

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

FEASIBILITY STUDY
ON
THE RESTORATION OF RURAL ROADS

FINAL REPORT

VOLUME III

APPENDIX

JANUARY 1992

JAPAN INTERNATIONAL COOPERATION AGENCY

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DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

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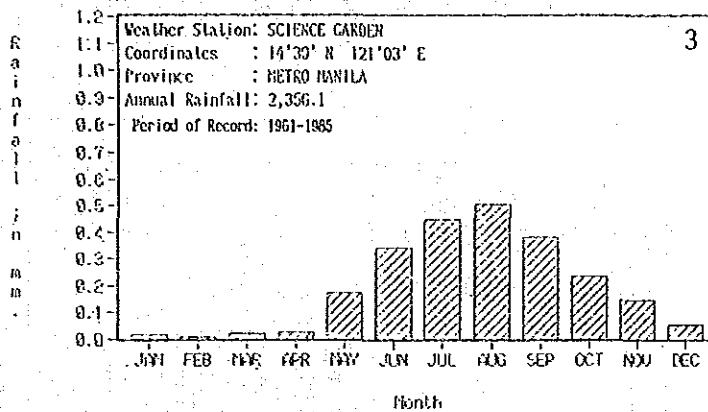
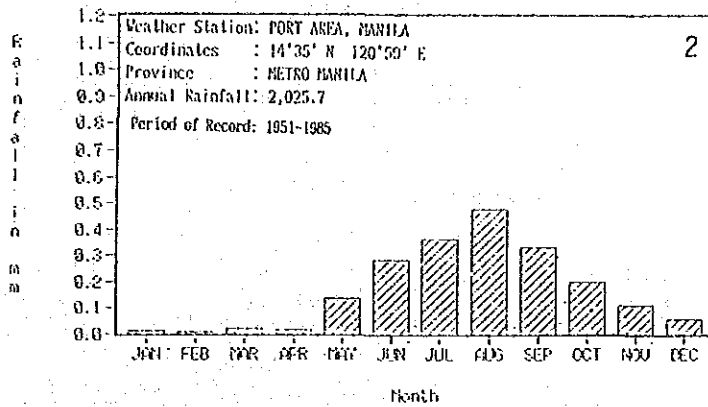
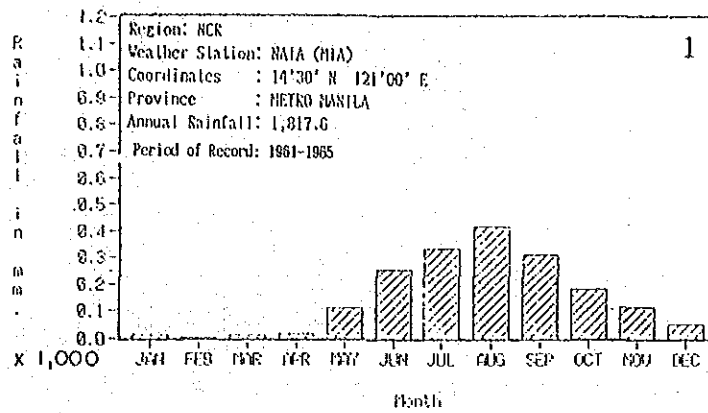
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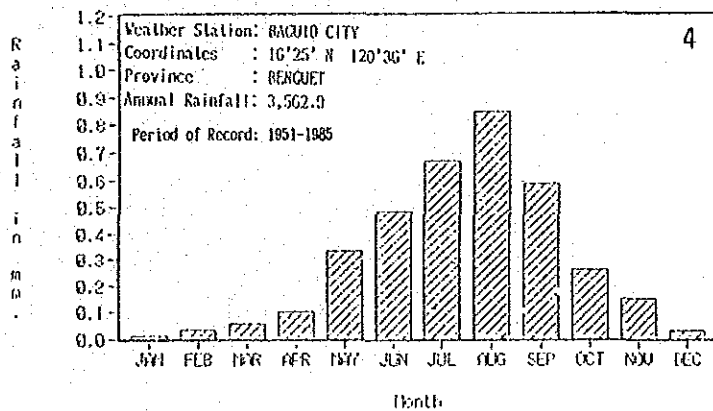
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APPENDIX 2-1
MEAN MONTHLY RAINFALL DISTRIBUTION

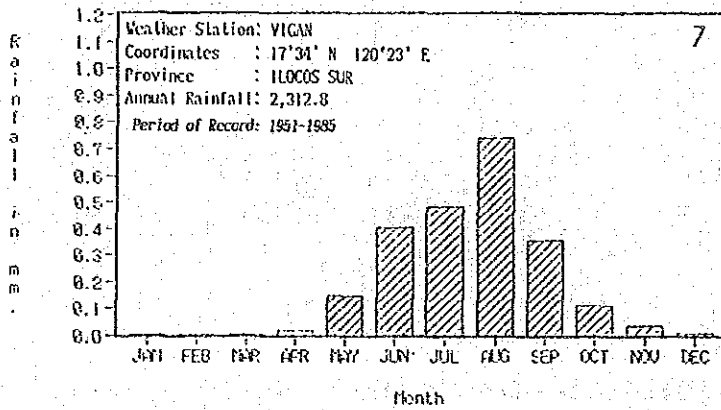
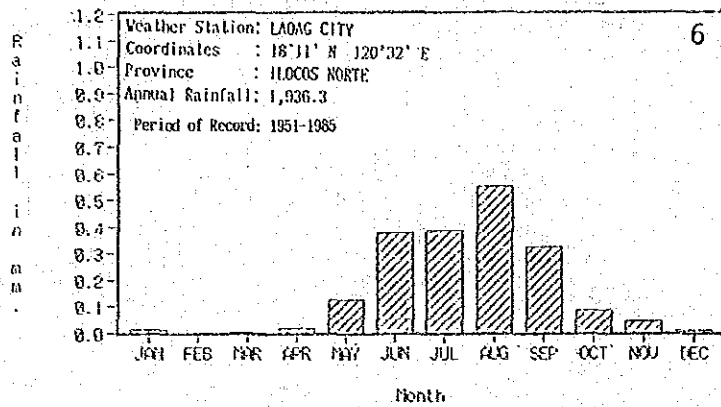
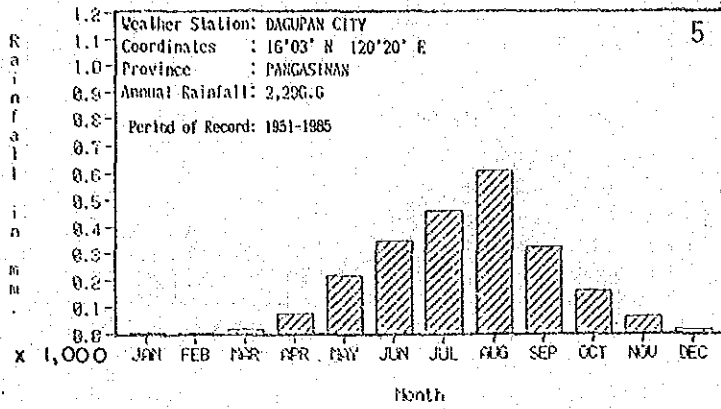
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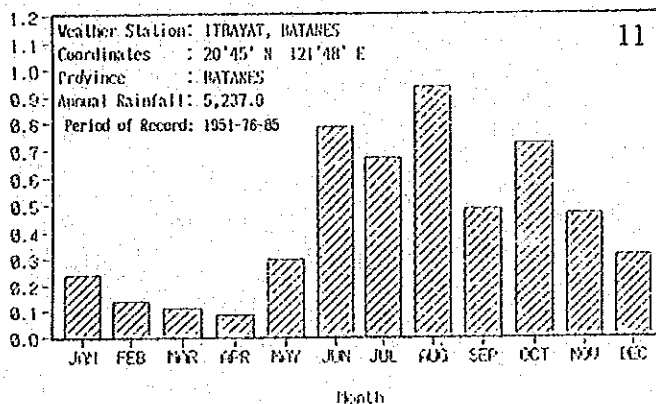
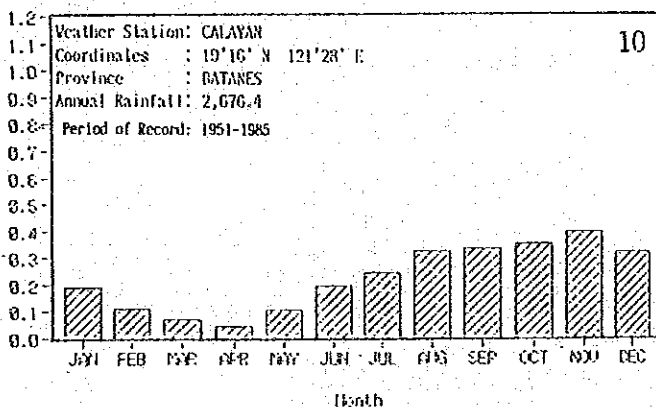
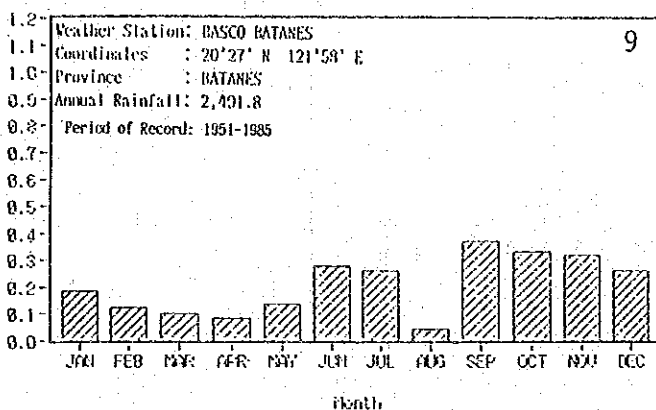
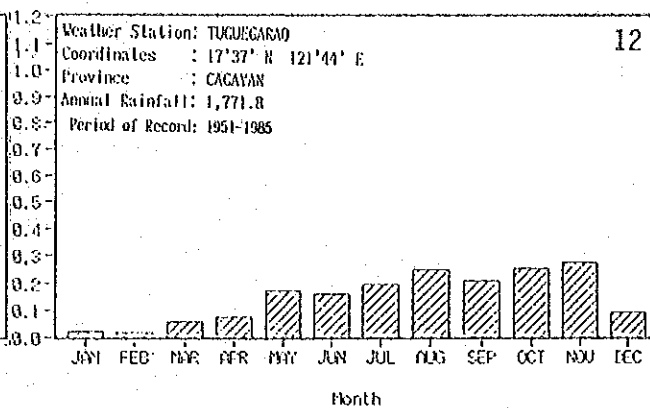
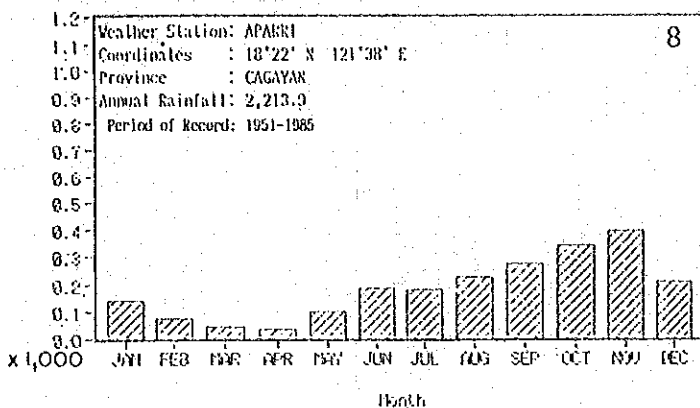
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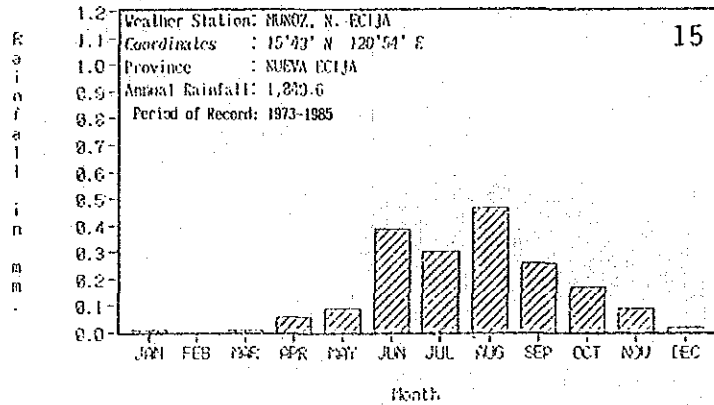
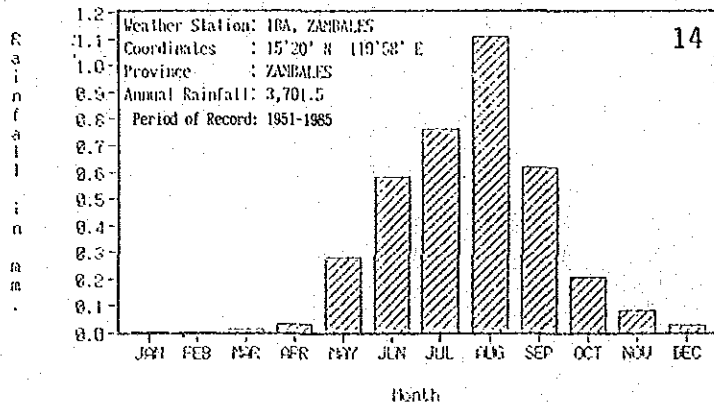
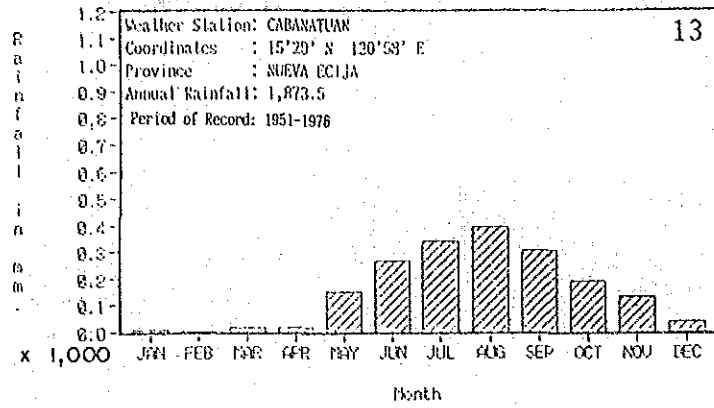
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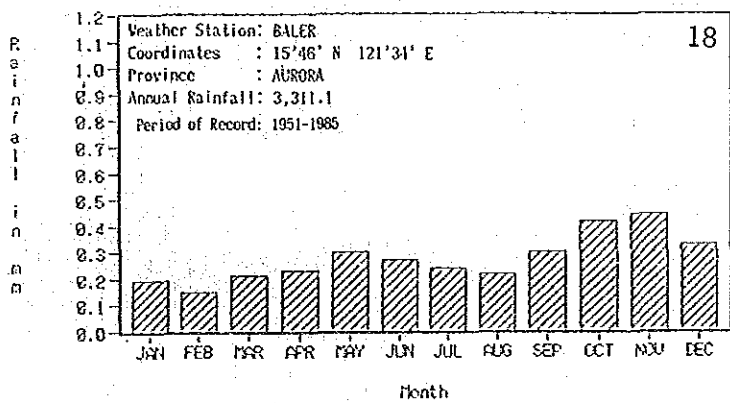
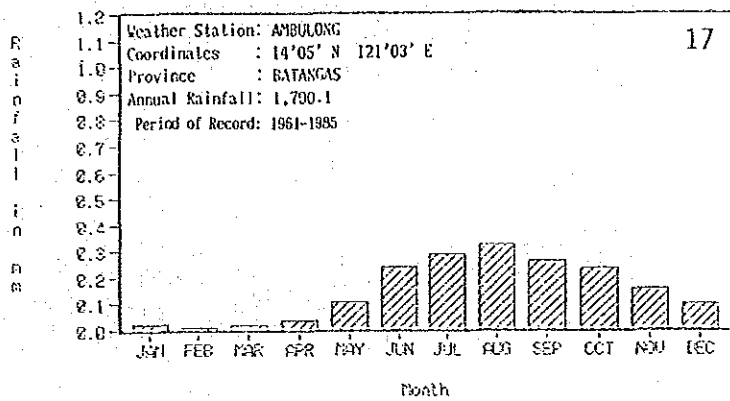
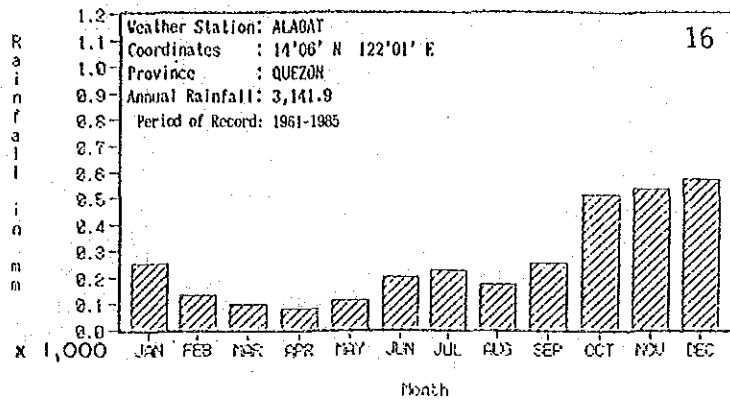
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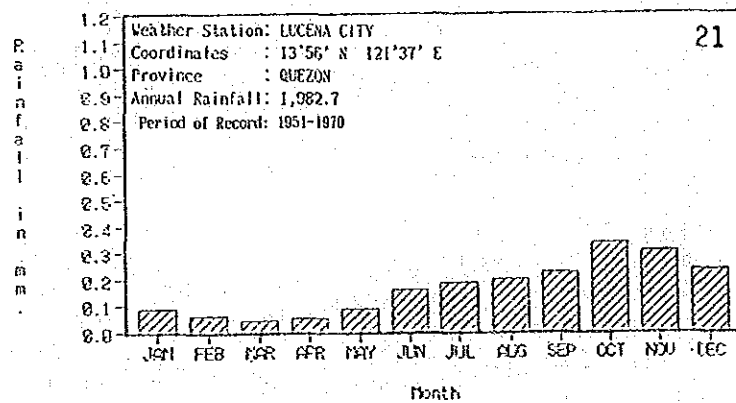
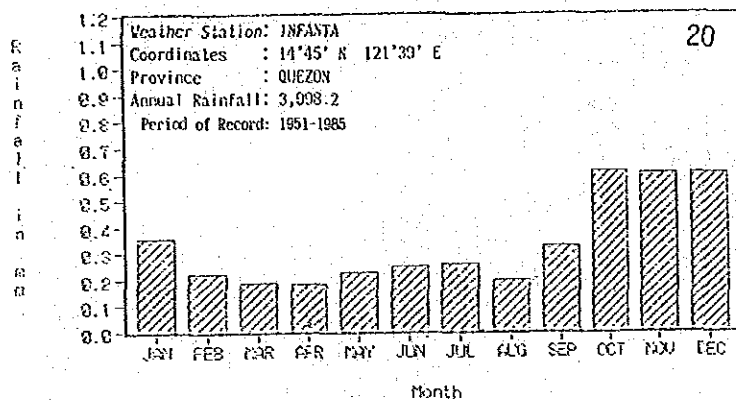
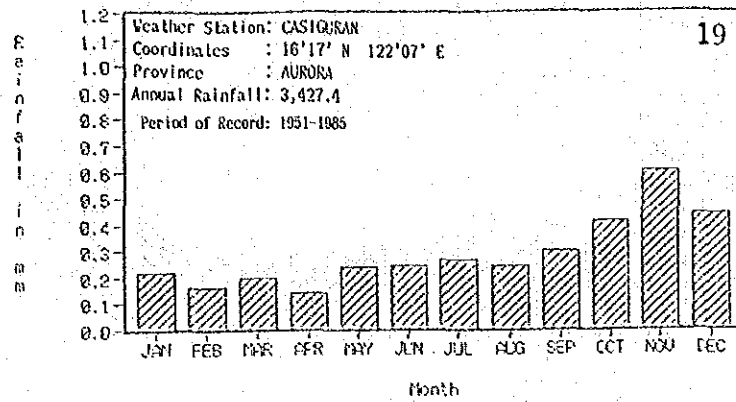
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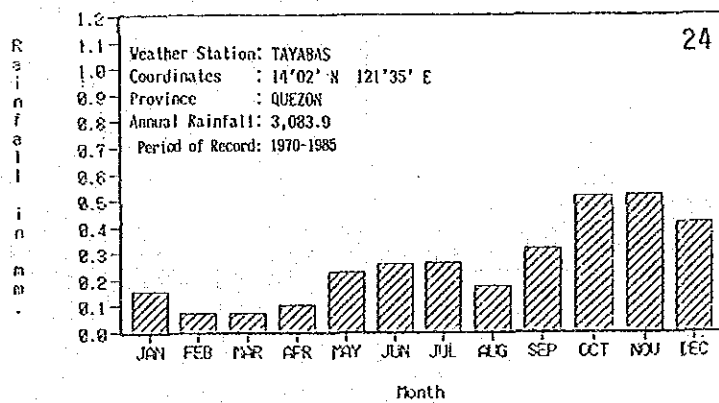
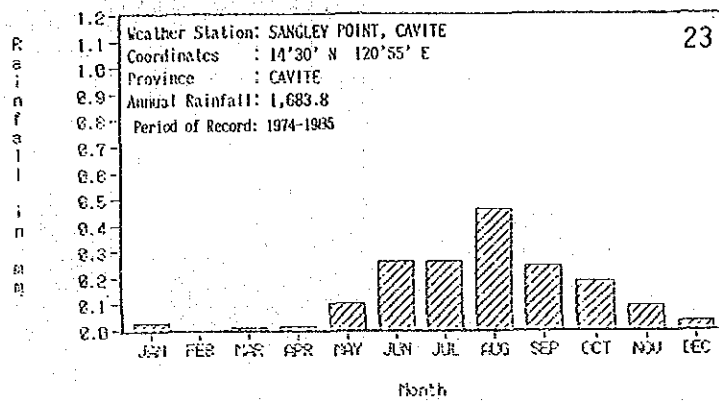
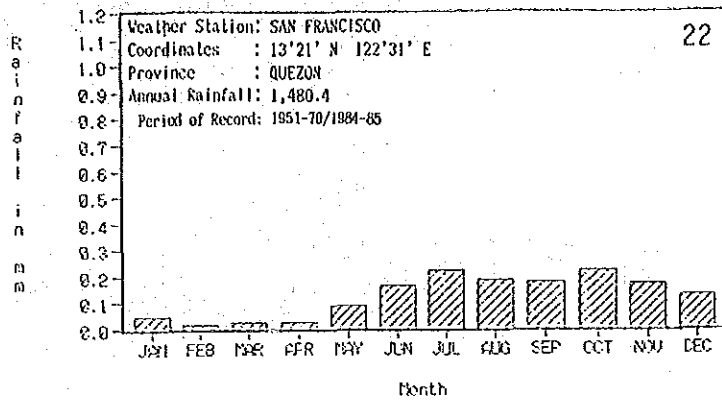
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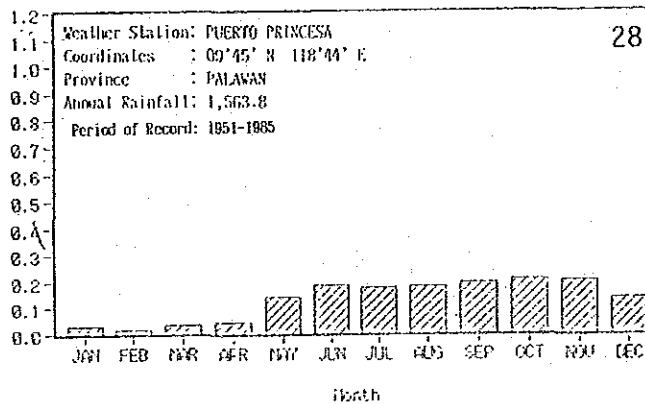
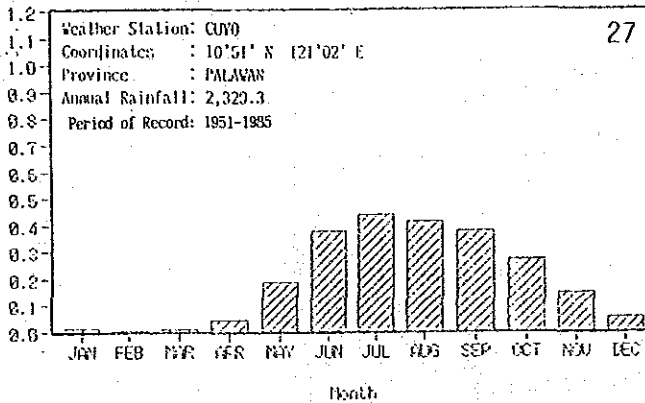
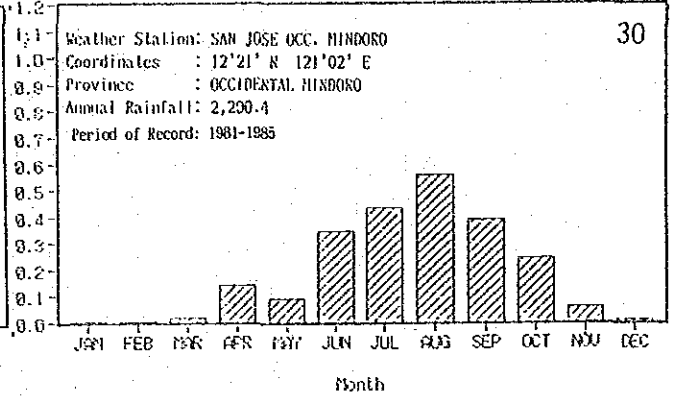
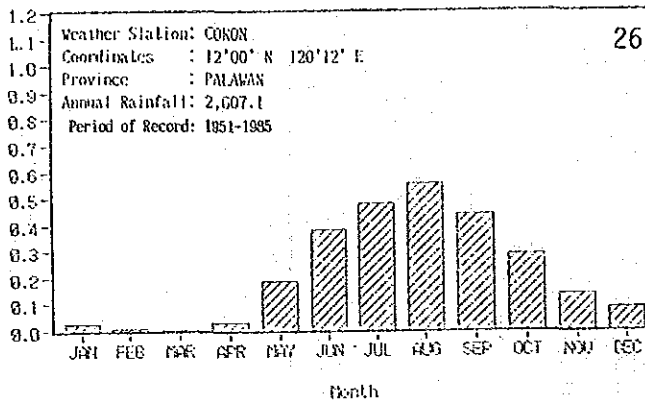
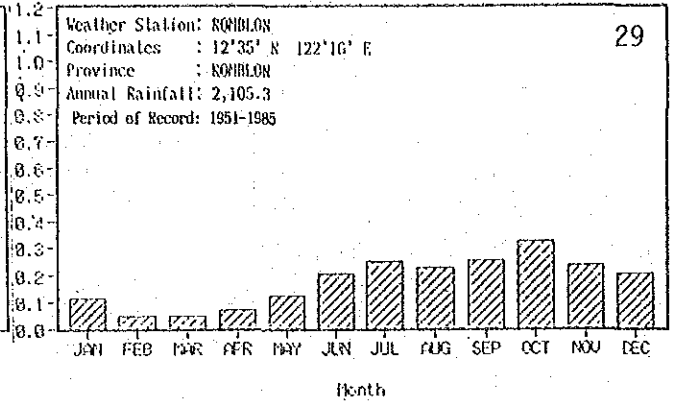
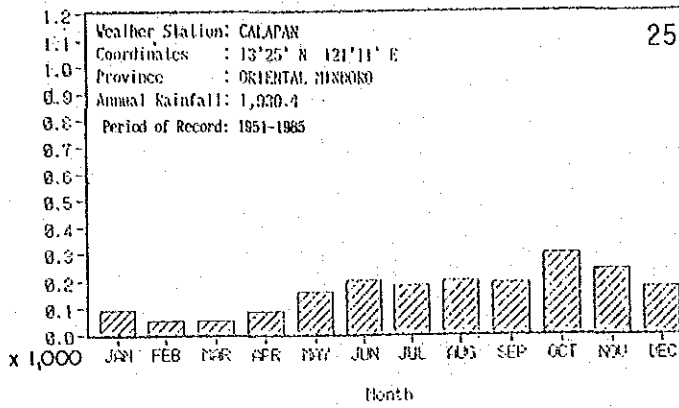
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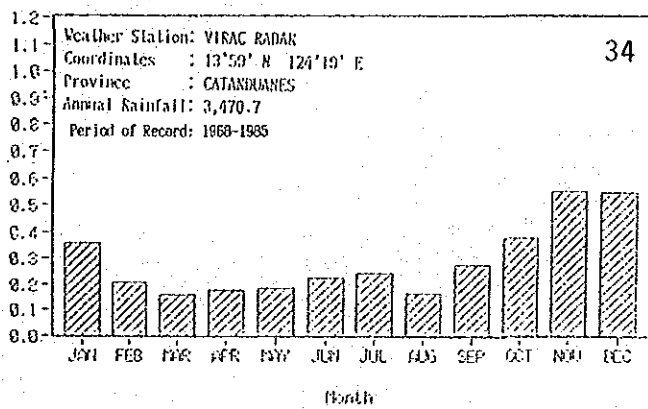
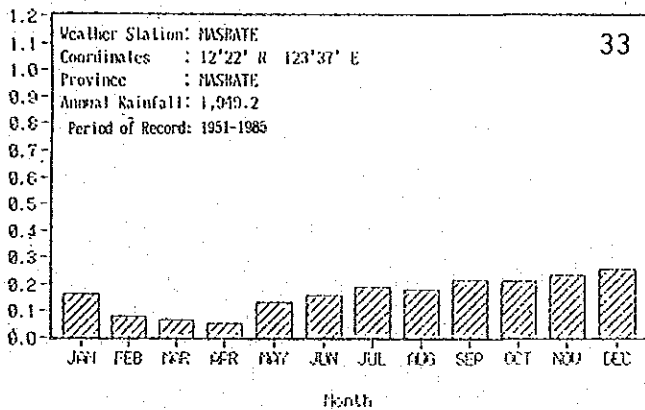
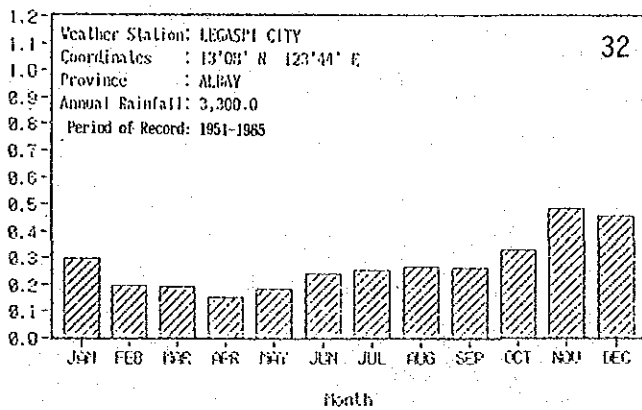
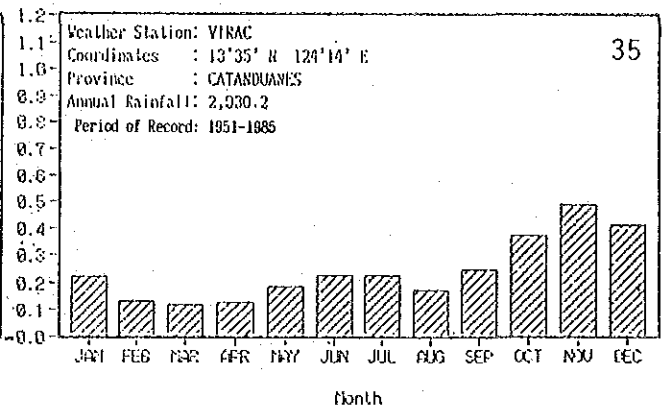
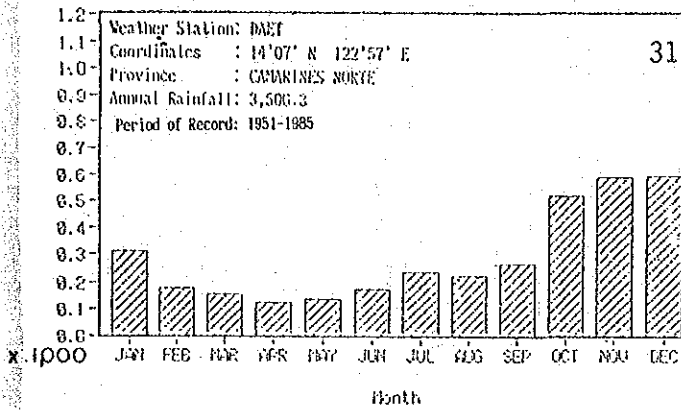
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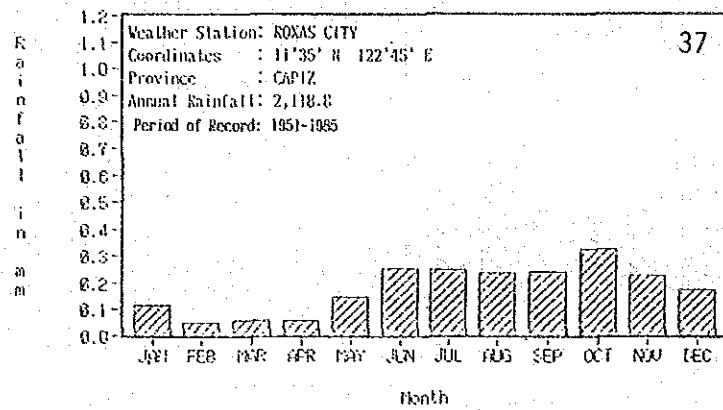
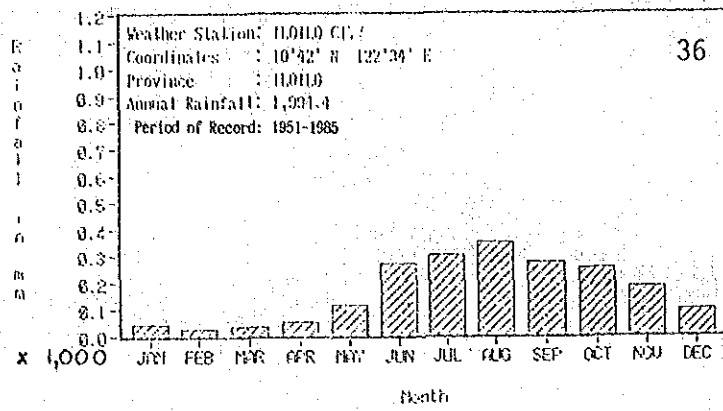
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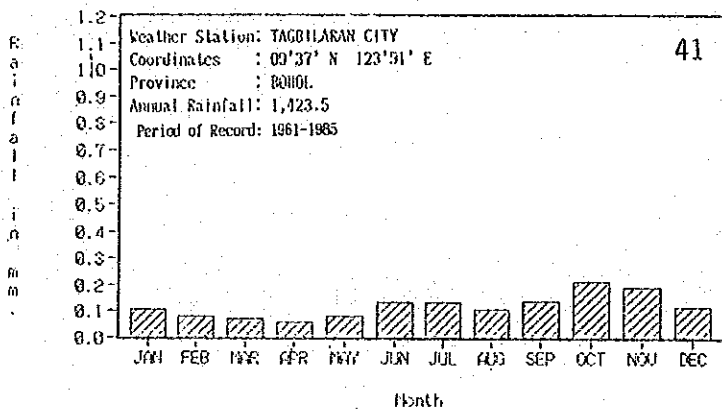
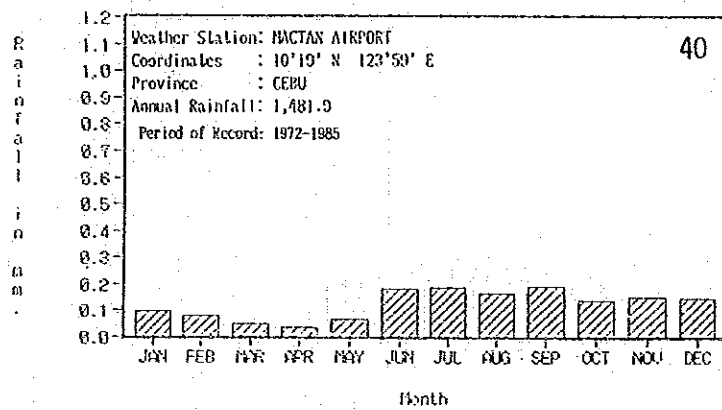
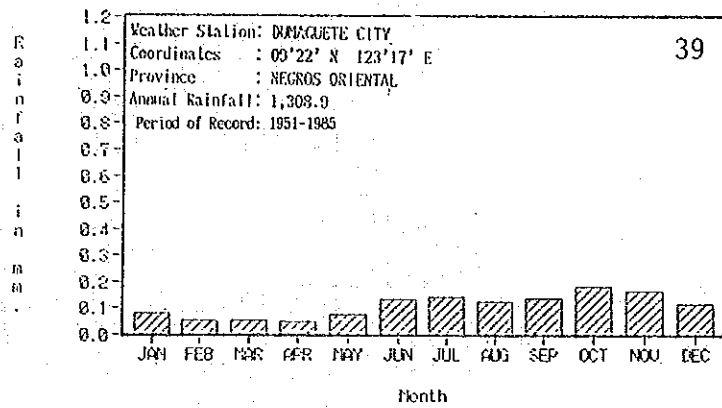
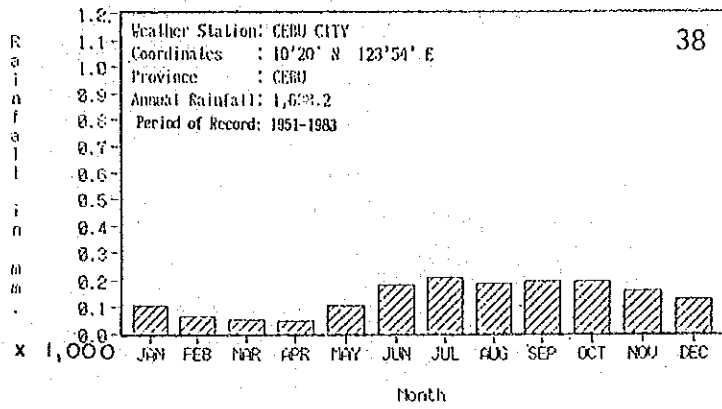
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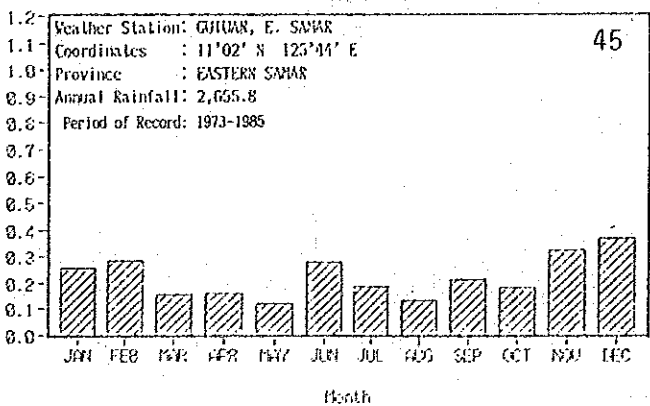
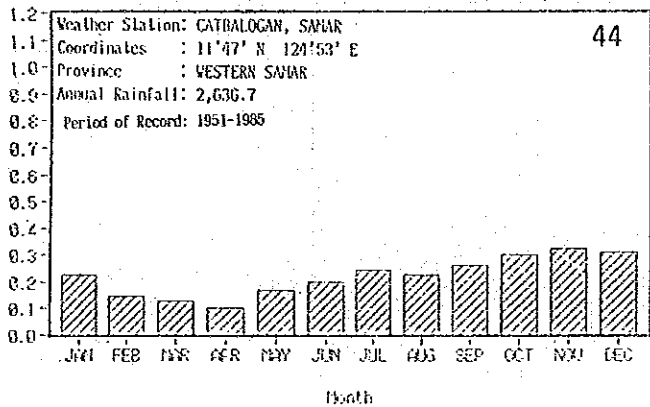
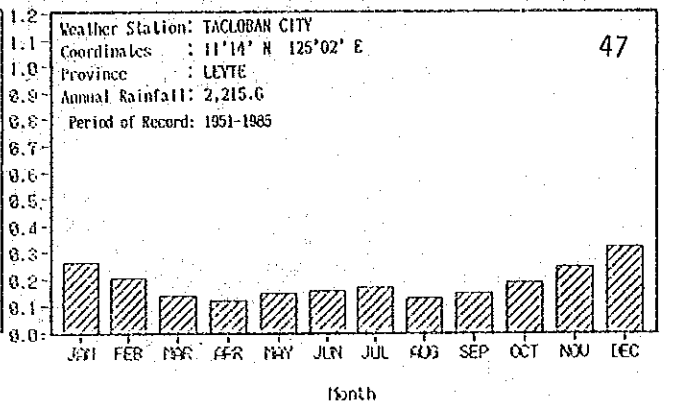
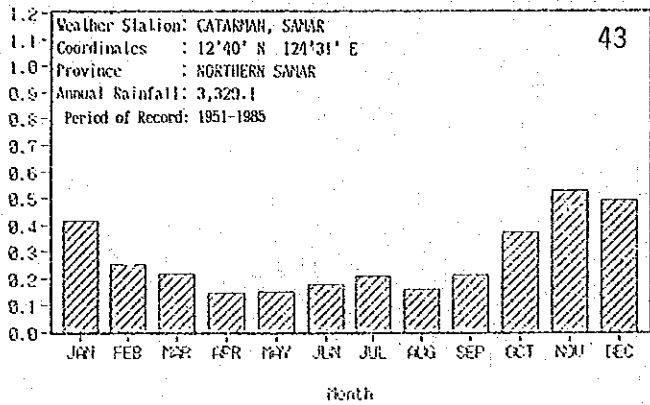
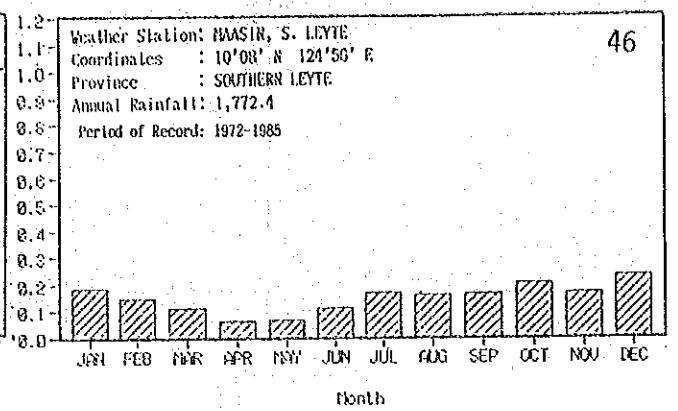
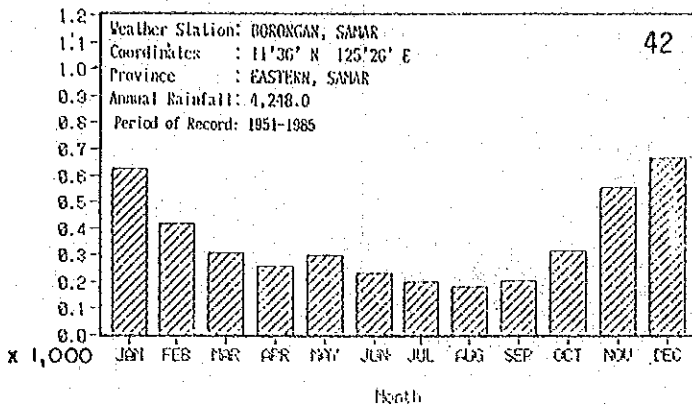
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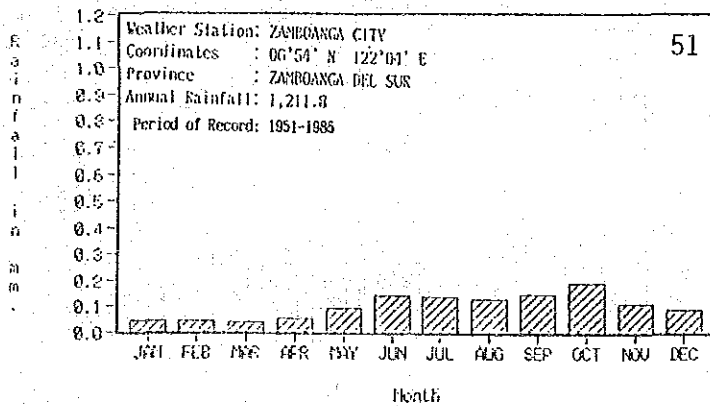
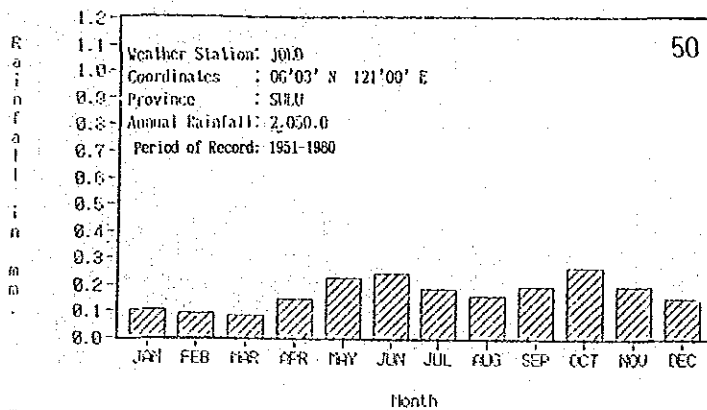
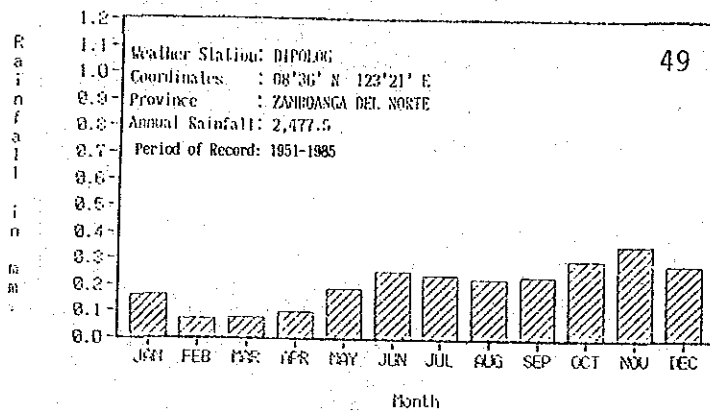
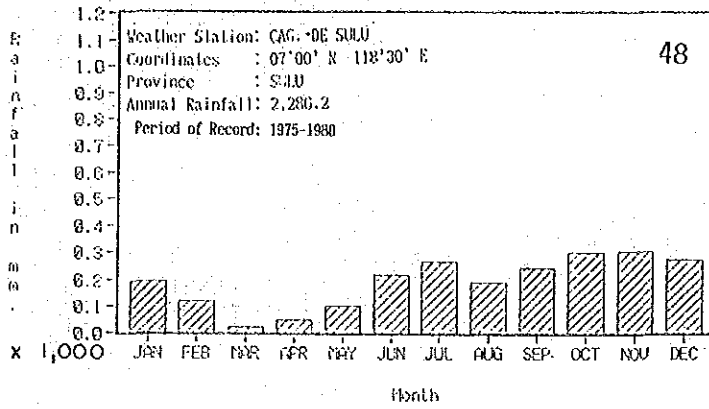
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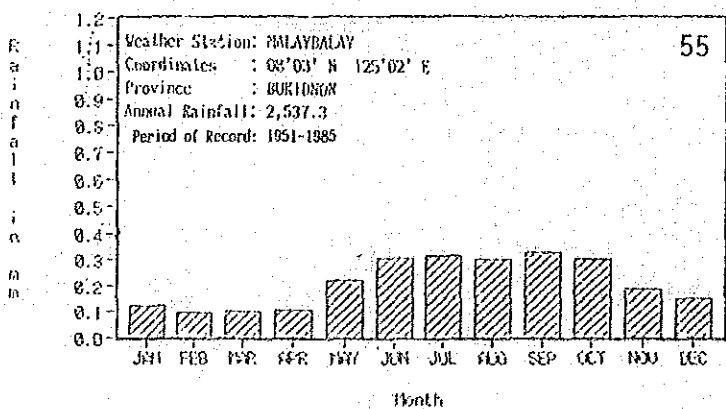
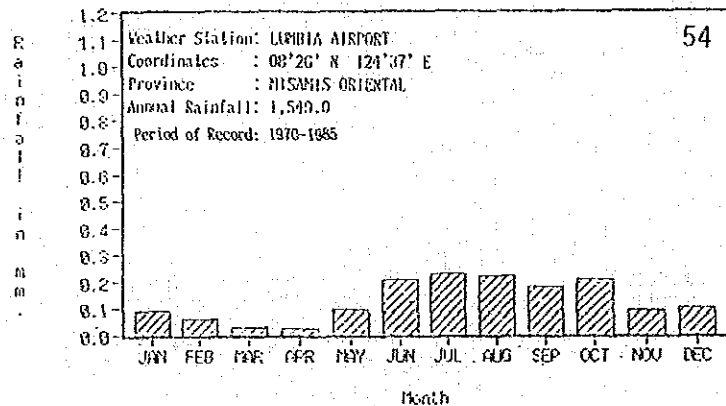
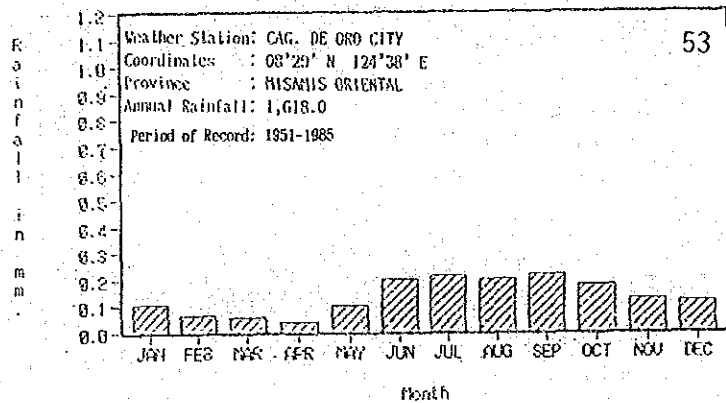
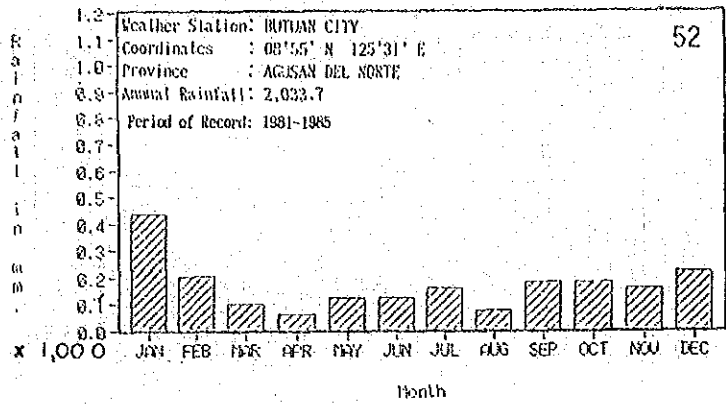
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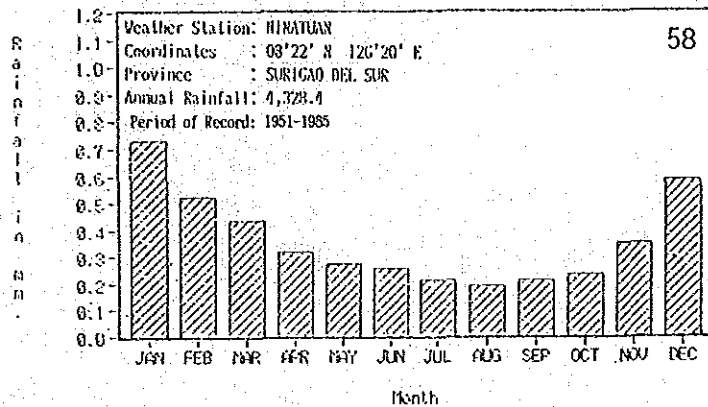
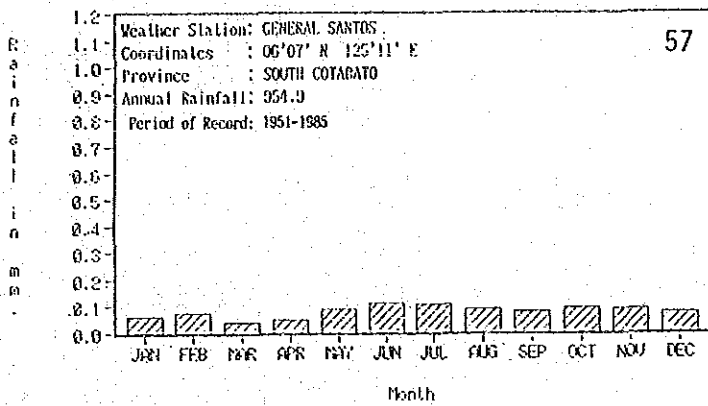
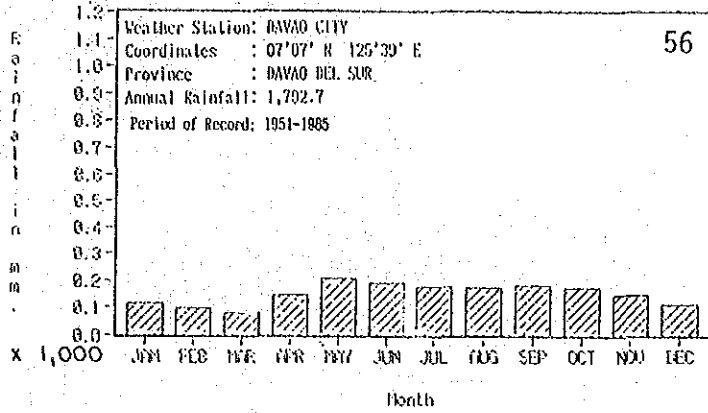
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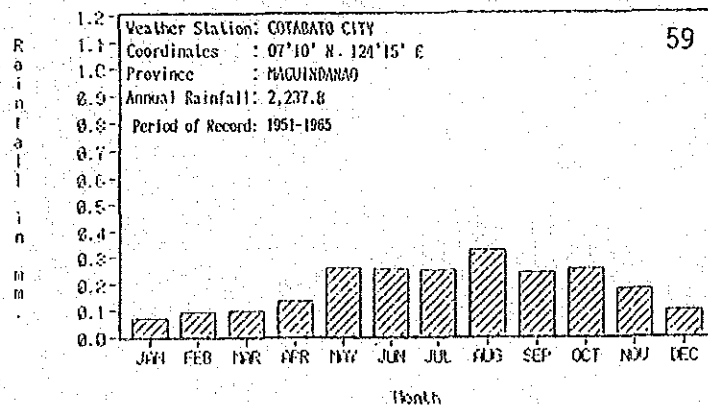
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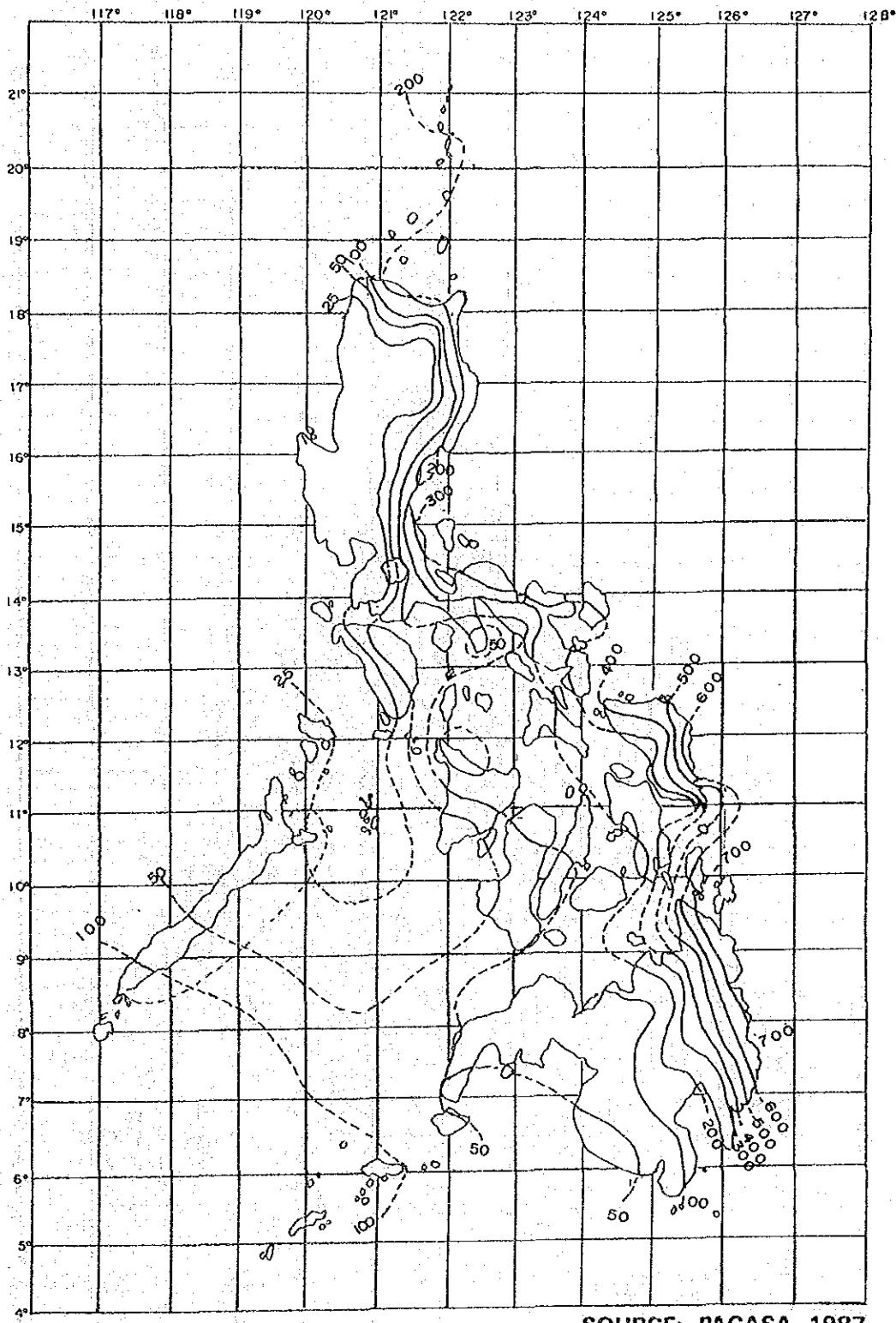


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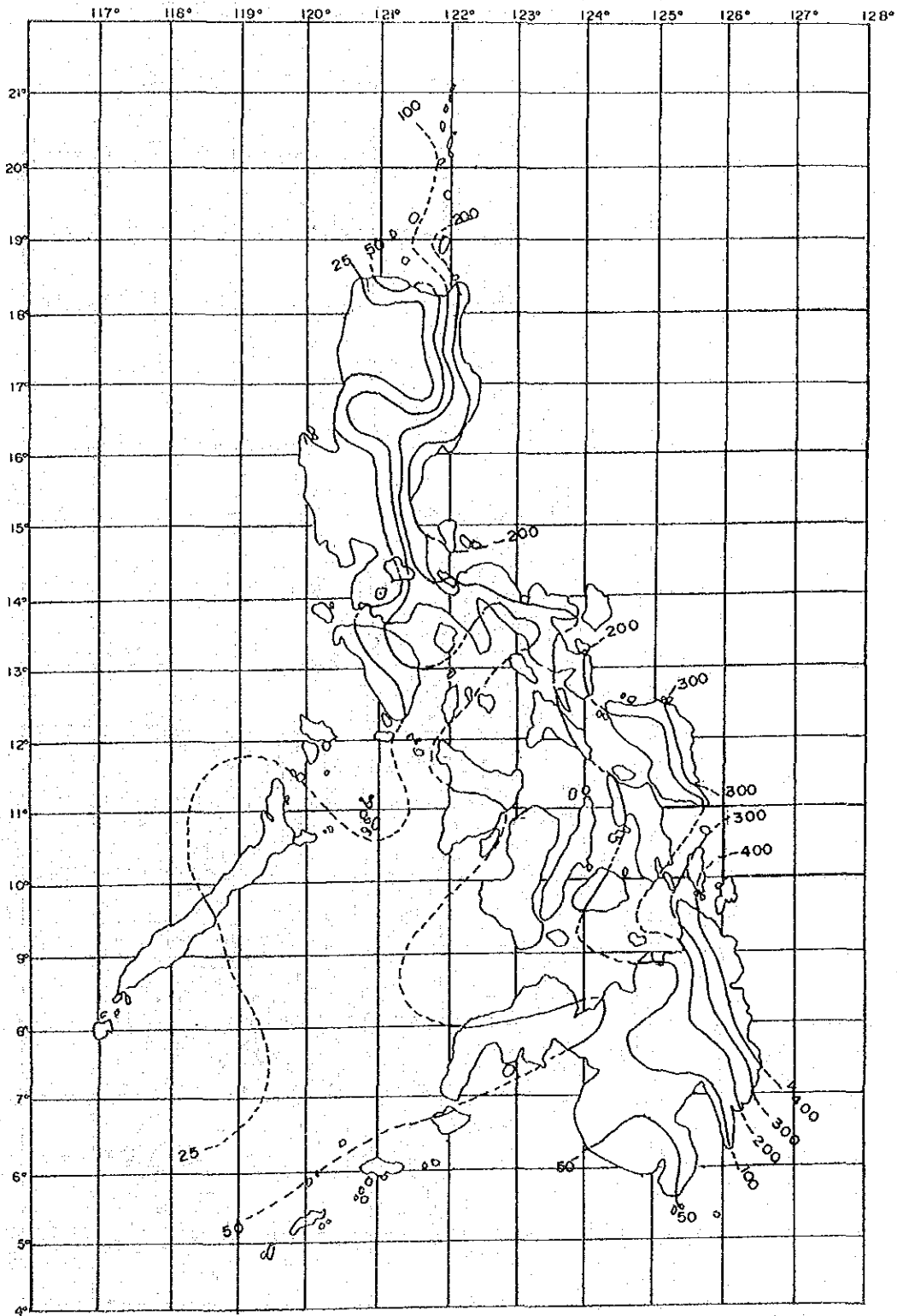
APPENDIX 2-2
ISOHYET MAP BY MONTH

ISOHYET MAP BY MONTH (JANUARY)



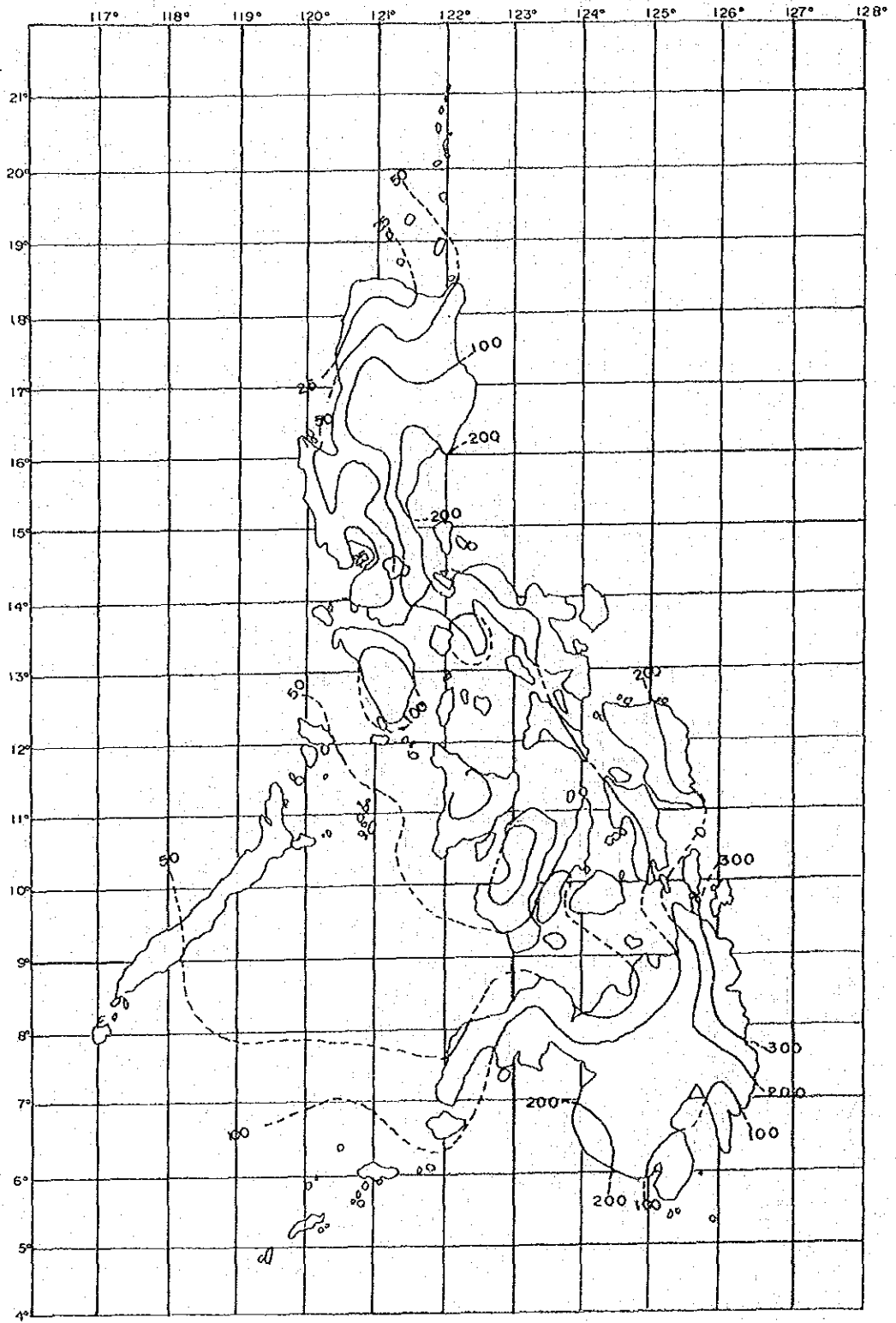
SOURCE: PAGASA, 1987

ISOHYET MAP BY MONTH (MARCH)



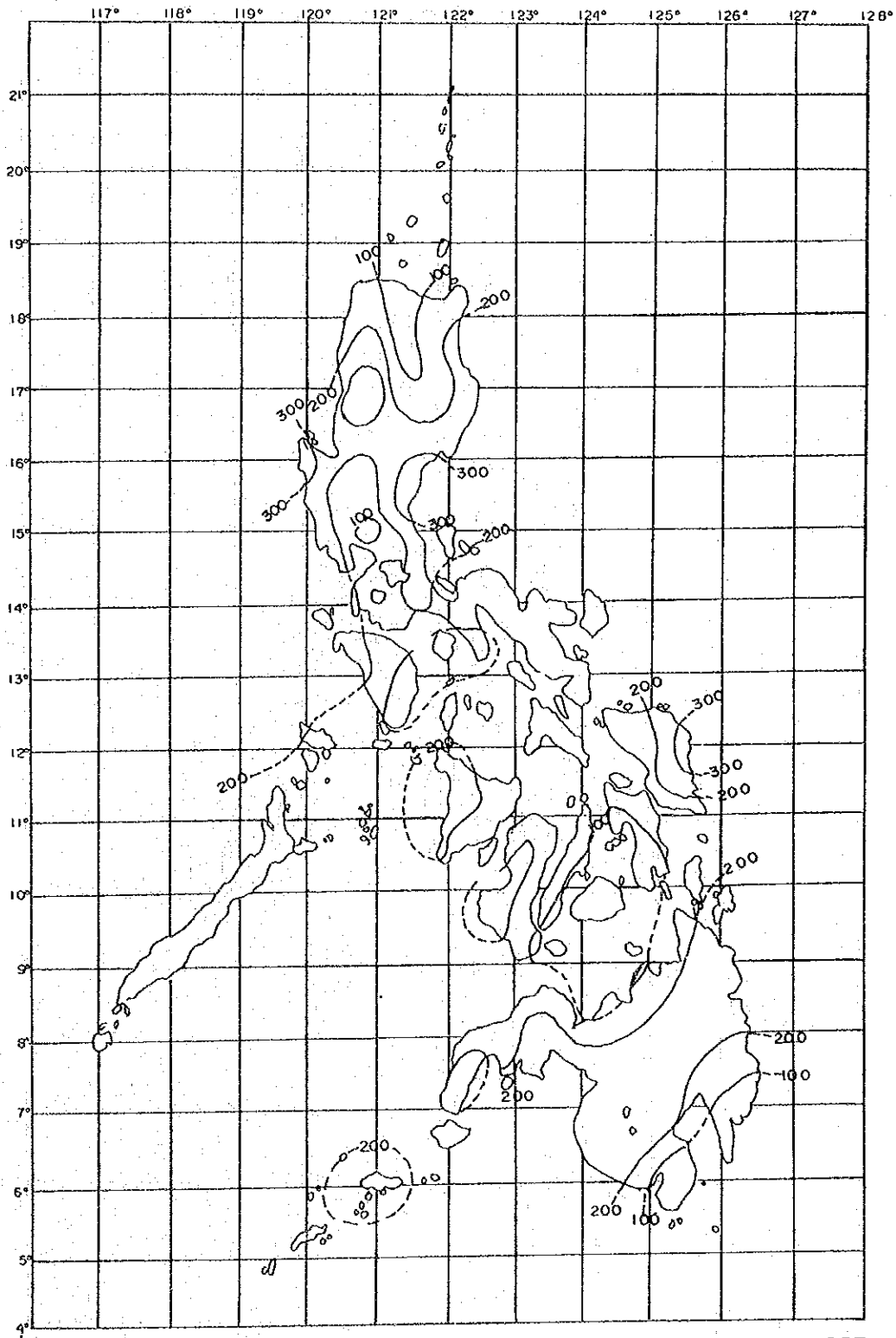
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ISOHYET MAP BY MONTH (APRIL)



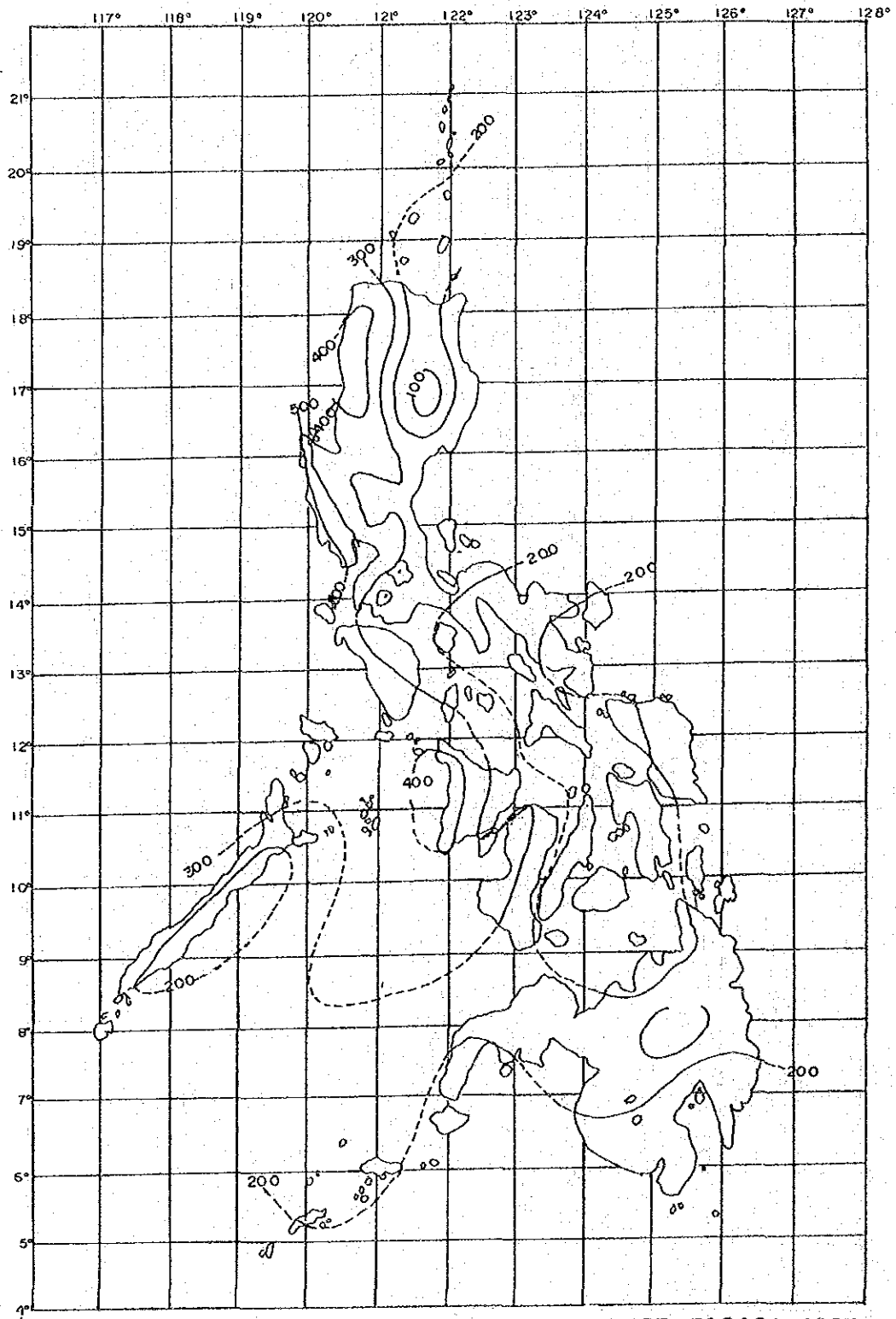
SOURCE: PAGASA, 1987

ISOHYET MAP BY MONTH (MAY)



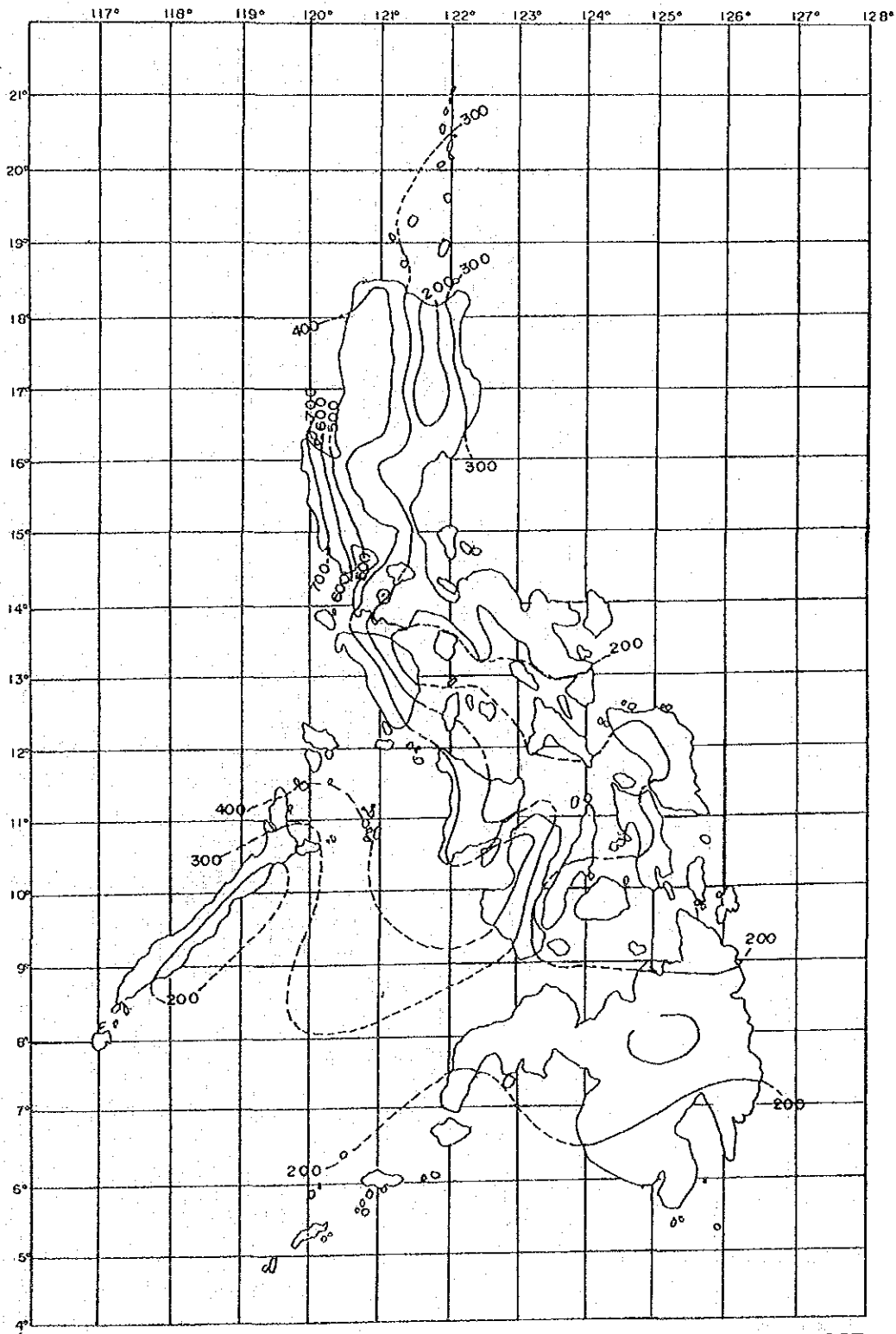
SOURCE: PAGASA, 1987

ISOHYET MAP BY MONTH (JUNE)



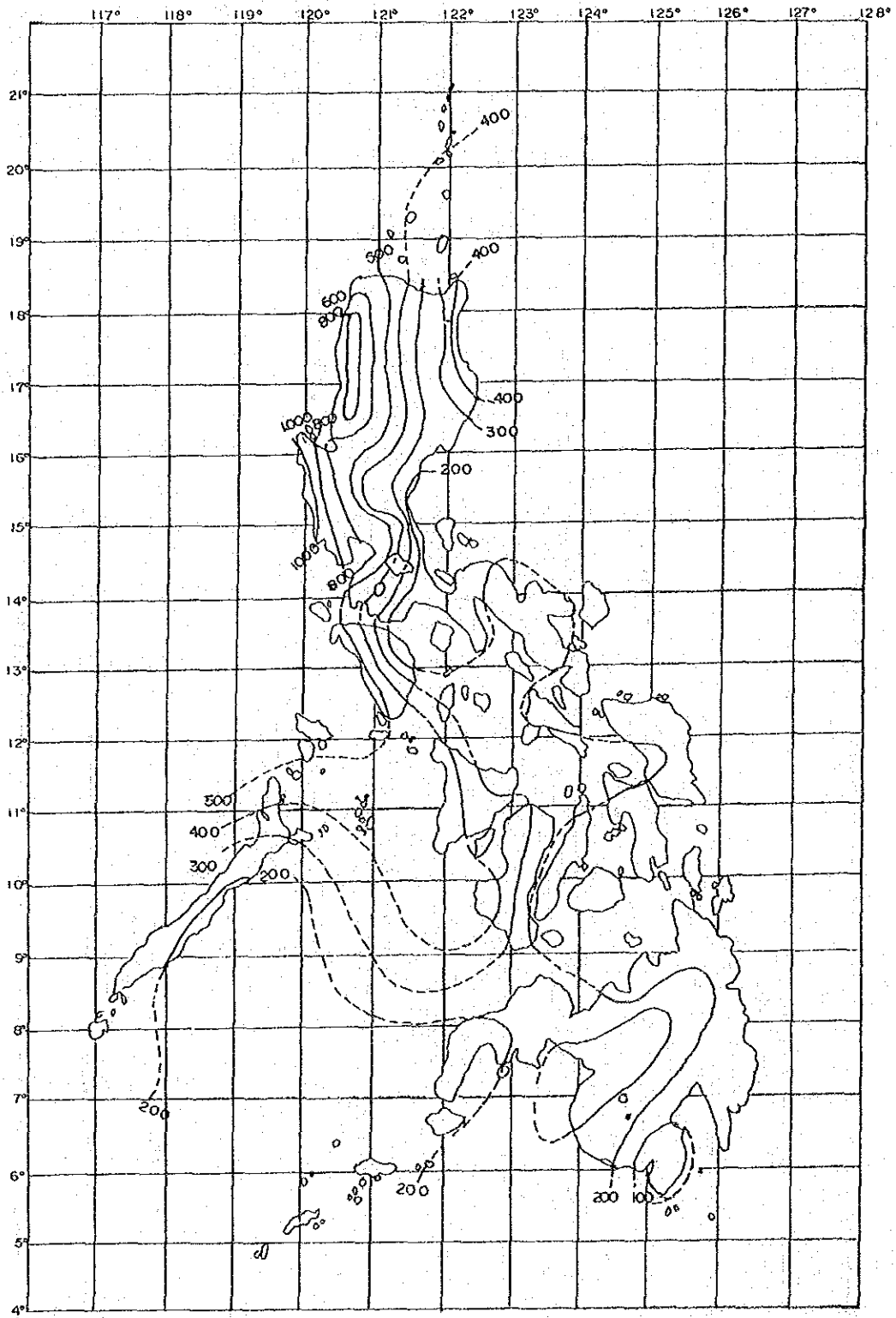
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ISOHYET MAP BY MONTH (JULY)



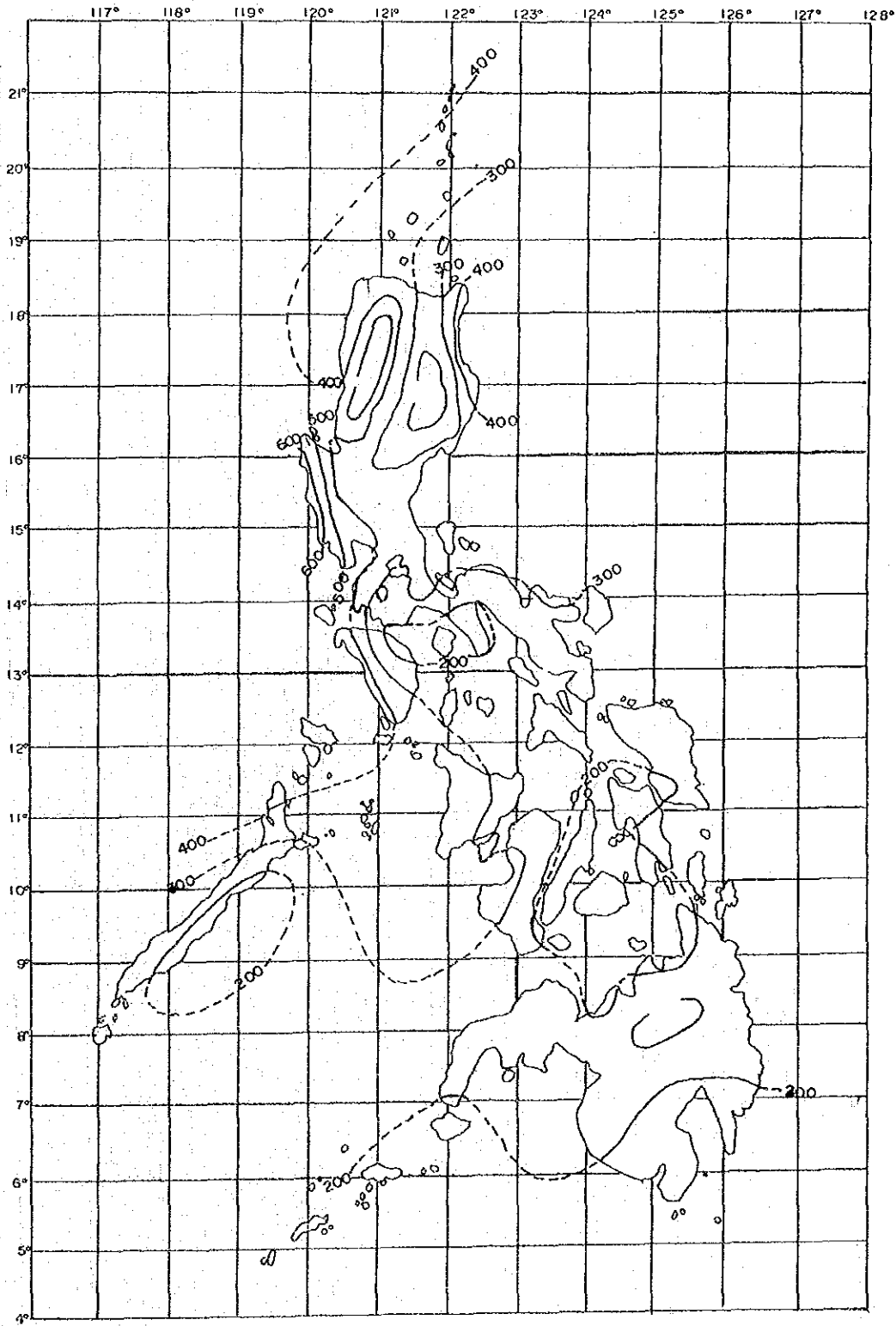
SOURCE: PAGASA, 1987

ISOHYET MAP BY MONTH (AUGUST)



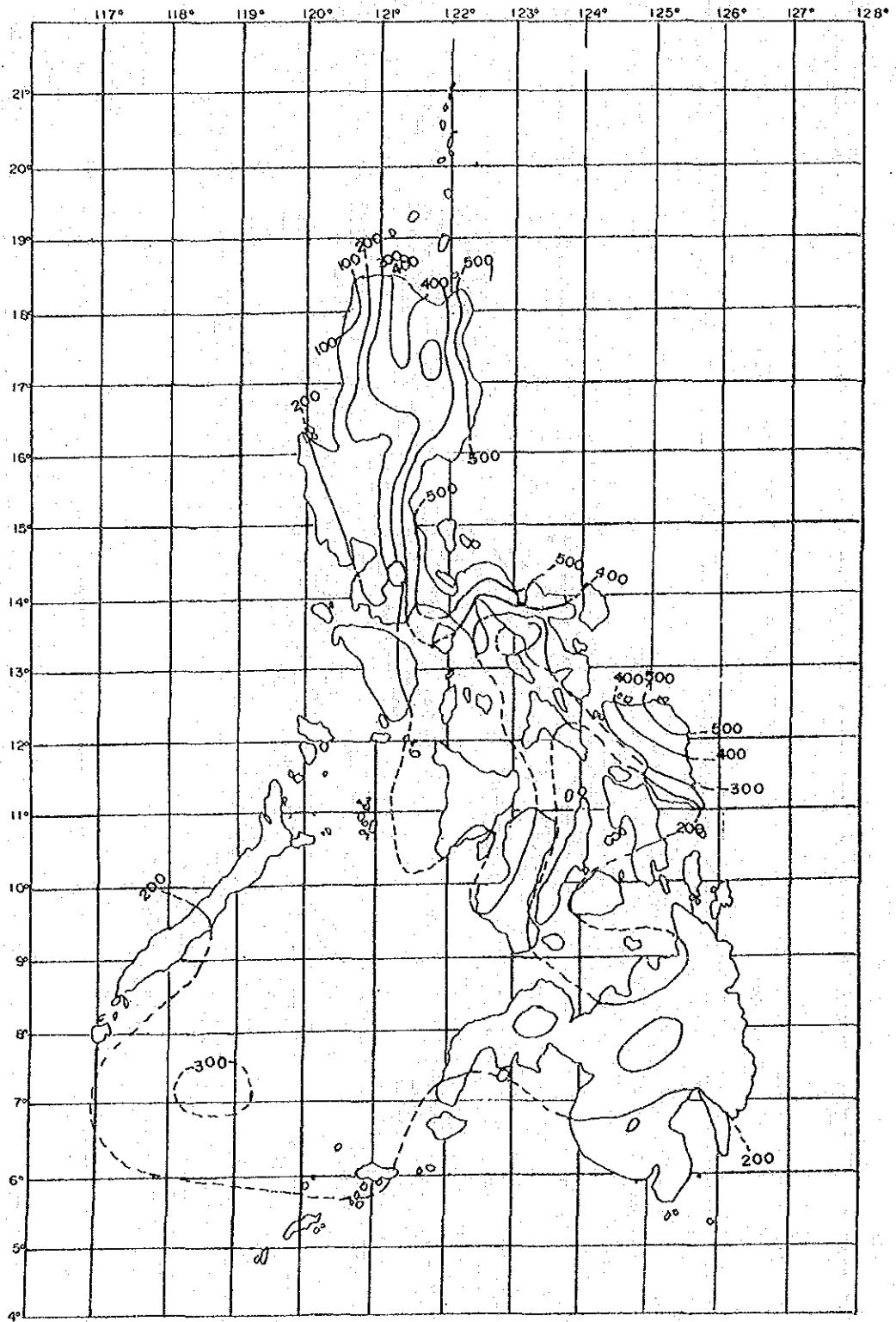
SOURCE: PAGASA, 1987

ISOHYET MAP BY MONTH (SEPTEMBER)



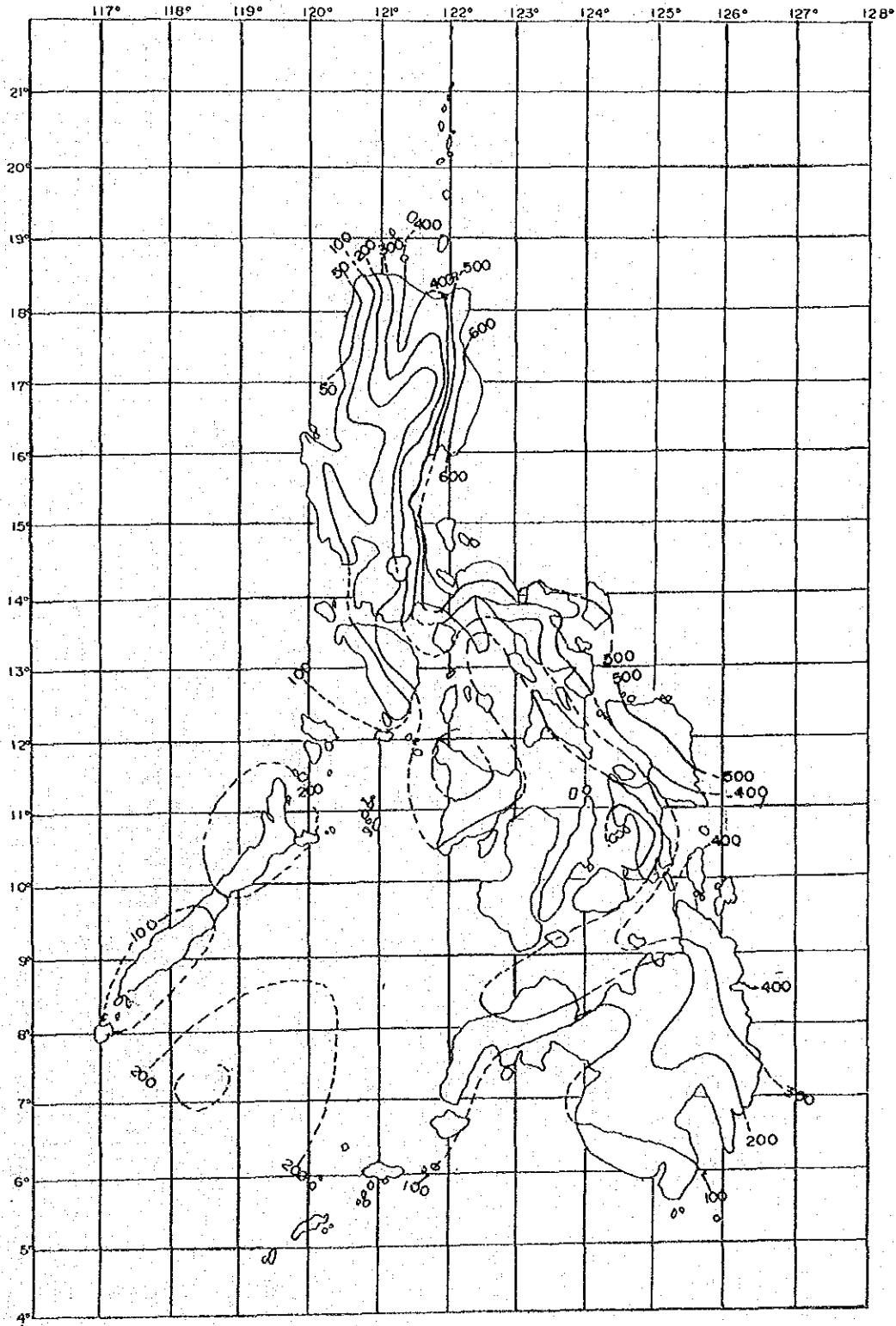
SOURCE: PAGASA, 1987

ISOHYET MAP BY MONTH (OCTOBER)



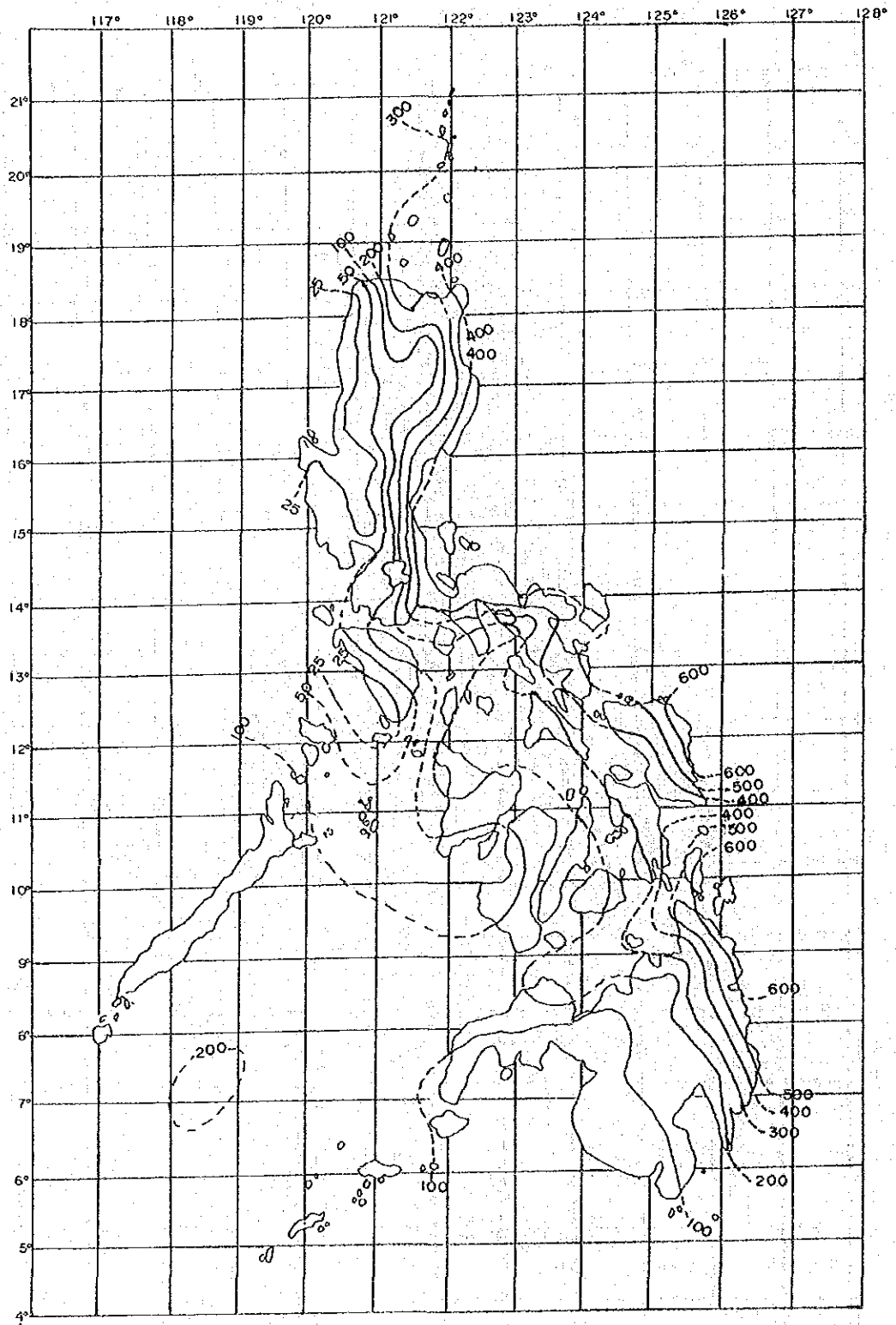
SOURCE: PAGASA, 1987

ISOHYET MAP BY MONTH (NOVEMBER)



SOURCE: PAGASA, 1987

ISOHYET MAP BY MONTH (DECEMBER)



SOURCE: PAGASA, 1987

APPENDIX 3-1
BASIC DATA BY PROVINCE

List of Basic Data

DATA	YEAR	DATA SOURCE
Land Area	-	National Statistics Office, Cartography Division
1980 population (Census)	1980	National Statistics Office, 1980 Census of Population and Housing
1990 population (Projected)	1990	National Statistics Office and Inter-Agency Committee on Population and Vital Statistics, Revised Population Projections for the Philippines and Its Region, 1980 - 2030
Gross domestic product at current prices	1987	Economic and Social Statistics Office, National Statistical Coordination Board
Per Capita income	1985	National Statistics Office, 1985 Family Income and Expenditures Survey
Incidence of poverty	1985	National Statistics Office, 1985 Family Income and Expenditures Survey
Length of roads by system classification and standard	1987	DPWH Infrastructure Atlas, 1988
Road/Bridge damage by typhoon 1)	1980 - 1989	Asean Natural Disasters Center, Office of Civil Defense, Department of National Defense
Land area by slope category	-	Bureau of Soils and Water Management, Department of Agriculture
Land area by geological category	-	Bureau of Mines, Department of Environmental and Natural Resources
Climate type	-	Climatology Branch, PAGASA
Annual Rainfall	1951 - 1985	Climatological Normals (1951-1985), PAGASA, 1987
Rainy days	1951 - 1985	Climatological Normals (1951-1985), PAGASA, 1987
Number of typhoons per year	1948 - 1982	Climate of the Philippines PAGASA, 1984
Monthly rainfall	1951 - 1985	Climatological Normals (1951-1985), PAGASA, 1987

Note: 1) Provincial breakdown of typhoon damage is not available for all typhoons. 10-year total damage per province is estimated assuming the provincial proportion, calculated based on the data with provincial breakdown.

BASIC DATA (I)

	Land Area (km2)	1980 Population (Census)	1990 Population (Projected)	Gross Domestic Product (M peso)	Per Capita Income (peso)	Incidence of Poverty (%)
All Philippines	300,000.2	48,098,460	61,480,198	705,467	5,593	59.3
NCR	636.0	5,925,884	7,974,002	215,753	10,797	44.1
CAR	18,293.7	914,432	1,150,924	8,628	6,647	52.2
Abra	3,975.6	160,198	194,694	1,272	4,198	66.6
Benguet	2,655.4	354,751	465,355	4,006	9,216	36.1
Mountain Province	2,097.3	103,052	116,927	1,034	5,019	57.1
Ifugao	2,517.8	111,368	135,435	1,025	4,537	66.3
Kalinga-Apayao	7,047.6	185,063	238,513	1,289	5,796	60.5
Region I	12,840.2	2,922,892	3,514,952	24,263	5,399	53.4
Ilocos Norte	3,399.3	390,666	463,489	3,185	6,449	51.6
Ilocos Sur	2,579.6	443,591	540,543	3,722	4,175	62.4
La Union	1,493.1	452,578	568,931	3,824	5,461	42.8
Pangasinan	5,368.2	1,636,057	1,941,989	13,532	5,182	53.7
Region II	26,837.7	1,918,091	2,470,759	13,838	4,984	53.2
Batanes	209.3	12,091	14,052	90	6,091	74.2
Cagayan	9,002.7	711,476	882,326	5,037	4,632	55.0
Iseabela	10,664.6	870,604	1,135,340	6,285	4,693	51.9
Nueva Vizcaya	3,903.9	241,690	319,832	1,843	6,274	52.4
Quirino	3,057.2	83,230	119,209	1,583	6,927	53.7
Region III	18,230.8	4,802,793	6,141,618	62,638	6,808	44.4
Bataan	1,373.0	323,254	452,120	4,970	6,396	47.2
Bulacan	3,625.8	1,096,046	1,441,261	17,633	7,361	36.5
Nueva Ecija	2,284.3	1,089,409	1,395,281	10,719	5,014	55.1
Pampanga	2,180.7	1,131,550	1,532,798	17,672	7,483	36.5
Tarlac	3,053.4	688,457	887,678	7,826	4,931	56.2
Zambales	3,714.4	444,037	572,509	5,718	10,982	38.3
Region IV	46,924.1	6,118,620	8,104,631	104,713	5,514	55.9
Aurora	3,239.5	107,145	152,049	1,350	3,134	82.0
Batangas	1,774.2	1,771,201	2,411,993	21,261	5,431	52.4
Cavite	1,287.6	1,771,320	2,411,993	16,478	7,157	31.4
Laguna	1,759.7	973,104	1,325,941	19,989	7,396	38.8
Marinduque	959.2	173,715	210,872	2,340	3,502	82.5
Occidental Mindoro	5,879.8	222,431	289,867	2,718	6,933	51.6
Oriental Mindoro	4,364.7	446,938	588,959	5,265	4,949	70.5
Palawan	14,806.3	371,782	505,664	4,688	3,901	72.0
Quezon	8,006.7	1,129,277	1,739,679	15,820	3,703	72.5
Rizal	1,308.9	585,313	792,048	12,347	6,974	45.7
Romblon	1,355.9	193,174	223,105	2,757	3,656	83.0
Region V	17,632.5	3,476,982	4,388,139	22,265	3,447	73.2
Albay	2,552.6	609,177	1,001,570	5,774	3,868	68.8
Camarinnes Norte	2,112.5	308,007	398,899	2,048	3,454	69.6
Camarinnes Sur	3,266.8	1,099,346	1,405,422	6,897	3,604	71.5
Catanduanes	1,511.5	211,992	279,915	1,073	3,499	72.1
Masbate	4,047.7	584,520	729,915	3,352	3,018	78.9
Sorsogon	2,111.4	500,685	637,341	3,078	2,918	79.5

	Land Area (km2)	1980 Population (Census)	1990 Population (Projected)	Gross Domestic Product (M peso)	Per Capita Income (peso)	Incidence of Poverty (%)
Region VI	20,223.2	4,525,615	5,672,398	45,805	4,294	73.1
Aklan	1,817.9	324,563	403,010	3,476	5,133	68.2
Antique	2,522.0	342,879	433,119	3,274	3,255	80.1
Capiz	2,833.2	492,231	617,828	4,637	4,802	74.0
Iloilo	5,324.0	1,433,641	1,759,438	14,283	4,765	69.4
Negros Occidental	7,926.1	1,930,301	2,448,923	20,125	4,122	75.1
Region VII	14,951.5	3,787,374	4,616,046	48,846	3,878	68.8
Bohol	4,117.3	806,013	942,438	8,888	3,151	74.8
Cebu	5,088.4	2,091,602	2,575,826	31,798	4,125	66.2
Negros Oriental	5,402.3	819,399	1,018,480	7,707	3,968	68.5
Siquijor	343.5	70,360	82,302	653	3,372	88.9
Region VIII	21,431.7	2,799,534	3,360,433	18,553	3,282	70.4
Leyte	6,268.3	1,302,648	1,556,078	9,068	3,456	68.0
Southern Leyte	1,734.8	296,294	377,776	1,913	3,363	69.9
Eastern Samar	4,339.6	320,637	400,053	1,958	3,236	76.6
Northern Samar	3,498.0	378,516	487,945	2,220	2,312	74.9
Samar	5,591.0	501,439	538,581	3,354	3,532	69.8
Region IX	18,585.0	2,528,506	3,194,797	24,106	4,110	65.3
Basilan	1,327.2	201,407	258,466	1,815	2,935	78.4
* Sulu	1,600.4	360,898	445,477	3,384	3,936	63.0
* Tawi-Tawi	1,087.6	194,651	243,930	1,436	4,581	66.0
Zamboanga del Norte	6,618.1	588,015	729,898	5,554	3,605	70.6
Zamboanga del Sur	8,051.9	1,183,845	1,517,026	11,917	4,547	60.9
Region X	28,327.8	2,758,985	3,615,621	38,116	4,873	66.2
Agusan del Norte	2,590.3	365,421	477,160	5,873	4,347	64.1
Agusan del Sur	8,965.5	285,030	359,355	2,759	4,191	68.7
Bukidnon	8,293.8	631,634	828,845	6,926	5,653	51.6
Camiguin	1,229.8	57,126	63,408	770	2,742	88.3
Misamis Occidental	1,939.3	386,328	478,253	5,714	2,909	78.4
Misamis Oriental	3,570.1	600,032	781,314	11,511	6,335	68.3
Surigao del Norte	2,339.0	369,414	476,866	4,563	4,083	71.6
Region XI	31,692.9	3,346,803	4,333,715	51,939	5,190	61.7
Davao del Norte	8,129.8	725,153	907,755	10,228	4,956	59.9
Davao del Sur	6,377.6	1,133,599	1,501,136	20,873	5,933	62.5
Davao Oriental	5,164.5	333,931	436,601	4,217	4,083	66.3
South Cotabato	7,489.8	770,473	985,241	11,150	5,429	57.1
Surigao del Sur	4,552.2	377,647	492,982	5,471	3,862	67.7
Region XII	23,293.1	2,270,949	2,942,253	26,002	4,089	65.2
Lanao del Norte	3,092.0	461,049	602,792	6,237	3,968	65.3
* Lanao del Sur	3,872.9	536,546	674,156	4,725	5,158	56.0
* Maguindanao	5,474.1	564,599	750,119	5,903	3,603	68.4
* North Cotabato	6,565.9	303,784	419,692	3,103	4,645	74.3
Sultan Kudarat	4,288.2	303,784	419,692	3,103	4,645	54.8

* ARMM (Autonomous Region of Muslim Mindanao)

	Length of National Roads (km)				Total
	PCC	AC	Gravel	Earth	
All Philippines	6,179.6	5,793.5	13,400.4	708.4	26,081.9
NCR	446.8	421.3	14.0	-	882.1
CAR	101.3	294.1	1,173.7	44.1	1,613.2
Abra	1.8	41.8	135.5	-	179.1
Benguet	45.2	184.8	219.0	18.1	467.1
Mountain Province	57.1	241.8	17.2	17.2	316.1
Iligao	52.9	1.0	198.7	-	252.6
Kalinga-Apayao	1.4	9.4	378.7	8.8	388.3
Region I	402.3	636.0	355.5	34.0	1,428.3
Ilocos Norte	202.1	38.2	116.4	-	356.7
Ilocos Sur	35.7	137.5	182.9	34.0	370.1
La Union	49.9	131.9	34.2	-	216.0
Pangasinan	114.6	328.4	43.0	-	486.0
Region II	544.8	98.4	954.6	53.1	1,650.9
Batanes	4.8	13.1	47.8	-	65.7
Cagayan	213.1	35.1	343.8	-	592.0
Isabela	192.8	47.6	181.1	-	421.5
Nueva Vizcaya	120.5	2.2	137.4	53.1	313.2
Quirino	13.6	0.4	244.5	-	258.5
Region III	796.5	503.9	391.8	-	1,692.2
Bataan	140.8	121.4	33.7	-	295.9
Bulacan	161.7	71.4	24.6	-	257.7
Nueva Ecija	234.6	16.5	176.2	-	427.3
Panganga	122.1	74.5	83.1	-	279.7
Tarlac	91.9	80.8	33.9	-	206.6
Zambales	42.4	139.3	40.3	-	222.0
Region IV	566.9	1,191.7	2,180.6	89.3	4,028.5
Aurora	0.4	21.4	196.6	-	218.4
Batangas	51.9	367.6	71.1	16.9	507.5
Cavite	46.7	239.4	15.9	-	302.0
Leguna	124.5	137.2	84.6	-	346.3
Marinduque	2.4	60.1	160.4	5.0	217.9
Occidental Mindoro	14.6	10.1	304.6	29.6	358.9
Oriental Mindoro	0.2	134.2	142.3	-	276.7
Palawan	5.5	9.3	536.6	-	551.4
Quezon	209.2	62.5	488.4	-	720.1
Rizal	109.4	99.6	33.2	-	242.2
Romblon	0.1	50.3	186.9	37.8	285.1
Region V	648.0	337.2	909.3	42.3	1,936.8
Albay	193.6	43.4	148.4	-	385.4
Camarines Norte	107.4	47.3	30.3	-	195.0
Camarines Sur	178.8	91.5	146.1	41.0	457.4
Calanduanes	22.6	11.9	217.9	-	252.4
Masbate	8.5	67.9	282.6	-	359.0
Sorsogon	137.1	75.2	84.0	1.3	297.6

	Length of National Roads (km)				Total
	PCC	AC	Gravel	Earth	
Region VI	307.0	789.2	1,534.0	2.6	2,632.8
Akian	22.5	54.7	64.7	-	141.9
Antique	23.9	49.4	289.5	-	362.8
Capiz	63.3	58.8	184.0	-	306.1
Iloilo	103.1	313.6	530.0	2.6	949.3
Negros Occidental	94.2	312.7	465.8	-	872.7
Region VII	164.6	676.5	821.2	4.4	1,666.7
Bohol	29.3	192.2	359.4	4.4	585.3
Cebu	78.5	301.6	243.3	-	623.4
Negros Oriental	56.8	155.9	169.7	-	382.4
Siquijor	-	26.8	48.8	-	75.6
Region VIII	661.9	57.1	1,152.4	92.1	1,963.5
Leyte	339.4	12.4	558.3	48.9	959.0
Southern Leyte	66.0	0.1	199.3	-	265.4
Eastern Samar	12.2	16.5	186.8	43.2	258.7
Northern Samar	101.9	-	146.2	-	248.1
Samar	142.4	28.1	61.6	-	232.1
Region IX	52.6	312.6	653.9	-	1,019.1
Basilan	-	48.1	14.0	-	62.1
* Sulu	9.0	33.6	92.0	-	134.6
* Tawi-Tawi	14.1	49.7	78.7	-	142.5
Zamboanga del Norte	20.8	181.0	267.5	-	469.3
Zamboanga del Sur	-	-	-	-	-
Region X	634.6	317.1	1,200.0	-	2,151.7
Agusan del Norte	125.0	0.9	89.2	-	215.1
Agusan del Sur	178.1	0.4	121.6	-	300.1
Bukidnon	7.4	98.8	507.1	-	613.3
Camiguin	1.7	35.6	26.2	-	63.5
Misamis Occidental	0.7	127.6	71.1	-	199.4
Misamis Oriental	238.8	52.2	128.5	-	419.5
Surigao del Norte	82.9	1.6	238.3	-	322.8
Region XI	455.2	129.9	1,224.4	141.7	1,951.2
Davao del Norte	175.7	2.1	173.7	-	351.5
Davao del Sur	118.3	95.1	179.8	120.0	513.2
Davao Oriental	11.1	7.2	230.0	-	308.3
South Cotabato	128.1	25.5	285.5	21.7	460.8
Surigao del Sur	22.0	-	291.4	-	316.4
Region XII	397.1	28.5	834.0	201.8	1,461.4
Lanao del Norte	93.2	0.8	130.5	-	224.5
* Lanao del Sur	39.3	4.7	237.6	-	281.6
* Maguindanao	113.0	3.2	129.0	3.2	248.4
* North Cotabato	105.3	19.8	213.8	186.1	555.0
Sultan Kudarat	45.3	-	93.1	12.6	151.9

* ARMM (Autonomous Region of Muslim Mindanao)

	Length of Provincial Roads (km)					Total
	PCC	AC	Gravel	Earth		
All Philippines	713.9	2,584.6	20,414.6	5,214.7	28,927.8	
NCR	-	-	-	-	-	-
CAR	6.0	108.1	687.3	620.6	1,402.0	
Abra	0.5	54.8	208.2	216.4	479.9	
Benguet	2.0	38.3	155.2	125.6	321.1	
Mountain Province	0.3	4.8	190.9	76.8	272.8	
Ifugao	-	0.4	28.5	125.5	154.4	
Kalinga-Apayao	3.2	9.8	84.5	76.3	173.8	
Region I	48.2	372.9	1,123.6	240.9	1,783.6	
Ilocos Norte	15.0	23.5	236.8	146.9	422.2	
Ilocos Sur	0.6	43.3	135.1	84.1	263.1	
La Union	22.8	57.3	189.7	2.1	251.9	
Pangasinan	7.8	248.8	532.0	7.8	846.4	
Region II	5.2	148.7	1,303.8	186.4	1,644.1	
Batanes	1.6	0.9	18.0	44.1	64.6	
Cagayan	-	108.8	401.4	16.8	527.0	
Isabela	2.3	32.2	545.7	369.7	880.2	
Nueva Vizcaya	1.3	6.8	241.1	120.5	369.7	
Quirino	-	-	97.6	5.0	102.6	
Region III	302.0	332.4	1,544.0	185.6	2,364.0	
Bataan	11.8	53.6	159.5	0.3	225.2	
Bulacan	122.0	92.3	137.9	-	352.2	
Nueva Ecija	34.8	1.9	680.9	-	697.6	
Pampanga	112.8	18.8	77.2	112.7	321.5	
Tarlac	14.4	123.1	322.2	72.6	552.3	
Zambales	6.2	42.7	186.3	-	215.2	
Region IV	151.5	488.8	2,824.5	401.6	3,866.4	
Aurora	-	4.1	111.8	-	115.9	
Batangas	10.6	242.3	380.2	3.9	637.0	
Cavite	45.3	81.5	203.0	89.7	429.5	
Laguna	64.8	80.0	29.9	27.7	252.4	
Marinduque	2.8	23.1	131.5	15.9	173.3	
Occidental Mindoro	2.1	0.5	280.2	39.0	321.8	
Oriental Mindoro	0.7	8.8	725.2	-	734.7	
Palawan	-	5.8	49.5	48.9	504.2	
Quezon	12.0	15.1	289.5	71.8	368.4	
Rizal	7.3	15.7	13.5	30.3	66.8	
Romblon	5.9	1.9	180.5	74.4	262.7	
Region V	35.1	318.2	1,082.3	361.0	1,796.6	
Albay	2.5	110.4	185.3	76.5	374.7	
Canarines Norte	1.5	67.0	81.5	4.8	134.8	
Canarines Sur	23.7	93.6	481.0	84.0	695.3	
Catanduanes	5.1	8.8	121.2	78.4	223.5	
Masbate	2.3	4.6	69.9	41.0	117.8	
Sorsogon	-	33.7	140.4	76.3	250.4	

	Length of Provincial Roads (km)					Total
	PCC	AC	Gravel	Earth		
Region VI	82.0	94.2	2,190.7	106.2	2,453.1	
Aklan	8.3	3.3	274.5	-	286.1	
Antique	1.2	2.9	92.6	-	96.7	
Capiz	13.6	2.2	250.0	99.7	365.5	
Iloilo	19.1	12.3	776.9	6.5	814.8	
Negros Occidental	19.8	73.5	796.7	-	890.0	
Region VII	13.7	169.9	1,891.6	261.5	2,336.7	
Bohol	7.1	11.3	782.9	120.9	922.2	
Cebu	6.6	109.7	718.5	95.3	930.1	
Negros Oriental	-	39.7	214.6	45.3	299.6	
Siquijor	-	9.2	175.6	-	184.8	
Region VIII	60.6	327.4	830.5	185.2	1,403.7	
Leyte	37.8	-	458.3	24.5	520.6	
Southern Leyte	7.0	306.3	-	37.5	350.8	
Eastern Samar	0.4	19.9	197.7	62.5	250.5	
Northern Samar	7.2	-	78.8	60.7	146.7	
Samar	8.2	1.2	125.7	-	135.1	
Region IX	1.7	130.7	1,730.5	231.9	2,094.8	
* Basilan	0.8	2.9	119.8	106.4	229.1	
* Sulu	0.8	50.8	165.7	-	217.3	
* Tawi-Tawi	0.9	-	12.1	16.9	29.9	
Zamboanga del Norte	-	21.2	786.6	-	807.8	
Zamboanga del Sur	-	55.8	646.3	108.6	810.7	
Region X	14.1	88.1	1,986.1	663.3	2,751.6	
Agusan del Norte	3.3	0.2	221.6	7.8	232.9	
Agusan del Sur	0.2	-	174.7	92.0	266.9	
Bukidnon	-	-	655.0	90.0	787.1	
Camiguin	0.3	42.1	39.4	39.6	94.5	
Misamis Occidental	3.8	6.3	348.1	149.7	507.9	
Misamis Oriental	4.5	23.3	285.9	187.8	501.5	
Surigao del Norte	2.0	1.0	261.4	96.4	360.8	
Region XI	10.7	4.5	2,210.5	783.7	3,009.4	
Davao del Norte	-	2.4	730.6	10.7	743.7	
Davao del Sur	-	0.9	375.0	49.8	425.7	
Davao Oriental	1.0	1.2	420.2	126.5	548.9	
South Cotabato	1.4	-	415.8	595.3	1,012.5	
Surigao del Sur	8.3	-	268.9	1.4	278.6	
Region XII	5.1	0.7	1,029.2	986.8	2,021.8	
Lanao del Norte	1.3	-	200.0	-	201.3	
Lanao del Sur	3.8	0.4	160.8	251.6	416.6	
* Maguindanao	-	-	55.3	286.5	341.8	
* North Cotabato	-	0.3	277.9	169.6	447.8	
Sultan Kudarat	-	-	335.2	279.1	614.3	

* ARMM (Autonomous Region of Muslim Mindanao)

BASIC DATA (4)

	Length of City Roads (km)				
	POC	AC	Gravel	Earth	Total
All Philippines	649.4	2,005.8	1,164.5	164.7	3,984.4
NCR	281.9	832.8	159.1	-	1,273.8
CAR	0.2	142.0	-	-	142.2
Abra	-	-	-	-	-
Benguet	0.2	142.0	-	-	142.2
Mountain Province	-	-	-	-	-
Iligan	-	-	-	-	-
Kalinga-Apayao	-	-	-	-	-
Region I	8.1	41.5	118.1	-	167.7
Ilocos Norte	-	-	-	-	-
Ilocos Sur	6.9	18.8	105.2	-	130.9
La Union	-	-	-	-	-
Pangasinan	1.2	22.7	12.9	-	36.8
Region II	-	-	-	-	-
Batanes	-	-	-	-	-
Cagayan	-	-	-	-	-
Isabela	-	-	-	-	-
Nueva Vizcaya	-	-	-	-	-
Quirino	-	-	-	-	-
Region III	56.5	115.8	41.0	45.2	238.5
Bataan	-	-	-	-	-
Bulacan	-	-	-	-	-
Nueva Ecija	5.5	15.3	18.8	-	39.6
Pampanga	51.0	30.2	2.0	45.2	128.4
Tarlac	-	-	-	-	-
Zambales	-	70.3	20.2	-	90.5
Region IV	37.9	127.7	102.1	25.0	292.7
Aurora	-	-	-	-	-
Batangas	4.6	28.0	1.7	2.0	37.3
Cavite	23.7	30.1	18.5	19.9	91.6
Laguna	6.1	49.5	24.2	-	79.8
Marinduque	-	-	-	-	-
Occidental Mindoro	-	-	-	-	-
Oriental Mindoro	-	-	-	-	-
Palawan	0.6	7.5	54.9	3.7	66.7
Quezon	2.9	11.6	2.8	-	17.3
Rizal	-	-	-	-	-
Romblon	-	-	-	-	-
Region V	20.3	81.1	125.8	18.1	245.3
Albay	2.1	17.3	3.5	4.0	26.9
Camarinnes Norte	-	-	-	-	-
Camarinnes Sur	18.2	63.8	122.3	14.1	218.4
Catanduanes	-	-	-	-	-
Masbate	-	-	-	-	-
Sorsogon	-	-	-	-	-

	Length of City Roads (km)				
	POC	AC	Gravel	Earth	Total
Region VI	91.7	152.2	48.8	4.6	297.3
Aklan	-	-	-	-	-
Antique	-	-	-	-	-
Capiz	13.3	2.4	12.1	-	27.8
Iloilo	27.2	2.7	1.9	-	31.8
Negros Occidental	51.2	147.1	34.8	4.6	237.7
Region VII	32.4	236.7	24.1	22.0	315.2
Bohol	-	65.4	-	-	65.4
Cebu	30.0	127.2	21.7	10.4	189.3
Negros Oriental	2.4	44.1	2.4	11.6	60.5
Siquijor	-	-	-	-	-
Region VIII	39.1	2.8	20.0	8.7	70.6
Levite	30.9	2.8	18.1	8.7	60.5
Southern Leyte	-	-	-	-	-
Eastern Samar	-	-	-	-	-
Northern Samar	8.2	-	1.9	-	10.1
Samar	-	-	-	-	-
Region IX	8.2	76.9	38.3	0.1	121.5
* Basilan	-	-	-	-	-
* Sulu	-	-	-	-	-
** Tawi-Tawi	5.3	22.5	18.8	-	46.6
Zamboanga del Norte	2.9	54.4	17.5	0.1	74.9
Region X	36.2	71.2	99.0	11.0	217.4
Agusan del Norte	-	-	-	-	-
Agusan del Sur	20.1	-	45.9	-	66.0
Bukidnon	-	-	-	-	-
Camiguin	-	-	-	-	-
Misamis Occidental	1.4	29.0	35.4	5.6	71.4
Misamis Oriental	5.2	42.2	10.7	5.4	63.5
Surigao del Norte	9.5	-	7.0	-	16.5
Region XI	15.2	92.5	319.1	26.9	453.7
Davao del Norte	-	-	-	-	-
Davao del Sur	3.8	88.7	148.5	26.9	267.9
Davao Oriental	-	-	-	-	-
South Cotabato	11.4	3.8	170.6	-	185.8
Surigao del Sur	-	-	-	-	-
Region XII	21.7	32.6	71.1	3.1	128.5
* Lanao del Norte	6.7	19.8	41.4	-	67.9
* Lanao del Sur	1.3	12.0	11.5	2.5	27.3
* Maguindanao	13.7	0.8	18.2	0.6	33.3
* North Cotabato	-	-	-	-	-
Sultan Kudarat	-	-	-	-	-

* ARMM (Autonomous Region of Muslim Mindanao)

BASIC DATA (5)

	Length of Municipal Roads (km)				
	PCC	AC	Gravel	Earth	Total
All Philippines	1,712.6	1,567.6	6,371.1	3,224.0	12,875.3
NCR	351.2	162.0	29.4	11.8	554.4
CAR	5.0	39.9	103.2	281.0	429.1
Abra	4.6	34.3	52.9	160.2	252.0
Benguet	-	1.1	5.6	28.9	35.6
Mountain Province	-	2.3	5.9	29.1	37.3
Ifugao	-	0.1	13.5	4.8	18.4
Kalinga-Apayao	0.4	2.1	25.3	58.0	85.8
Region I	36.0	249.0	603.2	191.6	1,079.8
Ilocos Norte	8.2	40.9	213.9	31.8	294.8
Ilocos Sur	6.6	56.7	103.9	78.3	245.5
La Union	4.5	26.9	51.1	39.1	121.6
Pangasinan	16.7	124.5	234.3	42.4	417.9
Region II	20.7	54.2	789.1	173.5	1,037.5
Batanes	15.0	-	3.8	11.7	30.5
Bagayan	-	16.3	170.2	16.1	202.6
Isabela	4.8	33.1	341.9	50.6	430.4
Nueva Vizcaya	0.9	4.5	189.1	91.2	285.7
Quirino	-	0.3	84.1	3.9	88.3
Region III	202.1	213.6	465.9	155.2	1,036.8
Bataan	1.4	45.1	3.8	2.2	52.5
Bulacan	128.3	37.2	63.6	15.9	245.0
Nueva Ecija	4.4	29.4	289.6	0.9	324.3
Pampanga	47.6	7.0	7.3	56.1	118.0
Tarlac	11.2	43.3	64.3	13.9	132.7
Zambales	9.2	51.6	37.3	68.2	164.3
Region IV	330.1	239.3	594.1	217.4	1,380.9
Aurora	1.4	6.3	27.9	19.5	55.1
Batangas	18.5	109.5	63.2	45.9	237.1
Cavite	42.2	5.4	14.0	6.3	67.9
Laguna	91.0	21.4	13.3	21.1	146.8
Marinduque	11.4	8.9	67.3	47.5	135.1
Occidental Mindoro	2.8	-	121.1	7.7	131.6
Oriental Mindoro	3.2	5.0	56.4	1.9	66.5
Palawan	-	4.1	71.3	33.7	109.1
Quezon	61.4	30.3	104.8	17.6	214.1
Rizal	65.5	44.2	28.1	5.8	143.4
Romblon	32.7	4.2	26.7	10.6	74.2
Region V	107.1	192.3	361.0	121.2	781.6
Albay	13.9	59.6	75.2	17.9	166.6
Camarinnes Norte	18.9	29.8	25.1	12.4	86.2
Camarinnes Sur	36.8	35.9	136.5	34.0	243.2
Catanduanes	18.5	7.7	44.4	11.7	71.7
Nasabato	16.1	9.3	37.0	24.2	86.6
Sorsogon	12.9	50.0	42.8	21.6	127.3

	Length of Municipal Roads (km)				
	PCC	AC	Gravel	Earth	Total
Region VI	204.3	75.9	359.3	57.1	696.6
Atlan	28.2	2.2	40.3	9.6	80.3
Artigue	36.2	5.5	47.1	8.3	97.1
Capiz	27.1	1.5	37.0	15.8	81.4
Iloilo	88.5	21.1	100.3	14.9	224.8
Negros Occidental	24.3	45.6	134.6	8.5	213.0
Region VII	97.6	137.3	445.5	228.3	908.7
Bohol	26.0	30.8	138.1	93.4	288.3
Cebu	71.2	37.5	220.5	74.1	403.3
Negros Oriental	0.4	61.7	74.7	59.7	196.5
Siquijor	-	7.3	12.2	1.1	20.6
Region VIII	246.5	18.2	310.8	138.0	713.9
Levite	100.4	10.9	178.7	81.5	351.5
Southern Leyte	32.2	-	36.6	12.4	81.2
Eastern Samar	59.8	4.1	54.9	16.4	135.3
Northern Samar	32.8	-	12.4	44.2	89.4
Samar	21.6	3.2	28.2	3.5	56.5
Region IX	3.2	25.6	547.7	260.1	836.6
* Basilan	-	5.6	37.9	16.1	47.9
* Sulu	0.2	2.6	0.5	13.4	16.7
* * Tawi-Tawi	0.4	-	-	24.6	25.0
Zamboanga del Norte	0.6	15.9	208.1	120.2	344.8
Zamboanga del Sur	2.0	1.5	301.2	94.8	399.5
Region X	38.4	91.9	556.4	523.9	1,210.6
Agusan del Norte	12.9	-	72.1	6.3	91.3
Agusan del Sur	7.3	-	68.4	86.2	161.9
Rukidnon	2.1	0.9	115.7	275.3	400.9
Camiguin	0.9	7.8	15.7	4.0	28.0
Misamis Occidental	1.1	10.2	93.4	65.3	170.1
Misamis Oriental	0.7	53.2	65.1	38.9	158.9
Surigao del Norte	13.4	4.8	134.4	46.9	199.5
Region XI	39.5	33.5	758.7	429.5	1,261.2
Davao del Norte	0.3	11.5	235.8	57.5	305.1
Davao del Sur	3.4	5.9	191.6	56.9	257.8
Davao Oriental	2.5	1.2	62.5	7.6	73.8
South Cotabato	17.1	9.6	187.5	291.6	512.1
Surigao del Sur	16.2	5.0	81.3	9.9	112.4
Region XII	30.5	34.9	446.8	435.4	947.6
* Lanao del Norte	0.5	13.5	161.5	54.2	229.7
* Lanao del Sur	7.4	0.2	59.4	177.6	244.6
* Maguindanao	-	-	73.1	35.5	108.6
* North Cotabato	22.5	26.9	130.7	75.5	249.6
Sultan Kudarat	0.1	0.3	22.1	92.6	115.1

* ARMM (Autonomous Region of Muslim Mindanao)

BASIC DATA (6)

	Length of Barangay Roads (km)					Total
	PCC	AC	Gravel	Earth	Earth	
All Philippines	308.6	583.5	85,048.7	-	-	85,940.8
NCR	1.9	23.2	246.1	-	-	271.2
CAR	0.8	40.2	3,458.9	-	-	3,499.9
Abra	-	-	1,309.6	-	-	1,309.6
Benguet	0.8	40.2	750.2	-	-	791.2
Mountain Province	-	-	172.9	-	-	172.9
Iligan	-	-	537.8	-	-	537.8
Kalinga-Apayao	-	-	668.4	-	-	668.4
Region I	17.7	32.2	7,668.2	-	-	7,716.1
Ilocos Norte	3.0	4.4	1,859.7	-	-	1,867.1
Ilocos Sur	8.2	1.3	1,924.0	-	-	1,933.5
La Union	6.5	6.3	626.1	-	-	638.9
Pangasinan	-	20.2	3,256.4	-	-	3,276.6
Region II	1.2	-	6,226.9	-	-	6,228.1
Batanes	1.2	-	115.2	-	-	116.4
Cagayan	-	-	2,135.2	-	-	2,135.2
Isabela	-	-	2,318.9	-	-	2,318.9
Nueva Vizcaya	-	-	1,434.4	-	-	1,434.4
Quirino	-	-	223.2	-	-	223.2
Region III	83.8	21.2	7,620.0	-	-	7,725.0
Bataan	1.1	5.0	495.0	-	-	501.1
Bulacan	82.7	14.1	1,889.9	-	-	1,889.9
Nueva Ecija	-	-	1,739.5	-	-	1,739.5
Pampanga	-	-	1,532.2	-	-	1,532.2
Tarlac	-	1.3	1,860.3	-	-	1,861.6
Zambales	-	0.8	600.1	-	-	600.9
Region IV	122.8	204.5	8,460.7	-	-	8,788.0
Aurora	-	-	241.3	-	-	241.3
Batangas	4.6	144.2	2,085.9	-	-	2,234.7
Cavite	13.3	5.9	686.1	-	-	717.3
Laguna	60.1	20.1	365.1	-	-	417.3
Marinduque	-	-	138.8	-	-	138.8
Occidental Mindoro	-	-	794.2	-	-	794.2
Oriental Mindoro	-	-	242.5	-	-	242.5
Palawan	-	-	1,386.6	-	-	1,386.6
Quezon	5.2	3.5	1,784.9	-	-	1,793.6
Rizal	37.6	30.8	714.4	-	-	782.8
Romblon	-	-	810.9	-	-	810.9
Region V	12.3	70.8	3,768.2	-	-	3,851.3
Albay	3.5	40.1	640.4	-	-	684.0
Camarines Norte	-	3.8	316.9	-	-	320.7
Camarines Sur	4.7	20.4	1,790.1	-	-	1,815.2
Catanduanes	0.8	-	239.5	-	-	240.3
Masbate	-	-	441.0	-	-	441.0
Sorsogon	3.3	6.5	340.3	-	-	350.1

	Length of Barangay Roads (km)					Total
	PCC	AC	Gravel	Earth	Earth	
Region VI	49.3	99.8	7,753.0	-	-	7,902.1
Akian	-	-	623.1	-	-	623.1
Antique	-	-	753.6	-	-	753.6
Capiz	-	-	877.4	-	-	877.4
Iloilo	39.9	1.6	2,281.3	-	-	2,322.8
Negros Occidental	9.4	98.2	3,207.6	-	-	3,315.2
Region VII	5.3	68.9	5,411.3	-	-	5,485.5
Bohol	-	9.1	2,657.2	-	-	2,666.3
Cebu	5.3	59.8	1,565.0	-	-	1,630.1
Negros Oriental	-	-	1,198.7	-	-	1,198.7
Siquijor	-	-	80.4	-	-	80.4
Region VIII	5.2	-	4,214.4	-	-	4,319.6
Levte	-	-	1,913.1	-	-	1,913.1
Southern Leyte	-	-	661.4	-	-	661.4
Eastern Samar	-	-	988.8	-	-	988.8
Northern Samar	5.2	-	431.1	-	-	446.3
Samar	-	-	330.0	-	-	330.0
Region IX	-	6.1	5,432.0	-	-	5,438.1
Basilan	-	-	332.0	-	-	332.0
* Sulu	-	-	481.8	-	-	481.8
* Tawi-Tawi	-	-	184.7	-	-	184.7
Zamboanga del Norte	-	-	1,710.0	-	-	1,710.0
Zamboanga del Sur	-	6.1	2,723.5	-	-	2,729.6
Region X	7.0	13.9	8,557.2	-	-	8,578.1
Agusan del Norte	1.6	-	596.0	-	-	597.6
Agusan del Sur	-	-	766.4	-	-	766.4
Bukidnon	-	-	2,888.3	-	-	2,899.3
Camiguin	0.6	1.0	158.3	-	-	160.0
Misamis Occidental	3.1	1.7	1,393.6	-	-	1,398.4
Misamis Oriental	-	10.1	2,050.0	-	-	2,060.1
Surigao del Norte	1.7	-	694.6	-	-	696.3
Region XI	-	-	8,769.4	-	-	8,769.4
Davao del Norte	-	-	1,641.1	-	-	1,641.1
Davao del Sur	-	-	2,521.0	-	-	2,521.0
Davao Oriental	-	-	418.2	-	-	418.2
South Cotabato	-	-	3,379.1	-	-	3,379.1
Surigao del Sur	-	-	810.0	-	-	810.0
Region XII	1.3	2.7	7,364.4	-	-	7,368.4
Lanao del Norte	0.3	2.7	1,044.5	-	-	1,047.5
* Lanao del Sur	-	-	3,456.3	-	-	3,456.3
* Maguindanao	1.0	-	1,056.9	-	-	1,057.9
North Cotabato	-	-	1,778.7	-	-	1,778.7
Sultan Kudarat	-	-	1,028.4	-	-	1,028.4

* ARMM (Autonomous Region of Muslim Mindanao)

	Length of All Roads (km)				
	PCC	AC	Gravel	Earth	Total
All Philippines	9,564.1	12,535.0	126,399.3	9,311.8	157,810.2
NCR	1,081.8	1,439.3	448.6	11.8	2,981.5
CAR	113.3	624.3	5,403.1	945.7	7,086.4
Abra	6.9	130.9	1,706.2	376.6	2,220.6
Benguet	48.2	406.4	1,130.0	172.6	1,757.2
Mountain Province	0.3	64.2	611.5	123.1	1,799.1
Iligan	52.9	1.5	798.5	130.3	983.2
Kalinga-Apaya	5.0	21.3	1,156.9	143.1	1,326.3
Region I	510.3	1,331.6	9,867.6	466.5	12,176.0
Ilocos Norte	235.2	125.8	2,532.0	178.7	3,071.7
Ilocos Sur	51.1	238.8	2,325.9	196.4	2,812.2
La Union	83.7	222.4	881.1	41.2	1,228.4
Pangasinan	140.3	744.6	4,128.6	50.2	5,063.7
Region II	571.9	301.3	9,274.4	413.0	10,560.6
Batanes	22.6	14.0	184.8	55.8	277.2
Cagayan	213.1	160.2	3,050.6	32.9	3,456.8
Isabela	199.9	112.9	3,387.6	50.6	3,751.0
Nueva Vizcaya	122.7	13.5	2,002.0	264.8	2,403.0
Quirino	13.6	0.7	649.4	8.9	672.6
Region III	1,440.9	1,186.9	10,062.7	386.0	13,076.5
Bataan	155.1	225.1	692.0	2.5	1,074.7
Bulacan	494.7	215.0	1,819.0	15.9	2,544.6
Nueva Ecija	279.3	163.1	2,885.0	0.9	3,228.3
Pampanga	333.3	138.5	1,701.8	214.0	2,377.6
Tarlac	120.5	248.5	2,100.7	86.5	2,556.2
Zambales	57.8	304.7	864.2	66.2	1,292.9
Region IV	1,209.2	2,252.0	14,162.0	733.3	18,356.5
Aurora	1.8	31.8	577.6	19.5	630.7
Batangas	90.2	892.6	2,602.1	68.7	3,653.6
Cavite	175.2	372.3	943.5	115.3	1,608.3
Laguna	346.3	308.2	766.8	48.8	1,470.1
Marinduque	16.6	92.1	488.0	68.4	665.1
Occidental Mindoro	19.5	10.6	1,500.1	76.3	1,606.5
Oriental Mindoro	4.1	148.0	1,166.4	1.9	1,320.4
Palawan	5.1	25.7	2,498.9	86.3	2,618.0
Quezon	290.7	123.0	1,610.4	89.4	2,113.5
Rizal	219.8	190.3	1,791.2	35.9	2,237.2
Romblon	38.7	56.4	1,215.0	122.8	1,432.9
Region V	822.8	999.6	6,246.6	542.6	8,611.6
Albay	215.6	270.8	1,052.8	98.4	1,637.6
Camarines Norte	527.8	147.9	433.8	17.2	1,126.7
Camarines Sur	262.2	305.2	2,689.0	173.1	3,429.5
Catanduanes	37.0	28.5	633.0	89.5	788.0
Masbate	26.9	81.8	830.5	65.2	1,004.4
Sorsogon	153.3	165.4	607.5	99.2	1,025.4

	Length of All Roads (km)				
	PCC	AC	Gravel	Earth	Total
Region VI	714.3	1,211.3	11,885.8	170.5	13,981.9
Aklan	59.0	60.2	1,002.6	9.6	1,131.4
Antique	61.3	57.8	1,182.8	8.3	1,310.2
Capiz	117.3	64.9	1,360.5	115.5	1,658.2
Iloilo	277.8	251.3	3,780.4	24.0	4,333.5
Negros Occidental	198.9	677.1	4,639.5	13.1	5,528.6
Region VII	313.6	1,289.3	8,593.7	516.2	10,712.8
Bohol	62.4	308.8	3,927.6	218.7	4,527.5
Cebu	191.6	635.8	2,769.0	179.8	3,776.2
Negros Oriental	56.6	301.4	1,570.1	116.6	2,047.7
Siquijor	-	43.3	317.0	1.1	361.4
Region VIII	1,013.7	405.5	6,628.1	424.0	8,471.3
Leyte	508.5	26.1	3,125.5	143.6	3,804.7
Southern Leyte	105.2	306.4	887.3	49.9	1,358.8
Eastern Samar	172.5	40.5	1,378.2	122.1	1,613.3
Northern Samar	155.3	-	680.4	104.9	940.6
Samar	172.2	32.5	545.7	3.5	753.9
Region IX	65.7	551.9	8,400.4	492.1	9,510.1
Basilan	-	56.6	503.7	110.8	671.1
Sulu	10.0	87.2	720.0	16.1	833.3
* Tawi-Tawi	15.4	109.3	2,925.2	41.5	3,222.4
Zamboanga del Norte	14.6	109.3	2,925.2	120.2	3,169.3
Zamboanga del Sur	25.7	298.8	3,956.0	203.5	4,484.0
Region X	730.3	582.2	12,398.7	1,198.2	14,909.4
Agusan del Norte	162.9	1.1	1,024.8	14.1	1,202.9
Agusan del Sur	185.6	0.4	1,131.1	178.2	1,495.3
Bukidnon	9.5	149.7	4,176.1	365.3	4,700.6
Camiguin	3.5	67.7	231.2	43.6	346.0
Misamis Occidental	10.1	174.9	1,941.6	220.6	2,347.2
Misamis Oriental	249.2	181.0	2,588.2	233.1	3,201.5
Surigao del Norte	109.5	7.4	1,389.7	143.3	1,615.9
Region XI	520.6	260.4	13,282.1	1,384.8	15,447.9
Davao del Norte	176.0	16.0	2,781.2	68.2	3,041.4
Davao del Sur	125.5	190.6	3,415.9	253.6	3,985.6
Davao Oriental	158.0	8.5	1,190.9	124.1	1,379.2
South Cotabato	158.0	39.2	4,439.5	917.6	5,544.3
Surigao del Sur	46.5	5.0	1,451.6	11.3	1,517.4
Region XII	455.7	99.4	9,745.5	1,627.1	11,927.7
Lanao del Norte	102.0	36.8	1,577.9	54.2	1,770.9
Lanao del Sur	51.8	17.3	3,925.6	431.7	4,466.4
* Maguindanao	127.7	4.0	1,332.1	335.8	1,799.6
North Cotabato	127.5	41.0	1,431.1	431.2	2,031.1
Sultan Kudarat	46.4	0.3	1,478.8	384.2	1,909.7

* ARMM (Autonomous Region of Muslim Mindanao)

Road/Bridge Damage by Typhoon			
	1980-1989 Total Damage (M peso)	Road Length (km)	Damage/ Rd. Length (1000p/km)
ALL Philippines	3,384.80	157,810.2	21.4
NCR	38.47	2,981.5	12.9
CAR	564.41	7,086.4	79.6
Abra	61.06	2,220.6	27.5
Benguet	301.83	1,757.2	171.8
Mountain Province	122.85	1,799.1	153.7
Ifugao	38.76	983.2	39.4
Kalinga-Apayao	39.91	1,326.3	30.1
Region I	341.96	12,176.0	28.1
Ilocos Norte	101.69	3,071.7	33.1
Ilocos Sur	77.83	2,812.2	27.7
La Union	31.93	1,228.4	26.0
Pangasinan	130.51	5,063.7	25.8
Region II	306.89	10,560.6	29.1
Batanes	48.55	277.2	175.1
Cagayan	61.06	3,456.8	17.7
Isabela	112.22	3,751.0	29.9
Nueva Vizcaya	35.53	2,403.0	14.8
Quirino	49.53	672.6	73.6
Region III	413.49	13,076.5	31.6
Bataan	116.07	1,074.7	108.0
Bulacan	31.88	2,544.6	12.5
Nueva Ecija	75.75	3,228.3	23.5
Pampanga	35.43	2,379.3	14.9
Tarlac	72.67	2,556.2	28.4
Zambales	81.69	1,292.9	63.2
Region IV	458.69	18,356.5	25.0
Aurora	66.08	630.7	104.8
Batangas	75.85	3,653.6	20.8
Cavite	19.82	1,608.3	12.3
Laguna	53.56	1,470.3	36.4
Marinduque	14.65	665.1	22.0
Occidental Mindoro	18.00	1,606.5	11.2
Oriental Mindoro	91.57	1,320.4	69.4
Palawan	11.52	2,618.0	4.4
Quezon	57.62	2,113.5	27.3
Rizal	14.59	1,237.2	11.8
Romblon	35.43	1,432.9	24.7
Region V	396.16	8,611.6	46.0
Albay	99.13	1,637.6	60.5
Camarines Norte	13.48	1,726.7	18.5
Camarines Sur	89.73	3,429.5	26.2
Catanduanes	27.90	788.0	35.4
Masbate	42.72	1,004.4	42.5
Sorsogon	123.22	1,025.4	120.2

Road/Bridge Damage by Typhoon			
	1980-1989 Total Damage (M peso)	Road Length (km)	Damage/ Rd. Length (1000p/km)
Region VI	319.22	13,981.9	22.8
Aklan	10.32	1,131.4	9.1
Antique	33.86	1,310.2	25.8
Capiz	20.97	1,638.2	12.1
Iloilo	103.80	4,353.5	23.8
Negros Occidental	151.17	5,528.6	27.3
Region VII	138.47	10,712.8	12.9
Bohol	-	4,527.5	-
Cebu	110.86	3,776.2	29.4
Negros Oriental	27.61	2,047.7	13.5
Siquijor	-	361.4	-
Region VIII	308.14	8,471.3	36.4
Levite	142.16	3,804.7	37.4
Southern Leyte	38.41	1,358.8	28.3
Eastern Samar	25.63	1,613.3	15.9
Northern Samar	54.64	340.6	88.1
Samar	47.50	753.9	62.7
Region IX	5.27	9,510.1	0.6
* Sulu	-	671.1	-
* Javi-Tawi	-	853.3	-
Zamboanga del Norte	1.00	332.4	0.3
Zamboanga del Sur	4.27	4,484.0	1.0
Region X	50.27	14,909.4	3.4
Agusan del Norte	11.09	1,202.9	9.2
Agusan del Sur	1.35	1,495.3	0.9
Bukidnon	5.73	4,700.6	1.2
Camiguin	3.02	346.0	8.7
Misamis Occidental	4.92	2,347.2	2.1
Misamis Oriental	10.82	3,201.5	3.4
Surigao del Norte	13.34	1,615.9	8.3
Region XI	39.03	15,447.9	2.5
Davao del Norte	-	3,041.4	-
Davao del Sur	-	3,985.6	-
Davao Oriental	-	1,349.2	-
South Cotabato	0.06	5,554.3	-
Surigao del Sur	38.97	1,517.4	25.7
Region XII	4.33	11,927.7	0.4
Lanao del Norte	-	1,770.9	-
Lanao del Sur	-	4,426.4	-
* Maguindanao	4.33	1,789.6	2.4
* North Cotabato	-	2,031.1	-
Sultan Kudarat	-	1,909.7	-

* ARMM (Autonomous Region of Muslim Mindanao)

	Land Area by Slope Category (km2)					Total
	0-8%	8-18%	18-30%	30-50%	>50%	
All Philippines	98,209.1	44,067.8	55,006.8	73,351.7	29,364.8	300,000.2
NCR	636.0	-	-	-	-	636.0
CAR	1,227.5	1,595.0	2,274.8	6,534.2	6,662.2	18,293.7
Abra	-	120.1	544.2	2,249.4	1,061.9	3,975.6
Benguet	-	32.4	55.5	732.1	1,835.4	2,655.4
Mountain Province	25.6	342.7	322.1	603.6	803.3	2,097.3
Iligao	43.3	322.5	263.4	745.3	1,143.3	2,517.8
Kalinga-Apayao	1,158.6	777.3	1,089.6	2,203.8	1,818.3	7,047.6
Region I	6,588.8	1,234.6	1,236.1	2,259.7	1,521.0	12,840.2
Ilocos Norte	1,367.2	357.6	87.0	1,018.8	568.7	3,399.3
Ilocos Sur	884.3	244.3	224.7	762.0	464.3	2,579.6
La Union	657.4	265.0	259.8	239.5	71.4	1,493.1
Pangasinan	3,679.9	367.7	684.6	239.4	416.6	5,368.2
Region II	8,153.2	2,207.1	4,737.3	8,089.6	3,650.5	26,837.7
Batanes	148.5	-	60.8	-	-	209.3
Cagayan	3,111.3	915.6	1,863.6	2,094.9	1,017.3	9,002.7
Isabela	4,137.8	572.7	1,888.7	3,091.7	973.7	10,664.6
Nueva Vizcaya	413.8	392.3	476.3	1,407.4	1,214.1	3,903.9
Quirino	341.8	325.5	447.9	1,495.6	445.4	3,057.2
Region III	10,117.3	1,383.7	2,396.5	2,307.0	2,026.3	18,230.8
Bataan	415.7	502.4	177.5	260.1	17.3	1,373.0
Eulacan	1,609.9	255.4	55.9	403.0	306.8	2,625.0
Nueva Ecija	3,273.1	265.8	524.6	596.6	524.2	5,284.3
Pampanga	1,775.5	21.8	278.9	104.5	21.8	2,180.7
Tarlac	2,128.2	36.6	140.5	598.5	149.6	3,053.4
Zambales	914.9	323.5	1,119.1	344.3	1,012.6	3,714.4
Region IV	15,295.0	9,631.6	7,700.9	11,719.7	2,576.9	46,924.1
Aurora	619.7	167.2	232.9	1,116.3	1,103.4	3,239.5
Batangas	1,282.8	244.4	789.5	576.8	272.3	3,165.8
Cavite	3,995.0	479.3	270.4	1,300.0	15.9	1,287.6
Laguna	578.8	705.8	145.9	206.9	122.3	1,759.7
Marinduque	337.9	-	314.9	124.1	162.3	1,959.2
Occidental Mindoro	2,684.7	376.3	898.5	2,010.3	119.2	5,879.8
Oriental Mindoro	1,171.9	719.3	687.1	1,747.2	119.2	4,364.7
Palawan	5,797.6	2,492.2	2,689.4	3,937.1	14,896.3	14,896.3
Quezon	1,662.1	4,222.2	1,150.8	1,095.9	575.7	8,706.7
Rizal	450.8	29.1	339.4	329.7	159.9	1,308.9
Romblon	293.7	195.8	372.1	415.4	48.9	1,355.9
Region V	8,044.0	2,405.1	3,584.3	2,311.1	1,288.0	17,632.5
Albay	665.3	316.8	647.2	660.8	262.5	2,552.6
Camarines Norte	440.3	613.0	744.8	215.5	98.3	2,112.5
Camarines Sur	2,273.5	630.2	1,177.7	576.2	469.2	5,266.8
Catanduanes	258.4	374.6	542.6	335.9	1,511.7	3,033.2
Masbate	3,037.4	572.1	418.2	216.0	122.1	4,047.7
Sorsogon	1,249.1	272.4	281.8	216.0	122.1	2,141.4

	Land Area by Slope Category (km2)					Total
	0-8%	8-18%	18-30%	30-50%	>50%	
Region VI	8,734.2	3,445.5	3,586.6	2,722.4	1,734.5	20,223.2
Aklan	641.4	343.2	245.0	371.8	216.5	1,817.9
Antique	583.3	255.5	356.9	660.8	665.5	2,522.0
Capiz	1,399.0	362.3	495.1	241.5	135.3	2,633.2
Iloilo	2,788.7	1,124.4	660.2	520.2	230.5	5,324.0
Negros Occidental	3,521.8	1,360.1	1,829.4	928.1	486.7	7,926.1
Region VII	4,234.7	1,780.4	4,769.2	2,823.7	1,343.5	14,951.5
Bohol	1,682.3	592.1	1,277.6	511.8	53.5	4,117.3
Cebu	1,272.1	222.4	1,707.2	1,290.9	595.8	5,088.4
Negros Oriental	1,106.4	665.9	1,614.2	1,021.0	694.2	5,402.3
Siquijor	173.9	-	169.6	-	-	343.5
Region VIII	5,846.6	2,807.8	5,697.8	5,934.9	1,144.6	21,431.7
Leyte	2,753.7	519.0	1,632.3	1,112.6	250.7	6,268.3
Southern Leyte	252.4	146.8	1,336.9	1,725.1	73.6	1,734.8
Eastern Samar	863.6	898.3	1,232.4	1,301.9	43.4	4,339.6
Northern Samar	848.6	323.0	843.7	1,243.2	39.5	3,488.0
Samar	1,128.3	720.7	1,452.5	1,552.1	737.4	5,591.0
Region IX	4,998.3	5,442.0	5,091.2	3,153.5	-	18,685.0
* Basilan	269.9	787.3	270.0	-	-	1,327.2
* Sulu	531.4	275.4	301.7	81.9	-	1,600.4
** Tawi-Tawi	932.9	187.1	205.0	62.4	-	1,087.4
Zamboanga del Norte	2,628.1	1,775.0	2,823.3	1,483.8	-	6,618.1
Zamboanga del Sur	2,628.1	2,417.2	1,491.2	1,515.4	-	8,051.9
Region X	6,988.0	5,001.8	6,391.2	7,342.0	2,614.8	28,327.8
Agusan del Norte	693.9	98.7	318.6	1,096.0	383.1	2,590.3
Agusan del Sur	2,908.4	1,398.6	1,468.6	2,908.4	281.5	8,965.5
Bukidnon	1,378.4	1,773.2	2,088.4	2,309.8	744.0	8,293.8
Camiguin	113.2	-	116.6	-	-	229.8
Misamis Occidental	501.9	513.9	301.2	244.9	377.4	1,939.3
Misamis Oriental	591.9	941.8	816.1	502.7	717.6	3,570.1
Surigao del Norte	800.3	275.6	1,211.7	280.2	111.2	2,739.0
Region XI	8,428.1	3,422.1	2,703.3	13,926.3	3,213.1	31,692.9
Davao del Norte	2,150.3	543.1	832.5	3,929.1	674.8	8,129.8
Davao del Sur	1,635.9	635.2	125.0	2,498.1	1,483.4	6,377.6
Davao Oriental	1,348.8	835.1	437.0	2,535.4	458.2	5,164.5
South Cotabato	1,825.2	573.6	812.6	3,806.2	551.2	7,468.8
Surigao del Sur	1,667.9	1,285.1	496.2	1,057.5	45.5	4,552.2
Region XII	8,917.4	3,711.1	4,847.6	4,227.6	1,589.4	23,293.1
Lanao del Norte	1,171.9	770.8	138.5	756.9	253.9	3,092.0
* Lanao del Sur	1,036.0	675.8	1,253.3	720.4	187.4	3,872.9
* Maguindanao	3,014.1	838.5	799.2	449.4	372.8	5,474.1
North Cotabato	2,843.6	1,017.7	1,981.6	833.9	189.1	6,565.6
Sultan Kudarat	1,151.8	408.2	675.0	1,467.0	586.2	4,288.2

* ARMM (Autonomous Region of Muslim Mindanao)

	Land Area by Geological Category (km2)						
	Quater-nary	Neogene	Palaeo-gene	Pre-tertiary	Intru-sive	Volca-nic	Total
All Philippines	91,816.1	37,104.7	39,356.6	30,606.6	19,143.7	81,972.5	300,000.2
NCR	575.4	-	-	-	-	50.6	636.0
CAR	1,514.3	1,810.0	5,980.2	382.3	2,486.2	6,219.7	18,293.7
Abra	209.2	119.6	567.9	328.8	747.3	2,002.8	3,975.6
Benguet	325.2	1,056.2	677.4	677.4	596.1	2,655.4	2,655.4
Mountain Province	54.5	190.7	871.6	54.5	163.4	762.6	2,097.3
Iligan	32.1	337.8	1,903.7	-	831.4	1,222.8	2,577.8
Kalinga-Apayao	1,158.5	836.7	1,480.3	-	836.7	2,735.4	7,047.6
Region I	6,070.7	2,002.8	2,478.6	597.2	1,385.1	305.8	12,840.2
Ilocos Norte	1,452.4	309.0	587.2	556.3	370.8	123.6	3,399.3
Ilocos Sur	859.9	235.7	1,310.3	40.9	81.9	40.9	2,528.6
La Union	537.5	857.0	298.9	-	-	-	1,493.1
Pangasinan	3,220.9	791.1	282.5	-	932.4	141.3	5,368.2
Region II	11,287.3	820.8	3,924.7	3,733.6	935.0	6,136.3	26,837.7
Batanes	104.6	-	-	-	-	104.7	209.3
Cagayan	4,758.6	514.4	546.6	1,318.3	692.9	1,864.8	9,002.7
Isabela	5,814.3	180.8	602.5	1,596.7	692.9	1,777.4	10,663.6
Nueva Vizcaya	209.4	400.4	1,267.9	567.3	200.2	1,468.1	3,903.9
Quirino	209.4	125.6	1,507.7	251.3	41.9	921.3	3,057.2
Region III	8,758.3	762.8	840.2	1,182.7	2,862.3	3,824.5	18,230.8
Bataan	286.0	57.2	-	-	136.7	1,029.8	1,373.0
Bulacan	1,421.9	82.0	246.1	-	201.3	738.3	2,625.0
Pangasinan	3,095.1	327.1	327.1	1,182.7	201.3	151.0	5,284.3
Tarlac	1,334.0	296.5	177.9	-	522.5	622.5	3,053.4
Zambales	832.0	-	89.1	-	1,901.8	891.5	3,714.4
Region IV	11,324.6	4,381.6	6,913.9	13,370.5	3,845.5	7,088.0	46,924.1
Aurora	306.9	-	-	1,466.3	920.7	545.6	3,239.5
Batangas	1,449.8	591.7	-	59.2	59.2	1,054.8	3,165.8
Cavite	1,170.2	-	-	-	-	1,171.1	1,287.6
Laguna	460.2	-	-	-	-	1,259.5	1,759.7
Marinduque	174.4	58.2	406.9	-	87.2	232.5	959.2
Occidental Mindoro	1,620.2	423.4	1,803.1	1,986.1	339.7	130.7	5,879.8
Oriental Mindoro	1,889.2	423.4	651.5	1,302.9	65.1	32.6	4,364.7
Palawan	2,405.4	579.6	1,478.0	7,303.3	1,854.8	1,275.2	14,896.3
Quezon	1,199.0	2,569.2	2,112.4	770.8	1,199.8	1,855.5	8,706.7
Rizal	436.3	216.3	216.3	83.1	-	530.2	1,308.9
Romblon	212.7	159.5	212.7	398.8	319.0	53.2	1,355.9
Region V	5,582.3	1,823.0	2,181.1	995.0	447.0	6,604.1	17,632.5
Albay	661.8	315.1	157.6	63.0	31.5	1,323.6	2,552.5
Camarines Norte	357.1	238.0	89.5	238.0	60.6	1,190.1	2,112.5
Camarines Sur	1,664.8	363.2	756.7	847.5	52.1	1,574.0	5,266.8
Catanduanes	260.6	781.8	52.1	52.1	64.9	361.9	1,511.5
Maabaco	906.7	259.0	32.4	32.4	64.8	1,878.1	4,047.7
Sorsogon	1,731.3	136.7	-	-	-	1,273.4	2,141.4

	Land Area by Geological Category (km2)						
	Quater-nary	Neogene	Palaeo-gene	Pre-tertiary	Intru-sive	Volca-nic	Total
Region VI	5,541.0	3,341.1	1,924.2	1,137.4	1,384.8	6,894.7	20,223.2
Aklan	158.1	447.9	210.7	210.8	237.1	553.3	1,817.9
Antique	289.2	854.9	534.3	42.8	85.5	703.3	2,522.0
Cabiz	658.3	877.7	356.6	54.9	27.4	658.3	2,633.2
Iloilo	2,249.6	849.8	175.0	749.9	1,299.7	3,324.0	7,926.1
Negros Occidental	2,175.8	310.8	647.6	828.9	284.9	3,678.1	7,926.1
Region VII	5,728.8	4,010.6	763.6	1,371.9	303.4	2,773.2	14,951.5
Bohol	529.9	2,282.9	-	1,059.9	244.6	500.0	4,117.3
Cebu	2,676.6	1,205.9	529.4	1,177.7	58.8	500.0	5,088.4
Negros Oriental	2,300.0	481.4	214.0	133.7	-	2,273.2	5,402.3
Siquijor	222.3	40.4	20.2	60.6	-	-	343.5
Region VIII	4,336.4	8,404.2	3,819.2	197.4	613.9	4,060.6	21,431.7
Leyte	2,517.2	2,073.0	567.6	197.4	123.4	789.7	6,268.3
Southern Leyte	73.0	1,049.9	-	-	91.3	529.6	1,734.8
Eastern Samar	606.9	1,062.1	910.4	-	364.2	1,396.0	4,339.6
Northern Samar	789.9	2,165.5	-	-	-	541.9	2,497.0
Samar	349.4	2,061.7	2,341.2	-	35.0	803.7	5,591.0
Region IX	2,427.6	1,271.2	3,265.2	3,105.5	1,066.3	7,549.2	18,685.0
Basilan	26.0	-	-	-	-	1,301.2	1,327.2
* Sulu	120.8	310.7	30.2	181.2	134.9	1,268.2	1,600.4
* Tawi-Tawi	186.4	497.1	1,149.9	2,423.5	341.8	1,846.8	6,018.1
Zamboanga del Norte	559.3	463.4	2,085.4	376.5	289.6	3,301.9	8,051.9
Zamboanga del Sur	1,535.1	-	-	-	-	-	-
Region X	8,436.4	3,428.0	2,266.4	1,235.2	1,280.2	11,671.6	28,327.8
Agusan del Norte	886.8	676.7	443.4	210.0	163.4	210.0	2,590.3
Agusan del Sur	5,325.0	1,702.3	1,021.4	340.5	133.5	766.0	8,965.5
Bukidnon	451.4	394.9	338.5	394.9	225.8	6,288.4	8,293.8
Camiguin	280.7	-	-	-	-	229.8	229.8
Misamis Occidental	790.3	654.1	81.7	81.8	163.5	1,658.6	1,939.3
Misamis Oriental	1,005.4	-	381.4	208.0	624.1	1,798.7	3,570.1
Surigao del Norte	10,057.3	4,129.1	4,198.4	2,221.7	2,159.7	8,826.7	27,739.0
Region XI	3,514.5	1,350.3	309.4	1,350.3	309.4	1,265.9	8,129.8
Davao del Norte	3,514.5	1,350.3	309.4	1,350.3	309.4	1,265.9	8,129.8
Davao del Sur	1,326.0	1,641.8	1,262.9	-	-	2,146.9	6,377.6
Davao Oriental	1,824.9	322.8	532.5	107.6	681.4	2,295.3	5,164.5
South Cotabato	2,742.7	782.6	553.2	-	-	2,424.3	7,468.8
Surigao del Sur	1,619.2	30.6	1,130.4	763.8	215.9	724.3	4,552.2
Region XII	10,175.7	919.5	900.9	1,075.2	364.3	9,857.5	23,293.1
Lanao del Norte	553.3	227.8	162.7	65.1	32.6	2,050.5	3,092.0
* Lanao del Sur	562.2	312.8	437.9	187.7	187.7	3,554.5	5,474.1
* Maguindanao	3,128.1	85.2	85.3	85.3	85.3	2,151.9	6,565.9
North Cotabato	3,553.0	283.7	58.8	822.4	58.7	675.5	4,288.2
Sultan Kudarat	2,379.1	-	-	-	-	-	-

* ARMM (Autonomous Region of Muslim Mindanao)

BASIC DATA (11)

	Climate Type	Annual Rainfall (mm)	Rainy Days	No. of Typhoons per year
All Philippines		2,403	174	
NCR	1	2,356	149	1.70
CAR		3,234	164	2.14
Abra	1	3,500	170	2.10
Benguet	1	3,563	169	2.00
Mountain Province	1	2,300	120	2.00
Iligao	3	2,900	160	2.00
Kalinga-Apayao	3	3,500	170	2.30
Region I		2,205	113	2.00
Ilocos Norte	1	1,936	95	2.50
Ilocos Sur	1	2,313	101	2.00
La Union	1	2,287	127	1.80
Pangasinan	1	2,297	127	1.70
Region II		2,767	173	2.25
Batanes	4	2,576	169	2.50
Cagayan	4	2,214	156	2.50
Isabela	4	3,400	200	2.20
Nueva Vizcaya	1	1,800	120	2.00
Quirino	4	3,427	198	2.00
Region III		2,303	130	1.70
Bataan	1	2,026	143	1.70
Bulacan	1	1,822	119	1.70
Nueva Ecija	1	1,874	121	1.70
Pampanga	1	2,000	140	1.70
Tarlac	1	2,100	140	1.70
Zambales	1	3,702	134	1.70
Region IV		2,611	166	1.28
Aurora	4	3,427	198	1.80
Batangas	1	1,790	137	1.50
Cavite	1	1,684	107	1.50
Laguna	1	1,730	137	1.50
Marinduque	4	2,000	180	1.50
Occidental Mindoro	1	2,290	114	1.50
Oriental Mindoro	1	1,920	181	1.50
Palawan	1	2,462	133	0.70
Quezon	2	3,988	230	1.60
Rizal	1	1,822	119	1.70
Romblon	4	2,105	180	1.00
Region V		3,089	210	1.39
Albay	2	3,300	225	1.50
Camarines Norte	2	3,506	218	1.50
Camarines Sur	2	3,500	220	1.50
Catanduanes	2	3,470	223	1.80
Masbate	2	1,949	169	1.00
Sorsogon	2	3,300	225	1.50

	Climate Type	Annual Rainfall (mm)	Rainy Days	No. of Typhoons per year
Region VI		1,743	158	1.00
Aklan	1	2,000	170	1.00
Antique	1	2,900	170	1.00
Capiz	3	2,119	166	1.00
Iloilo	1	1,984	155	1.00
Negros Occidental	1	1,309	150	1.00
Region VII		1,450	157	1.00
Bohol	4	1,424	161	1.00
Cebu	3	1,638	162	1.00
Negros Oriental	3	1,302	151	1.00
Siquijor	3	1,300	150	1.00
Region VIII		2,885	213	1.70
Leyte	2	2,216	210	1.70
Southern Leyte	2	1,792	149	1.70
Eastern Samar	2	4,248	243	1.70
Northern Samar	2	3,529	214	1.70
Samar	2	2,637	212	1.70
Region IX		1,907	150	0.08
Basilan	4	2,500	160	0.08
Sulu	4	2,286	175	0.08
Tawi-Tawi	4	2,300	175	0.08
Zamboanga del Norte	4	2,478	161	0.08
Zamboanga del Sur	4	1,212	132	0.08
Region X		2,301	198	0.82
Agusan del Norte	2	2,034	171	1.00
Agusan del Sur	2	2,500	220	1.00
Bukidnon	3	2,537	221	0.60
Camiguin	1	1,600	150	1.00
Misamis Occidental	4	2,500	150	0.08
Misamis Oriental	3	1,618	153	1.00
Surigao del Norte	2	2,000	170	1.00
Region XI		2,158	192	0.21
Davao del Norte	2	1,800	200	0.08
Davao del Sur	4	1,793	199	0.08
Davao Oriental	2	3,000	220	0.08
South Cotabato	4	945	131	0.08
Surigao del Sur	2	4,328	237	1.00
Region XII		2,175	194	0.13
Lanao del Norte	4	2,500	160	0.40
Lanao del Sur	4	2,200	200	0.10
* Maguindanao	4	2,238	198	0.08
* North Cotabato	4	2,200	200	0.08
Sultan Kudarat	4	1,800	200	0.08

* ARMM (Autonomous Region of Muslim Mindanao)

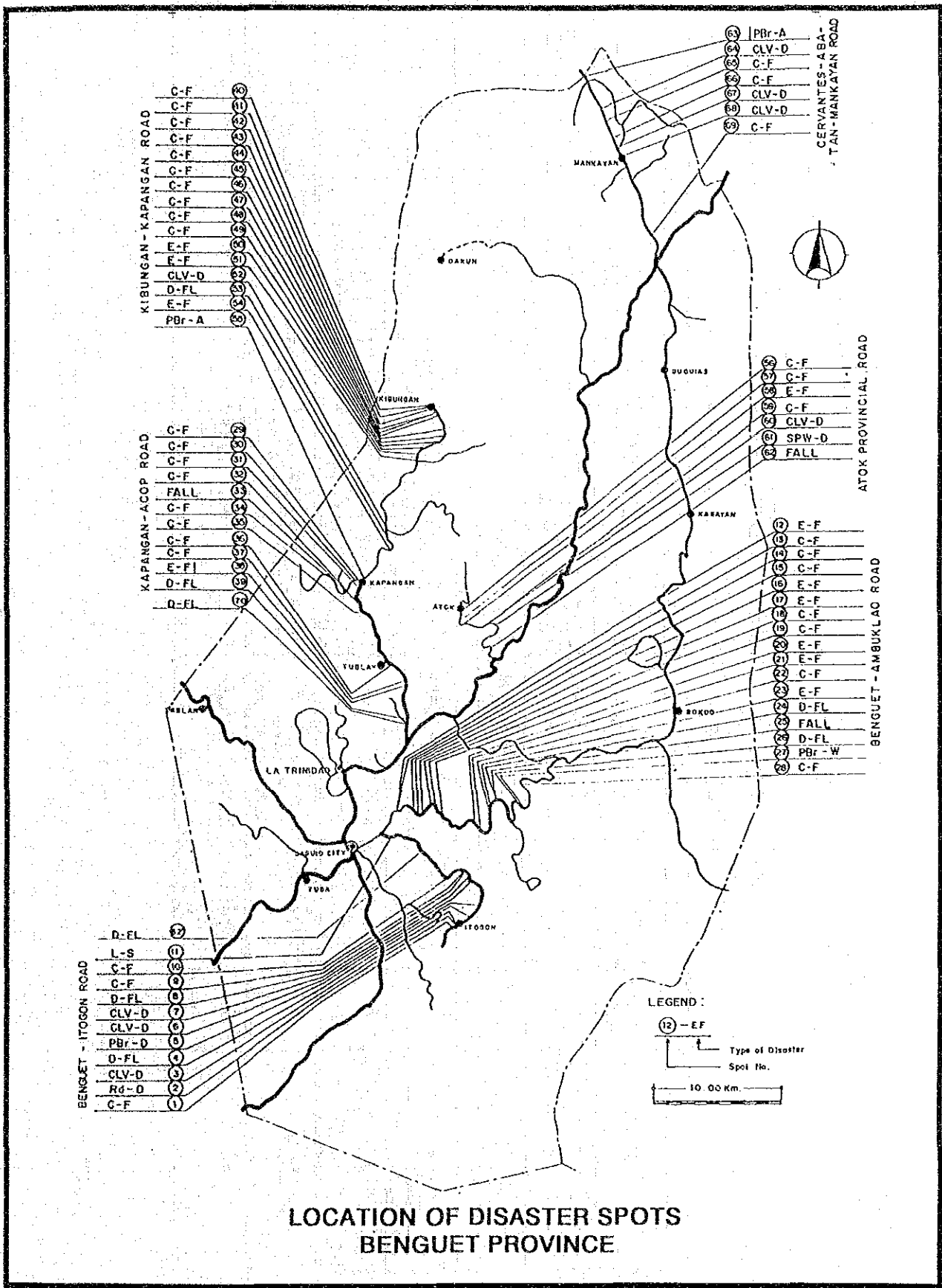
BASIC DATA (12)

	Monthly Rainfall (mm)												
	1	2	3	4	5	6	7	8	9	10	11	12	Total
All Philippines	140	96	90	93	174	246	275	299	269	271	252	206	2,409
NCR	17	10	22	28	173	340	448	505	382	234	144	54	2,357
CAR	112	87	105	105	252	334	425	503	406	328	350	218	3,234
Abra	12	35	55	101	325	472	659	833	572	257	149	28	3,488
Benguet	12	36	56	103	331	481	671	848	582	252	152	29	3,563
Mountain Province	6	18	73	216	347	462	608	329	159	63	14	2,301	
Ifugao	159	86	52	40	114	208	207	255	310	387	447	236	3,501
Kalinga-Apayao	222	161	197	142	241	243	287	243	303	421	615	446	3,501
Region I	7	4	11	48	178	366	446	618	333	130	53	12	2,207
Ilocos Norte	12	1	3	20	125	377	386	547	324	86	45	10	1,936
Ilocos Sur	2	3	5	17	146	304	483	738	356	133	35	9	2,312
La Union	6	6	18	73	216	347	462	608	329	159	63	14	2,301
Pangasinan	6	6	18	73	216	347	462	608	329	159	63	14	2,301
Region II	160	108	116	86	175	232	244	252	289	354	460	324	2,790
Batanes	184	126	102	83	138	278	259	12	270	330	317	260	2,491
Ngayyan	141	176	146	35	101	184	183	235	275	333	396	209	2,245
Isabela	215	157	191	138	234	236	259	235	295	409	597	494	3,461
Nueva Vizcaya	8	5	15	19	144	237	380	283	183	130	437	381	1,800
Quirino	217	158	193	139	236	248	261	238	297	412	602	437	3,428
Region III	9	5	17	21	173	337	436	570	379	197	115	43	2,304
Bataan	14	7	21	19	139	284	364	478	334	201	111	56	2,026
Bulacan	8	5	16	19	146	261	332	365	297	166	131	39	1,825
Nueva Ecija	8	5	16	20	150	268	341	356	305	191	135	59	1,875
Pampanga	14	7	20	18	137	280	359	470	329	188	110	58	2,039
Tarlac	15	7	22	20	144	294	377	483	346	208	115	26	2,039
Zambales	3	3	12	29	284	579	763	1,065	616	204	81	26	3,703
Region IV	105	62	61	86	186	296	352	332	314	340	256	204	2,663
Aurora	217	158	193	139	235	238	261	238	297	412	602	437	3,428
Batangas	23	10	17	38	109	246	300	325	269	242	162	133	1,852
Cavite	22	12	14	14	102	259	260	431	244	186	192	98	1,685
Laguna	22	17	15	37	107	238	290	376	260	234	157	98	1,781
Marinduque	14	7	20	18	137	280	359	470	329	188	110	58	2,039
Occidental Mindoro	3	2	19	141	89	343	433	559	352	245	55	3	2,280
Oriental Mindoro	91	55	63	90	159	201	183	200	190	288	238	172	1,930
Palawan	26	8	6	30	184	379	480	591	437	289	135	82	2,607
Quezon	354	220	187	180	225	249	259	186	325	608	597	3,997	
Rizal	12	4	13	16	109	259	333	418	309	187	117	54	1,831
Romblon	114	48	48	71	125	206	250	238	252	323	234	205	2,101
Region V	278	162	145	121	153	193	231	219	255	385	476	474	3,090
Albay	297	196	193	152	181	241	251	284	260	326	484	456	3,301
Camargines Norte	312	175	154	126	139	174	236	222	268	519	590	592	3,507
Camargines Sur	312	175	154	126	139	174	236	222	268	519	590	592	3,507
Catanduanes	163	209	161	175	185	226	246	274	372	550	544	3,472	
Masbate	163	80	66	55	134	158	191	160	219	213	233	257	1,943
Sorsogon	297	196	193	152	181	241	251	284	260	326	484	456	3,301

	Monthly Rainfall (mm)												
	1	2	3	4	5	6	7	8	9	10	11	12	Total
Region VI	82	44	49	53	109	208	216	217	206	244	185	127	1,740
Aklan	109	47	54	55	138	239	233	220	227	304	212	162	2,000
Antique	139	47	54	55	138	239	233	220	227	304	212	162	2,000
Capiz	116	50	57	58	149	253	247	233	240	322	225	172	2,119
Iloilo	43	25	34	52	113	272	301	348	276	251	180	97	1,984
Negros Occidental	81	54	54	50	76	133	139	123	136	181	161	113	1,301
Region VII	96	66	59	52	88	150	161	140	157	196	169	119	1,454
Bohol	105	79	72	58	80	131	135	108	136	213	191	117	1,425
Cebu	107	68	54	50	108	184	207	184	197	196	158	127	1,640
Negros Oriental	81	54	54	50	76	134	140	124	137	183	163	114	1,310
Siquijor	81	54	54	50	76	134	140	124	137	182	162	114	1,308
Region VIII	345	234	180	143	177	187	201	172	201	273	335	407	2,856
Levite	262	205	138	121	146	155	167	129	147	184	245	317	2,215
Southern Leyte	187	145	110	60	66	169	170	162	163	202	168	231	1,833
Eastern Samar	625	414	307	256	297	232	199	182	205	313	555	583	4,238
Northern Samar	417	251	175	147	150	179	209	185	212	372	326	438	3,129
Samar	225	145	150	103	170	200	244	225	263	302	321	438	2,638
Region IX	102	63	61	85	152	204	187	175	190	247	227	179	1,873
Basilan	160	73	77	99	187	256	242	228	236	300	359	283	2,500
* Sulu	104	95	86	145	226	242	187	162	194	264	195	151	2,063
* Tawi-Tawi	105	96	97	146	227	243	186	163	195	266	196	151	2,063
Zamboanga del Norte	159	72	76	98	185	254	240	226	234	297	356	281	2,478
Zamboanga del Sur	44	44	38	51	95	142	135	129	145	192	109	88	1,212
Region X	149	97	91	86	189	268	278	256	287	271	177	152	2,301
Agusan del Norte	436	205	100	63	125	124	161	73	182	181	159	224	2,033
Agusan del Sur	123	95	101	102	220	303	311	296	322	295	184	147	2,499
Bukidnon	125	96	103	104	223	307	316	300	327	299	187	150	2,537
Camiguin	106	64	56	38	102	197	212	197	215	176	124	115	1,602
Misamis Occidental	123	85	101	102	220	303	311	296	322	295	184	147	2,499
Misamis Oriental	107	65	57	38	103	199	214	199	217	178	125	116	1,618
Surigao del Norte	109	47	54	55	138	239	233	220	227	304	212	162	2,000
Region XI	216	166	136	147	182	186	173	166	170	184	209	219	2,154
Davao del Norte	115	99	78	145	208	191	177	174	181	176	147	110	1,801
Davao del Sur	115	99	78	145	207	190	176	173	180	175	146	110	1,794
Davao Oriental	287	176	174	137	163	217	226	238	234	233	435	410	2,971
South Cotabato	64	73	40	51	88	113	104	87	81	84	87	47	956
Surigao del Sur	730	523	405	321	275	258	214	190	213	233	350	586	4,328
Region XII	86	92	92	130	241	245	242	290	237	243	171	107	2,175
Lanao del Norte	123	85	101	102	220	303	311	296	322	295	184	147	2,499
* Lanao del Sur	70	89	93	130	253	247	245	318	247	324	250	174	2,200
* Maguindanao	71	91	99	132	257	251	249	324	238	250	174	99	2,238
* North Cotabato	70	89	93	130	253	247	245	318	247	324	250	174	2,200
Sultan Kudarat	115	99	78	145	208	191	177	174	181	176	147	110	1,801

* ARMM (Autonomous Region of Muslim Mindanao)

APPENDIX 7-1
SUMMARY OF IDENTIFIED DISASTER SPOTS



**LOCATION OF DISASTER SPOTS
 BENGUET PROVINCE**

SUMMARY OF IDENTIFIED DISASTER SPOTS

PROVINCE OF BENGUET (1/13)

ROAD NAME	SPOT NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	IMPACT TO ROAD	REMARKS
Benguet-Itogon Road	1	268+535	Cut Slope Failure	Erosion due to heavy rain-fall; Forms gullies on slope surfaces	High	Type of rock is porphyry
-do-	2	268+335	Scour/Washout of Roadbed	Erosion and siltation	Low	
-do-	3	268+335	Culvert Damage	Erosion and siltation ; Debris flow and its related damages	Low	
-do-	4	266+535	Debris Flow	Scouring & concentration of surface water Debris flow from upstream	High	Type of rock is diorite
-do-	5	265+035	Permanent Bridge Other Damage	Scoured abutment ; Strong impact of flowing water	Low	
-do-	6	262+535	Culvert Damage	Erosion & debris flow coming from upstream	Low	

SUMMARY OF IDENTIFIED DISASTER SPOTS
PROVINCE OF BENGUET (2/13)

ROAD NAME	SPOT NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	IMPACT TO ROAD	REMARKS
Benguet-Itogon Road	7	262+035	Culvert Damage	Erosion and concentration of surface water Debris flow coming from upstream	Medium	
-do-	8	261+285	Debris Flow	Debris flow from upstream	Medium	
-do-	9	261+235	Cut Slope Failure	Loose subsurface condition	Medium	
-do-	10	259+335	Cut Slope Failure	Loose rock formation	Low	Type of rock is diorite
-do-	11	243+535	Landslide	Erosion and concentration of surface water; Loose subsurface condition	Low	

SUMMARY OF IDENTIFIED DISASTER SPOTS
PROVINCE OF BENGUET (3/13)

ROAD NAME	SPOT NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	IMPACT TO ROAD	REMARKS
Benguet-Ambuklao Road	12	255+400	Embankment Slope Failure	Unconfined surface water ; Eroded shoulder	Low	Benguet-Ambuklao Road Bdry. is approximately 1.0 km. away; Andesite
-do-	13	255+400	Cut Slope Failure	Erosion due to heavy rain-fall ; Boulders on slope surfaces	Low	Type of rock is andesite
-do-	14	257+350	Cut Slope Failure	Erosion due to heavy rain-fall ; Loose subsurface soil	Low	Type of rock is andesite
-do-	15	257+650	Cut Slope Failure	Erosion due to heavy rain-fall ; Loose subsurface soil	Low	
-do-	16	257+750	Embankment Slope Failure	Erosion ; Unstable sub-surface soil	Low	Type of rock is andesite

SUMMARY OF IDENTIFIED DISASTER SPOTS
PROVINCE OF BENGUET (4/13)

ROAD NAME	SPOT NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	IMPACT TO ROAD	REMARKS
Benguet-Ambuklao Road	17	259+050	Embankment Slope Failure	Erosion; Poor subsoil condition	Low	
-do-	18	259+700	Cut Slope Failure	Loose subsurface soil	Medium	
-do-	19	261+050	Cut Slope Failure	Loose subsurface soil	Medium	Type of rock is tuff breccia
-do-	20	265+800	Embankment Slope Failure	Erosion and constricted roadway width	Medium	
-do-	21	266+650	Embankment Slope Failure	Eroded shoulder and constricted roadway width	Medium	
-do-	22	270+750	Cut Slope Failure	Loose subsurface soil; Debris flow from upstream Gullies in slope surface	High	Hornblend diorite

SUMMARY OF IDENTIFIED DISASTER SPOTS
PROVINCE OF BENGUET (5/13)

ROAD NAME	SPOT NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	TO ROAD	IMPACT REMARKS
Benguet-Ambuklao Road	23	271+150	Embankment Slope Failure	Erosion and concentration of surface water	Low	Hornblend diorite
-do-	24	271+150	Debris Flow	Poor subsurface condition; Debris flow from upstream	High	Hornblend diorite
-do-	25	272+450	Rock Fall/Debris Fall	Weathered rock composition; Relative earth movement; Debris fall	High	Granite
-do-	26	275+550	Debris Flow	Erosion due to insufficient drainage system; Debris flow from upstream	High	Fine-grained hornblend diorite
-do-	27	276+300	Permanent Bridge Washout	Collapsed superstructure; Accumulation of debris	High	Adonot Bridge was washed out by typhoon
-do-	28	279+250	Cut Slope Failure	Relative earth movement; Debris flow from upstream	Medium	End of section is Ambuklao Dam. Type of rock is fine-grained dio-

SUMMARY OF IDENTIFIED DISASTER SPOTS
PROVINCE OF BENGUET (6/13)

ROAD NAME	SPOT NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	IMPACT TO ROAD	REMARKS
Kapangan-Acop Road	29	280+750	Cut Slope Failure	Erosion caused by heavy rainfall; Gullies on slope surfaces	Low	Typical rock sample is diorite
-do-	30	280+650	Cut Slope Failure	Erosion caused by heavy rainfall; Weak subsurface condition	Low	
-do-	31	280+250	Cut Slope Failure	Soil type is clayey; Erosion due to heavy rainfall; Relative earth movement	Low	Typical rock sample is tuff
-do-	32	279+200	Cut Slope Failure	Erosion due to heavy rainfall; Weak subsurface soil	Low	
-do-	33	278+950	Rock Fall/Debris Fall	Weathered rock formation; Relative earth movement	Low	

SUMMARY OF IDENTIFIED DISASTER SPOTS
PROVINCE OF BENGUET (7/13)

ROAD NAME	SPOT NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	IMPACT TO ROAD	REMARKS
Kapangan-Acop Road	34	278+700	Cut Slope Failure	Erosion due to heavy rain-fall ; Weak subsurface soil	Low	
-do-	35	277+100	Cut Slope Failure	Erosion due to heavy rain-fall ; Weak subsurface soil	Low	
-do-	36	272+750	Cut Slope Failure	Weak subsurface soil ; Relative earth movement	Low	
-do-	37	270+900	Cut Slope Failure	Erosion due to heavy rain-fall ; Loose subsoil condition	Low	Rock sample is diorite
-do-	38	270+400	Embankment Slope Failure	Erosion due to heavy rain-fall ; Loose subsoil condition ; Damaged riprap	Low	
-do-	39	266+200	Debris Flow	Lack of drainage system ; Overflow of water into the roadway surface ; Debris Flow from upstream	Medium	End of road section is Acop Jct; Diorite

SUMMARY OF IDENTIFIED DISASTER SPOTS
PROVINCE OF BENGUET (8/13)

ROAD NAME	SPOT NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	IMPACT TO ROAD	REMARKS
Kibungan-Kapangan Road	40	310+900	Cut Slope Failure	Uncontained water & over-flow into roadway ; Boulders on slope surfaces ; Eroded shoulder	Low	Andesite
-do-	41	310+600	Cut Slope Failure	Relative earth movement ; Loose subsurface contact	Low	Andesite
-do-	42	310+450	Cut Slope Failure	Relative earth movement ; Loose subsurface contact ; Debris flow from upstream	Low	Andesite
-do-	43	310+250	Cut Slope Failure	Relative earth movement ; Loose subsurface contact	Medium	Andesite
-do-	44	309+400	Cut Slope Failure	Erosion due to rainfall ; Loose subsoil condition ; Gullies on slope surfaces	Low	Weathered Andesite

SUMMARY OF IDENTIFIED DISASTER SPOTS
PROVINCE OF BENGUET (9/13)

ROAD NAME	Spot NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	IMPACT TO ROAD	REMARKS
Kibungan-Kapangan Road	45	309+150	Cut Slope Failure	Erosion due to heavy rain-fall ; Loose subsoil condition	Medium	
-do-	46	309+050	Cut Slope Failure	Erosion due to heavy rain-fall ; Loose subsoil condition	Medium	Fine-grained Diorite/Aplite
-do-	47	307+000	Cut Slope Failure	Erosion due to heavy rain-fall ; Loose subsoil condition	Medium	Diorite
-do-	48	306+150	Cut Slope Failure	Erosion due to heavy rain-fall ; Loose subsurface contact	Medium	Andesite
-do-	49	305+400	Cut Slope Failure	Erosion due to heavy rain-fall ; Loose subsurface contact	Medium	
-do-	50	303+800	Embankment Slope Failure	Erosion ; Concentration of surface water	Low	

SUMMARY OF IDENTIFIED DISASTER SPOTS
PROVINCE OF BENGUET (10/13)

ROAD NAME	SPOT NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	IMPACT TO ROAD	REMARKS
Kibungan-Kapangan Road	51	300+900	Embankment Slope Failure	Erosion due to lack of drainage system; Constricted roadway width	Low	
-do-	52	291+650	Culvert Damage	Overflowing water; Clogged inlet of R. C. Box.; Crop boulders from up-stream	Low	
-do-	53	290+450	Debris Flow	Relative earth movement; Loose subsurface condition; Debris flow	High	
-do-	54	287+900	Embankment Slope Failure	Erosion; Lack of drainage system; Constricted roadway width	Low	
-do-	55	282+200	Permanent Bridge Approach Washout	Scouring of bridge abutment; Debris impact; Constricted bridge approaches	Medium	Lomon Bridge

SUMMARY OF IDENTIFIED DISASTER SPOTS
PROVINCE OF BENGUET (11/13)

ROAD NAME	SPOT NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	IMPACT TO ROAD	REMARKS
Atok Provincial Road	56	289+150	Cut slope Failure	Erosion due to heavy rain-fall; Loose subsurface condition; Gullies on slope surfaces	Low	Start of section; Ande-site
-do-	57	288+250	Cut slope Failure	Erosion due to heavy rain-fall; Loose subsurface contact	Low	
-do-	58	287+150	Embankment Slope Failure	Erosion; Concentration of running surface water; Crop boulders on embankment slope surface (down-stream)	Low	Type of rock sample is diorite
-do-	59	284+150	Cut Slope Failure	Relative earth movement; Loose subsurface condition	High	A detour was constructed
-do-	60	284+150	Culvert Damage	Clogging of culvert; Presence of debris	Low	

SUMMARY OF IDENTIFIED DISASTER SPOTS
PROVINCE OF BENGUET (12/13)

ROAD NAME	SPOT NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	IMPACT TO ROAD	REMARKS
Atok Provincial Road	61	283+450	Spillway Damage	Overflow of water over the roadway surface	Medium	
Benguet-Itogon Road	62	4+400	Debris Flow	Relative earth movement ; Loose subsurface condition	Medium	
Abatan-Mankayan-Cervantes Road	63	359+600	Permanent Bridge Approach Washout	Scoured bridge approach ; Overflowing water and debris	High	Cervantes is 7.0 km away
-do-	64	355+000	Culvert Damage	Clogged pipe culvert	Low	Type of rock is andesite
-do-	65	353+200	Cut Slope Failure	Erosion due to heavy rain-fall ; Loose subsurface soil	Low	

SUMMARY OF IDENTIFIED DISASTER SPOTS
PROVINCE OF BENGUET (13/13)

ROAD NAME	SPOT NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	IMPACT TO ROAD	REMARKS
Abatan-Mankayan-Cervantes Road	66	351+500	Cut Slope Failure	Erosion due to heavy rain-fall ; Loose subsurface soil ; Gullies on slope surface	Low	
-do-	67	350+200	Culvert Damage	Clogged pipe culvert ; deb-ris inside pipe	Low	
-do-	68	349+400	Culvert Damage	Clogged culvert ; Presence of earth	Low	1.0 km to Man-kayan proper
-do-	69	339+850	Cut Slope Failure	Erosion due to heavy rain-fall ; Loose subsurface condition	Low	Jct. Abatan
Kapangan-Acop Road	70	16+200	Debris Flow	Relative earth movement ; Loose subsurface condition	Medium	

SUMMARY OF IDENTIFIED DISASTER SPOTS
PROVINCE OF BATANGAS (1/13)

ROAD NAME	SPOT NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	IMPACT TO ROAD	REMARKS
Mahayahay Jct.- Tagaytay Bdry. Road	1	0+900	Embankment Slope Failure	Erosion due to loose soil; Small water run-off formed on road sur- face; Lack of drainage facilities	Low	Magon, Lemery
-do-	2	1+600	Embankment Slope Failure	Erosion due to loose soil; Concen- tration of water surface run-offs on roadway surface; Lack of drain- age facilities.	Medium	Dayapan, Lemery
-do-	3	5+400	Embankment Slope Failure	Shoulder scouring due to water concentration; Loose soils; Lack of drainage facilities.	High	Masalis, Lemery
-do-	4	6+400	Embankment Slope Failure	Shoulder scouring due to water concentration; Lack of drainage facilities; Poor construction method of riprapping.	Medium	Masalis, Lemery
Calaca-Taal Road	5	0+000	Permanent Bridge Other Damage	Scoured pier/ abutment; Exposed piles and scoured river bed due to strong current during heavy rains.	Low	Bagong Tubig Bridge (RCDG), Bagong Tubig,

SUMMARY OF IDENTIFIED DISASTER SPOTS
PROVINCE OF BATANGAS (2/13)

ROAD NAME	SPOT NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	IMPACT TO ROAD	REMARKS
Calaca-Taal Road	6	6+000	Permanent Bridge Other Damage	Exposed piles due to the scouring of pier; Scoured abutment and scoured river bed caused by downstream quarry near the sea.	Low	Sinisian Bridge (RCDG); Sinisian Lemery
-do-	7	7+400	Permanent Bridge Other Damage	Scoured pier and scoured river bed caused by downstream quarry near the sea.	Low	Caibangan Bridge (RCDG) Mataas na Bayan, Lemery
3. Mabini-Talaga-Malimatok Road	8	2+600	Seawall Damage	Collapsed Seawall; Scouring caused by the strong sea waves.	Low	Talaga, Mabini
-do-	9	2+800	Scour/Washout of Roadbed	Scoured shoulder on the left side caused by strong sea waves.	Low	Masaging, Mabini
-do-	10	4+100	Culvert Damage	Scoured spillway due to strong and fast velocity of water from the upstream.	Medium	Masaging, Mabini

SUMMARY OF IDENTIFIED DISASTER SPOTS
PROVINCE OF BATANGAS (3/13)

ROAD NAME	SPOT NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	IMPACT TO ROAD	REMARKS
Mabini-Talaga-Malimatok Road	11	4+900	Culvert Damage	Scoured spillway; Scoured grouted riprap caused by the rapid and strong current of water from the mountain.	Medium	Gasang, Mabini
Mabini-Anilao-San Teodoro Road	12	3+300	Rock Fall/Debris Fall	Surface failure; Fallen rocks; Impact to road: Low	Low	San Jose, Mabini Rock test-slightly weathered andesite
-do-	13	3+320	Rock Fall/Debris Fall	Surface failure; Fallen rocks; Fallen debris; Loose soils.	High	San Jose, Mabini
-do-	14	3+700	Flooded/Muddy Road Surface	Muddy roadway; Clogged and overflowing RCPC; Water runoff concentrated on road surface.	High	San Jose, Mabini
-do-	15	4+000	Culvert Damage	Clogged and silted cross drains; Muddy road due to insufficient drainage facilities.	Low	San Jose, Mabini

SUMMARY OF IDENTIFIED DISASTER SPOTS
PROVINCE OF BATANGAS (4/13)

ROAD NAME	SPOT NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	IMPACT TO ROAD	REMARKS
Mabini-Anilao-San Teodoro Road	16	4+200	Rock Fall/ Debris Fall	Surface failure; Rockfall; Debris Fall.	Medium	San Jose, Mabini Rock slightly weathered andesite
-do-	17	4+300	Cut slope Failure	Surface Failure; Forms gully; No side ditch.	Low	San Jose, Mabini
-do-	18	4+400	Embankment Slope Failure	Eroded shoulder; Clogged cross drainage facilities; Soft soil due to the concentration of surface water.	Low	San Jose, Mabini
-do-	19	4+600	Culvert Damage	Clogged and broken cross drainage; Scoured and muddy roadway; Scoured embankment.	Medium	San Jose, Mabini
-do-	20	4+650	Embankment Slope Failure	Eroded shoulder due to loose soil and seepage; Muddy roadway due to lack of drainage facilities.	Low	San Jose, Mabini
-do-	21	6+100	Culvert Damage	Scoured spillway caused by siltation; Eroded pavement due to strong current of water.	Medium	Solo, Mabini

SUMMARY OF IDENTIFIED DISASTER SPOTS
PROVINCE OF BATANGAS (5/13)

ROAD NAME	SPOT NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	IMPACT TO ROAD	REMARKS
Ibaan - Rosario Road	22	3+600	Permanent Bridge Other Damage	Collapsed retaining wall beside bridge approach.	Low	Matala Bridge (PCDG) Matala, Ibaan
San Juan-Laiya Road	23	0+400	Permanent Bridge Other Damage	Scoured abutment and scoured grouted riprap due to river meandering.	Low	Lawaye Bridge (PCDG) Mabaloy, San Juan
-do-	24	8+900	Permanent Bridge Other Damage	Scoured abutment; scoured grouted riprap.	Low	Calubcub Bridge (C.S.) Calubcub, San Juan
-do-	25	12+900	Culvert Damage	Damaged RCPC; Muddy road surface due to insufficient drainage facilities.	Low	Subuquin, San Juan
Mapolo-Lobo Road	26	0+100	Embankment Slope Failure	Embankment Erosion due to loose Soils.	Low	Mapolo, Taysan

SUMMARY OF IDENTIFIED DISASTER SPOTS
PROVINCE OF BATANGAS (6/13)

ROAD NAME	SPOT NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	IMPACT TO ROAD	REMARKS
Mapolo-Lobo Road	27	1+600	Embankment Slope Failure	Embankment Erosion; Sagged & Cracked Road Pavement due to loose soil foundation.	Medium	Dagatan, Taysan
-do-	28	3+000	Embankment Slope Failure	Embankment Erosion; Damaged road caused by slope failure and loose soil foundation.	Medium	Dagatan, Taysan
-do-	29	4+000	Cut Slope Failure	Slope failure due to unstable material and loose soil foundation.	Low	Dagatan, Taysan
-do-	30	8+600	Cut Slope Failure	Fallen debris on roadway surface.	Low	Bacao, Taysan
-do-	31	8+700	Culvert Damage	Exposed and broken RCPC ; Eroded pavement.	Low	Bacao, Taysan

SUMMARY OF IDENTIFIED DISASTER SPOTS
PROVINCE OF BATANGAS (7/13)

ROAD NAME	SPOT NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	IMPACT TO ROAD	REMARKS
Mapolo-Lobo Road	32	19+800	Permanent Bridge Other Damage	Scoured grouted riprap; Silted river bed of sand and gravel (3 meter high).	High	Lobo Bridge (C. S.) Lobo, Poblacion.
-do-	33	20+100	Permanent Bridge Approach wash-out	Washout Bridge Approach due to river meandering.	High	Lobo Bridge (going to Malabrigo); Lobo Poblacion
Tanauan-Banga Junction-Tagaytay Bdry. Road	34	10+400	Permanent Bridge Other Damage	Scoured abutment; Scoured grouted riprap.	Low	Ambulong Bridge I (ECDC) Ambulong, Tanauan
-do-	35	16+000	Permanent Bridge Other Damage	Scoured abutment; Scoured grouted riprap.	Low	Banga Bridge I (S-I B) Banga, Talisay
-do-	36	18+000	Cut Slope Failure	Slope Failure caused by unstable materials and loose soil foundation.	Low	Miranda, Talisay

SUMMARY OF IDENTIFIED DISASTER SPOTS
PROVINCE OF BATANGAS (8/13)

ROAD NAME	SPOT NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	IMPACT TO ROAD	REMARKS
Tanauan-Banga Junction-Tagaytay Boundary Road	37	19+500	Culvert Damage	Embankment Erosion and slope failure caused by the installation of big RPCPC pipe (2.2 m Ø) and loose soil foundation.	Low	Miranda, Talisay
-do-	38	19+600	Culvert Damage	Damaged RPCPC; Scoured embankment; Cracked grouted riprap caused by seepage.	Low	Miranda, Talisay
-do-	39	19+700	Embankment Slope Failure	Erosion caused by seepage; Embankment erosion; Cracked, sagged and unsupported one side pavement.	Medium	Miranda, Talisay
-do-	40	20+300	Embankment Slope Failure	Eroded shoulder caused by water runoff from top elevation; Loose soil.	Low	Batangas-Cavite Boundary
Banga Junction-Laurel Road	41	8+000	Rock Fall/Debris Fall	Fallen rocks; Fallen debris; Surface failure due to loose & unstable materials.	Low	Benirayan, Talisay

SUMMARY OF IDENTIFIED DISASTER SPOTS
PROVINCE OF BATANGAS (9/13)

ROAD NAME	SPOT NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	IMPACT TO ROAD	REMARKS
Banga Junction-Laurel Road	42	9+300	Culvert Damage	Embankment Erosion; Damaged RCPC; Cracked and Sagged pavement caused by seepage.	Medium	Benirayan, Talisay
-do-	43	9+700	Culvert Damage	Scoured RCBC Apron; Scoured Wing-wall; Scoured shoulder; Scoured river bed.	Low	Balaquilong, Laurel
-do-	44	11+700	Spillway Damage	Washout Spillway; Flooded and Muddy caused by the scouring of road by 1 meter and insufficient drainage facilities.	High	Balaquilong, Laurel
Agoncillo-Laurel-Ilicub Road	45	4+170	Scour/Washout of Roadbed	Scoured Embankment; Sagged, Cracked, Sagged and unsupported pavement (one lane).	Medium	Subic, Agoncillo

SUMMARY OF IDENTIFIED DISASTER SPOTS
PROVINCE OF BATANGAS (10/13)

ROAD NAME	SPOT NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	IMPACT TO ROAD	REMARKS
Agoncillo-Laurel - Ticub Road	46	4+200	Scour/Washout of Roadbed	Washout road caused by strong Taal Lake waves; Insufficient height of seawall; Impassable to traffic and pedestrians.	High	Subic, Agoncillo
-do-	47	18+200	Permanent Bridge Other Damage	Scoured Approach; Scoured Abut- ment; Scoured Pier; Exposed piles; Scoured river bed; River mean- dering.	Low	Bugaan Bridge (RCDG) Bugaan, Laurel
-do-	48	19+200	Permanent Bridge Other Damage	Scoured pier and exposed piles; Scoured river bed; Meandering River.	Low	Alasas Bridge (RCDG) Laurel Poblacion
Sta. Maria-Banoyo- San Luis	49	8+400	Flooded/ Muddy Road Surface	Eroded and muddy road caused by inadequate drainage facilities.	High	Boboy, San Luis
-do-	50	12+700	Temporary Bridge Other Damage	Scoured abutments; scoured piers and scoured grouted riprap caused by meandering of the river.	Low	Banoyo Bailey Bridge (BB) Banoyo, San Luis

SUMMARY OF IDENTIFIED DISASTER SPOTS
PROVINCE OF BATANGAS (11/13)

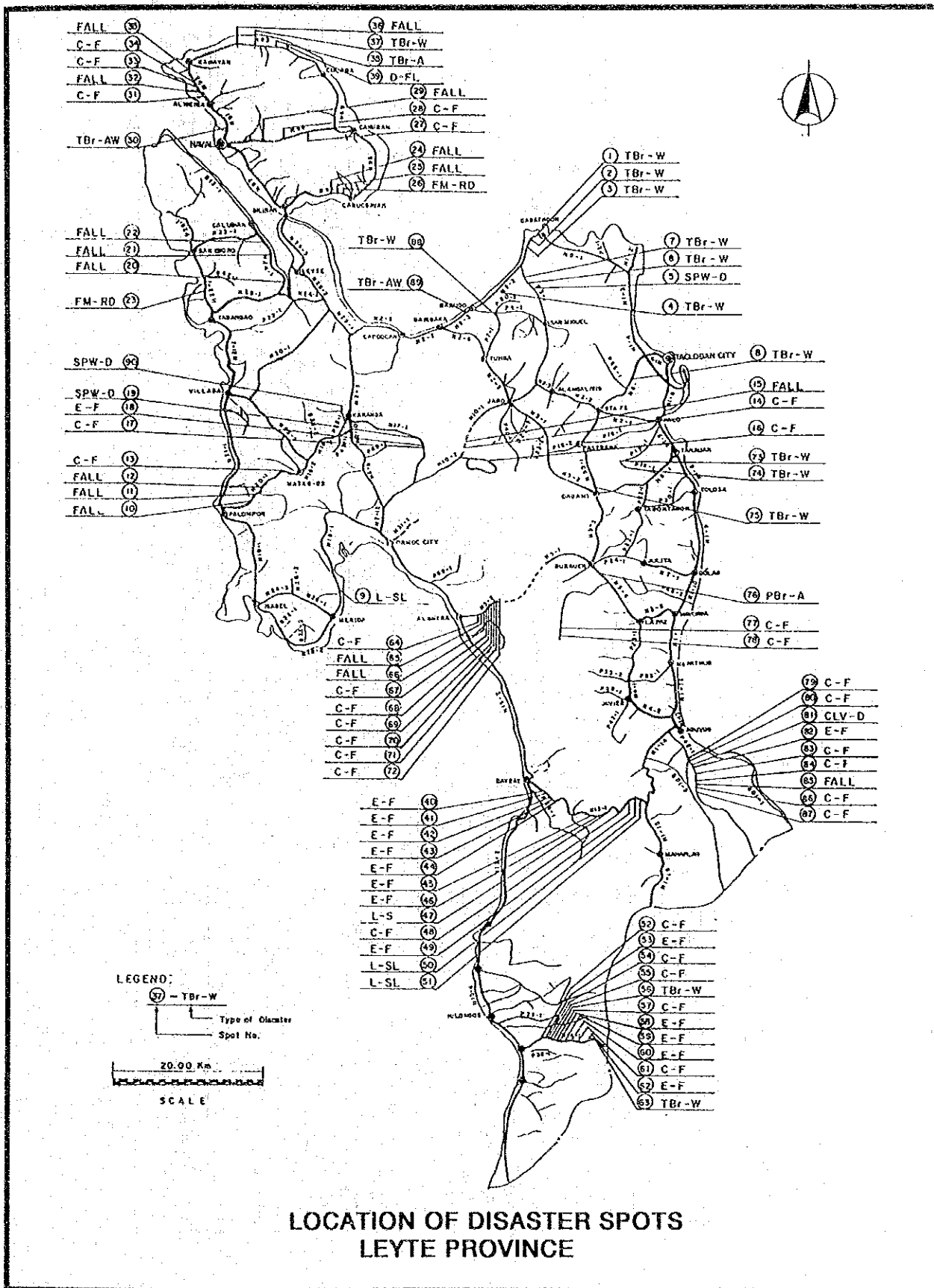
ROAD NAME	SPOT NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	IMPACT TO ROAD	REMARKS
Sta. Maria-Banoyo-San Luis Road	51	12+900	Seawall Damage	Collapsed Seawall caused by strong water waves.	Medium	Banoyo, San Luis
Tiquiwan-Pinagsibaan Junction Road	52	1+500	Flooded/Muddy Road Surface	Flooded and Muddy Roadway caused by small dimension of side ditch and higher ricefield elevation.	High	Tiquiwan, Rosario
-do-	53	2+150	Flooded/Muddy Road Surface	Flooded and Muddy Roadway caused by higher ricefield elevation.	High	Tiquiwan, Rosario
-do-	54	3+100	Flooded/Muddy Road Surface	Flooded and Muddy Roadway caused by higher ricefield elevation.	High	Baybayin, Rosario
-do-	55	3+800	Flooded/Muddy Road Surface	Flooded and Muddy Roadway caused by higher ricefield elevation.	High	Baybayin, Rosario

SUMMARY OF IDENTIFIED DISASTER SPOTS
PROVINCE OF BATANGAS (12/13)

ROAD NAME	SPOT NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	IMPACT TO ROAD	REMARKS
Tiquiwan-Pinagsibaan Jct. Road	56	4+000	Flooded/ Muddy Road Surface	Flooded and Muddy Roadway caused by higher ricefield elevation.	High	Baybayin, Rosario
-do-	57	6+250	Flooded/ Muddy Road Surface	Flooded and Muddy Roadway caused by higher ricefield elevation.	High	Mabato, Rosario
-do-	58	7+100	Flooded/ Muddy Road Surface	Flooded and Muddy Roadway caused by higher ricefield elevation.	High	Mabato, Rosario
-do-	59	7+200	Flooded/ Muddy Road Surface	Flooded and Muddy Roadway caused by higher ricefield elevation.	High	Mabato, Rosario
Pinagsibaan Jct. Salao Rd.	60	4+400	Flooded/ Muddy Road Surface	Flooded and Muddy Roadway caused by higher ricefield elevation.	High	Salao, Rosario
-do-	61	4+500	Flooded/ Muddy Road Surface	Flooded and Muddy Roadway caused by higher ricefield elevation.	High	Salao, Rosario

SUMMARY OF IDENTIFIED DISASTER SPOTS
 PROVINCE OF BATANGAS (13/13)

ROAD NAME	SPOT NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	IMPACT TO ROAD	REMARKS
Calitcalit-Jct. Pinagbayanan Road	62	2+500	Temporary Bridge Washout	Collapsed one abutment but temporarily replaced by big boulders; Scoured grouted riprap; Flooding of 0.60 meter above bridge level.	High	Poctol Bailey Bridge (B.B.) Poctol, San Juan
-do-	63	2+500	Spillway Damaga	Washout Spillway; Broken RCPC; Flooded and Wash-out roadway of more than 1 kilometer.	High	Pinagbayanan, San Juan
Sto. Tomas Jct. - San Bartolome Road	64	0+900	Flooded/ Muddy Road Surface	Flooding caused by low elevation of roadway.	Medium	San Bartolome, Sto. Tomas
Calatagan-Calumbuyan Road	65	6+150	Flooded/ Muddy Road Surface	Flooded Roadway; Low elevation of roadway; No drainage facilities.	High	Calatagan, Batangas
Lipa City-Balete-Mataas na Kahoy Road	66	12+700	Spillway Damage	Washout Spillway; Impassable to traffic; Flooded and scoured road by 1 meter caused by strong river current during typhoon and rainy days.	High	Balete, Batangas



SUMMARY OF IDENTIFIED DISASTER SPOTS
PROVINCE OF LEYTE (1/12)

ROAD NAME	SPOT NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	IMPACT TO ROAD	REMARKS
Babalingon-Barugo Road	1	0+500	Temporary Bridge Washout	Timber Bridge impassable to traffic	High	Babalingon Bridge
Babalingon-Barugo Road	2	0+800	Temporary Bridge Washout	Timber Bridge impassable to traffic	High	Magsaizad Bridge
Babalingon-Barugo Road	3	1+300	Temporary Bridge Washout	Timber Bridge impassable to traffic	High	Pitogo Bridge
Babalingon-Barugo Road	4	10+500	Temporary Bridge Washout	Timber Bridge impassable to traffic	High	Cobarasan Br.
San Miguel - Sta. Cruz Road	5	7+800	Spillway Damage	Scoured approach partially damaged slab	Medium	Heavily Scoured
San Miguel - Sta. Cruz Road	6	10+400	Temporary Bridge Washout	Timber Bridge impassable to traffic	High	Bagacay Bridge
San Miguel - Sta. Cruz Road	7	10+900	Temporary Bridge Washout	Timber Bridge impassable to traffic	High	Malakidang Bridge

SUMMARY OF IDENTIFIED DISASTER SPOTS
PROVINCE OF LEYTE (2/12)

ROAD NAME	SPOT NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	IMPACT TO ROAD	REMARKS
Sta. Fe - Tigbao Rd.	8	4+700	Temporary Bridge Washout	Timber Bridge impassable to traffic	High	San Isidro Bridge
Ormoc - Merida Rd.	9	20+400	Landslide	Settlement of Road	High	Brgy. Kinayabang
Palompon-Matagob Kananga Rd.	10	5+900	Rock Fall/Debris Fall	Unstable Cut Surface	Low	
Palompon-Matagob Kananga Rd.	11	7+000	Rock Fall/Debris Fall	Unstable Cut Surface	Low	
Palompon-Matagob Kananga Rd.	12	10+400	Rock Fall/Debris Fall	Surface Failure	Low	
Palompon-Matagob Kananga Rd.	13	14+200	Cut Slope Failure	Surface Failure	Low	Brgy. Sta. Rosa
Ormoc-Jaro-Daro Rd.	14	15+100	Cut Slope Failure	Surface Failure	Low	Brgy. Pangub
Ormoc-Jaro-Daro Rd.	15	15+700	Rock Fall/Debris Fall	Cut Slope Failure	Low	Brgy. Pangub
Lake Danao Circum. Rd. (start Jct.)	16	4+300	Cut Slope Failure	Unpassable	Medium	Lake Danao Circum. Rd.

SUMMARY OF IDENTIFIED DISASTER SPOTS
PROVINCE OF LEYTE (3/12)

ROAD NAME	SPOT NO.	Km.	TYPE OF DAMAGE	DESCRIPTION	IMPACT TO ROAD	REMARKS
Jct. Milagros - Kananga Rd.	17	5+000	Cut Slope Failure	Surface Failure	Low	After PNOC Office
Jct. Milagros - Kananga Rd.	18	5+100	Embankment Slope Failure	Shoulder failure caused by penetration of drainage water	Low	After PNOC Office
Jct. Milagros - Kananga Rd.	19	6+900	Spillway Damage	Washout approach impassable to traffic	High	Brgy. Tungonan
Gimorce-Calubian Rd.	20	4+500	Rock Fall/Debris Fall	Rock size 1-2 m.	Low	Brgy. Palid
Gimorce-Calubian Rd.	21	10+300	Rock Fall/Debris Fall	Steep slope with overhang	Low	Brgy. Toktok
Gimorce-Calubian Rd.	22	14+500	Rock Fall/Debris Fall	Rock size 30-50 m. steep slope	Low	Brgy. Burabod
Tabango - San Isidro Road	23	5+400	Flooded/Muddy Road Surface	Muddy road caused by insufficient drainage. Impassable to light vehicles	High	Brgy. Tabang