Parameter	Description	Check if monitored	
		Inland Surface Waters	Coastal & Marine Waters
Biochemical Oxygen Demand	BOD determines the concentration of oxygen required for the decomposition of organic matter from a pollution source. A higher BOD value indicates a greater degree of pollution. Most aquatic organisms cannot survive if the BOD level is above 7 mg/L.	/	
Chloride	Chloride exists in all natural waters, the concentrations varying very widely and reaching a maximum in sea water (up to 35,000 mg/L). In fresh waters the sources include soil and rock formations, sea spray and waste discharges. Sewage contains large amounts of chloride, as do some industrial effluents.	/	
Color	Natural color reflects the presence of complex organic molecules derived from vegetable (humic) matter such as peat, leaves, branches and so on. Its effect can be enhanced by the presence of suspended matter, but this is normally eliminated in the analysis by filtration. Obviously, the more vegetable matter in the water the greater is the color. Exceptionally, natural color may arise from the presence of colloidal iron/manganese in a water, but organic matter is almost always the cause.	/	/
Dissolved Oxygen	DO is the concentration of oxygen measured in its dissolved form. Fish and other aquatic organisms require at least 5 mg/L of DO to live.	/	/
Fecal Coliform	Fecal Coliform bacteria are microscopic organisms that indicate significant content of pathogens from feces of warm-blooded animals. They are disease-carrying organisms and have important implications to human health. The PNSDW prescribed that drinking water should contain less than 1.1 MPN/100mL Fecal Coliform level. This parameter is especially significant for water bodies that involve high human interface.	/	/
Nitrate	Nitrates in the environment consist of salts of ammonium, sodium, potassium, and calcium. Like phosphates, nitrates in water bodies come from agricultural runoff and sewage discharge where they are formed as by-products of decomposition. High nitrate concentrations can inhibit fish growth, impair immune system, and cause stress in some aquatic species.	/	/
pH	By definition pH is the negative logarithm of the hydrogen ion concentration of a solution and it is thus a measure of whether the liquid is acid or alkaline. The pH scale (derived from the	/	/

Water Quality Parameter	Description	Check if monitored	
		Inland Surface Waters	Coastal & Marine Waters
	ionization constant of water) ranges from 0 (very acid) to 14 (very alkaline). The range of natural pH in freshwaters extends from around 4.5, for acid, peaty upland waters, to over 10.0 in waters where there is intense photosynthetic activity by algae. However, the most frequently encountered range is 6.5-8.0.		
Phosphate	Phosphates occur either as particulate phosphates or dissolved phosphates. The presence of excess phosphates can cause enormous algal bloom. Once a vast mass of excess algae dies and decomposes by oxidation, the water is depleted of DO and may result to fish kill.	/	/
Temperature	The effect of temperature, and especially changes in temperature, on living organisms can be critical. Elevated temperatures and, more importantly, steep temperature gradients can have directly harmful effects on fish. It is for such reason that changes in temperature are subject to limits.	/	/
Total Suspended Solids	TSS measures the concentration of undissolved solid particles in water, such as silt, decaying plant and animal matter, and domestic and industrial wastes. Higher TSS value suggests decreased ability of the water to support aquatic life due to reduced light penetration. TSS level in sources of water supply should not exceed 25 mg/L for Class AA and 50 mg/L for Class A.	/	/

Source: DENR Administrative Order No. 2016-08; Ireland Environmental Protection Agency (2001)

During the period 2014 to 2019, EMB Region XI monitored a total of 32 water bodies for classification; four priority rivers; two water quality management area (WQMA); and two priority recreational water, all of which are listed in the following table.

Table I-4.10 Water Bodies Monitored by EMB Region XI from CY 2014-2019

Names of Programs	Water Bodies Monitored
INLAND SURFACE WATER INCLUDED IN THE COMPLIANCE RATING ASSESSMENT	Sibulan River
	Davao River
	Digos River
	Matina River
	Sumlog River
	Baguan River
	Lipadas River
	Manurigao River
	Cateel River
	Baganga Mahan-ub River
	Dapnan River
	Talomo River
	Tuganay River
	Bitanagan River
	Mal River
	Lasang River
	Lais River
	Malita River
	Mayo River
	Saug River
	Naboc River
	Hijo River
	Padada River
	Matiao River
	Agusan River

Names of Programs	Water Bodies Monitored
	Libuganon River
	Kingking River
	Balutakay River
	Bunawan River
	Ilang River
	Tagum River
	Naboc River
PRIORITY RIVERS	Lipadas River
	Libuganon River
	Padada River
	Tagum River
WATER QUALITY MANAGEMENT AREA	Davao River WQMA
	Talomo River WQMA
PRIORITY RECREATIONAL WATERS	Coaco Beach (Aliwagwag)
	Leling Beach Resort (Hagonoy, Davao Del Sur)

Source: EMB Region XI

I-4.2.3 Solid Waste

Solid waste management remains a major challenge in the region especially in urban areas. Improper waste disposal, inefficient wastes collection and lack of disposal facilities are among the main concerns. Republic Act No. 9003, also known as "Ecological Solid Waste Management Act of 2000", aims to address the growing problem of solid wastes in the country. The RA No. 9003 also includes necessary institutional mechanisms with the creation of National Solid Waste Management Commision (NSWMC) which shall oversee the implementation of solid waste management plans.3

According to NSWMC, the region's waste generation in 2012 is at 1,818.05 tons/day and increases by 129.21 tons/day in 2016.

The Regional Development Council Davao passed and approved a resolution enjoining the Environmental Management Bureau 11 and Provincial Governments for a more active and full coordination in facilitating the provision of necessary assistance to LGUs that have yet to complete and submit their 10-year solid waste management (SWM) plan. The region has a total of five provinces, one highly urbanized city and 49 municipalities where 48 had approved 10-year SWM plan, five are for approval and one has no submission. The number of municipalities and provinces with approved, for approval or no submission of SWM plan per province is summarized below:

Table I-4.11 Status of 10-year SWM Plan in WRR XI

Province	Approved	For Approval	No Submission	Total
Compostela Valley	12	0	0	12
Davao del Norte	11	1	0	12
Davao del Sur	11	1	0	12
Davao Occidental	3	2	1	6
Davao Oriental	11	1	0	12
Total	48	5	1	54

Source: DENR Region XI (10-YEAR SOLID WASTE MANAGEMENT PLAN

The country has a total of 189 established sanitary landfills and 233 open dumpsites which are still operating in the country. Among the open dumpsites, 20 are in the region.4 Aside from the sanitary landfills and open dumpsites, there are 11 registered TSD facilities who manages the hazardous wastes in the region (see next table).

[3] Philippines Solid Wastes at a Glance (November 2017).
[4] DENR, sanitary landfill operators step up partnership for effective solid waste management (January 2021)

Table I-4.12 List of Registered TSD Facilities in WRR XI

Name	Location	Category
PEMA Plastic Products, Inc.	Sto. Tomas, Davao del Norte	D, F
Davao United Plastic Recycling Inc	Panabo City, Davao del Norte	D
Yunhap Plastic Corporation	Carmen, Davao del Norte	D
Starplas Corporation	Davao City	D
Macondray Plastic Products, Inc	Panabo City, Davao del Norte	D
Cycle Rich Summit Industries, Inc.	Sto. Tomas, Davao del Norte	D
Northsea Petroleum Products	Davao City	D
Maya Med Waste Corporation	Davao City	B
Holcim Philippines, Inc. – Davao Plant	Davao City	A, B, D
Davao Thermo Biotech Corp.	Davao City	D, F
Propack Manufacturing & Marketing Corporation	Davao City	D

Source: List-of-TSD-Facilities-March-2020-for-Posting.pdf (emb.gov.ph)

NSWMC projected the waste generation in the region per province as summarized in the table below. Davao del Sur accounts for the greatest projected waste generation from 2020-2025 which is above five hundred thousand tons/year.

Table I-4.13 Projected Waste Generation (tons/year) from 2020 to 2025 in WRR XI

Province	2020	2021	2022	2023	2024	2025
Compostela Valley	139000	141000	143000	145000	148000	150000
Davao del Norte	245000	250000	255000	261000	266000	272000
Davao del Sur	593000	606000	619000	632000	646000	660000
Davao Occidental	56600	57400	58300	59100	60000	60800
Davao Oriental	115000	117000	118000	120000	122000	124000
Total	1148600	1171400	1193300	1217100	1242000	1266800

Source: Microsoft Power BI

ANNEX I-5 ENVIRONMENTAL AND SOCIAL BASELINE DATA IN WRR V

I-5.1 Social Environment

I-5.1.1 Ethnicity

The PSA defined ethnicity as a sense of belonging to an ethnic group. Ethnic group is consanguine in nature, meaning, the ties are reckoned by blood and traced through the family tree. Thus, ethnicity refers to the household member's identity, by blood or consanguinity and not by choice nor by adoption/confirmation for any ethnic group nor indigenous peoples (IPs).

This section will be updated accordingly.

I-5.1.2 Local Economy

The WRR V is the 9th largest economy by Region in the Philippines with PHP 517.46 billion, translating to 2.9% of the National GDP in 2020, according to the Philippine Statistics Authority (PSA). The economic activities of Bicol are predominantly service-oriented, comprising of 57.5% of the economy, followed by industry and agriculture, hunting, forestry, and fishing (AHFF).

The WRR V's functional role, as discussed in the National Economic and Development Authority (NEDA) Bicol Regional Development Plan (RDP) for 2017 to 2022 Midterm Update, in terms of national development were as follow:

I-5.2 Historic Site / Culture Heritage

Republic Act No. 10066, otherwise known as the "National Cultural Heritage Act of 2009" was enacted in 2010 to provide protection, preservation, and promotion of the nation's cultural heritage. This enabled the National Commission for Culture and the Arts (NCCA) to establish the Philippine Registry of Cultural Property (PRECUP). The PRECUP is the repository of all culture properties of the Philippines that were deemed important to cultural heritage.

Bicol is currently home to 458 historical, tangible, and intangible cultural properties recorded in the PRECUP-TALAPAMANA. The table below highlights the declared marked structures and important cultural property in Bicol Region.

Table I-5.1 TALAPAMANA List of Marked Structures & Important Cultural Properties in WRR V

Official Name	Location	City/ Municipality	Declaration/Classification	Type
Jose Panganiban Monument | Jose Ma. Panganiban y Enverga (1863-1890) Marker	-	Jose Panganiban	Marked Structure, NHCP; Registered Property, Province of Camarines Norte	Tangible-Immovable
Metropolitan Cathedral of Saint John the Evangelist of Naga | Cathedral of Naga Marker; Church of Nueva Caceres Marker	-	Naga City	Marked Structure, NHCP; Local Cultural Property - Naga City Historical Buildings and Structures (Ordinance Number 2003-003)	Tangible-Immovable
Holy Rosary Minor Seminary Historical Landmark | Seminary of Nueva Caceres Marker	-	Naga City	National Historical Landmark, NHCP; Local Cultural Property - Naga City Historical Buildings and Structures (Ordinance No. 2003-003)	Tangible-Immovable
Universidad de Santa Isabel | Colegio de Santa Isabel Marker; Universidad de Santa Isabel Marker	Elias Angeles corner Santonja Streets	Naga City	Marked Structure, NHCP; Local Cultural Property - Naga City Historical Buildings and Structures (Ordinance Number 2003-003)	Tangible-Immovable

Official Name	Location	City/ Municipality	Declaration/Classification	Type
Jose Rizal National Monument Daet | First Rizal Monument	Daet National Park, Daet Heritage Center, Magallanes corner Justo Lukban Streets	Daet	National Monument, NHCP; Registered Property, Province of Camarines Norte	Tangible-Immovable
Laniton Battle Memorial | Bantayog Para Sa Kapayapaan Marker	Barangay Laniton	Basud	Marked Structure, NHCP; Registered Property, Province of Camarines Norte	Tangible-Immovable
Bicolano Penitensya (Penitential Flagellation)		Paracale; Santa Elena; Vinzons	Philippine Intangible Cultural Heritage Inventory; Registered Property, Province of Camarines Norte	Intangible
Parish Church of the Holy Cross of Nabua | Church of Nabua Marker	San Esteban	Nabua	Marked Structure, NHCP; Registered Property, Municipality of Nabua	Tangible-Immovable
Batalay Church | Dambana sa Batalay Marker	Batalay	Bato	Marked Structure, NHCP; Registered Property, Municipality of Bato	Tangible-Immovable
Shrine of Our Lady of Peñafrancia of Naga | Church of Nuestra Señora de la Peña de Francia Marker		Naga City	Marked Structure, NHCP; Local Cultural Property - Naga City Historical Buildings and Structures (Ordinance Number 2003-003)	Tangible-Immovable
Parish Church of Nuestra Señora de la Porteria of Daraga | Simbahan ng Daraga Marker		Daraga	National Cultural Treasure, National Museum (referring to the Eastern and Western Façade, Belfry and Baptistry of the Church); Marked Structure, NHCP; Local Cultural Property - Provincial Cultural Treasure, Albay	Tangible-Immovable
Parish Church of Saint John the Baptist of Camalig | Simbahan ng Camalig Marker	Barangay 2	Camalig	Important Cultural Property, National Museum; Marked Structure, NHCP; Registered Property, Municipality of Camalig, Albay	Tangible-Immovable
Parish Church of Saint Peter the Apostle of Vinzons | Simbahang San Pedro Apostol Marker	Francisco O. Balce Street, Barangay II	Vinzons	Marked Structure, NHCP; Local Cultural Property - Provincial Cultural Treasure, Camarines Norte; Registered Property, Province of Camarines Norte	Tangible-Immovable
Parish Church of Saint Mary Magdalene of Bula | Church of Bula Marker			Marked Structure, NHCP; Registered Property, Municipality of Bula	Tangible-Immovable

Source: NCCA TALAPAMANA Luzon (2021)

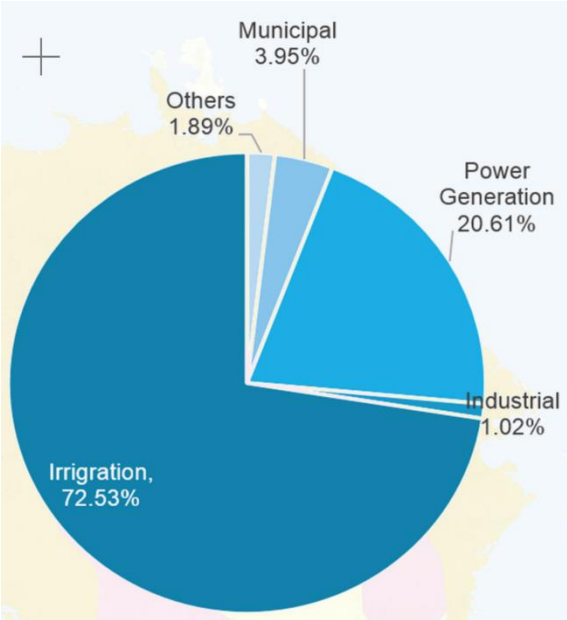
I-5.3 Present Uses of Surface Water including Water Supply

(1) Water Use

As shown in the water resource utilization of Bicol Region in the figure below, the water use in Bicol Region was estimated at 4,087.75 MCM annually based on awarded water permits as of 2017. Of this, about 2,964.67 MCM (72.53%) was allocated for irrigation, 161.55 MCM (3.95%) for municipal/domestic sector, 41.79 MCM (1.02%) for industrial sector and 842.52 MCM (20.61%) for power sector.

(2) Water Supply

About 82% of Bicol Region's population in 2015 had access to safe water sources. This translates to around 925,000 households. As presented in Table, about 31.3% of the population in 2015 has Level III service connection, about 6.7% has Level II connections and about 42.5% has access to Level I.



Source: Bicol Region Water Supply and Sanitation Databook and Regional Roadmap

Figure I-5.1 Bicol Region Water Resource Utilization, 2017

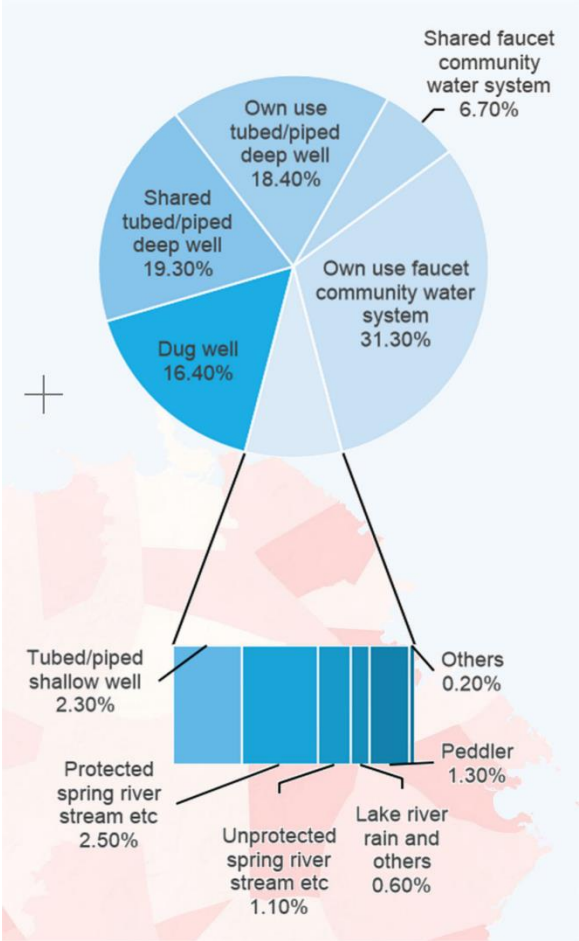
Table I-5.2 Bicol Region Access to Water Supply

Level of Service	Bicol Region
Level III	31.3%
Level II	6.7%
Level I (Safe Source)	42.5%
Subtotal (Safe Source)	80.5%
Level 1 (Unsafe Sources)	19.5%
Total	100.0%

Source: Bicol Region Water Supply and Sanitation Databook and Regional Roadmap

The following figure shows the main sources of water supply of Bicol Region in 2015. Majority of the sources are own use faucet community water system (31.30%).

As shown in the following table, the province of Camarines Norte has the highest access to water supply (92.8%) while Albay has the least percentage of access to water supply (67.4%).



Source: Bicol Region Water Supply and Sanitation Databook and Regional Roadmap

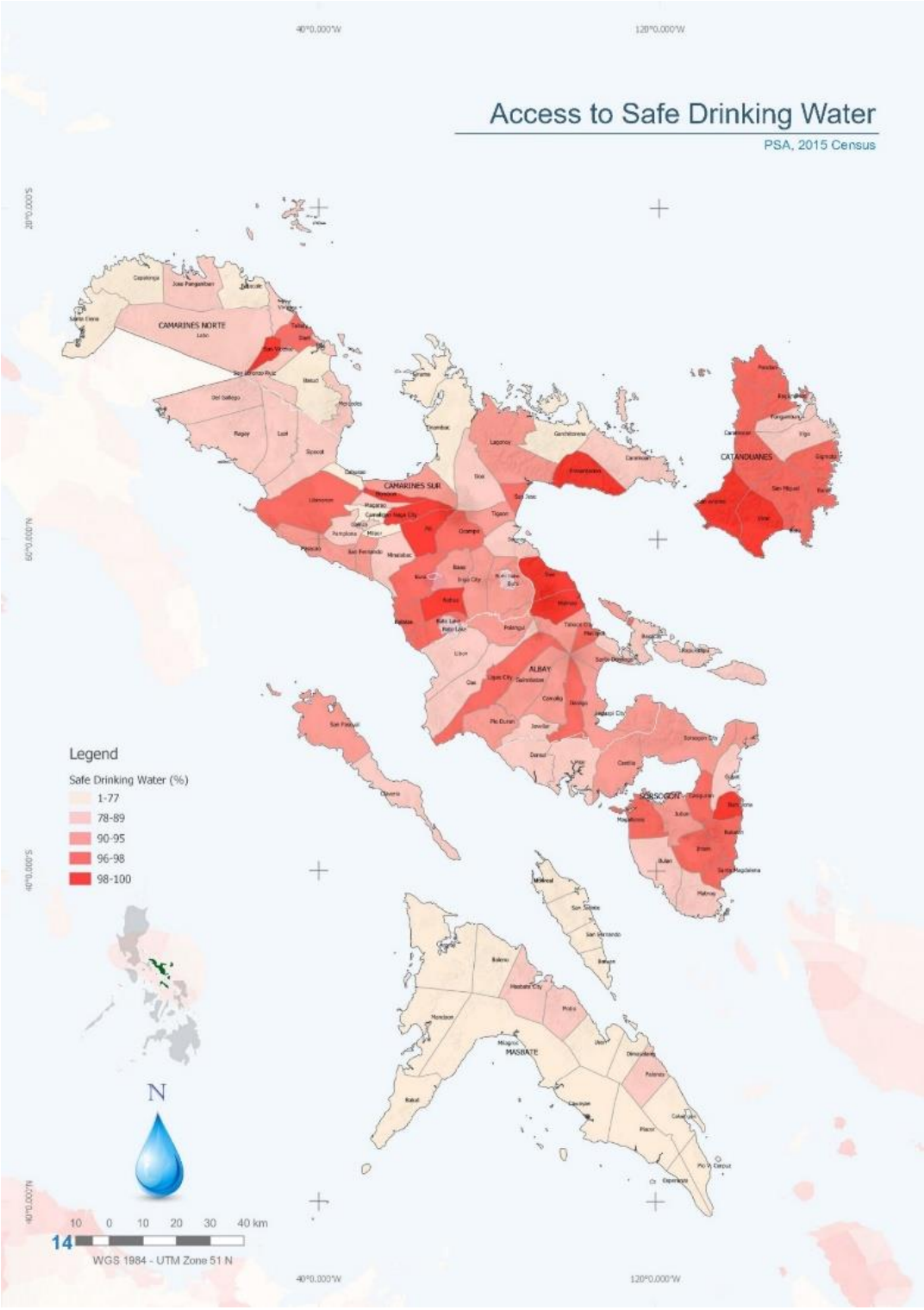
Figure I-5.2 Bicol Region Main Sources of Water Supply

Table I-5.3 Access to Water Supply per Province

Level of Service	Access to Safe Water Supply
Albay	67.4%
Camarines Norte	92.8%
Camarines Sur	72.3%
Catanduanes	87.0%
Masbate	70.5%
Sorsogon	87.7%

Source: Bicol Region Water Supply and Sanitation Databook and Regional Roadmap

The following figure shows a map of the access to safe water of Bicol Region in 2015.



Source: Bicol Region Water Supply and Sanitation Databook and Regional Roadmap

Figure I-5.3 Bicol Region Access to Safe Water

I-5.3.2 Sanitation

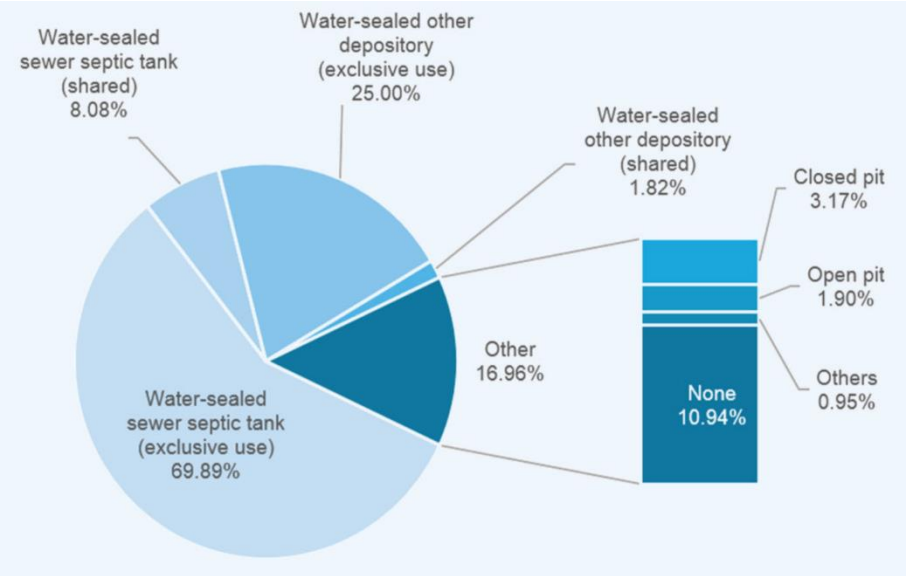
About 70% of Bicol Region's population in 2015 had access to improved sanitation. Open defecation is a major problem in Bicol Region. As shown in the following table, the region's open defecation rate is around 11.89% which is nearly thrice the national percentage and considered as the second highest open defecation rate, next to ARMM.

Table I-5.4 Bicol Region Access to Sanitation

Sanitation Coverage	Bicol Region
Improved Sanitation	69.90%
Basic Sanitation	16.33%
Unimproved Sanitation	1.88%
Open Defecation	11.89%
Total	100.0%

Source: Bicol Region Water Supply and Sanitation Databook and Regional Roadmap

The following figure shows the percentage of households of Bicol Region per type of sanitation facilities in 2015. Majority of households have exclusive use water-sealed sewer septic tank (69.89%).



Source: Bicol Region Water Supply and Sanitation Databook and Regional Roadmap

Figure I-5.4 Households in Bicol Region with Access to Sanitation Facilities

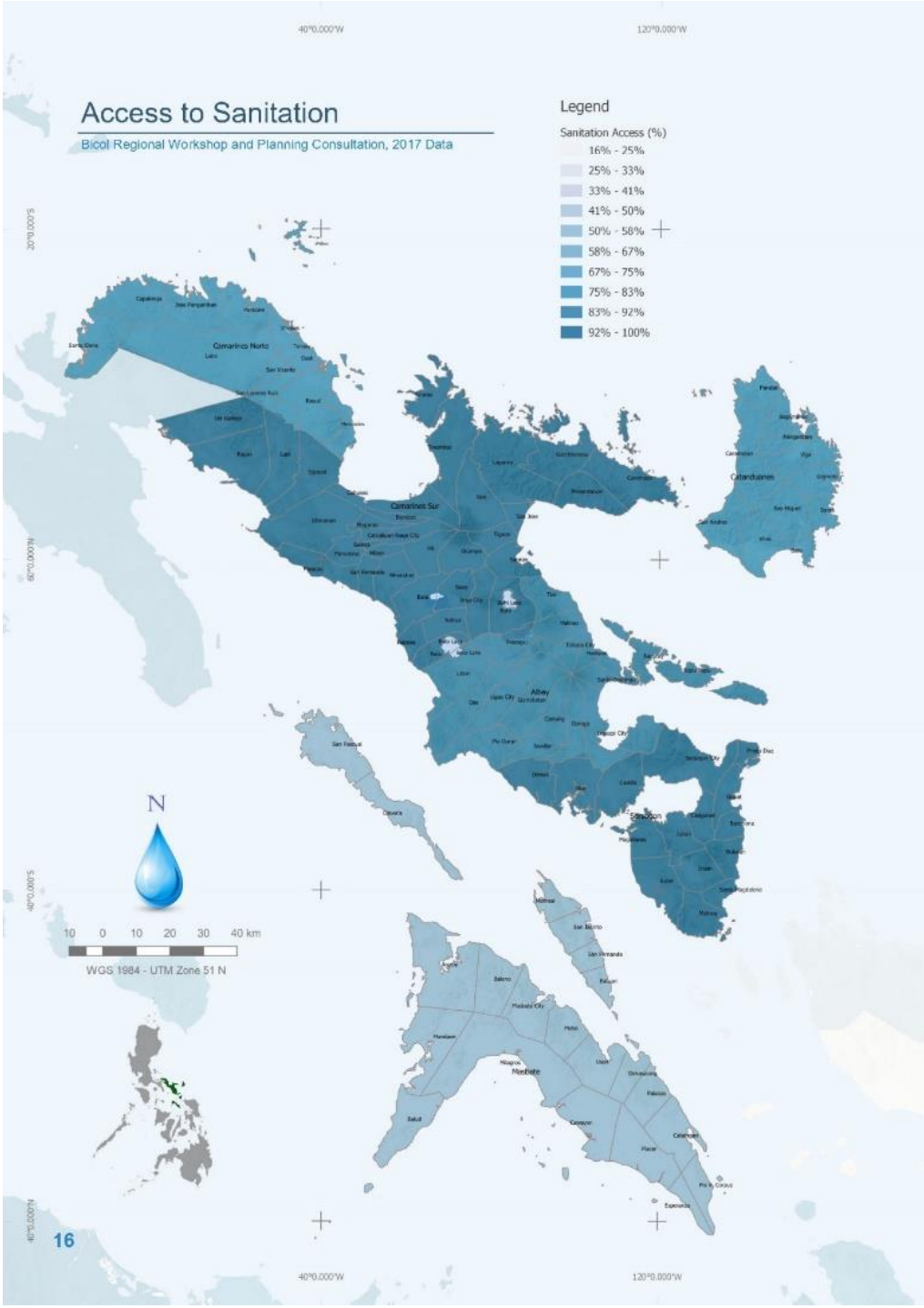
As shown in Table, Camarines Norte registered the highest access to basic sanitation (75.54%). Albay and Camarines Sur, two provinces with the highest population in the region, recorded the second lowest and second highest access to sanitation (58.12% and 74.34%).

Table I-5.5 Access to Sanitation Facilities per Province/HUC

Level of Service	HHs with Sanitary Toilets	HHs with Complete Basic Sanitation Facilities
Albay	58.12%	24.50%
Camarines Norte	75.54%	61.80%
Camarines Sur	74.34%	51.02%
Catanduanes	71.99%	39.54%
Masbate	50.26%	33.29%
Sorsogon	71.65%	42.23%
Naga City	97.76%	96.44%

Source: Bicol Region Water Supply and Sanitation Databook and Regional Roadmap

The following figure shows a map of the access to sanitation of Bicol Region in 2017. The data on access to sanitation at the provincial level were gathered during the regional consultation and planning workshop. In addition, there are septage treatment plants (SpTPs) in the cities of Naga and Legazpi.



Source: Bicol Region Water Supply and Sanitation Databook and Regional Roadmap

Figure I-5.5 Bicol Region Access to Sanitation

I-5.4 Natural Environment

I-5.4.1 Protected Area

As stated in the National Integrated Protected Areas System (NIPAS) Act of 1992, protected areas is defined as an identified portion of land and water set aside by reason of their unique physical and biological significance, managed to enhance biological diversity, and protected against destructive human exploitation. Protected areas in the Philippines is categorized as strict nature reserve, natural park, natural monument, wildlife sanctuary, protected landscapes and seascapes, and resource reserve.

Under the mandate of NIPAS Act, these protected areas implement ecotourism approaches and practices, thus, ensuring that travel benefits the environment, protected area management, communities that surround the protected area, businesses conducting various operations related to the park, and many other stakeholders.

According to the Department of Environment and Natural Resources (DENR) Region V, WRR V has a total of 19 protected areas. These protected areas cover approximately a total land area of 500,221 ha. The list and distribution of protected areas in the region are summarized in the table below:

Table I-5.6 List of Protected Areas in WRR V

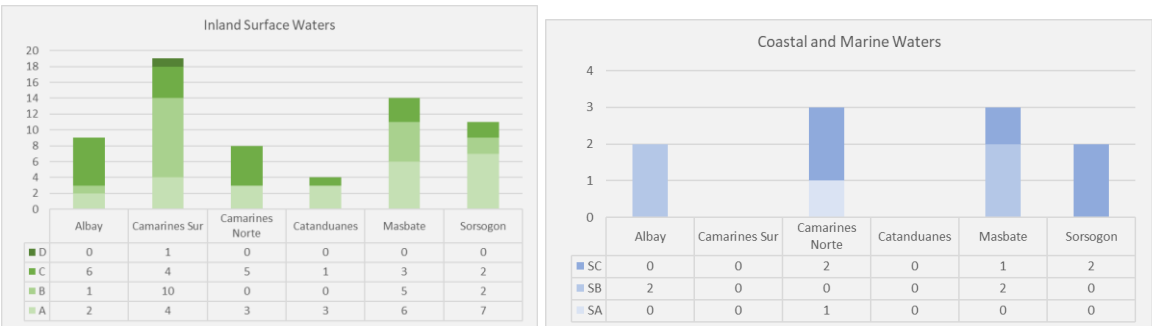
Protected Area	Province
Mt. Mayon Natural Park	Albay
Mt. Masaraga Watershed Forest Reserve	
Abasig-Matogdon-Mananap Natural Biotic Area	Camarines Norte
Lagonoy Natural Biotic Area	Camarines Sur
Mt. Isarog Natural Park	
Buhi Wildlife Sanctuary	
Caramoan Natural Park	
Libmanan Caves Natural Park	
Malabungot Protected Landscape	
Catanduanes Natural Park	Catanduanes
Bongsanglay Natural Park	Masbate
Tugbo Watershed Forest Reserve	
Naro Island Wildlife Sanctuary	
Matang-Tubig Watershed Forest Reserve	
Chico Island Wildlife Sanctuary	
Juban Magallanes Watershed Forest Reserve	Sorsogon
Bulusan Volcano Natural Park	
Ticao-Burias Pass Protected Seascape	Albay, Masbate, Sorsogon
Bicol Natural Park	Camarines Norte; Camarines Sur

Source: DENR Region V (https://r5.denr.gov.ph/index.php/about-us/regional-profile)

I-5.4.2 Water Quality

(1) Water Body Classification

As of 2019, Environmental Management Bureau (EMB) has classified a total of 75 water bodies in Region V (Bicol Region) in terms of best usage and water quality. Of these classified water bodies, 66 are inland surface waters and 9 are coastal and marine waters. Figure presents the distribution of classified water bodies among the provinces of the Region.



Source: EMB, 2019

Figure I-5.6 Distribution of Classified Water Bodies per Province, 2019

Some water bodies have several beneficial uses and are classified differently per reach or portion. Of the 75 classified water bodies in the Region, four have more than one classification. Table presents the inventory of water bodies in the Region according to their usage and classification.

Table I-5.7 Inventory of Classified Inland Surface Waters in Region V, 2019

Classification	Intended Beneficial Use	Location and Name of Water Bodies
Class AA	Public Water Supply Class I – Intended primarily for waters having watersheds, which are uninhabited and/or otherwise declared as protected areas, and which require only approved disinfection to meet the latest PNSDW	No inland surface water body is classified under this category
Class A	Public Water Supply Class II – Intended as sources of water supply requiring conventional treatment (coagulation, sedimentation, filtration, and disinfection) to meet the latest PNSDW	Albay: Bombon River, Tayhi River
		Camarines Norte: Daet River (Upper), Labo River, Talisay River (Upper)
		Camarines Sur: Bicol River, Sipocot River, Tambang-Tinambac River, Tinalmud River
		Catandanues: Bato River, Pajo River, Viga River (Cabuyuan)
		Masbate: Aguada/Nauco River, Asid River, Baleno River, Lanang River, Malbug River, Tugbo River (Upstream)
		Sorsogon: Banuang Daan, Cadacan River, Donsol River, Fabrica River, Lake Bulusan, Matnog River, Ogod River
Class B	Recreational Water Class I – Intended for primary contact recreation (bathing, swimming, etc.)	Albay: Tagas River
		Camarines Sur: Balos River, Kibay-Katabanagan River, Lake Baao/Bula, Lake Bato, Lake Buhi, Polantuna River, Ragay River, Waras River, Barit River, Daraga River
		Masbate: Daraga River, Guiom River, Mandaon River, Napayawan River, Tugbo River (Downstream)
		Sorsogon: Cawayan River, Putiao River, Geladioc River
Class C	Fishery Water for the propagation and growth of fish and other aquatic resources Recreational Water Class II – For boating, fishing, or similar activities For agriculture, irrigation, and livestock watering	Albay: Cabilogan River, Kamanitohan River, Quinali River, Sagumayon River, San Francisco River, Tagas River, Yawa River
		Camarines Norte: Daet River (Lower), Labo River (Lower), Malaguit River, Paracale River, Talisay River (Lower)
		Camariners Sur: Lagunoy River, Limbanan River, Naga River, Pawili River
		Catanduanes: Gogon River
		Masbate: Nainday River, Panique River, Rio Guinobatan River
		Sorsogon: Salog River, Cawayan River
Class D	Navigable waters	Camarines Norte: Gumaus River
		Camarines Sur: Anayan River

Sources: DENR Administrative Order No. 2016-08 (Water Quality Guidelines and General Effluent Standards); EMB, 2019

Table I-5.8 Inventory of Classified Coastal and Marine Waters in Region V, 2019

Classification	Intended Beneficial Use	Location and Name of Water Bodies
Class SA	Protected Waters – Waters designated as national or local marine parks, reserves, sanctuaries, and other areas established by law (Presidential Proclamation 1801 and other existing laws), and/or declared as such by appropriate government agency, LGUs, etc. Fishery Water Class I – Suitable for shellfish harvesting for direct human consumption	No coastal and marine water body is classified under this category
Class SB	Fishery Water Class II – Waters suitable for commercial propagation of shellfish and	Albay/Sorsogon: Albay Gulf Albay: Tabaco Bay
		Masbate: Mobo Bay, Port Barrera

Classification	Intended Beneficial Use	Location and Name of Water Bodies
	intended as spawning areas for milkfish (Chanos chanos) and similar species Tourist Zones – For ecotourism and recreational activities Recreational Water Class I – Intended for primary contact recreation (bathing, swimming, skin diving, etc.)	
Class SC	Fishery Water Class III – For the propagation and growth of fish and other aquatic resources and intended for commercial and sustenance fishing Recreational Water Class II – For boating, fishing, or similar activities Marshy and/or mangrove areas declared as fish and wildlife sanctuaries	Camarines Norte: Mambulao Bay, Paracale Bay Masbate: Masbate Bay Sorsogon: Pilar Bay, Sorsogon Bay
Class SD	Navigable waters	No coastal and marine water body is classified under this category

Sources: DENR Administrative Order No. 2016-08 (Water Quality Guidelines and General Effluent Standards); EMB, 2019

(2) Water Quality Monitoring

As of 2019, Philippine water quality is assessed based on the set beneficial use as defined in the DENR Administrative Order No. (DAO) 2016-08 or the Water Quality Guidelines and General Effluent Standards of 2016. Of the 48 parameters defining the water quality guidelines, 10 are categorized as primary parameters or the minimum required to be monitored for each water body. The primary parameters monitored by EMB Region V from 2014 to 2019 are listed in the following table.

Table I-5.9 Primary Parameters Monitored by EMB Region V from 2014 to 2019

Water Quality Parameter	Description	Check if monitored	
		Inland Surface Waters	Coastal & Marine Waters
Biochemical Oxygen Demand	BOD determines the concentration of oxygen required for the decomposition of organic matter from a pollution source. A higher BOD value indicates a greater degree of pollution. Most aquatic organisms cannot survive if the BOD level is above 7 mg/L.	/	
Chloride	Chloride exists in all natural waters, the concentrations varying very widely and reaching a maximum in sea water (up to 35,000 mg/L). In fresh waters the sources include soil and rock formations, sea spray and waste discharges. Sewage contains large amounts of chloride, as do some industrial effluents.		
Color	Natural color reflects the presence of complex organic molecules derived from vegetable (humic) matter such as peat, leaves, branches and so on. Its effect can be enhanced by the presence of suspended matter, but this is normally eliminated in the analysis by filtration. Obviously, the more vegetable matter in the water the greater is the color. Exceptionally, natural color may arise from the presence of colloidal iron/manganese in a water, but organic matter is almost always the cause.	/	
Dissolved Oxygen	DO is the concentration of oxygen measured in its dissolved form. Fish and other aquatic organisms require at least 5 mg/L of DO to live.	/	/
Fecal Coliform	Fecal Coliform bacteria are microscopic organisms that indicate significant content of pathogens from feces of warm-	/	/

Water Quality Parameter	Description	Check if monitored	
		Inland Surface Waters	Coastal & Marine Waters
	blooded animals. They are disease-carrying organisms and have important implications to human health. The PNSDW prescribed that drinking water should contain less than 1.1 MPN/100mL Fecal Coliform level. This parameter is especially significant for water bodies that involve high human interface.		
Nitrate	Nitrates in the environment consist of salts of ammonium, sodium, potassium, and calcium. Like phosphates, nitrates in water bodies come from agricultural runoff and sewage discharge where they are formed as by-products of decomposition. High nitrate concentrations can inhibit fish growth, impair immune system, and cause stress in some aquatic species.	/	
pH	By definition pH is the negative logarithm of the hydrogen ion concentration of a solution and it is thus a measure of whether the liquid is acid or alkaline. The pH scale (derived from the ionization constant of water) ranges from 0 (very acid) to 14 (very alkaline). The range of natural pH in freshwaters extends from around 4.5, for acid, peaty upland waters, to over 10.0 in waters where there is intense photosynthetic activity by algae. However, the most frequently encountered range is 6.5-8.0.	/	/
Phosphate	Phosphates occur either as particulate phosphates or dissolved phosphates. The presence of excess phosphates can cause enormous algal bloom. Once a vast mass of excess algae dies and decomposes by oxidation, the water is depleted of DO and may result to fish kill.	/	
Temperature	The effect of temperature, and especially changes in temperature, on living organisms can be critical. Elevated temperatures and, more importantly, steep temperature gradients can have directly harmful effects on fish. It is for such reason that changes in temperature are subject to limits.	/	/
Total Suspended Solids	TSS measures the concentration of undissolved solid particles in water, such as silt, decaying plant and animal matter, and domestic and industrial wastes. Higher TSS value suggests decreased ability of the water to support aquatic life due to reduced light penetration. TSS level in sources of water supply should not exceed 25 mg/L for Class AA and 50 mg/L for Class A.	/	

Reference: DENR Administrative Order No. 2016-08; Ireland Environmental Protection Agency (2001)

During the period 2014 to 2019, EMB Region V monit ored a total of 37 water bodies for classification (11 water bodies for classification purposes, 3 waterbodies for re-classification purposes and 23 waterbodies for monitoring purposes (five priority rivers; two WQMA; 11 recreational water; and 5 other waterbodies)), all of which are listed in the following table.

Table I-5.10 Water Bodies Monitored by EMB Region V from CY 2014-2019

Names of Programs and Water Bodies Monitored	Year(s) Monitored
WATER BODY CLASSIFICATION	
Sorsogon Bay	2014
Waras River	2015
Port Baera	2015
Cabilogan River	2016
Mobo Bay	2017
Masbate Bay	2017

Names of Programs and Water Bodies Monitored	Year(s) Monitored
Polantuna River	2018
Libmanan River	2018
Barit River	2019
Geladioc River	2019
Daraga River	2019
RE-CLASSIFICATION	
Quinali River	2016
San Francisco River	2016
Bicol River	2018-2019
SAGIP-ILOG PROGRAM (PRIORITY RIVERS)	
Malaguit River	2014
Rio Guinobatan River	2014
Sagumayon River	2014-2019
Balos River	2015-2019
Salog River	2015-2019
SAGIP-ILOG PROGRAM (OTHER WATER BODIES)	
Lake Bato	2014-2019
Lanang River	2014-2019
Mambulao Bay	2014-2019
Gumaos River	2017-2019
Anayan River	2017-2019
WATER QUALITY MANAGEMENT AREA	
Lake Buhi	2014-2019
Naga River	2014-2019
PRIORITY RECREATIONAL WATERS	
Diwata-Imacoto Beach	2015-2019
Maramba Beach	2015-2019

Source: EMB Region V

I-5.4.3 Solid Waste

Solid waste management remains a major challenge in the region especially in urban areas. Improper waste disposal, inefficient wastes collection and lack of disposal facilities are among the main concerns. Republic Act No. 9003, also known as "Ecological Solid Waste Management Act of 2000", aims to address the growing problem of solid wastes in the country. The RA No. 9003 also includes necessary institutional mechanisms with the creation of National Solid Waste Management Commission (NSWMC) which shall oversee the implementation of solid waste management plans.5

According to NSWMC, WRR V's waste generation in 2012 is at 1,878.74 tons/day and increases by 133.52 tons/day in 2016.

The Regional Development Council Bicol Region passed and approved a resolution enjoining the EMB 5 and Provincial Governments for a more active and full coordination in facilitating the provision of necessary assistance to LGUs that have yet to complete and submit their 10-year solid waste management (SWM) plan. The region has a total of six provinces and 120 municipalities where 28 had approved 10-year SWM plan and 92 are for approval. The number of municipalities with approved, for approval or no submission of SWM plan per province is summarized below:

Table I-5.11 Status of 10-year SWM Plan in WRR V

Province	Approved	For Approval	No Submission	Total
Albay	9	10	0	19
Camarines Norte	4	9	0	13
Camarines Sur	9	29	0	38
Catanduanes	0	12	0	12
Masbate	2	20	0	22
Sorsogon	4	12	0	16

[5] Philippines Solid Wastes at a Glance (November 2017).

Total	28	92	0	120

Source: DENR Region V (10-YEAR SOLID WASTE MANAGEMENT PLAN)

The country has a total of 189 established sanitary landfills and 233 open dumpsites which are still operating in the country. Among the open dumpsites, 23 are in the region.6 NSWMC projected the waste generation in the region per province as summarized in the table below. Camarines accounts for the greatest projected waste generation from 2020-2025 which is above 300,000 tons/year.

Table I-5.12 Projected Waste Generation (tons/year) from 2020 to 2025 in WRR V

Province	2020	2021	2022	2023	2024	2025
Albay	270000	274000	277000	281000	284000	288000
Camarines Norte	93000	95000	96000	97000	99000	100000
Camarines Sur	347000	353000	358000	363000	369000	375000
Catanduanes	36200	36600	37100	37600	38000	38500
Masbate	145000	148000	150000	152000	155000	157000
Sorsogon	141000	143000	145000	147000	149000	151000
Total	1032200	1049600	1063100	1077600	1094000	1109500

Source: Microsoft Power BI

[6] DENR, sanitary landfill operators step up partnership for effective solid waste management (January 2021)

ANNEX I-6 RESULT OF THE STAKEHOLDER MEETING

I-6.1 1st Stakeholder Meeting

I-6.1.1 Outlines

1st SHMs were held at WRR VII and XI in September 2022 and at WRR V in December 2022 as follows.

Table I-6.1 Summary of the 1st Stakeholder Meetings

Region	WRR VII	WRR XI	WRR V
Date	September 8, 2022	September 15, 2022	December 7, 2022
Venue	Quest Hotel & Conference Center in Cebu city	Waterfront Insular Hotel in Davao city	NEDA V Regional Office Conference Center in Legazpi city
Participants	Total: 133 - In-person: 42 - Virtual: 88	Total: 182 - In-person: 41 - Virtual: 141	Total: 134 - In-person: 41 - Virtual: 93
Program	- Opening Ceremony - Project Description & Initial Activities - Environmental and Social Consideration for the Project - Open Forum - Closing Remarks		
Purpose	- To share the description and progress result of the survey - To avoid the conflict between stakeholders for the implementation of the proposed project - To collect several opinions, concerns, issues ideas and recommendations. - To reflect above to the result of the survey and future planning		

Source: JICA Survey Team

With the emergence of the Corona Virus Disease 2019 (COVID-19) in the Philippines, the implementation of the SHM was done in accordance with the minimum health and safety guidelines and protocols for mass gatherings set by the Inter-Agency Task Force for the Management of Emerging Infectious Diseases (IATF)

I-6.1.2 1st Stakeholder Meeting at WRR VII

The 1st SHM for WRR VII Central Visayas was held on September 8, 2022 at the Quest Hotel & Conference Center in Cebu City and via Zoom application. The participants in total 130 (in-person: 42 and virtual: 88) were composed of representatives from the national and regional government agencies; provincial, city, and municipal local government offices; water service providers; universities; and non-government organizations (NGOs).

As a program of the meeting, welcome remarks and each presentation were conducted and the following remarks were mentioned.

Table I-6.2 Summary of the 1st Stakeholder Meetings

Program	Presenter	Remarks
Welcome Remarks	Asec. Roderick Planta, NEDA Infrastructure Development Office	- The challenges in the water sector include: the country has a fragmented sector in which several entities deal with the water sector; and a lack of data in water resources. - This SHM will present the current efforts of the agency and JST in undertaking the water resource in the area, as well as collect ideas from participants. - This is a small step in our mind: establishing a small partnership with everyone will address the water challenges in the Philippines.

Program	Presenter	Remarks
	Ms. Dolores Molintas, NRO VII OIC-RD	- The water crisis in the urban areas of Region 7 has been acknowledged for over two decades. With the available data on the projected water shortage and potential water sources, the region will be able to scale up activities such as planning and implementing water projects to address the projected future water supply problem.
	Ms. Cynthia Lumampao, NRO VI OIC-ARD	- Some parts of Region 6 have water scarcity from surface water sources, particularly during drought and dry seasons. - This activity is timely since we lack information about water gaps in other parts of the region. - According to a groundwater assessment conducted in Region 6 in 2013, the majority of the groundwater infrastructure was inadequately maintained and operated. There were also no technologies to increase the storage capacity of groundwater reservoirs. Groundwater use for household, industrial, and commercial reasons is still unregulated.
	Mr. Yo Ebisawa, JICA Philippines Office, Senior Representative	- Cities such as Cebu, Davao, and Legazpi are expected to require more water supply sources in the future as the country and regional economic centers continue to increase in economic activity and population. - This data collection survey will contribute to assisting the country in addressing issues on water management and developing effective countermeasures.
Project Description & Initial Activities	Mr. Tadahiro Fukuda, JST Team Leader	Findings of the field surveys in the region: - There is a shortage of domestic and industrial water in Cebu, Bohol, and Siquijor; and insufficient use of rich potential of water resources in Negros Oriental
	Mr. Kiyoshi Hirata, JST Hydrologist	- The map of WRR VII is divided into 408 sub-basins. - Water balance of Surface water. Surface water potentials are abundant in the entirety of Bohol Island and Negros Oriental. - The future water demand (2050) of Cebu Island (Metro Cebu area), Bohol Island (Tagbilaran area), and the northern portion of Negros Oriental exhibits a declining trend for surface water balance. - In high case of climate, a declining trend for the groundwater balance is observed in Bohol Island (Tagbilaran area), northern portion of Negros Oriental (Dumaguete), and Siquijor Island.
	Mr. Satoshi Yoshida, JST groundwater Specialist	- Saltwater intrusion studies will be added as a component to calculate groundwater potential. - After the completion of the calculation of groundwater balance for each watershed, projections of groundwater potential will be made, considering the rising sea level due to climate change.
Environmental and Social Considerations	Mr. Shumpei Ichikawa, JST Environmental & Social Specialist	- SEA considers the negative impact at the earliest stage of decision making; provides recommendations at a strategic level and the procedure and method are based on the requirement of JICA Guidelines. - As a public participation, the concerns and/ ideas of the participants are important and will reflect into the output of the project.

Source: JICA Survey Team

After each presentation, open forum was conducted and the following opinion / suggestion / question were mentioned.

Table I-6.3 Summary of Questions and Suggestions raised in Open Forum

Questions and Suggestion	Raised by	Responses
Will there be a component for **capacity building and/or technology transfer to government agencies** that employ water resource assessment methodologies based on this study?	DENR-MGB Central Office	Capacity building is not included in the scope of the study. We will try to coordinate this request to JICA.

Questions and Suggestion	Raised by	Responses
The presentation is very technical, if not too so, for most of the local attendees; **hydrology and hydrogeology** need to be emphasized in our higher education curriculum. After all, we are all reliant on water.	USC Water Resources Center	This is noted.
In your water balance study analysis, is **Negros Oriental** abundant in terms of water surface?	NIA-Negros Oriental	The potential water balance is abundant in Cebu, Bohol, and Negros Island- Negros Oriental. A more detailed analysis will be given to Negros Oriental.
Did you consider the **service sector** in the water demand forecast for Region 7, which is a tourism-driven industry?	City of Lapu-Lapu, Cebu	The water demand per capita such as domestic, commercial (A, B, & C), institutional, and government bulk water demand was used for the calculation in this study. The tourist water demand is included in the municipal water demand. [Tourist- Seasonal Variation] Tourism often peaks in the fourth quarter of the year and continues into the first quarter of the following year. The DOT may have information on the tourism trend.
[comment] The **results of the study** should be presented in an LGU-specific manner because this will help the LGUs in their water resource development efforts.	City of Lapu-Lapu, Cebu	This is noted.
Was the study conducted in **coordination** with the water districts?	DTI Region 7	Yes, the local stakeholders were consulted such as Water Districts, private water service providers and LGU-operated water systems.
What type of **CHIRPS Rainfall Data** was used in the study? Was it *global dekad* or *global pentad* or other type?	DENR-MGB Region 6	The USGS satellite rainfall data (5km) was used. Satellite rainfall data for global regions is available for free. If someone needs such information, they can obtain it from the source. The methodology with agencies who want to use the data can be shared.
In the climate change presentation, a high **emission scenario** was used (RCP 8.5). Would you like to consider using the moderate emissions as well?	NEDA Region 7	The 8.5 case as the most serious was selected. A range of temperature and rainfall variations will be taken into account. Climate change is also taken into consideration.
In the presented SEA, why is there no impact assessment during **pre-construction phase**?	NIA Cebu	SEA is complying with the social and environment considerations which are requirements of JICA. Construction and pre-construction are combined. A strategic higher-level environmental evaluation is conducted for two reasons: 1) We do not yet have any specific projects; and 2 We do not know where these projects will be built. We will consider the pre-construction and it will be covered.
Siquijor, Bohol, Cebu, and portions of Negros Island are mostly karst. Did you consider the **karst landscape** of the water resource region? Did you consider the implications of **ocean/sea-level rise** on the region's spring systems?	Soil and Water Conservation Foundation, Inc.	We will take note of these issues.
We would want to hold a topic-specific focus meeting. Our group may be able to **evaluate the data** presented here critically.	USC Water Resources Center	This is noted.
In terms of social and environmental implications, I respectfully propose that more emphasis be placed on **equality concerns**; the poor frequently have restricted access to water and pay the highest prices	LGU-Bantayan, Cebu	This is noted.

Questions and Suggestion	Raised by	Responses
for safe, drinking water. Furthermore, places with high rates of **poverty** are frequently located on the outskirts rather than in metropolitan areas, making them vulnerable to being the least and last served.		
How about on **water treatment facility**, is it included in this study?	LGU Canlaon City	The data on the water facility requirement of the city is needed to estimate the requirement for the LGU's water treatment facility. This study is doing a water balancing to anticipate your future water consumption while considering the City's water treatment requirements.
We recommend contacting Carlos Primo David, who completed a **study on the area's water resources in 2011**. It contains information on water resources in the Philippines by municipality and city.	NEDA Region 7	Noted, we will get in touch with CP.
WRC did a **detailed water research in the province of Siquijor** prior to the pandemic. In comparison to DA, the supply of groundwater and surface water is adequate, however it is fractured and placed at a lower level. The problem of **transporting water** from low-level places to steep ones. Communicate and collaborate with WRC and its findings.	DA Region 7	We will try to conduct a face-to-face meeting with the WRC.
[comment] The decision on where to site projects of this magnitude is made at the national level, not at the local level. The answer above underscores the argument that **equity concerns** are more of an afterthought than a key design requirement.	LGU Bantayan	This is noted.
According to your groundwater water balance, steep hilly places have high groundwater flow. Could there be a **link between surface run-off**, which is higher in steep places, **and surface water percolation**?	DENR-MGB Region 7	The slope is particularly steep in mountainous locations. The flow of groundwater is considerable. However, the basin's catchment area in a hilly terrain is quite tiny. Mountain locations have very limited groundwater potential.

Source: JICA Survey Team

Group Photo with the In-Person Participants

Opening remarks and presentation by the team

Discussion in Open Forum

Source: JICA Survey Team

Photo I-6.11st Stakeholder Meeting in WRR VII

I-6.1.3 1st Stakeholder Meeting at WRR VII

The 1st SHM for WRR XI Southeastern Mindanao was held on September 15, 2022 at the Waterfront Insular Hotel in Davao City and via Zoom application. The participants in total 182 (in-person: 41 and virtual: 141) were composed of representatives from the national and regional government agencies; provincial, city, and municipal local government offices; water service providers; universities; and non-government organizations (NGOs).

As a program of the meeting, welcome remarks and each presentation were conducted and the following remarks were mentioned.

Table I-6.4 Summary of the 1st Stakeholder Meetings

Program	Presenter	Remarks
Welcome Remarks	Asec. Roderick Planta, NEDA Infrastructure Development Office	- Acknowledging the lack of information, this stakeholder's consultation meeting will be a venue to collect data that will make the plans be achievable.
	Ms. Maria Lourdes D. Lim, NRO XI RD	- The Davao Regional Development Plan (RDP) 2017-2022 mid-term update recognized water resource challenges such as rural communities' limited access to Level II and Level III Water Supply Systems, as well as the continuous pollution of major rivers. - Considering the water quality guidelines standards for inland water bodies, the 2021 regional targets for Cyanide, Mercury, and Nitrates parameters were achieved, whereas the targets for fecal coliform, BOD, TSS, and Phosphates were not met. - The conduct of Data Collection Survey on the Water Resources of WRR XI is very timely. The activity will provide strategies for resolving the region's

Program	Presenter	Remarks
		water resource-related concerns during the formulation of the successor regional development plans for the 2023-2028 planning cycle. - The results of the data collection survey will contribute to establishing the priority programs, projects, and activities for water resources geared towards attaining the target development outcomes.
	Mr. Takehiro Kido, JICA Southeast Asia and Pacific Division, Director	- The activities and results of these surveys will create more opportunities, collaborations, and stronger partnerships for a more sound and effective water resources management in the Philippines.
Project Description & Initial Activities	Mr. Tadahiro Fukuda, JST Team Leader	Findings of the field surveys in the region: - Sedimentation in NIA's reservoirs; High soil erosion rate in watersheds; flood and drainage problems in irrigation areas; shortage of domestic and industrial water in Tagum City and Davao City; and falling of GW level in water district wells
	Mr. Kiyoshi Hirata, JST Hydrologist	- The map of WRR XI is divided into 345 sub-basins. - Water balance of Surface water. Surface water potentials (river flows) are abundant in the eastern part of WRR XI due to much rainfall. - In terms of future water demand (2050), considering RCP 8.5 (low case of climate change), the surface water balance of central (near Davao City area) and southeastern parts of WRR XI are on a declining trend. - The groundwater potential is relatively high downstream of Mt. Tagubud in the eastern part of WRR XI, and near Mt. Apo of south-west of Davao City. - In terms of future water demand (2050), considering RCP 8.5 (low case of climate change), the groundwater balance of central WRR XI (near Davao City area) and southern parts of WRR XI are on a declining trend.
	Mr. Satoshi Yoshida, JST groundwater Specialist	- Since the covered area of WRR XI is large, the model domain was divided into three parts: Northern Domain - Caraga Area, Central Domain - Davao and Samal Island, and Southern Domain - General Santos - Boundaries were set based on the subwater basin classification of the surface water analysis. - After the calibration, saltwater intrusion studies will also be conducted. - Calculation of groundwater balance for each subwater basin includes future projections of groundwater potential.
Environmental and Social Considerations	Mr. Shumpei Ichikawa, JST Environmental & Social Specialist	- SEA considers the negative impact at the earliest stage of decision making; provides recommendations at a strategic level and the procedure and method are based on the requirement of JICA Guidelines. - As a public participation, the concerns and/ ideas of the participants are important and will reflect into the output of the project.

Source: JICA Survey Team

After each presentation, open forum was conducted and the following opinion / suggestion / question were mentioned.

Table I-6.5 Summary of Questions and Suggestions raised in Open Forum

Questions and Suggestion	Raised by	Responses
The Central and Southern Domains of WRR XI were covered in the presentation; would the **same study** be undertaken in the **Northern Domain**?	Davao Oriental -LGU	Study for WRR XI also includes the northern domain.
What is the **basis** for the '**Municipal and Industrial Water Demand**' data used in the computation for the water balance analysis?	DENR Region 13	The basis of the municipal and industrial water demand is basically based on the Philippine Water Supply master plan. We communicate with water districts to obtain the basis data such as allocation for domestic, commercial (a, b, and c), and bulk water.

Questions and Suggestion	Raised by	Responses
[Slide 59 of the presentation: Proposal of Priority Project Concepts] Both short-term and mid-term project concepts for groundwater are focused on the resource **utilization** in Urban areas (well development in Urban) **rather than conservation and preservation**. Can there be a **consideration** of a **project concept for the long term** that will focus on **replenishment** of the resource, like rainwater harvesting, and use it for **groundwater recharge** (e.g., use of injection well in groundwater stressed areas)	DENR MGB - Central Office	The JICA survey team can consider rainwater harvesting that will be used to recharge groundwater.
Does the study only consider the **water sources covered with water rights/ permit**?	DENR Region 13	All water sources, including those extracting without a permit was taken into account.
Are there **actual pumping tests** and **evaluation of pumping test data** conducted in the site to evaluate properly the aquifer characteristics, transmissivity, etc. **during the groundwater analysis**?	DENR-MGB Region	The JST relied on the existing available data. Usually, the pumping test evaluation is conducted during the feasibility stage of the project to confirm and validate through actual field test.
The use of **technology**, **software**, and introduction of **new approaches** are highly appreciated. More importantly the inputting of **accurate data** to come up with a **more realistic analysis in water balance**. For instance, the prediction of water demand, groundwater extraction and recharge.	NIA Region 11	This is noted.
Is there a possibility that JICA can **include** the **province of Bukidnon** in their study?	Valencia City Water District	Portions of Bukidnon are included in WRR XI. JST will double check if Valencia City is included in those cities/municipalities within WRR XI. Inclusion of cities/ municipalities in the Water Resource Regions are based on the hydro geographic boundaries and not on political boundaries.
The existing **river basin master plans** are available at **DENR-RBCO**, while **studies on watershed characteristics**, and **vulnerabilities**, and **stream flow records** are available at **RBS-DPWH**.	NIA Region 11	JST has already communicated with the RBCOs on the watershed master plans. JST will continue to communicate with DENR-RBCO in order to acquire further data.
[Slide 59 of the presentation: Inclusion of groundwater and surface water] Last 2021, we had a research forum regarding the preservation of wetlands. Based on a result of a study conducted by an NGO, the **wetlands in Davao City are decreasing 79.2%.** The preservation of wetlands might help or affect the city's projected water balance. What are your reconsiderations if we **include preservation of wetlands in the development plans**?	Ateneo de Davao University	The study did not cover wetlands. However, the decrease of wetlands may impact groundwater recharge. The survey team's hydrologist can consider such scenarios. We will also communicate with you to have a more detailed discussion and exchange of data/ information regarding wetlands and water resources.
Is it possible to **expand the study area** covering the 5 provinces (Agusan del Sur, Surigao del Sur, Agusan del Norte, Surigao del Norte and Province of Dinagat).	DENR Region 13	The JST did the study and collection of data for the whole country (12 WRRs). Upon the discussion with NEDA and NWRB, the selection of the 3 prioritized WRRs is based on the presented criteria. The JST's results and approach can be applied to other regions. After the study conducted by JICA, the Philippine government may expand similar analysis.
In the case of Central Mindanao where it was shaken by **earthquakes**, certain **paths of aquifers and springs** were	Cotabato Province - LGU	The presented groundwater analysis did not account for earthquake-induced changes in aquifer and

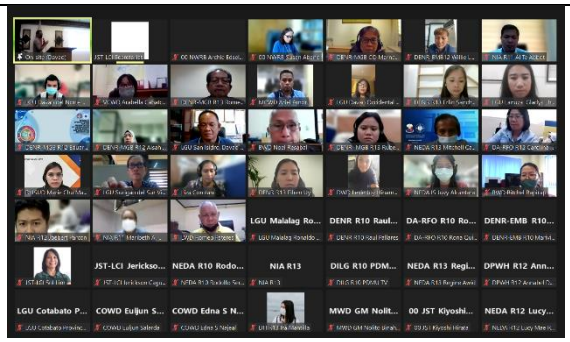
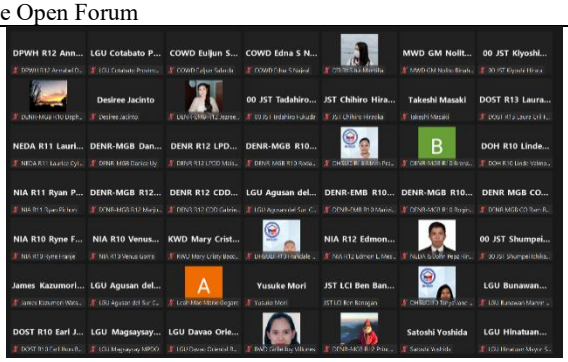
Questions and Suggestion	Raised by	Responses
diverted, altering the water supply of major water concessionaires. Did the study or data collection include such scenario?		spring pathways. However, we will take this into account and assess it separately.
Population growth, rapid development at the watershed such as mountain resorts, swimming pools, and the urban development of condominiums, subdivisions, hospitals, hotels in the urban area, solar powered irrigation projects using both groundwater and surface water, should be **considered in the projection of water demand**.	NIA Region 11	This is noted and the survey team will look into this.
Pulangi River, which drains to Rio Grande de Mindanao (Mindanao River), is quite a large river basin. Why is it not considered as one of the priorities WRR? Bukidnon, in connection with the VCWD concern, is the headwater of such water basin.	Malaybalay City Water District	There is a criterion for selecting the priority water resource regions.
What are your **expectations** or **requirements from DTI** for this project?	DTI Region 11	At this point, the economic statistics/data required for projections, as well as priority investment areas.
What were the **difficulties encountered** by the JST **in gathering data** in Region 11 for groundwater analysis? DOST may help in the collection of data.	DOST Region 11	For the evaluation of groundwater, the JST had a difficulty in obtaining the actual monitoring data, like the groundwater table, and water quality, due to the current situation (COVID-19). JST anticipates that all water resource-related agencies in the country would monitor such data on a monthly basis (e.g., Metro Cebu Water District monthly monitoring report)
The NWRB conducted an **inventory of existing deep wells**, which may be used to supplement data on groundwater analysis.	NIA Region 11	This is noted. The JICA Survey Team is also in constant communication with NEDA and NWRB.
Was the **quality** of **our inland waters** considered as well, specifically with regards to **saline intrusion**? In terms of social aspects, **indigenous people** can be found in the areas covered by WRR XI. Did you consider their **social practices** in terms of **sanitation**? Regions 10, 11, 12 and 13 also have lot of **mining areas**, aside from salinity, we also have **heavy metals** reflected on the regions monitoring of ambient waters.	DENR-EMB Region 11	In the project concept, we will consider the water quality aspect of inland waters. For the social aspect, we also considered the indigenous people. If you have vital information/data about this subject, please contact us and share it with the survey team.
What are the **possible projects** in Region 10 that will **maintain and/ or increase water security**?	DENR Region 10	The selection of the priority projects stated previously will undoubtedly take water security into consideration. A comprehensive solution is required for water security. We are researching not only structural solutions (such as developing a pond or dam) for water security, but also water demand management, which includes groundwater and surface water.
I concur with the suggestion of NIA R11, that all those water sources (ground & surface water) being appropriated (with and without water permit) must be considered in the Water Demand Projection.	DENR Region 13	This is noted.
Major rivers are being classified by DENR-EMB. The water assessment may also be an input to water quality.	NIA Region 11	This is noted. EMB has a recently updated water quality report.
Can we request that the **data generated** by this study be **utilized** for our **local plans**, such as local irrigation plans and the like?	Davao del Norte - LGU	Once the project is completed, all plans and reports will be shared through NEDA.
May we inquire why there is **no data presented for Davao Occidental**?	Davao Occidental - LGU	Davao Occidental is part of the study area (WRR XI).

Questions and Suggestion	Raised by	Responses
There are **rivers** that have been designated as **Water Quality Management Areas** (WQMA), such as the Davao River and Talomo River; and you may request the data from DENR-EMB.	NIA Region 11	This is noted. The water quality status report includes the classification, description, monitoring, catchment, and sources of pollution for the classified rivers.
Can we **request** that the **data gathered** in this study be utilized in the future in our surface water source?	Linamon Water District	Once the project is completed, all plans and reports will be shared through NEDA.
[Slide 77: Davao City Graph; negative water balance] What is the underlying basis of the **negative water balance of Davao City**? And what does the data mean for the water utility sector?	Davao City Water District	The presented graph shows the water balance for Davao City and not for the entirety of Metro Davao.

Source: JICA Survey Team

Open remarks and presentation by the team

Discussion in the Open Forum

Group Photo with the Virtual Participants

Group Photo with the In-Person Participants

Source: JICA Survey Team

Photo I-6.21st Stakeholder Meeting in WRR XI

I-6.1.4 1st Stakeholder Meeting at WRR V

The 1st SHM for WRR V (Bicol) was held on 07 December 2022 at NEDA V Regional Office Conference Center and via Zoom application. The participants in total 134 (in-person: 41 and virtual: 93) were composed of representatives from the national and regional government agencies; provincial, city, and municipal local government offices; water service providers; universities; and non-government organizations (NGOs).

As a program of the meeting, welcome remarks and each presentation were conducted and the following remarks were mentioned.

Table I-6.6 Summary of the 1st Stakeholder Meetings

Program	Presenter	Remarks
Welcome Remarks	Asec. Roderick Planta, NEDA Infrastructure Development Office	- Planning, implementation, monitoring, and evaluation of the water resources starts with good information. The participation of the community is essential to address the water resource management challenges in the Philippines.
	Ms. Agnes M. Espinas-Tolentino, NRO V RD	- The result of this survey is very important especially for the Regional Development Plan and Physical Framework Plan. - The survey will assist the region in developing plans for making judicious or sustainable use of limited water supply. The region will benefit in identifying initiatives that will address challenges and gaps including inconsistent data and uneven access to water supplies.
	Mr. Ide Soichiro, JICA Philippines Office, Senior Representative	- As the country and regional economic centers continue to increase in economic activity and population, cities such as Legazpi, Cebu, and Davao are expected to require more water supply resources in the future. - The activities and results of these surveys will create more opportunities, collaborations, and stronger partnerships for a more sound and effective water resources management in the Philippines.
Project Description & Initial Activities	Mr. Tadahiro Fukuda, JST Team Leader	Findings of the field surveys in the region: - Downstream of Bicol River: Difficulty of development of dam reservoir because of social issues so more effective use of irrigation system is needed - Upstream of Bicol River: Flood and drainage problems in irrigation areas and restrictions on water use of existing lakes (Buhi Lake) so more effective use of Batu Lake is needed

Program	Presenter	Remarks
		- Masbate: Severe water shortage and several proposals for multi-purpose dam yet none has been investigated - Catanduanes: Rich in surface water resources so improvement on the non-revenue water rate is needed
	Mr. Kiyoshi Hirata, JST Hydrologist	- The map of WRR V is divided into 243 sub-basins. - In terms of future water demand in 2050, the surface water balance of the Southern portion of WRR V (Donsol Area) is on a declining trend and it is expected that the water balance will be tight in Masbate Island. For the major cities of WRR V, the future surface water balance is projected to be less tight. - In Naga City, it is predicted that the water balance of surface water will be negative against the future demand in 2050. - Naga City, Legazpi City, and Masbate Island are predicted to have a negative groundwater balance in the future and Catanduanes Island has an abundant groundwater potential.
	Mr. Tadahiro Fukuda, on behalf of JST groundwater specialist	- The groundwater analysis for WRR V is on the process of calibration. It will be followed by saltwater intrusion studies, and then calculation for groundwater balance for subwater basin including future projections of groundwater potential.
Environmental and Social Considerations	Mr. Shumpei Ichikawa, JST Environmental & Social Specialist	- SEA considers the negative impact at the earliest stage of decision making; provides recommendations at a strategic level and the procedure and method are based on the requirement of JICA Guidelines. - As a public participation, the concerns and/ ideas of the participants are important and will reflect into the output of the project.

Source: JICA Survey Team

After each presentation, open forum was conducted and the following opinion / suggestion / question were mentioned.

Table I-6.7 Summary of Questions and Suggestions raised in Open Forum

Questions and Suggestion	Raised by	Responses
What is the **basis of Region IV-A inclusion** in the WRR5	NEDA Region IV-A	The administrative boundaries and water resource region (WRR) boundaries were shown in the presentation. The WRR boundary is set considering the watershed area, so there is a bit of difference between the administrative boundary and the WRR boundary. WRR V partially covers the Region IV-A.
I can see from the summary of the water balance analysis for WRR V that the result is very alarming. Is there any **intervention** that we can do at the moment to reverse this result?	Bicol University	In the target year of 2050, it would be very serious. Maybe for immediate intervention, some water usage management should be considered, or water demand management would be very effective.
Would it be possible to do the **water balance on a monthly scale**? The demand would also vary on a monthly basis. Perhaps, doing that on a monthly scale would show us which months would we be experiencing shortages, especially in the future. Please include the monthly water balance in the report. It would help decisionmakers in deciding what infrastructure to build to address shortages.	Bicol University	The monthly surface water balance will be tight in the future (2050) especially during the dry season (March, April, May, June). But the groundwater potential is very stable (almost the same every month). Today's presentation only shows the annual water balance, but the JICA Survey Team evaluates the daily/monthly water balance because the rainfall varies every day/month. Also, water demand is stable for domestic and industrial, but for irrigation, it depends on the season. So, such conditions will be considered and the monthly variations will be shown in the report.
May we know what the **participation of the LGUs** in this particular project will be and how are going to be provided with the data for us to come up with interventions? *	LGU Goa	The region may break down the general results of the study for WRR V at the local level. It would be important for LGUs to appreciate the status of our water resources, so that when they come up with their projects to address the water lag at their level,

Questions and Suggestion	Raised by	Responses
		especially with the devolution of services to the LGUs. It is an opportune time for LGUs to consider the data. This would be shared to all the LGUs, because they will one of the principal users of the Survey results. Support from the LGUs would be very crucial in terms of providing us baseline information (particularly the land use plan) that will enable us to assess potential impacts of the projects and also the protection impacts of the environment to the project.
In our place particularly in the Municipality of Monreal, Masbate we have an abundant surface water source we want to have comprehensive study, but the problem is we don't have a background on this study. Can you tell us what to do? *	Municipality of Monreal, Masbate	Abundant water resource in the island was found, but some locations have severe water shortage. Water use management is necessary, and water development can also be considered. By using baseline data, maybe the LGU can consider project development and management.
Is there already **any identified intervention** to address the possible water scarcity predicted in the study particularly in **Naga City** in the year 2050? *	Metro Naga Water District	So far, none yet. The survey is at the data gathering and analysis stage. If there are projects already initiated by the municipal/city/provincial government on water resources, they must know. That's why, they also interact with the water districts, because they already have program of actions in terms of the development of water sources, supplying water for their concessionaires in the next 20 years. Your inputs and specific plans can be a very good starting point to consider. Later on, you can also get some inputs to correct/calibrate whatever you are doing in your respective water districts.
The Area in Monreal Masbate is a separate Island those Islands have plenty of springs and waterfalls, different from what we have surveyed few days ago. *	PPDO MASBATE	This comment was duly noted for consideration of the JST.
Why is it only Legazpi City include	PPDO Bicol	Today's presentation just shows the case for Legazpi City, but our hydrologist for surface water balance analyzed all areas in this region.
Any particular study to be conducted/scoped in Quezon?	Quezon Province	No particular study. Water balance, water potential, and water demand assessment were made for the WRR V. Regarding the small area in Quezon that was included in the study, Tagkawayan area is sandwiched in the political boundary of WRR V. It's because of the watershed area that cuts across political boundaries.
I also have question about **Social Considerations**. *	PPDO Masbate	This Project being supported by JICA will be very strict in environmental and social considerations.
Regarding water demand prediction, were you able to consider the **current and future policies of the government**. One which may have an impact in terms of the water demand is the Mandanas Ruling. Under the National Irrigation Management Plan (NMIP), most of the projects will be implemented by the NIA; but under the Mandanas ruling, some of the communal irrigation systems will already be devolved to the LGUs. There is no certainty that the irrigation systems will be implemented by the LGUs. Were these **water management practices** considered?	NEDA V	Such policy decisions and recommendations provided today should be considered as much as possible. It would be very fruitful for our estimation of water demand. Regarding the devolution of irrigation to the LGUs, recently, there are a considerable number of LGUs who are of the opinion that irrigation should not be devolved because of the big amount required for irrigation projects. If they would be doing that, that would eat a big percentage of their local budget. So perhaps this is an area that would have to be reconsidered. While irrigation projects have been indicated in the devolution transition plan, but some policy changes along that policy line can be excepted. Regarding climate change, there is some uncertainties in the worst case. This time we considered some upper

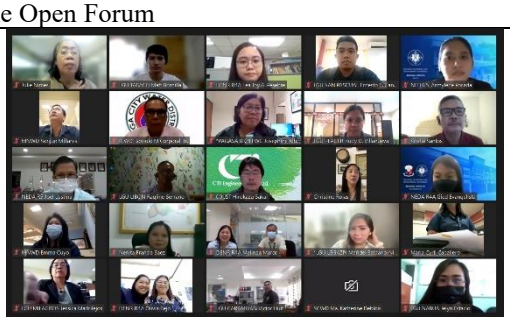
Questions and Suggestion	Raised by	Responses
- We are pushing for **volumetric water pricing**. One of the supposed pilot areas for volumetric water pricing is the Tigman-Hinagyanan-Inarihan River Irrigation System in Camarines Sur. That means, we will be able to save on the use of surface water/irrigation water, because farmers will only be paying for what they use unlike now that there is a lot of wastage in terms of water usage. - Policy on using **sprinkler irrigation system** instead of surface water - Policy in terms of the **multi-purpose use of our reservoirs and dams**. Currently, most of our reservoirs and dams are used for irrigation and hydropower. There is also a conflict in terms of the utilization of these water resources. I don't think the universal rule in terms of water usage has been applied to this. Since there is a portion of Quezon that was included in WRR V, there will be an inter-basin water transfer on this. Most likely, not only the Tagkawayan municipality will **benefit** but also **other areas in Quezon**. In the **GRDP forecast**, you based it on the 2017-2022 RDP. Now we are in already in the planning process for the **RDP 2023-2028**. One of the key priority areas for Region V is to develop the agriculture sector and also the industry sector in terms of agricultural development. This means that there will be a higher demand for water, both for agricultural and industrial purposes. We are also happy to note that climate change has been considered here. Actually, in our **DRR-CCA-enhanced Regional Physical Framework Plan (RPFP)**, which was recently approved by the Regional Land Use Committee and Regional Development Council, RCP8.5 was one of the key assumptions in our RFPF, and the same is being applied here.		limits (i.e., RCP8.5). In each scenario, maybe we can adopt/consider what kind of development/management is necessary.
My understanding of the Strategic Environmental Assessment (SEA) is we establish first certain multi-criteria prior to the preparation of the plan. Another thing that I noted is that there were only two factors that were considered: environment and social. My suggestion is to **expand the analysis**, not only limited to those two factors; also **include economic and political**.	NEDA V	In the JST, there is a specific person looking at the institutional framework. On the SEA, it is really a new concept even for some development partners. The SEA incorporated here in this study is following the guidelines from JICA. SEA framework being done by other development partners (e.g., ADB and World Bank) was also reviewed. Your suggestion about the political and economic aspects for the SEA will be considered. [Showed Slide No. 57, Table on Examples of Alternative Indicators in SEA]
Regarding **subdividing the WRR V into 243 sub-basins**, I disagree with the delineation of the sub-basins. By definition, a sub-basin should have a common outlet, and there are sub-basins that do not have a common outlet there. For example, the Bicol	NEDA V	The definition of the sub-basins with NEDA V may be compared and reconciled.

Questions and Suggestion	Raised by	Responses
River Basin is subdivided into seven (7) sub-basins, but here, there are several sub-basins. Would it be possible for our experts to consider the Regions' **definition of the sub-basin**. We can discuss this further outside of this meeting.		
On using the data that you have generated at this stage, now that we are doing the RDP and almost completing the RPFP, I'd like to know from the JICA Team if we can already make **use of the data** that you have presented here. This is a good time for us to consider the information from the Interim Results of the Survey. We will include a notation that whatever data you will provide us were from the Interim Results of the Survey. We can share the draft to the JST.	NEDA V	This matter (data sharing) should be coordinated with JICA For our Study, we need your updated RDP and RPFP. Let's exchange data and information.
Have you considered sea waters that enters agricultural farms leaving salt/silts that hinder farm produce especially low-lying municipalities. *	LGU Camaligan	This comment was duly noted for consideration of the JST.
My key takeaway is that, in general, the Bicol region is still in a relatively better condition (looking at all the provinces). For me what is really crucial is the management of these resources, not just in Masbate but also in those areas where we have rich water resources. We really have to be good in water resources management. The results of this Study will be very good references for us to determine how to proceed in the future development of our water resources. Again, thank you to the JICA Team and to our local colleagues and counterparts.	NEDA V	Water resources development could take longer time, but water resource management can be done immediately.

Source: JICA Survey Team

Presentation by the team

Discussion in the Open Forum



Group Photo with the Virtual Participants

Group Photo with the In-Person Participants

Source: JICA Survey Team

Photo I-6.31st Stakeholder Meeting in WRR V

I-6.2 2nd Stakeholder Meeting

I-6.2.1 Outlines of the 2nd Stakeholder Meeting

2nd SHMs were held at WRR VII and V in April 2023 and at WRR XI in May 2023 as follows.

Table I-6.8 Summary of the 2nd Stakeholder Meetings

Region	WRR VII	WRR XI	WRR V
Date	April 19, 2023	May 9, 2023	April 25, 2023
Venue	Quest Hotel & Conference Center in Cebu city	Acacia Hotel in Davao city	NEDA V Regional Office Conference Center in Legazpi city
Participants	Total: 112 - In-person: 51 - Virtual: 61	Total: 150 - In-person: 48 - Virtual: 102	Total: 114 - In-person: 50 - Virtual: 64
Program	- Opening Ceremony - Regional Development Plan by NEDA Regional Office - Survey Result & Priority Project Concept		

Region	WRR VII	WRR XI	WRR V
	- Open Forum - Closing Remarks		
Purpose	- To share the survey result & priority project concept - To avoid the conflict between stakeholders for the implementation of the proposed project concept - To collect several opinions, concerns, issues ideas and recommendations		

Source: JICA Survey Team

I-6.2.2 2nd Stakeholder Meeting at WRR VII

The 2nd SHM for WRR VII Central Visayas was held on April 19, 2023 at the Quest Hotel & Conference Center in Cebu City and via Zoom application. The participants in total 112 (in-person: 51 and virtual: 61) were composed of representatives from the national and regional government agencies; provincial, city, and municipal local government offices; water service providers; universities; and non-government organizations (NGOs).

As a program of the meeting, welcome remarks and each presentation were conducted and the following remarks were mentioned.

Table I-6.9 Summary of Presentation of the 2nd Stakeholder Meetings in WRR VII

Program	Presenter	Remarks
Welcome Remarks	Ms. Kathleen Mangune, NEDA IS-WRD	- Among the pressing issues of the Philippine Water Resources Sector are the limited operationalization of integrated water resources management in the country; lack of updated, consolidated, and harmonized data, which is important in planning and programming; and unequal access to safe and improved water supply services. - The gap between available water supply and demand continues to widen in some areas of the country.
	Ms. Dolores J. Molintas, NRO VII OIC-RD	- The region will be better armed by right data and options to properly plan towards water security, social development, and stronger economic growth.
	Mr. Takuya Hashizume, Project Formulation Advisor, JICA Philippines Office	- This data collection survey will contribute to assisting the country in addressing issues on water management and developing effective countermeasures. - This consultation meeting will present the results of the study and the priority projects. These projects will be the recommendation of the JST in which the Philippine Government can consider in the future.
Regional Development Plan of NRO7	Ms. Maria Teresa Alambra, Chief EDS, NEDA Regional Office VII	- One of the sector outcomes is water security, ecological integrity of water systems, and resiliency to water hazards attained. - The strategy framework for expanding and upgrading infrastructures. The strategy framework is geared towards the delivery of sustainable, resilient, integrated, and modern infrastructure system including upgrade and expand water and sanitation infrastructure and strengthening the implementation of Integrated Water Resource Management
Survey Results and Priority Projects Concepts	Mr. Tadahiro Fukuda, JST Team Leader and each team members	1. Outline of the Survey 2. Study for Water Resources Development and Management Options in WRR VII 3. Challenge & Approach to Sustainable Water Use 4. Alternative Study for New Water Resources Development Options 5. Water Resources Development and Management Plan (idea) - P1: Water Demands Management - P2: Sustainable Use of Groundwater - P3: Development of Water Resources - P3(1) Surface Water Development Plan (idea)

Program	Presenter	Remarks
		- P3(2) Water Supply Plan (Agriculture Water Use, Municipal and Industrial Water Use) - P4: Water Resources Management - P4(a) Information Management Plan - P4(b) Flood Risk Management - P4(c) Watershed Conservation/ River Basin Environemntal Conservation Plan - P4(d) Organization and Institutional Enhancement 6. Priority Project Concepts: Selection of Priority Project 7. Environmental and Social Considerations for the Project

Source: JICA Survey Team

After each presentation, open forum was conducted and the following opinion / suggestion / question were mentioned.

Table I-6.10 Summary of Questions and Suggestions raised in Open Forum in WRR VII

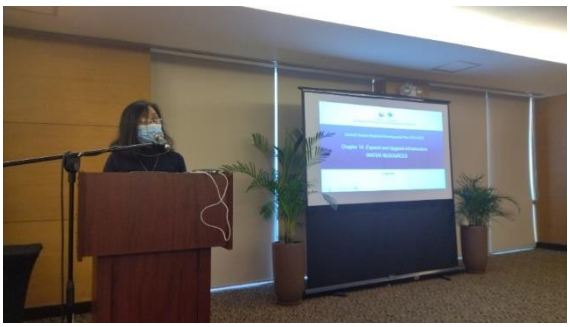
Questions and Suggestion	Raised by	Responses
1. Did the JICA Survey Team conduct a study on the potential recharge area in the region and its condition, such as the Mananga River System? 2. I also noted that water is cheap in the region. I am proposing that MCWD modify the rate of water cost in the region to reduce the water demand.	DENR-EMB Region VII	1. The Survey Team conducted a water balance analysis that included about 400 sub-basins. The study is pragmatic and limited to the observation data used for calibration. To improve accuracy, observations or actual data are required. The results of the study for the sub-basins are available for sharing. 2. This suggestion must be addressed by the MCWD later.
1. The team will conduct an actual water balance analysis, or have you already done so? We often use the river basin as the planning region while doing the analysis. However, we frequently overlook which part of the river basin feeds groundwater or surface water, or the other way around. 2. On the water supply side, I'd like to see us prioritize integrated planning for groundwater and surface water consumption. For example, we are presently preparing for the onset of El Nino. There should have been a consideration to utilize groundwater during the dry season and/or surface water during the wet season. That type of management would be ideal in the water supply sector. We should combine both surface and groundwater during analysis in future studies, rather than compartmentalizing them.	University of San Carlos-WRFCI	JST: 1. The water balance study has already been completed. 2. The groundwater analysis is a regional masterplan level analysis and not a detailed groundwater analysis. A detailed analysis may be conducted during the feasibility stage of the proposed priority projects. Seasonal change can be accounted for in groundwater recharge and water balance analyses.
A qualification that states that this will be integrated at the local level into one system is what I believe is required in this situation if we are compartmentalizing surface and groundwater on a regional scale. Because if you don't have that, people might still assume that you're only going to use surface water or groundwater and they will neglect how the two interact. Maybe only a sentence or two to confirm it.	Soil and Water Conservation Foundation, Inc.	The analysis of the Survey Team integrated both surface water and groundwater.
Based on your recommendations, desalination plants should be used to address the issue of water supply in the country. However, the use of desalination plants may also contribute to greenhouse gas emissions.	NEDA Region-7	If we take this into account, we must choose typical project concepts once more. One of the concepts is the utilization of solar energy for desalination facilities.

Questions and Suggestion	Raised by	Responses
Will the study also suggest desalination plant designs that probably produce less greenhouse gas emissions? Do we have the technology for desalination facilities powered by the sun? Because the use of desalination plants that rely on fossil fuels will induce a maladaptation to climate change.		
Will you be able to include the countryside in your long-term plan, such as the Municipality of Bantayan, given that the metropolitan area is already congested? In 2021, the Province of Cebu enacted its own water code. The Water Code mandates the establishment of the Provincial Water Resource Authority (PWRA) and the formulation of an Integrated Water Management Plan (IWMP). The province also has 25 projects related to water resources.	Cebu Provincial Government	The survey team performed the water balance analysis up to the municipal level in response to the recommendation that the countryside be included in the research. The municipality may use the results of the study for planning purposes. To be clear, the data is analyzed at the regional level.
What criteria are taken into account when making a recommendation for water demand management when just two of the five proposals were chosen as the top options (Reduction of non-revenue water use and Promotion of water-saving activities)? When compared to the recycling of municipal or industrial water, we cannot be certain of the volume of water that will be saved when the suggestion of "Promotion of water saving activities" is made. I believe that the other three suggestions will also have a significant impact on water resources.	NEDA Region-7	The other three options are also effective. The high costs for the proposed concepts in Items 3 to 5 are the most crucial consideration. That is why we considered and prioritized Items 1 and 2 for this masterplan survey.
Based on the presentation, I think that we should give more emphasis to the protection and preservation of the remaining watersheds in the province because it is much cheaper to do so.	Lapu-Lapu City LGU-CENRO	As presented in the fourth item of the water resource management plan, the team incorporated watershed conservation in the promotion of the IWRM.
To address the water issue, we needed to see a really comprehensive strategy that took into account hydrology, water management, micro-water cycles, water recharge, and how water is tied to land use. We don't want to see us concentrating just on groundwater, surface water, and technical solutions without considering nature-based solutions. We also suggest: 1. To begin, consider what constitutes a healthy watershed. 2. Conduct comprehensive watershed mapping to identify critical areas, which should include a Sankey diagram. 3. Use Soil and Water Assessment Tool (SWAT)- GIS analysis to further subdivide the watershed into further manageable subbasins and units. 4. Prioritize the subbasins that are more degraded. Areas where the water table is depleted. 5. In terms of the water catchment, proposed a network of water systems and not just isolated water projects. 6. Consider cryo-desalination because it is much more efficient and cheaper to operate.	Movement for Livable Cebu	We also recommended comprehensive water resource management and development in the region since the construction of water reservoirs will take years. Additionally, we want to include fresh concepts.
Is it possible to include the Municipality of Bantayan in the JICA study on Water Resource Management? Based on the report presented earlier, there was no specific recommendation for Bantayan island. Though we are part of Cebu province, we have specific limitations such as saltwater intrusion and according to experts Bantayan only have water lenses/water pockets. How to go about it?	LGU-Banatayan, Cebu (online)	As discussed with the representative of the Cebu Provincial Government, the study covered all municipalities in WRR VII.

Questions and Suggestion	Raised by	Responses
Will the report of this study discuss how the water balance calculations and demand-supply calculations were done? So that we can replicate the method used and input our data to be more accurate or update the data.	DENR-MGB Region 6 (online)	The First SHM discussed the detailed discussion on the water balance. The detailed water balance analysis will be included in the final report of JST, which will then be submitted to the NRO.
Has the study also considered the effects of mining areas in Region VII? (Hydrology, water intrusion, outflows, etc)	DHSUD Region 7 (online)	Our hydrological and groundwater analysis was unable to take the effects of mining into account. It is better to take this effect into account in future studies.

Source: JICA Survey Team

Group Photo with the In-Person Participants



Opening remarks and presentation by NRO and the team

Discussion in Open Forum

Source: JICA Survey Team

Photo I-6.42nd Stakeholder Meeting in WRR VII

I-6.2.3 2nd Stakeholder Meeting at WRR XI

The 2nd SHM for WRR XI Central Visayas was held on May 9, 2023 at the Acacia Hotel Davao in Davao City and via Zoom application. The participants in total 150 (in-person: 48 and virtual: 102) were composed of representatives from the national and regional government agencies; provincial, city, and municipal local government offices; water service providers; universities; and non-government organizations (NGOs).

As a program of the meeting, welcome remarks and each presentation were conducted and the following remarks were mentioned.

Table I-6.11 Summary of Presentation of the 2nd Stakeholder Meetings in WRR XI

Program	Presenter	Remarks
Welcome Remarks	Asec. Roderick Planta, NEDA IS-WRD	- The country has its development frameworks such as Ambisyon 2040, SDG 6-Water and Sanitation for All by 2030, Philippine Development Plan (PDP) 2023-2028, and the Regional Development Plans (RDPs). All these frameworks aim to have a sustainable water for the country in the future. - The measures and the priority projects that will address the issues on the water resources in the Region will be presented. We need your (stakeholders) help to address the water resource problem in the country.
	RD Maria Lourdes D. Lim, NRO XI	- In line with the PDP 2023-2028, Davao RDP (2023-2028) has given importance to effective management of the country's water resources sector which is faced with numerous challenges. - From this data collection survey, we hope that we can identify fundable programs and projects that will be included in the investment programs and budget proposals of our agencies and development partners in the future..
	Mr. Kenji Nagata, Senior Advisor on Water Resources, JICA Head Office	- I hope that this discussion will accelerate the better planning and steady implementation of the Masterplan in the Davao Region. - This consultation meeting will present the results of the study and the priority projects. These projects will be the recommendation of the JST in which the Philippine Government can consider in the future.
Regional Development Plan of NRO11	Mr. Rosendo M. Aya-ay, Chief, NRO XI Policy Formulation and Planning Division	- The Davao RDP adopted the six cross-cutting strategies which applies to almost all sectors in the framework. This includes (1) Digitalization, (2) Enhanced Connectivity, (3) Public-Private Partnership, (4) Servicification, (5) Dynamic Innovation Ecosystem, and (6) Greater collaboration between local and national government. - In Chapter 13: Expand and Upgrade Infrastructure, development plans related to water resource, water supply and sewage, hydropower, flood control, and among other were extensively highlighted.
	Mr. Mario M. Realista, Chief, NRO XI Project	- Anchored in the Ambisyon 2040, investment and management support for water resources, sanitation, and flood control facilities shall be accelerated to

Program	Presenter	Remarks
	Monitoring and Evaluation Divisio	contribute to the region's food security, provide basic services- water supply and sanitation to all, and improve the resiliency of the communities. - The core challenge for the water resource sector in Davao Region is the limited investment and management support for water resource and sanitation facilities. The key strategy of the region is to adhere to the Integrated Water Resource Management (IWRM) principles. - In Region X (Northern Mindanao), the challenges identified for the water sector were Water Supply and Sanitation (Inaccessibility of potable water and sanitation facilities, Unprotected sources of drinking water and Open defecation), Agriculture/Irrigation (Irrigation development is moving at a slow pace, Potential irrigable areas are yet to be developed, Irrigation facilities are not resilient against impact disasters), Flood Control and Drainage System (The region is vulnerable to natural disasters). - In Region XII (SOCCSKSARGEN), the challenges identified for the water sector were Water Resources (Absence of a body that would oversee the implementation of water resources and management), Water Supply and Sanitation (Decrease in the proportion of households with access to safe water supply, Decrease in the proportion of households with access to improved/basic sanitation facilities, Limited funds to implement water supply and sanitation projects) and Flood Control and Drainage System (Perennial flooding besting the region due to silted water bodies, Limitations on the accuracy of data, quantifying actual improvements in flood interventions coverage is difficult). - In Region XII (SOCCSKSARGEN), the challenges identified for the water sector were Water Protection (Water source protection is inadequately managed), Water Supply and Sewerage (Water supply and sanitation infrastructures are obsolete and scarce), Agriculture/Irrigation (Development of potentially irrigable areas remains impeded) and Flood Control and Drainage System (Flood hazards are major threat to flood-prone communities as investments in flood prevention and mitigation remain inadequate).
Survey Results and Priority Projects Concepts	Mr. Tadahiro Fukuda, JST Team Leader and each team members	1. Outline of the Survey 2. Study for Water Resources Development and Management Options in WRR XI 3. Challenge & Approach to Sustainable Water Use 4. Alternative Study for New Water Resources Development Options 5. Water Resources Development and Management Plan (idea) - P1: Water Demands Management - P2: Sustainable Use of Groundwater - P3: Development of Water Resources - P3(1) Surface Water Development Plan (idea) - P3(2) Water Supply Plan (Agriculture Water Use, Municipal and Industrial Water Use) - P4: Water Resources Management - P4(a) Information Management Plan - P4(b) Flood Risk Management - P4(c) Watershed Conservation/ River Basin Environemntal Conservation Plan - P4(d) Organization and Institutional Enhancement 6. Priority Project Concepts: Selection of Priority Project 7. Environmental and Social Considerations for the Project

Source: JICA Survey Team

After each presentation, open forum was conducted and the following opinion / suggestion / question were mentioned.

Table I-6.12 Summary of Questions and Suggestions raised in Open Forum in WRR XI

Questions and Suggestion	Raised by	Responses
Since this is a nationwide project and the team has already identified the IPs or IP Groups within or near the proposed priority projects, will it still be possible to get an En Bank Resolution from NCIP?	HELP Davao Network-Davao River Initiatives	We will take note of this suggestion. There is an Environment and Social Consideration which includes the indigenous people. We know that the FPIC process and obtaining the CP is a long process. Rest assured that the project will consider and follow the standard procedure and the JICA Safeguards Policy.
1. On demand management to reuse wastewater, DOST in collaboration with their partners established a nature based Vertical Helophyte Filter systems. A technology that uses local materials, nature-based, and low cost. Almost 20 units are operational, and it has treated 200 million cubic meters of wastewater since 2017. My recommendation is to also explore technologies/ systems that will reuse the water sewerage and effluents. 2. On water governance and management, the Regional Development Council recently approved the Water Vision for Davao. We also have a 15-year strategy plan for water resources management that integrates efforts to preserve water, land, and other resources. We recommend that all plans should be aligned, harmonized, and integrated so that there will be no conflicts or overlaps in any of the abovementioned plans. 3. DOST has been working with International Centre for Water Hazard and Risk Management under the auspices of UNESCO (ICHARM) Japan. DOST and ICHARM developed an online synthesis system. This system will consolidate the water data so that water knowledge users can access and use the data for planning or decision-making purposes. The platform will also enable everyone to share data on water. The Davao Online Synthesis System (OSS) was already endorsed to the Davao River Basin Alliance. 4. The DOST and HELP Davao Network uses the "Pentahelix Approach to Development" to communicate our plans with the stakeholders. This approach includes the five sectors of society: government agencies, industries, civil societies, academe, and the media. 5. The DOST is working with DCWD in monitoring the recharge areas in Davao River. Currently, the DOST-PNRI is using isotope techniques to monitor the recharge of areas in Davao City.	DOST-XI	1. The reuse of wastewater is one of the things we can consider in the future. Last week, the JST visited the Water Reuse Facility in Parañaque and learned that the water from the facility is potable. With that, we wanted to hear from you more about the advanced technologies (nature-based filters) that you shared. 2. We also wanted to harmonize with Davao Region's vision, policy, and development plans. It is good time to collaborate our plan and your vision. We would also like to coordinate in the future. 3. ICHARM focuses on flooding while JICA's proposed project focuses on water use and flood management. The database can also be set up for flood water management and water use management. 4. We agree in your approach that we should involve the stakeholders from different sectors such as the government agencies, industries, civil societies, academe, and the media. 5. The JST took note of this suggestion.
There are only two protected areas mentioned in the presentation: Mt. Apo and Malagos. In the final drafting of the report, can we include the current situation that DCWD and Apo Agua Infrastuctura, Inc. are requesting for the declaration of the "Panigan-Tamugan Watershed" as a protected area? This is where the bulk water will come from.	HELP Davao Network-Davao River Initiatives	The JST took note of this suggestion.
I just want to share the initiatives done by DSSC and Digos City. We can into non-structural solutions such as legislation and policies related to water management and governance.	Davao del Sur State College	Our municipal water and industrial water expert also explained and agreed that education is also important for water saving. We agree with your idea

Questions and Suggestion	Raised by	Responses
We already have initial research on assessment on water policies in Davao del Sur and we already start initiating IWRM implementation focusing on Kapatagan, Davao del Sur. At present, we have an approved proposal for water education called Water Innovation and Security Education (WISE). We will implement WISE, together with other agencies, to expand the reach of our initiatives related to water governance.	(DSSC) / HELP Davao Network	of non-structural measures should be considered in our plans.
It seems that the priority projects revolve around Davao City, will there be also details on the priority projects for the surrounding provinces and regions?	LGU Davao del Norte (online)	The JST focused on the priority projects in Davao River Basin because we found a significant water shortage in the area. By using these water data, we will recommend water saving activities, groundwater monitoring, and non-revenue water management. These projects can be developed or expanded by the Philippine government. The JST studied the whole WRR and divided the WRR into several sub-basins and sub-watersheds. The JST have projections for the whole WRR down to the municipal level. On the priority projects, the JST had criteria presented to NEDA and NWRB. Based on these evaluation criteria, the JST came up with the list of initial priority concepts. Some of the recommendations in the presentation can be implemented down to the barangay level.
Just an inquiry- during the study, have we considered the involvement of our Indigenous Peoples because they also have their valid claims on water resources?	Valencia City Water District	As of now, we don't have an interface with the NCIP. But as suggested a while ago, this will be the next step as we identify the priority project concepts.
Could it be possible in this venue to include in the recommendations at this early the stopping of conversion of forest areas into alienable and disposable lands in order to increase the watershed areas?	Valencia City Water District (online)	Regarding the forest conservation, this should follow the forest management policy/plan prepared by Philippines government so we will refer it first and consider this issue and recommendation as needed.
1. DOST was given a copy of the Draft Davao City Flood Control Masterplan. This also contains a list of major proposed infrastructures based on the recommendations of JICA. Is there an alignment with the proposed infrastructure projects for water resources and flood control proposals in the DPWH Masterplan? 2. Can we consider technologies or instrumentation to improve data or information management as part of priority concept projects? And how can the regional offices assist in the deployment of this project? 3. The HELP Davao Network in partnership with ICHARM Japan and the LGU of Davao City, we propose to hold a Davao City Water Forum on July 4. We hope that we can invite NEDA and JST to present the results of the study.	DOST XI and HELP Davao Network	1. JST reviewed two masterplans: (1) Integrated River Basin Management Plan developed by DENR-RBCO; and (2) The Ongoing JICA Project on Flood Control Masterplan. As explained in the presentation, we think that it is important to consider the existing and future infrastructure plans in the river. Also, we selected the location of our proposed new construction dam for water resource development in consideration of not interfering or adversely affecting the other infrastructure. 2. Regarding the Water Data Management System Project, we agree on the comment on the importance of data-sharing among the agencies. The Central and Regional Offices should manage the data-sharing diligently. Non-structural measures are also included in the report of this study. 3. Noted

Questions and Suggestion	Raised by	Responses
We hope that assessment and data collection survey for the Water Resources Development and Management Plan be conducted in Region 10	DENR R10 (online)	Portions of Region 10 are covered by WRR XI. The boundaries of the Administrative Regions are different from the Water Resource Regions.
Did the study consider the sand and/or gravel extraction/mining activities in some rivers in the region? These activities could impact on our water management.	DENR-MGB XI	1. For this study, JST did not consider the mining activities in the region. However, it should be considered in future studies. 2. When JST reviewed the Masterplan for Buayan-Malungon River Basin, it was mentioned in the report that there is a problem of sand mining in the upstream area. It will cause a problem for River Management because it will induce sediments and some parameter problems. This is also reflected and discussed in the report of the team.

Source: JICA Survey Team

Group Photo with the In-Person Participants

Opening remarks and presentation by NRO and the team

Discussion in Open Forum

Source: JICA Survey Team

Photo I-6.52nd Stakeholder Meeting in WRR XI

I-6.2.4 2nd Stakeholder Meeting at WRR V

The 2nd SHM for WRR VII Central Visayas was held on April 25, 2023 at the NEDA Regional Office V in Legazpi City and via Zoom application. The participants in total 114 (in-person: 50 and virtual: 64) were composed of representatives from the national and regional government agencies; provincial, city, and municipal local government offices; water service providers; universities; and non-government organizations (NGOs).

As a program of the meeting, welcome remarks and each presentation were conducted and the following remarks were mentioned.

Table I-6.13 Summary of Presentation of the 2nd Stakeholder Meetings in WRR V

Program	Presenter	Remarks
Welcome Remarks	Ms. Kathleen Mangune, NEDA IS-WRD	- Among the pressing issues in the Philippine Water Resources Sector are the limited operationalization of integrated water resources management; lack of updated, consolidated, and harmonized data; and unequal access to safe and improved water supply and sanitation services. - The gap between available water supply and demand continues to widen in some areas of the country. If we continue to do business as usual, the water crisis in the country is projected to worsen by 2040. - The conduct of this data collection survey will aid the country to address the gaps in the water supply sector.
	Ms. Cynthia Berces, NRO V ARD	- EDA (RO 5), together with the concerned water agencies, continue its efforts to improve water resources management, strengthen water sector governance, and increase safe water supply. - Once the results of the study are approved and accepted by the Philippine Government, they will also be a valuable contribution to the plans of the regional agencies and local government units which will benefit the Bicolanos.
	Mr. Takuya Hashizume, Project Formulation Advisor, JICA Philippines Office	- This data collection survey will contribute to assisting the country in addressing issues on water management and developing effective countermeasures. - This consultation meeting will present the results of the study and the priority projects. These projects will be the recommendation of the JST in which the Philippine Government can consider in the future.
Regional Development Plan of NRO5	Mr. Argel Joseph S. Tria, Senior EDS, NEDA Regional Office V	- The overall outcome of the RDP on Chapter 11 is “sustainable, resilient, integrated, and modernized infrastructure facilities and services delivered.” - On the subcategory "Water security, ecological integrity of water systems, and resiliency to hazards attained", the RDP discussed the following strategies to be employed in order to achieve water security in the region: - Ensure water availability through efficient water infrastructure and management - Strengthen the participation of local communities in improving water and sanitation management - Develop applicable wastewater system in urban areas - Continue to pursue climate proofing for irrigation development

Program	Presenter	Remarks
		- Optimize use of funds and improve the technical capacity for irrigation development and management of facilities - Prioritize flood control and coastal protection infrastructure with hybrid systems - Improve data monitoring systems
Survey Results and Priority Projects Concepts	Mr. Tadahiro Fukuda, JST Team Leader and each team members	1. Outline of the Survey 2. Study for Water Resources Development and Management Options in WRR VII 3. Challenge & Approach to Sustainable Water Use 4. Alternative Study for New Water Resources Development Options 5. Water Resources Development and Management Plan (idea) - P1: Water Demands Management - P2: Sustainable Use of Groundwater - P3: Development of Water Resources - P3(1) Surface Water Development Plan (idea) - P3(2) Water Supply Plan (Agriculture Water Use, Municipal and Industrial Water Use) - P4: Water Resources Management - P4(a) Information Management Plan - P4(b) Flood Risk Management - P4(c) Watershed Conservation/ River Basin Environemntal Conservation Plan - P4(d) Organization and Institutional Enhancement 6. Priority Project Concepts: Selection of Priority Project 7. Environmental and Social Considerations for the Project

Source: JICA Survey Team

After each presentation, open forum was conducted and the following opinion / suggestion / question were mentioned.

Table I-6.14 Summary of Questions and Suggestions raised in Open Forum in WRR V

Questions and Suggestion	Raised by	Responses
Why did you call this Bicol, Catanduanes, and Masbate?	Bicol University-College of Engineering	The WRR V was divided into several basins and sub-basins. It is only referred to as Bicol in the presentation because the Bicol River Basin covers Albay, Camarines Norte, and Camarines Sur. On the other hand, Sorsogon, Masbate Island, and Catanduanes Island were separated because they are not part of the Bicol River Basin.
How were you able to compute the effective depth of Lake Buhi? Is the range on the presentation computed during normal times only? During the flood events in 2008 and 2018, the water line for those events rose about 3 meters. The lake reached some parts of the municipal buildings. It was mentioned that there is a dam. However, it is located further downstream. How would you mitigate a flood or how would you conserve/ store water in the swollen dam during large flood events so they can be used at a later period? The JST should also consider non-structural measures including enhancing settlements inside of the boundaries the lake's legal easements.	DENR-MGB Region 5	As shown in the presentation, the team showed the normal level of water which is considered for irrigation purposes or water usage. Regarding the volume capacity of the dam, we understand that the catchment area of this lake is not vast, and we estimated its capacity to be 70 mcm per year. During the wet season. It is feasible to store flood water there during the rainy season so that it may be used. Regarding non-structural measures, we considered the combination of rainwater-flood forecasting systems. With the help of these monitoring results, we can suggest a combined operation for water supply and flood control. Additionally, we can take environmental improvement into account.
High slopes that are prone to landslides are found in the northeastern and eastern parts of Lake Buhi. The lake was filled with rubble from landslides and debris flows that	DENR-MGB Region 5	We can consider landslide management such as dredging and excavation of debris flows.

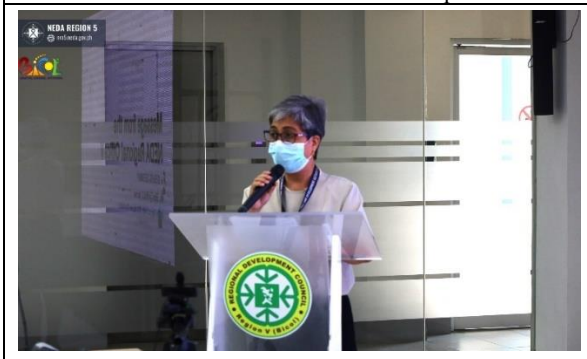
Questions and Suggestion	Raised by	Responses
occurred during the Tropical Depression in 2018. Lakebed became shallower as a result. I recommend desilting or dredging of the lakebed should also be included in the plan.		
On the challenges that need to be addressed, particularly in the "increasing access to water for domestic, agricultural, industrial, ecological, and recreational purposes." Do we have a computation or projection for how much water will be consumed by each household member, as well as for the other sectors (agriculture, industry, ecological objectives, and recreation)?	DHSUD Region 5	The first statement was based on the RDP 2017-2022. Both the previous and present RDPs were considered in the study. The basis for our water demand forecast is the population projection of the PSA Census. The calculation up to the municipal level up to the year 2050 has already been taken into consideration. The NIA master plan, which spans the years up to 2030, served as the foundation for our estimate of water demand for the agricultural sector. But for 2050, we estimated the projection based on the NIA master plan. For the industrial sector, Mr. Watanabe estimated the water projection in 2050 based on the GRDP of the region. In the final report of the study, discussion on the water projections will be segmented into the municipality level.
In the presentation Island of Ticao is not included in the study? Is it possible Monreal to be included in the future study?	LGU Monreal, Masbate (online)	The study is a regional approach. If the municipality belongs to WRR V, your municipality is included in the water balance analysis of the study. As shown in the map, we divided the region into 243 sub-basins. The team analyzed all areas in WRR V which includes islands. The results of the study may help the plans and strategies for water resources development and management plan. The study considered the entire regional basin. We recommend each LGU consider its local water demand condition to update the results presented.
Bicol Region is one of the regions prone to flooding. Are there programs possible for proposal to harness these said flood waters based on the data gathered as an alternative or additional source of water?	NIA Region 5 (online)	Lake Baao and Lake Bato might be utilized as a natural basin for lowering flood water flow in terms of flood risk management. In the 1990s, there is an ADB flood control project. River discharge regulation facilities were proposed at the downstream of Lake Baao; to use Lake Bato and Baao for flood control purposes. Because of the land acquisition and resettlement problem, the proposal was not realized. The water resources of Lake Bato and Lake Baao are significant from the perspective of integrated water resource management. The utilization of Lake Bato and Baao can be considered in future studies.
The presented data would be beneficial and helpful in upgrading Buhi Lake IWRM which has been part of NIA R5's priority projects making irrigation structures and facilities more climate-resilient and modernized."	NIA Region 5 (online)	It is worth noting that the JST also conferred with NIA Region 5 and reviewed their master plan while developing the list of priority projects.
Would it be possible that data results generated by the study be disaggregated at city/municipality level, as it can be very useful for the LGUs in their local development planning?	DHSUD (online)	The information is based on the PSA Census (population data down to the city/municipality level). Then the data will be disaggregated or presented as such.
In Albay, we are experiencing a scarcity of potable water. Can you please update me on any possible development for water surface/ water resource development for the province? In Legazpi, we are currently extracting water from the Yawa	Bicol University CENG	(LCWD) The challenges presented by the JST are the same challenges that are being faced by the water districts in Albay. In Legazpi, we have water sources in the northern

Questions and Suggestion	Raised by	Responses
River.		portion of Legazpi. We have groundwater sources (wells) and surface water sources (Yawa River being extracted by a private company. With regards to improving the quality, supply, and pressure of the water, the LCWD still needs to do a lot of things that require big investments. The financial capacity of LCWD in developing bigger projects to address bigger problems is very small. LCWD also has plans to address the concern such as water treatment facilities in the northern portions of Legazpi, and we are also looking for water sources in the southern portion of Legazpi.
Even if Legazpi has alternatives, we might not be able to meet the water demands of the residents, hence the direction of LCWD is to put up a concept considering the use of water resources from neighboring provinces. Some residents of Legazpi think that LCWD does not deliver good quality water, which is why they tried to dig their wells. The problem with that is ground subsidence, and over-extraction in some areas, and it is not aligned with proper management of water resources. LCWD has an idea of coming up with a bulk water facility- a local water treatment facility. However, the project cannot be financed by our financial resources. We suggest that the study must consider big sources of water for possible distribution that can cater for several provinces and municipalities.	Legazpi City Water District	(Bicol University) We suggest that part of all these developments and future developments that policy evaluation, assessment, and revision should be considered so that water resources development is well synchronized. Stakeholders should also be consulted to attain the goal of having good water quality. The survey team provided the Water Resource Region Development and Management Plan. For each city/municipality and province, we can provide the hydrological water balance analysis result. We also presented a comprehensive approach for the region. We discovered a lot of locations that may be used for bulk water projects in the area. For localization and integration, we recommend coordination of the water district.
Did the JICA Survey Team include the sea level rise problem in the study and how will it affect the Bicol River Basin? According to the inter-governmental panel for climate change, the present sea level in Legazpi City will rise to 15 meters by 2100.	LGU Legazpi City-CPDO	For the groundwater analysis, the sea-level rise data up to 2050 is considered. We also learned that Naga will be the most negatively impacted by the present extraction of groundwater and the impending saltwater intrusion.
On the social aspect of the priority projects, the team may overlook one of the vulnerable sectors in Buhi Lake which is the local fish farmers. They can be affected during and after the upgrading of Buhi Lake. The improvement of the water quality in the lake may also mean limiting the aquaculture practices in the area.	Bicol University	In this stage, we have a few pieces of information and a brief initial assessment to come up with the concept of the priority projects. As presented, the team uses the JICA screening which includes the “indigenous peoples/ poverty/ vulnerable people” item. For the mentioned suggestions, it will also be considered.
Not just for water districts, but for flood management, irrigation, and other components, there must be a clear and detailed implementation mechanism/ arrangements to maximize resources and benefits. Learnings from previous programs on water management (inc. Bicol River Basin programs) must be fully considered. In the presentation, there is a proposal on the expansion of regional offices. I suggest this area be given utmost consideration and attention. This must be detailed further, including the instruments that will operationalize the arrangements so that resources and actions of DPWH, NIA, water districts, LGUs, etc. are cohesive and complementary.	LGU Canaman (online)	The JST noted this comment.

Questions and Suggestion	Raised by	Responses
May I ask if the participants can still send comments and inputs to the survey or study?	NEDA Region 5	We are now at the final stage of the survey. The recommendations and comments made today could be incorporated into the final report.

Source: JICA Survey Team

Group Photo with the In-Person Participants



Opening remarks and presentation by NRO and the team

Discussion in Open Forum

Source: JICA Survey Team

Photo I-6.62nd Stakeholder Meeting in WRR V