1.2.4 Road Network and Related Structures

Four lines of the national roads in the project area are all the first class road and their width and surfacing materials and types are as follows.

Surface Conditions of National Road

Name of Road	Surfacing Width, m	Surfacing Material or Type
Manila North Road	6.00 - 6.70	Concrete or Pre-mix light asphalt
San Fernando-Bataan Boundary Road	6.00 - 6.70	Concrete
Angeles-Bataan Road	6.00 - 6.10	Concrete, hard Gravel or Pre-mix intermediate type
Olongapo-Gapan Road	7.00 - 7.30	Concrete

The related structures on the national roads are as shown in TABLE I-42, and, out of them, some structures were constructed during the Spanish era but have been reconstructed and most of all the cross drains were replaced with the larger capacity structures especially on the San Fernando-Bataan Boundary Road (San Fernand-Guagua).

Among the provincial roads, the Guagua-Sta. Rita-Porac Road is the provincial first class road having concrete surface in the whole line, and about a half of the Bacolor-Sta, Rita Road is concrete surfaced provincial first class road but the rest is the provincial third class road, and halves of the Bacolor-Porac Road and Bacolor-Angeles road are also concrete surfaced first class roads but the rest is still the provincial second or third class road of gravel or dust road surface. Accordingly, coupled with the inadequate drainage system, the road surface has been washed away extensively in every rainy season and the breach of road due to the flood flow of the Pasig-potrero river was the habitual damage.

TABLE I-1 RATES OF POPULATION GROWTH: 1903-1975

Year	Population	Annual Rate of Growth
1903	7,635,426	-
1918	10,314,310	2.03
1939	16,000,303	2.11
1948	19,234,182	2.07
1960	27,087,685	2.89
1970	36,684,486	3.08
1975/1	41,831,045	2.66

Source: National Census and Statistics Office, Population Studies Division.

/1 : Preliminary results.

TABLE I-2 PROJECTED POPULATION OF THE PHILIPPINES, BY FIVE-YEAR INTERVAL, BY REGION AND PROVINCE: 1970-2000
(High Assumption)

Region	1970 (May 6)	July 1st					
		1975	1980	1985	1990	1995	2000
PHILIPPINES	36,684,486	42,803,342	50,348,937	59,650,257	70,520,898	82,957,487	97,256,806
I. Ilocos	2,990,561	3,329,906	3,714,443	4,231,694	4,795,930	5,476,984	6,222,051
II. Cagayan Valley	1,691,459	1,946,500	2,259,991	2,660,907	3,131,307	3,652,887	4,255,573
III. Central Luzon	3,713,952	4,428,828	5,300,900	6,333,244	7,540,305	8,850,651	10,348,886
IV. Southern Tagalog ..	8,325,247	10,088,408	12,341,044	14,795,422	17,732,808	20,736,155	24,193,642
Sub-region IV-A ...	4,175,477	5,238,188	6,635,685	8,079,763	9,837,208	11,602,212	13,647,312
Sub-region IV-B ...	4,149,770	4,850,220	5,705,359	6,715,659	7,895,600	9,133,943	10,546,330
V. Bicol	2,966,881	3,271,550	3,624,936	4,149,940	4,735,537	5,485,105	6,325,161
VI. Western Visayas ...	3,618,326	3,922,613	4,259,033	4,806,927	5,392,641	6,165,607	7,008,029
VII. Central Visayas ...	3,032,719	3,394,477	3,800,813	4,387,837	4,987,597	5,786,597	6,674,147
VIII. Eastern Visayas ...	2,381,409	2,541,628	2,753,820	3,071,996	3,424,181	3,869,280	4,365,351
IX. Western Mindanao ..	1,869,014	2,251,448	2,713,120	3,304,082	3,998,686	4,833,858	5,810,550
X. Northern Mindanao .	1,952,735	2,470,581	3,065,431	3,815,923	4,736,221	5,795,624	7,063,562
XI. Southern Mindanao .	2,200,726	2,834,590	3,655,215	4,594,608	5,743,490	7,057,901	8,625,912
XII. Central Mindanao ..	1,941,457	2,352,663	2,860,191	3,517,677	4,302,195	5,246,464	6,363,942

Source: National Census and Statistics Office, Population Studies Division.

TABLE I-3 GROSS NATIONAL PRODUCT, NATIONAL INCOME AND NET DOMESTIC PRODUCT BY INDUSTRIAL ORIGIN, FY 1927-77

(At constant 1972 prices)

	Value in millions of Pesos						Per cent. Increase (Decrease)				
	1972	1973	1974	1975 r/	1976 p/	1977 a/	1972-73	1973-74	1974-75	1975-76	1976-77
Agriculture, fishery & forestry	14,967	15,745	15,876	16,943	18,283	19,171	5.2	0.8	6.7	7.9	4.9
Mining and quarrying	1,015	1,057	1,038	1,053	1,123	1,256	4.1	(1.8)	1.4	6.6	11.8
Manufacturing	8,838	10,144	10,532	10,662	11,368	12,210	14.8	3.8	1.2	6.6	7.4
Construction	1,934	2,084	2,195	3,076	4,151	4,388	7.8	5.3	40.1	34.9	5.7
Transportation, communication storage and utilities	2,057	2,215	2,356	2,520	2,935	3,106	7.6	6.4	7.0	16.5	5.8
Commerce	10,627	11,211	11,713	12,309	13,196	13,638	5.5	4.5	5.1	7.2	3.3
Services	6,902	7,458	7,953	8,362	8,729	9,309	8.1	6.6	5.1	4.4	6.6
Net domestic product at factor cost	46,340	49,914	51,663	54,925	59,785	63,078	7.7	3.5	6.3	8.8	5.5
Net factor income from abroad	(549)	(50)	600	169	(244)	(81)	(90.8)	1,300.0	(71.8)	(244.4)	(66.8)
Net National product or national income	45,791	49,864	52,263	55,094	59,541	62,997	8.9	4.8	5.4	8.1	5.8
Indirect taxes net of subsidies	4,382	5,482	6,627	7,143	6,784	7,168	25.1	20.9	7.8	(5.0)	5.7
Capital consumption allowance	5,353	5,535	5,849	6,324	6,847	7,463	3.4	5.7	8.0	8.3	9.0
Gross National Product	55,526	60,881	64,739	68,561	73,172	77,628	9.6	6.3	5.9	6.7	6.1

r/ Revised
p/ Preliminary
a/ Advance estimates as of 26 December 1977
1972-1973 Revised link series as of 23 December 1976

Source: National Economic and Development Authority

TABLE I-4. EMPLOYED PERSONS BY MAJOR INDUSTRY GROUP: 1963-1975

(In thousand)

Sex and Year	Total	Agriculture forestry, hunting and fishing	Mining & quarrying	Manufacturing	Construction	Electricity, gas & sanitary services	Commerce	Transport storage & communication	Government community business recreational services	Domestic services	Personal services other than domestic	Industry not reported
		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
May												
Both Sexes												
1963	10,315	6,131	32	1,259	324	33	1,076	355	516	353	215	20
1964	10,572	6,188	36	1,245	346	18	1,196	331	569	390	239	14
1965	10,543	6,052	28	1,221	299	22	1,120	367	700	475	251	a
1966	11,032	6,275	28	1,331	323	25	1,197	387	727	482	203	53
1967	12,185	6,993	52	1,389	347	33	1,352	385	806	562	245	20
1968	12,481	7,202	46	1,387	378	27	1,379	380	851	507	268	58
1969	11,235	6,325	51	1,291	349	29	1,109	383	884	527	245	40
1970 Census ...	11,355	b	b	b	b	b	b	b	b	b	b	b
1971	12,584	6,440	56	1,472	467	58	1,531	518	1,132	611	270	29
1972	13,217	7,166	58	1,467	456	40	1,674	479	1,059	562	237	20
1973	13,262	7,016	62	1,418	522	37	1,660	505	1,087	670	255	29
1974	14,479	8,245	44	1,508	403	44	1,613	518	1,132	651	302	19
1975 August ..	14,517	7,768	54	1,651	456	46	1,623	492	1,335	782	272	39

Source: National Census and Statistics Office, Households Survey Division.

TABLE I-5 GROSS VALUE ADDED IN AGRICULTURE, FISHERY AND FORESTRY BY SUBSECTOR IN CURRENT PRICES

(In billion pesos)

	1967	1968	1969	1970	1971	1972	1973	1974[f]	1975[r]	1976[p]
Agricultural crops										
Paddy	1.6	1.7	1.7	1.9	2.6	2.7	3.8	4.7	5.6	6.3
Corn	0.3	0.4	0.4	0.6	0.8	1.0	1.2	1.8	2.0	2.3
Coconut, including copra	0.7	0.8	0.7	1.0	1.2	1.2	2.2	3.0	2.8	3.5
Sugarcane	0.4	0.4	0.5	0.7	1.1	1.1	1.2	2.0	2.6	2.8
Banana	0.1	0.3	0.5	0.7	0.7	0.6	0.7	1.0	1.9	2.2
Other crops	0.7	0.9	1.1	1.5	1.7	2.3	3.2	4.3	5.6	7.2
Total crops	3.7	4.4	4.9	6.5	8.1	8.9	12.4	16.8	20.6	24.3
Livestock	1.1	1.2	1.3	1.3	1.6	1.8	2.2	3.2	2.7	2.9
Poultry	0.4	0.4	0.5	0.4	0.7	0.7	0.8	1.1	1.3	1.5
Fishery	1.0	1.5	1.6	1.9	2.5	2.7	3.1	5.1	5.6	6.5
Forestry	1.3	1.5	1.7	1.6	1.9	2.0	2.6	3.3	2.8	3.3
Gross value added in agriculture, fishery and forestry	7.5	8.0	10.1	11.8	14.8	16.0	12.1	29.4	33.0	38.5

f: final
r: revised
p: preliminary

Note: Totals may not add up due to rounding.

Source: National Accounts Staff, NEDA, estimates as of May 1977.

TABLE I-6 COCONUTS: AREA, PRODUCTION, YIELD AND DISPOSITION

(Thousand metric tons)

Calendar Year	Area		Copra production	Yield of harvested area /d	Exports /a				Domestic disappearance /b		
	Planted	Harvested /c			Copra	Coconut oil	Desiccated coconut	Total	Coconut oil	Other	Total
	(thousand ha)		('000 mt)	(mt/ha)	('000 mt in copra equivalents) /e						
1970	1,884	1,434	1,356	0.95	423	539	74	1,036	269	51	320
1971	2,048	1,590	1,756	1.10	711	654	91	1,456	262	38	300
1972	2,126	1,791	2,174	1.21	968	575	95	1,820	313	41	354
1973	2,133	1,633	1,871	1.15	728	691	95	1,514	319	38	357
1974	2,206	1,750	1,424	0.81	309	699	77	1,085	296	43	339
1975	2,283	1,828	2,217	1.21	833	954	80	1,867	306	44	350
1976 /f	2,521	1,985	2,742	1.38	867	1,373	95	2,338	354	50	404

/a These export data are form the United Coconut Association of the Philippines (UCAP) and are based on information provided by its members; the export data used for the balance of payments table are provided by the Central Bank and are based on customs reports.

/b Domestic disappearance is calculated as a residual - i.e., total production minus exports - and is equal to consumption plus stock change.

/c The harvested are has been computed by dividing the number of bearing trees (as reported by UCAP by 150, which is the approximate planting density per hectare.

/d Yield is calculated from copra production and harvested area.

/e The conversion factors used in the Philippines are as follows: coconut oil, 62 % of copra equivalents and desiccated coconut, 83 %.

/f Preliminary.

Source: United Coconut Association of the Philippines.

TABLE I-7 SUGAR: AREA, YIELD, EXTRACTION RATE, PRODUCTION AND EXPORTS

Crop Year /a	Area Planted ('000 ha)	Yield (t/ha)		Extraction Rate /b (%)	Sugar production ('000 t)	Exports /c		
		Cane	Sugar			US	World Free Market ('000 t)	Total
1970	377	56.9	5.1	9.0	1,927	1,178	-	1,178
1971	473	49.2	4.3	8.8	2,056	1,444	-	1,444
1972	420	46.3	4.3	9.3	1,816	1,299	-	1,299
1973	435	52.1	5.2	9.9	2,245	1,295	64	1,359
1974	468	55.7	5.2	9.4	2,446	1,309	278	1,587
1975	514	52.2	4.7	9.7	2,394	420	645	1,065
1976	530	55.9	5.2	9.8	2,875	961	505	1,466

/a The crop year for sugar begins September 1 and ends August 31.

/b The extraction rate used is the ratio of sugar to sugarcane.

/c Export data is provided by the Sugar Quota Administration and is by crop year. The export data used for the balance of payments tables are for calendar years as reported by the customs department.

Source: Philippine Sugar Institute.

TABLE I-8 RICE PRODUCTION AND CONSUMPTION

(Thousand metric tons)

Crop Year/a	Paddy Production	Paddy to be Milled/b	Milled Rice Output/c	Net Imports	Domestic Consumption/d	Change in Commercial Stock /e	Per Capita Consumption (Kg)
Actual							
1965	3,992	3,848	2,374	482	2,802	54	89.5
1966	4,073	3,926	2,423	327	2,767	-17	85.8
1967	4,094	3,947	2,435	215	2,575	-75	76.0
1968	4,561	4,397	2,713	119	2,596	236	75.9
1969	4,445	4,285	2,644	...	2,704	-87	76.6
1970	5,233	5,045	3,113	...	3,227	-115	87.7
1971	5,343	5,151	3,178	18	3,272	-76	86.4
1972	5,100	4,916	3,033	620	3,660	-7	93.9
1973	4,415	4,256	2,626	239	2,839	26	70.8
1974	5,594	5,393	3,327	317	3,527	117	85.4
1975/f	5,660	5,456	3,366	168	3,606	-72	84.3
1976/f	6,432	6,200	3,825	55	3,680	200	85.0

/a Crop year begins on July 1 and ends June 30.

/b Assumed to be 96.4 % of production due to seed requirements and post-harvest losses.

/c Milling rate assumed to be 61.7 %.

/d Includes changes in household stocks. Calculated as residual from changes in stocks and production except for 1976 when consumption estimated from assumed per capita consumption figure.

/e Changes in stocks held for sale on commercial market, except for 1976 (see footnote d).

/f Bank estimate.

Source: National Grains Authority.

TABLE I-9 DOMESTIC PRODUCTION AND IMPORTS OF CEREALS

Calendar Year	Milled rice			Shelled corn			Wheat
	Domestic Production '000 t	Net Imports	Import Dependence %	Domestic Production '000 t	Net Imports	Import Dependence %	Net Imports '000 ton
1965	2,690	569	17.5	1,346	6	...	505
1966	2,747	108	3.8	1,407	2	....	495
1967	2,844	237	7.7	1,481	50	3.3	476
1968	3,289	-41	1.3	1,537	3	...	525
1969	3,264	...	...	1,870	29	1.5	505
1970	3,582	...	...	2,007	...	...	449
1971	3,496	370	9.6	2,002	83	4.0	485
1972	3,149	451	12.5	1,920	168	8.0	490
1973	2,870	310	9.7	1,830	100	5.2	504
1974	3,412	168	4.9	2,081	100	4.8	471
1975	3,453	152	4.4	2,335	121	5.2	450
1976	3,923	55	1.4	2,681	96	3.6	660

Source: National Grains Authority.

TABLE I-10 EXPORTS BY SELECTED COMMODITY GROUP
1970 - 1976
(Value in million U.S. dollars)

Commodity	1970	1971	1972	1973	1974	1975	1976	Jan.-Nov. 1977
COCONUT PRODUCTS	209	254	228	372	609	467	542	678
Copra	80	114	110	166	140	172	150	179
Coconut oil	96	103	84	151	381	230	299	366
Desiccated coconut	19	21	18	32	60	30	37	83
Copra meal/cake	14	16	16	23	28	33	54	48
Others	-	-	-	-	-	2	2	2
SUGAR & PRODUCT	196	220	218	294	766	617	456	503
Centrifugal & refined	188	212	211	275	737	581	429	481
Molasses	8	8	6	18	28	34	24	20
Others	-	-	1	1	1	2	3	2
FOREST PRODUCTS 1/	295	265	230	443	332	252	309	262
Logs	237	215	164	304	216	167	135	111
Lumber	13	11	10	35	30	27	68	61
Plywood	20	24	34	58	26	21	43	34
Others	25	15	22	46	60	37	63	56
MINERAL PRODUCTS	224	214	238	424	519	362	431	453
Copper Concentrates	185	185	191	275	393	212	266	239
Gold 2/	-	8	27	103	74	76	65	63
Nickel	-	-	-	-	1	30	60	66
Iron concentrates	10	7	8	17	12	12	7	-
Chromite ore	6	6	5	9	12	13	15	24
Nickel sulphite	-	-	-	-	-	-	-	
Cobalt sulphite	-	-	-	-	-	-	-	
Others	23	8	7	20	26	19	18	63
FRUITS & VEGETABLES	34	42	52	57	91	124	142	149
Pineapple, canned	21	20	20	20	31	35	47	53
Pineapple juice	1	1	1	1	1	3	1	3
Pineapple concentrates	3	2	2	2	3	3	4	5
Bananas	4	15	24	28	45	73	76	68
Others	6	4	5	6	11	10	14	20
ABACA & PRODUCTS	17	15	16	23	45	22	28	26
Unmanufactured	15	13	13	19	37	15	19	16
Abaca rope	2	2	3	4	8	7	9	10
TABACCO & PRODUCTS	14	15	18	27	30	35	28	28
Raw	13	14	17	26	30	34	27	27
Cigar & others	1	1	1	1	-	1	1	1
Marine products	2	6	9	20	18	17	27	39
Mineral fuels & lubricants	17	24	19	16	17	37	23	35
Other Manufactures	11	21	21	63	86	102	144	186
Clothing	11	1	2	11	24	33	81	101
Textile yarns/fabrics	5	7	9	24	20	22	19	22
Cement	2	7	4	17	27	26	18	18
Chemicals	3	6	6	10	15	21	26	45
Miscellaneous Manufactures & Others	38	52	53	146	209	257	441	456
Re-Exports	5	8	4	1	3	2	3	13
TOTAL	1,062	1,136	1,106	1,886	2,725	2,294	2,574	2,828

Source: Central Bank

TABLE I-11 EXPORTS BY SELECTED COMMODITY GROUP
1970 - 1976
(Volume in thousand metric tons)

Commodity	1970	1971	1972	1973	1974	1975	1976	Jan.-Nov. 1977
COCONUT PRODUCTS								
Copra	445	692	926	734	268	761	823	563
Coconut oil	339	397	466	427	416	614	862	670
Desiccated coconut	67	73	76	78	64	66	81	90
Copra meal/cake	231	288	352	263	271	303	498	360
SUGAR & PRODUCT								
Centrifugal & refined	1,228	1,345	1,224	1,474	1,542	972	1,446	2,293
Molasses	481	478	336	606	655	674	793	526
FOREST PRODUCT 1/								
Logs	9,261	8,440	7,126	7,763	4,701	4,595	2,331	1,683
Lumber	219	158	182	427	283	255	493	413
Plywood	203	311	434	533	163	158	262	191
MINERAL PRODUCTS								
Copper concentrates	632	815	823	764	830	699	942	891
Gold 2/	-	203	501	536	541	491	535	459
Nickel	-	-	-	-	2	6	12	14
Iron concentrates	1,182	1,130	1,175	1,830	1,118	1,285	836	-
Chromite ore	333	297	281	478	532	407	295	390
FRUITS & VEGETABLES								
Pineapple, canned	100	100	108	91	125	116	138	147
Pineapple juice	14	9	10	11	13	18	8	22
Pineapple concentrates	10	7	8	10	10	11	14	14
Bananas	82	268	422	466	663	823	696	649
ABACA & PRODUCTS								
Unmanufactured	55	49	49	54	43	27	41	35
TOBACCO & PRODUCTS								
Raw	38	43	50	34	34	38	28	25

1/ In thousand cubic meter

2/ In thousand troy ounces.

Source: Central Bank

TABLE I-12 F.O.B. VALUE OF IMPORTS OF SELECTED COMMODITIES
1970 - 1976
(Million U.S. Dollars)

	Commodity Group	1970	1971	1972	1973	1974	1975	1976	1977*
I.	CAPITAL GOODS	414	456	434	491	825	1,149	1,216	970
	Non-electrical machinery	235	255	240	296	424	655	625	521
	Electrical machinery	59	66	54	71	105	157	187	127
	Transport equipment	78	95	97	90	162	223	171	190
	Aircraft, ships & boats	28	27	27	12	104	78	106	82
	Professional scientific and controlling instruments	14	13	16	22	30	36	37	50
II.	RAW MATERIALS & INTERMEDIATE GOODS	452	440	471	724	1,343	1,166	1,272	1,329
	Wheat	26	27	34	50	79	95	113	67
	Crude materials, inedible	60	67	71	90	145	128	133	172
	Cotton	19	20	19	30	35	36	37	30
	Synthetic & Artificial Fibers	21	29	27	29	53	41	43	51
	Others	20	18	25	31	57	51	53	91
	Animal & vegetable oils and fats	5	6	4	7	12	7	7	11
	Chemical	125	144	148	218	491	380	352	396
	Chemical compound	36	39	44	66	151	108	132	148
	Medical & pharm. chem.	16	18	16	21	36	34	39	40
	Urea	/1	/1	4	10	65	46	10	25
	Fertilizer excl. urea	9	14	12	15	84	43	11	11
	Others	64	73	72	106	155	149	160	172
	Manufactures	236	196	214	306	530	457	461	501
	Paper & paper products	29	34	35	34	56	31	29	34
	Textile yarn, fabrics and made-up articles	24	24	25	47	69	66	50	73
	Iron and steel	114	65	87	115	229	176	194	214
	Metal products	22	26	23	47	60	93	81	66
	Others	47	47	44	63	116	91	107	114
	Embroideries	-	-	-	45	62	58	115	88
	Materials and accessories for the manufacture of electrical equipment	-	-	-	8	24	41	91	95
III.	MINERAL FUELS & LUBRICANTS	119	141	149	188	653	770	890	892
	Coal, coke and briquettes	1	1	1	1	2	2	2	8
	Petroleum crude	103	127	134	166	573	710	801	770
	Others	15	13	14	21	78	58	87	114
IV.	CONSUMER GOODS	105	149	176	194	322	374	345	355
	Food and food preparations	78	120	141	153	231	227	185	202
	Dairly products	32	39	46	45	75	62	55	66
	Fish & fish preparations	17	21	20	20	32	33	30	21
	Rice	-	28	34	45	39	37	12	4
	Corn	-	3	5	7	16	16	12	13
	Others	29	29	36	36	69	79	76	98
	Beverages & tobacco	8	6	8	10	17	23	35	43
	Miscellaneous excl. professional scientific & controlling instruments	14	18	18	23	31	39	44	39
	Miscellaneous, n.e.s.	5	5	9	8	43	85	81	71
	Live animals not for food	-	1	1	-	-	1	1	-
	Articles temporarily imported or exported	1	-	-	-	30	67	58	52
	Others	4	4	8	8	13	17	22	19
	TOTAL IMPORTS	1,090	1,186	1,230	1,597	3,143	3,459	3,633	3,546

/1 Importation less than a million * January - November
Source: Central Bank

TABLE I-13 VOLUME OF IMPORT OF SELECTED COMMODITIES
1970 - 1976
(In thousand metric tons)

Commodity Group	1970	1971	1972	1973	1974	1975	1976	1977
I. CAPITAL GOODS								
Non-electrical machinery								
Electrical machinery								
Transport equipment								
Aircraft, ships & boats								
Professional scientific and controlling instruments								
II. RAW MATERIALS & INTERMEDIATE GOODS								
Wheat	424	440	588	504	478	518	704	555
Crude materials, inedible								
Cotton	38	34	27	43	29	29	31	20
Synthetic & Artificial Fibers	29	41	36	31	35	33	37	43
Others								
Animal & vegetable oils and fats								
Chemical								
Chemical compound								
Medicinal & pharm. chem.								
Urea	6	9	60	104	286	134	90	225
Fertilizer excl. urea	194	273	259	255	718	241	166	139
Others								
Manufactures								
Paper & paper products	153	184	160	95	105	54	49	61
Textile yarn, fabrics and made-up articles								
Iron and steel	922	530	751	655	932	628	898	977
Metal products								
Others								
Embroideries								
Materials and accessories for the manufacture of electrical equipment								
III. MINERAL FUELS & LUBRICANTS /1								
Coal, coke and briquettes								
Petroleum crude	66.7	66.7	64.9	67.1	61.7	66.5	69.6	62.4
Others	1.5	1.6	1.5	2.0	6.4	4.3	7.6	10.4
IV. CONSUMER GOODS								
Food and food preparations								
Dairy products	107	95	82	67	78	60	83	95
Fish & fish preparations	68	75	69	40	47	58	45	25
Rice		331	387	336	168	135	55	26
Corn		39	93	80	110	121	96	123
Others								
Beverages & tobacco								
Miscellaneous excl. professional scientific & controlling instruments								
Miscellaneous, n.e.s.								
Live animals not for food								
Articles temporarily imported or exported								
Others								
TOTAL IMPORTS								

/1 Volume in million barrels

Source: Central Bank

TABLE I-14 BALANCE OF PAYMENTS

1970 - 1976
(In million U.S. dollars)

Item	1970	1971	1972	1973	1974	1975	1976	WHOLE YEAR 1977
I. Current Transactions								
A. Merchandise Trade	-7	-38	-122	275	-449	-1,196	-1,117	-1,023
Exports	1,083	1,148	1,108	1,871	2,694	2,263	2,517	2,877/1
Imports	1,090	1,186	1,230	1,596	3,143	3,459	3,634	3,900/1
B. Non-Merchandise Trade	-142	-87	-55	-	-34	-45	-259	-134
Inflow	258	265	347	639	834	907	871	1,079
Outflow	400	352	402	639	868	952	1,130	1,213
C. Transfers (Donations, etc.)	119	134	188	246	276	318	269	258
Inflow	124	144	198	256	284	329	280	272
Outflow	5	10	10	10	8	11	11	14
Current Net Inflow, Total	-30	9	11	521	-207	-923	-1,107	-899
II. Non-Monetary Capital								
D. Long-Term Loans	133	35	140	71	145	357	1,040	719
Inflow	401	285	372	380	456	677	1,407	1,169
Outflow	268	250	232	309	311	320	367	450
E. Direct Investments (Net)	-28	-4	-22	64	28	125	144	145
Inflow	7	5	4	119	92	152	185	170
Outflow	35	9	26	55	64	27	41	25
F. Short-Term Capital	76	92	56	74	231	102	-96	294
Inflow	280	453	579	657	1,138	1,283	1,381	1,797
Outflow	204	361	523	583	907	1,181	1,477	1,503
Errors & Omissions	-147	-143	-107	-66	-87	-182	-142	-89
Non-Monetary Capital, Total	34	-20	67	143	317	402	946	1,069
Allocation of SDRs	19	17	16	-	-	-	-	-
III. Overall Surplus (Deficit)	23	6	94	664	110	-521	-161	170

/1 January - November actual, December estimated.

TABLE I-15 INTERNATIONAL RESERVES OF THE CENTRAL BANK AND FOREIGN EXCHANGE HOLDINGS OF COMMERCIAL BANKS

(In Million U.S. Dollars)

End of Period	TOTAL	INTERNATIONAL RESERVES OF THE CENTRAL BANK	FOREIGN EXCHANGE HOLDINGS OF COMMERCIAL BANKS		
			NET	ASSETS	LIABILITIES
1973 /1					
January	327.31	588.60	(261.29)	156.40	417.69
December	875.96	1,037.05	(161.09)	378.58	539.67
1974					
January	921.30	1,072.57	(151.27)	352.91	504.18
December	1,165.48	1,502.51	(337.03)	475.44	812.47
1975					
January	1,250.79	1,605.02	(354.23)	487.27	841.50
December	1,089.14	1,360.65	(271.51)	718.52	990.03
1976					
January	1,086.06	1,457.10	(371.04)	605.03	976.07
December	1,123.91	1,641.68	(517.77)	563.73	1,081.50
1977 /2					
January	1,542.29	(568.02)	494.28	1,062.30	
February	1,371.47	(611.32)	459.57	1,070.89	
March	1,393.01	(516.18)	572.16	1,088.34	
April	1,466.53	(597.08)	535.35	1,132.43	
May	1,430.46	(579.28)	557.79	1,137.07	
June	1,533.98	(585.67)	563.57	1,149.24	
July	1,538.00	(566.42)	571.54	1,137.96	
August	1,534.46	(605.06)	547.55	1,152.61	
September	1,515.44	(624.87)	616.98	1,241.85	
October	1,537.57	(689.86)	626.96	1,316.82	
November	1,521.75	(660.19) p/	667.13	1,327.32	
December	1,525.09	(674.55) p/	739.22	1,413.77	

/1 Revised as of November 22, 1966 to include deferred payments liabilities previously unreported by commercial banks. These revisions supersede those previously made on end of 1964 data. Revisions for years prior to 1964 will be made depending on availability of data.

/2 Effective January 1, 1977, the term "International Reserves" shall refer to the gross foreign exchange holdings of the Central Bank as defined in Section 69 of R.A. 265, as amended.

TABLE I-16 GENERAL WHOLESALE PRICE INDEX FOR MANILA, 1949-1977
(1965 = 100)

Period	All Items	Food	Beverages & Tobacco	Crude Materials inedible	Mineral Fuels	Animal & Veg. Oils & Fats	Chemicals	Manufactures Goods	Mach. & Transp. Equipment	Misc. Mftd. Articles n.e.s.
1949	72.3	78.4	70.7	55.3	68.0	-	74.2	66.4	42.7	64.9
1950	70.1	69.7	82.0	59.6	67.8	-	75.3	69.1	47.3	68.9
1951	78.7	77.3	86.6	62.5	72.8	-	96.1	103.8	61.4	87.2
1952	72.0	74.9	81.0	50.0	77.1	-	82.0	82.8	65.4	83.7
1953	71.3	70.2	81.3	61.6	73.8	-	80.0	76.0	58.5	83.9
1954	67.6	67.8	82.2	54.0	71.4	-	76.3	72.9	54.7	81.2
1955	65.8	66.5	81.3	52.0	70.3	43.5	70.2	69.7	53.0	77.8
1956	67.9	67.5	84.9	55.5	71.8	41.0	70.4	75.9	54.3	79.6
1957	70.8	71.5	85.9	56.8	77.6	43.1	74.1	78.7	56.5	79.2
1958	73.2	73.6	86.5	61.1	77.7	58.5	77.0	78.7	61.2	80.9
1959	74.2	69.0	87.0	71.8	79.0	71.6	79.8	83.4	68.0	86.2
1960	77.3	73.7	88.0	71.3	80.7	63.2	77.9	85.8	78.2	90.7
1961	81.1	79.5	90.5	70.3	89.7	60.0	81.0	88.3	86.6	90.4
1962	85.2	81.6	91.9	78.8	95.2	71.2	92.3	91.3	92.6	96.0
1963	93.5	92.5	96.1	87.8	98.8	79.6	97.3	94.4	100.3	101.6
1964	97.8	98.7	97.6	93.1	98.8	85.7	99.0	97.6	99.9	102.5
1965	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1966	104.3	110.5	101.7	99.0	103.1	89.6	100.3	101.1	100.9	101.0
1967	107.0	114.0	107.0	104.7	103.3	98.3	102.1	100.9	101.6	102.7
1968	109.9	115.1	110.1	115.9	103.3	114.7	102.1	101.7	103.6	104.2
1969	111.4	116.0	110.6	116.5	104.5	101.8	102.6	105.3	110.9	106.6
1970	137.7	141.6	123.6	141.9	129.2	153.5	135.4	136.3	136.8	127.0
1971	159.3	176.8	130.8	153.1	151.6	141.6	151.1	148.9	158.5	139.6
1972	175.4	204.2	141.5	156.0	165.0	120.7	164.4	160.0	170.7	159.9
1973	218.4	234.1	160.1	233.0	188.1	266.7	203.8	226.8	190.4	196.4
1974	337.5	341.9	182.7	392.5	413.9	530.1	340.2	348.1	233.5	301.7
1975	347.2	374.9	223.6	271.1	474.3	244.5	394.6	374.3	292.8	326.2
1976	372.4	379.9	246.9	307.8	544.0	260.4	414.9	424.2	316.6	352.1
1977	404.1	401.3	261.7	388.1	570.2	355.4	462.2	458.2	333.9	377.1
Jan. ...	392.9	390.7	252.5	378.7	546.4	347.6	425.0	441.9	329.5	361.4
Feb. ...	397.6	396.3	253.4	391.2	546.4	362.2	426.6	445.4	329.5	362.6
Mar. ...	409.3	400.9	253.7	429.6	546.4	470.6	429.7	457.4	331.3	365.3
Apr. ...	407.7	400.8	258.0	410.1	557.7	445.4	431.1	458.1	331.6	370.1
May ...	410.2	400.7	260.8	412.5	580.7	446.2	433.6	458.5	331.7	373.8
June ...	405.7	399.1	260.8	388.5	580.7	375.2	435.6	462.5	334.1	375.9
July ...	401.2	397.3	261.8	373.1	580.7	323.9	421.3	462.4	334.6	378.4
Aug. ...	398.1	396.9	267.8	357.9	580.7	267.6	421.5	462.5	335.0	379.6
Sept....	402.9	403.3	268.7	370.3	580.7	287.1	421.5	462.2	336.3	382.8
Oct. ...	405.1	408.6	268.7	370.7	580.7	287.1	422.0	462.1	337.4	386.2
Nov. ...	407.2	410.3	267.3	374.7	580.7	309.3	424.1	461.0	337.7	392.7
Dec. ...	411.8	410.5	267.3	399.8	580.7	342.0	422.2	463.8	338.5	396.4

Source: Central Bank of the Philippines

TABLE I-17 RETAIL PRICE INDEX OF SELECTED COMMODITIES IN METROPOLITAN MANILA, 1949-1977

(1972 = 100)

Period	All Items	Food	Beverages	Tabacco	Wearing Apparel	Construction Materials	Fuel	Medicinal & Pharmaceutical Prep'ns	Office and School Supplies	Household Operations & Supplies
1949	40.0	28.5	33.2	61.6	36.0	40.0	44.6	54.4	33.9	38.2
1950	40.5	28.1	34.2	67.3	41.4	36.4	42.4	51.8	34.9	39.6
1951	44.9	31.0	36.9	70.3	47.5	43.3	42.7	55.8	42.6	44.4
1952	42.4	30.0	35.0	66.4	40.8	41.2	43.1	53.0	43.6	38.2
1953	40.5	28.4	34.3	63.9	37.9	41.1	40.9	48.5	38.3	39.9
1954	38.3	27.0	34.4	61.7	35.9	37.0	38.8	46.3	35.3	37.0
1955	37.3	26.5	34.5	62.0	34.7	35.0	37.1	44.4	34.0	36.0
1956	39.1	28.0	35.2	64.9	37.0	38.4	36.0	46.4	36.5	38.4
1957	40.2	30.2	36.1	64.8	37.8	39.8	37.5	45.4	37.6	40.1
1958	42.0	33.0	37.6	66.8	38.8	39.8	41.8	45.0	40.1	41.7
1959	42.0	30.1	37.8	67.0	39.6	41.3	41.9	45.2	41.2	42.0
1960	44.0	34.6	39.8	69.0	41.7	45.3	42.1	45.1	41.0	43.8
1961	44.7	35.4	40.2	68.2	41.6	45.2	43.9	47.3	42.0	44.7
1962	47.9	38.2	41.6	69.9	44.5	49.2	45.7	53.9	46.3	47.9
1963	50.9	41.9	48.4	71.4	46.9	52.5	47.9	56.4	47.8	49.7
1964	54.8	47.2	59.2	71.3	50.9	55.9	48.0	62.3	50.2	52.3
1965	55.9	49.5	60.1	74.7	51.6	56.6	49.2	63.3	50.4	52.4
1966	58.7	53.3	63.9	78.1	54.3	59.7	51.4	63.2	52.9	55.9
1967	61.8	56.5	69.8	80.0	57.9	61.5	55.3	65.4	55.1	58.8
1968	62.0	54.9	70.1	80.1	58.0	61.6	56.9	65.5	55.2	59.6
1969	63.2	56.5	70.5	80.2	60.8	61.8	57.2	66.7	57.6	61.3
1970	76.2	67.0	84.7	86.3	73.9	77.3	66.2	75.2	83.9	74.1
1971	89.2	84.3	93.7	94.5	88.6	90.9	84.3	85.6	93.2	88.4
1972	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1973	114.5	109.1	114.2	124.9	116.7	128.1	109.3	101.5	117.6	111.2
1974	160.0	155.3	148.8	160.0	168.6	208.6	161.4	121.0	173.1	155.7
1975	176.1	165.0	170.0	176.4	181.7	213.3	186.5	139.2	186.0	175.8
1976	191.0	174.5	184.7	192.3	186.0	224.2	210.1	157.2	212.2	185.6
1977	203.9	190.6	187.9	196.5	208.0	251.2	217.7	163.9	231.3	200.4
Jan.	199.3	182.6	186.5	196.5	198.2	244.1	212.6	161.6	224.5	198.3
Feb.	200.7	182.5	187.3	196.5	206.0	246.4	212.6	162.9	224.8	198.8
March ...	201.7	186.1	187.3	196.5	206.5	247.9	212.6	163.2	228.0	198.8
April ...	201.8	185.5	187.3	196.5	206.5	248.3	214.0	163.2	228.0	198.9
May	203.0	187.3	187.3	196.5	206.5	251.1	220.1	163.7	228.0	199.2
June	203.8	189.3	187.3	196.5	206.8	251.8	220.1	163.7	231.8	199.9
July	204.2	192.0	187.3	196.5	208.1	251.8	220.1	163.7	231.8	199.9
Aug.	204.8	192.8	187.3	196.5	210.4	253.1	220.1	163.7	232.9	200.3
Sept. ...	205.7	195.1	188.8	196.5	210.5	253.7	220.1	165.1	232.9	201.6
Oct.	206.6	197.1	189.3	196.5	211.9	253.7	220.1	165.1	236.8	202.2
Nov.	207.1	198.3	189.3	196.5	212.0	255.8	220.1	165.1	237.2	203.3
Dec.	207.6	198.2	189.3	196.5	213.1	256.3	220.1	165.7	238.5	204.2

Source: Central Bank of the Philippines

TABLE I-18 CONSUMER PRICE INDEX IN METROPOLITAN MANILA, 1949-1977
(1972 = 100)

Period	All Items	Food /1	Clothing	Housing and Repair	Fuel Light & Water	Services	Miscel-laneous
1949	42.9	32.6	32.1	62.9	50.0	51.5	42.8
1950	44.2	32.2	39.7	62.6	49.8	56.7	47.5
1951	47.9	38.6	51.7	62.1	50.7	57.2	48.5
1952	44.8	35.3	40.7	58.5	50.0	57.8	46.0
1953	43.2	32.9	38.3	57.3	46.9	58.3	46.0
1954	42.6	32.2	36.4	56.9	43.8	58.3	45.9
1955	42.2	32.0	35.2	56.3	42.2	58.2	45.7
1956	43.4	34.2	39.5	57.3	42.4	65.5	49.3
1957	44.1	35.5	41.8	57.6	43.1	62.1	51.8
1958	45.6	38.0	43.4	58.5	45.1	60.0	53.7
1959	45.1	36.4	44.8	58.5	46.2	59.8	55.9
1960	47.2	39.2	48.0	60.0	45.8	60.7	57.2
1961	47.8	40.0	48.1	61.0	47.0	61.7	56.5
1962	50.5	43.2	52.1	62.8	48.0	62.5	60.0
1963	53.4	47.6	51.5	65.4	49.3	63.4	62.3
1964	57.8	53.9	53.8	67.1	54.6	65.5	63.9
1965	59.2	54.7	55.1	69.1	59.9	67.2	65.2
1966	62.4	58.4	54.5	70.4	60.2	66.6	64.7
1967	66.4	63.2	57.3	73.1	60.6	71.4	67.9
1968	68.0	63.0	58.7	77.6	61.0	76.8	69.1
1969	69.3	63.9	59.1	79.3	60.8	78.2	70.8
1970	79.0	73.8	75.6	86.7	75.6	86.7	81.4
1971	90.9	88.8	90.2	93.7	85.6	96.8	91.7
1972	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1973	114.0	114.0	117.1	119.8	104.2	108.2	113.6
1974	152.2	156.6	171.9	139.0	151.0	139.2	168.3
1975	164.6	166.6	189.6	150.2	160.1	153.2	194.2
1976	174.8	176.8	193.8	157.3	169.7	169.5	204.4
1977	188.6	190.0	204.8	168.6	176.3	193.7	213.2
Jan.	182.5	183.6	201.0	166.1	170.3	181.4	211.5
Feb.	182.4	183.2	201.5	166.1	170.3	181.4	211.6
March ...	184.3	187.0	201.8	166.2	170.3	181.4	211.9
April ...	183.4	184.8	201.8	166.2	171.1	182.8	212.1
May	185.7	186.4	201.8	166.3	179.2	190.1	212.1
June	186.5	187.8	202.7	166.3	179.2	190.1	213.0
July	190.5	190.4	203.5	170.9	179.2	202.2	213.0
Aug.	190.8	190.8	206.0	170.9	179.2	202.2	213.1
Sept. ...	192.4	193.7	206.7	171.0	179.2	202.2	214.0
Oct.	193.7	195.6	209.0	171.2	179.2	203.5	214.6
Nov.	195.0	198.1	209.7	171.2	179.2	203.5	215.1
Dec.	195.6	198.6	212.1	171.2	179.2	203.5	216.4

/1 Includes Beverages & Tobacco

Source: Central Bank of the Philippines

TABLE I-19 GOVERNMENT CASH OPERATIONS
(₱ billion)

	CY75 Actual	CY76 Actual	CY77 Estimate	CY78 Forecast
NATIONAL GOVERNMENT				
Revenue	17.2	18.3	21.7	25.7
Tax	13.8	15.3	18.6	22.0
Nontax	3.4	3.0	3.1	3.7
Current expenditure /1	15.1	16.1	17.4	20.0
Current surplus	+2.1	+2.2	+4.3	+5.7
Capital expenditures	3.4	4.5	8.5	10.3
Infrastructure & other capital outlays /2	2.1	2.7	5.4	7.1
Capitalization of government enterprises	1.3	1.8	3.1	3.2
Cash deficit = Net financing	-1.4	-2.4	-4.2	-4.6
Foreign borrowing, net	0.3	0.1	0.9	1.6
Domestic borrowing, net	1.2	1.5	2.6	2.9
Use of cash balances	-0.1	0.8	0.7	0.1
SOCIAL SECURITY CONTRIBUTIONS /3	1.0	1.2	1.5	1.9
LOCAL GOVERNMENTS				
Revenue	2.1	2.4	2.8	3.0
Tax revenue	0.8	1.0	1.2	1.4
Internal revenue allotments	0.6	0.7	0.8	0.7
Special aids from national govt.	0.2	0.2	0.3	0.3
Nontax revenue	0.4	0.5	0.6	0.6
Expenditures	2.1	2.4	2.8	3.0
Current	1.8	2.0	2.3	2.7
Capital	0.3	0.4	0.5	0.3

/1 Includes net extra-budgetary deficit of ₱ 0.2 billion in CY75-76 and ₱ 0.3 billion in CY76, and transfers to local governments.
/2 Includes transfers to local governments.
/3 At present, social security contributions far exceed benefit payments with the surplus being invested in financial assets.

Note: Components may not add up to total because of rounding.

Sources: Statistical Appendix, Tables 5.1 and 5.2 for national and local governments; IMF Report, The Philippines - Recent Economic Developments, 1977 for social security contributions.

TABLE I-20 GROSS NATIONAL PRODUCT, POPULATION, AND PER CAPITA GNP, 1977-83 AND 1987

	Value (In Million Pesos)							Annual Growth Rates (In Per Cent)					
	1977/1	1978	1979	1980	1981	1982	1987	1977 1978	1978 1979	1979 1980	1980 1981	1981 1982	1982 1987
Gross National Product (In Million Pesos at Constant Prices of 1972)	77,804	83,250	89,494	96,206	103,902	112,214	164,879	7.0	7.5	7.5	8.0	8.0	8.0
Gross National Product (In Million Pesos at Current Prices)	152,029	174,076	200,198	230,317	266,093	307,578	633,795	14.5	15.0	15.0	15.5	15.6	15.6
Total Population/2 (In Thousands, Medium Assumption)	45,028	46,350	47,719	49,137	50,557	52,026	59,903	2.9	3.0	3.0	2.9	2.9	2.9
Per Capita GNP (In Pesos at Constant Prices of 1972)	1,728	1,796	1,875	1,958	2,055	2,157	2,752	3.9	4.4	4.4	5.0	5.0	5.0
Per Capita GNP (In Pesos at Current Prices)	3,376	3,756	4,195	4,687	5,263	5,912	10,580	11.3	11.7	11.7	12.3	12.3	12.3

/1 Estimate

/2 Although the medium assumption is used, the target population level uses the low assumption.

Source: Five-Year Development Plan

TABLE I-21 PERCENTAGE DISTRIBUTION AND ANNUAL GROWTH RATE OF NET DOMESTIC PRODUCT, 1977-82 AND 1987

	Percentage Share							Annual Growth Rate		
	1977/1	1978	1979	1980	1981	1982	1987	1978-87	1978-82	1982-87
Net Domestic Product	100.0	100.0	100.0	100.0	100.0	100.0	100.0	7.9	7.7	8.1
Agriculture, Fishery and Forestry	30.8	30.2	29.5	28.8	28.2	27.5	24.3	5.3	5.2	5.5
Industrial Sector	28.7	29.2	29.7	30.3	31.0	31.8	36.9	10.8	10.0	11.4
Mining and Quarrying	1.7	1.7	1.7	1.7	1.7	1.8	1.9	9.3	9.0	9.5
Manufacturing	19.1	19.2	19.4	19.7	19.9	20.3	23.2	10.2	9.2	11.0
Construction	7.3	7.6	7.9	8.2	8.6	9.0	10.9	12.4	12.3	12.5
Electricity, Gas and Water	0.6	0.7	0.7	0.7	0.7	0.7	0.9	11.5	10.9	12.0
Service Sector	40.5	40.6	40.8	40.9	40.8	40.7	38.8	7.4	7.8	7.0
Transport, Communication and Storage	4.1	4.2	4.3	4.4	4.4	4.5	4.7	9.3	9.4	9.3
Commerce	22.0	22.0	22.0	22.1	22.0	22.0	21.1	7.4	7.7	7.1
Services	14.4	14.4	14.5	14.4	14.4	14.2	13.0	6.7	7.3	6.2

/1 Estimate

Source: Five-Year Development Plan

TABLE I-22 NET DOMESTIC PRODUCT BY INDUSTRIAL ORIGIN, 1977-82 AND 1987 (In millions of pesos at constant 1972 prices)

	1977 /1	1978	1979	1980	1981	1982	1987
Net Domestic Product	63,920	68,446	73,577	79,055	85,311	92,037	135,893
Agriculture, Fishery and Forestry	19,691	20,676	21,721	22,797	24,016	25,279	32,969
Industrial Sector	18,312	19,949	21,841	23,961	26,416	29,252	50,201
Mining and Quarrying	1,071	1,151	1,249	1,355	1,484	1,625	2,553
Manufacturing	12,179	13,161	14,285	15,548	17,000	18,707	31,579
Construction	4,655	5,189	5,812	6,511	7,325	8,243	14,874
Electricity, Gas ans Water	407	448	495	547	607	677	1,195
Service Sector	25,917	27,821	30,015	32,297	34,879	37,506	52,723
Transport, Communication and Storage	2,642	2,881	3,153	3,448	3,771	4,124	6,435
Commerce	14,042	15,047	16,210	17,436	18,808	20,275	28,623
Services	9,233	9,893	10,652	11,413	12,300	13,107	17,665

/1 Estimate
Source: Five-Year Development Plan

TABLE I-23 INFRASTRUCTURE INVESTMENT PROGRAM, 1978-87 (In millions of pesos at current prices)

Category	1978	1982	1987	Average % Share To Total 1978-87
GRAND TOTAL	14,954	25,494	55,608	100
Transportation	3,100	5,442	13,187	21
Highways	1,946	3,061	8,646	13
Others	1,154	2,381	4,541	8
Water Resources	3,681	6,556	11,698	24
Irrigation	2,019	3,475	5,111	12
Water Supply & Sewerage	1,168	2,299	4,110	9
Flood Control	494	782	2,477	3
Power and Electrification	5,956	8,994	18,107	36
Power	5,310	8,235	16,992	33
Rural Electrification	546	759	1,115	3
Communications	298	450	2,041	2
Social Infrastructure	1,356	3,698	8,916	14
Miscellaneous & Other Special Projects	663	354	1,659	3

Note: These estimates are not necessarily comparable with historical figures since they cover activities/projects which were not usually included in previous infrastructure programs. Some of these activities/projects include expenditures which are not part of capital formation, i.e., site acquisition and salaries. Also, some projects included in the table were previously covered under "Other Capital Outlays," like infrastructure support to social housing, NGA warehouses, and other buildings.

Source: Five-Year Development Plan

TABLE I-24 GROSS REGIONAL DOMESTIC PRODUCT BY INDUSTRIAL ORIGIN 1972-1976
(In Million Pesos at Constant 1972 Prices)

	Values In Million Pesos At Constant 1972 Prices					Annual Compound Average Growth Rate	Percentage Share to GRDP (In Percent)
	1972	1973	1974	1975	1976	1972-76	1972-76
Agriculture, Fishery & Forestry	2038	2105	2264	2142	2296	3.02	39.5
Industrial Sector	1634.2	1610.9	1877.9	2106	2155	7.16	32.9
Mining and Quarrying	66.3	46.8	42.9	48	52	5.89	.8
Manufacturing	1337	1348	1441	1631	1673	5.76	26.3
Construction	208	189	361	389	393	17.24	5.3
Electricity, Gas & Water	22.9	27.1	33	38	37	12.74	.5
Service Sector	1362.3	1501.8	1558.1	1680	1771	6.78	27.6
Transport, Communication and Storage	124.3	156.8	192.1	193	216	14.81	3.1
Commerce	775	828	861	944	945	5.08	15.4
Services	463	517	505	543	550	4.4	9.1
GROSS REGIONAL DOMESTIC PRODUCT	5034	5218	5700	5928	6222	5.4	100.0

Sources: NEDA Statistical Coordination Office, National Accounts Staff
NEDA Regional Office III

TABLE I-25 GROSS REGIONAL DOMESTIC PRODUCT 1972-1976

(Central Luzon)

	1972	1973	1974	1975	1976	Compund Annual Growth Rate 1976
Gross Regional Domestic Product, In Million Pesos At Constant Prices of 1972	5034	5218	5700	5928	6222	5.4
Total Population (In Thousand)	3985	4119	4258	4401	4548	3.3
Per Capita GRDP (In Pesos at Constant Prices)	1263	1266	1338	1346	1368	2.0

Sources: NEDA Statistical Coordination Office, National Accounts Staff

NEDA Region Office III

TABLE I-26 EMPLOYED PERSONS BY MAJOR INDUSTRY GROUP, BY SEX, URBAN AND RURAL
REGION III, FEBRUARY 1974

	Both Sexes	Male	Female	URBAN			RURAL		
				B. Sexes	Male	Female	B. Sexes	Male	Female
Region III	1,266,869	890,336	376,533	355,103	223,725	131,378	911,766	666,611	245,145
Agri. forestry, hunting & fishing	519,573	458,482	61,091	33,706	31,110	2,596	485,867	427,372	58,495
Mining and Quarrying	5,517	5,517	-0-	1,697	1,697	-0-	3,820	3,820	-0-
Manufacturing	144,052	93,586	50,466	45,931	37,656	8,275	98,120	55,930	42,191
Electricity, Gas, water & san. serv's.	3,448	3,448	-0-	1,897	1,897	-0-	1,551	1,151	-0-
Construction	61,729	59,559	2,130	28,117	25,987	2,130	33,612	33,612	-0-
Commerce	220,230	86,683	133,547	85,336	41,915	43,421	134,894	44,768	90,126
Gov't Comm. Bus. and Recreational services	155,674	88,337	67,337	92,716	52,003	40,713	62,958	36,334	26,624
Transport, Storage & communication	73,986	73,033	953	23,711	23,063	648	50,272	49,970	305
Domestic services	48,946	6,793	42,153	23,698	2,246	21,452	25,248	4,547	20,701
Personal serv'. other than Domestic	33,136	14,280	18,856	18,294	6,151	12,143	14,482	8,129	6,353
Industry not reported	578	578	1,923	-0-	-0-	-0-	578	578	-0-

Source: National Census and Statistics Office

TABLE I-27 PERCENTAGE DISTRIBUTION OF GROSS VALUE ADDED IN AGRICULTURE AND LAND AREA BY REGION

	REGION	Land Area (in hectares)	Agricultural Crops	Livestock	Poultry	Fishery /1	Forestry /1	Total Gross Value Add.
I.	Ilocos	2,156,845	10.23	9.64	6.01	1.53	1.22	7.45
II.	Cagayan Valley	3,640,300	3.62	5.69	3.00	0.36	6.13	4.06
III.	Central Luzon	1,827,785	13.68	10.17	14.97	8.84	1.42	10.50
IV.	Southern Tagalog	4,751,314	13.17	19.16	27.82	59.75	6.38	17.69
V.	B i c o l	1,763,249	6.81	6.07	5.87	4.10	3.11	5.71
VI.	Western Visayas	2,022,311	13.16	8.15	7.83	19.20	2.27	10.65
VII.	Central Visayas	1,495,142	6.23	13.43	9.36	0.58	1.33	5.99
VIII.	Eastern Visayas	2,143,169	6.89	9.41	3.86	1.46	1.90	5.65
IX.	Western Mindanao	1,868,514	5.99	5.94	5.37	1.77	8.87	6.12
X.	Northern Mindanao	3,984,483	7.91	3.22	5.29	0.45	45.48	13.56
XI.	Southern Mindanao	4,346,888	12.31	9.14	10.62	1.96	21.91	12.66
	Philippines	30,000,000	100.00	100.00	100.00	100.00	100.00	100.00

/1 Preliminary estimates as of July 26, 1974

SOURCE: NEDA Economic Indicators, Vol. 11, No. 8 August 1974, pp. 44-45

TABLE I-28 GROSS REGIONAL VALUE ADDED TARGETS, BY ECONOMIC ACTIVITY, REGION III CENTRAL LUZON 1978-1982
(In Million Pesos at 1972 Prices)

S E C T O R	1978	1979	1980	1981	1982	1978-1982
1) Agriculture, Fishery and Forestry	2,731.2	2,873.7	3,020.7	3,181.5	3,347.6	5.2
2) Industry in Total	2,907.6	3,219.5	3,576.2	3,951.8	4,380.9	10.8
Mining and Quarrying	74.2	81.4	99.2	97.9	107.4	9.6
Manufacturing	2,280.2	2,535.9	2,821.4	3,140.2	3,496.5	11.27
Construction	504	547.8	595.5	647.3	703.6	8.7
Electricity, Gas and Water	49.2	54.4	60.1	66.4	73.4	10.5
3) Service in Total	2,208.8	2,410.2	2,630.2	2,870.3	3,132.4	9.1
Transportation, Storage & Communication	266.4	316.5	349.7	386.5	427.1	10.5
Commerce	1,220	1,330.9	1,452.1	1,584.2	1,728.3	9.1
Services	702.4	762.8	828.4	899.6	977	8.6
REGION III-TOTAL	7,847.6	8,503.4	9,227.1	10,003.6	10,860.9	8.5
Per Capita	1,689	1,787	1,892	2,009	2,134	6.0

Assuming a balanced development in other regions, Region III would remain to share 10 percent of the GRDP of all regions.

Source: NEDA Regional office III.

TABLE I-29 GROSS REGIONAL VALUE ADDED TARGETS, BY PERCENTAGE SHARES, REGION III CENTRAL LUZON 1978-1982

(%)

S E C T O R	1978	1979	1980	1981	1982
1) Agriculture, Fishery & Forestry	34.80	33.79	32.79	31.80	30.82
2) Industry in Total	37.05	37.87	38.68	39.51	40.34
Mining and Quarrying	0.95	0.96	0.97	0.98	0.99
Manufacturing	29.06	29.82	30.60	31.39	32.20
Construction	6.42	6.44	6.46	6.47	6.47
Electricity, Gas & Water	0.62	0.65	0.65	0.67	0.68
3) Service in Total	28.15	28.34	28.53	28.69	28.84
Transportation, Storage & Communication	3.65	3.72	3.79	3.86	3.93
Commerce	15.55	15.65	15.75	15.84	15.91
Services	8.95	8.97	8.99	8.99	9.00
REGION III-TOTAL	100.00	100.00	100.00	100.00	100.00

Source: NEDA Regional Office III.

TABLE I-30 GROWTH IN PADDY AREA PLANTED PRODUCTION AND YIELD PER HECTARE
FISCAL YEARS 1961 - 1975
REGION III

FISCAL YEAR	AREA PLANTED (Hectares)	GROWTH RATE	PRODUCTIONS /1 (cavans)	GROWTH RATE	AVERAGE YIELD PER HECTARE (cavans)
1961 - 1962	477,134	-	19,160,505	-	40.16
1962 - 1963	492,297	+ 3%	20,441,915	+ 6%	41.52
1963 - 1964	477,031	- 3%	19,480,402	- 4%	40.84
1964 - 1965	413,302	- 13%	17,863,065	- 8%	43.22
1965 - 1966	523,026	+ 26%	21,419,772	+ 19%	40.95
1966 - 1967	539,357	+ 3%	23,558,841	+ 9%	43.68
1967 - 1968	573,788	+ 6%	26,547,890	+ 12%	46.27
1968 - 1969	532,482	- 7%	22,615,420	- 14%	42.47
1969 - 1970	551,506	+ 3%	22,950,567	+ 1%	41.61
1970 - 1971	601,161	+ 9%	22,121,368	- 3%	36.80
1971 - 1972	395,180	- 34%	15,031,600	- 32%	42.20
1972 - 1973	519,372	+ 31%	17,854,400	+ 18%	47.00
1973 - 1974	509,212	- 1%	24,951,400	+ 39.7%	49.00
1974 - 1975	525,682	+ 3%	35,813,466	+ 43%	68.00

/1: Paddy Bureau of Plant Incustry and BAECON.

TABLE I-31 SUGAR CANE AREA AND PRODUCTION
REGION III
CROP YEAR 1974-75

SUGAR MILL (District)	Area Planted (ha)	Tons Cane	Tons Cane/ Hectare	Area Milled Hectares	Tons Cane	Sugar (Picul)	Picul Sugar/ Hectare	Picul Sugar/ Ton Cane
PANIQUI, SUGAR MILL Paniqui, Tarlac	5,500	172,140	31.30	3,443	107,760	265,570	77.13	2.46
CENTRAL AZUCARERA DE TARLAC San Miguel, Tarlac	16,000	950,979	59.44	24,000	1,426,468	1,434,839	59.78	1.01
PASUDECO SUGAR MILL San Fernando, Pampanga	22,177	619,516	27.94	18,309	511,475	881,194	48.12	1.72
PAMPANGA SUGAR MILL Del Carmen, Pampanga	16,429	361,301	22.00	8,429	185,347	438,375	52.00	2.37
CAREBI SUGAR MILL Botolan, Zambales	1,669	172,724	103.49	1,669	172,724	251,099	26.65	1.45
TOTAL	61,775	2,276,660		55,850	2,403,774	3,721,077		
AVERAGE			43.04				58.56	1.36

Source: PHILSUGIN, Annual Reports 1974-75, Mill District Offices, Region III

TABLE I-32 SUGAR AREA, PRODUCTION, AND YIELD BY SUGAR MILL DISTRICT REGION III
CROP YEAR 1974-75

SUGAR MILL (District)	Actual Mill Capacity M.T./ Day	Area Planted (Ha)	Area Milled (Ha)	PRODUCTION				
				Total Picul Sugar	Total Tons Cane	Tons Cane Per Ha.	Picul Sugar Per Ton Cane	Picul Sugar Per Ha.
PANIQUI SUGAR MILL Paniqui, Tarlac	1,300	5,500	3,443 (2,057 diverted to other mills)	265,570	172,140	31.30	1.54	77.13
TARLAC SUGAR MILL San Miguel, Tarlac	7,080	16,000	24,000 (8,000 comes from Pampanga)	1,434,839	950,979	59.44	1.51	59.78
PASUDECO SUGAR MILL San Fernando, Pampanga	5,500	22,177	18,309 (3,868 milled in other mills)	881,194	619,516	27.94	1.42	48.12
ISSCO (Pasumil) SUGAR MILL Del Carmen, Pampanga	3,936	16,429	8,429 (8,000 diverted to other mills)	438,375	361,301	22.00	1.21	52.00
CAREBI SUGAR MILL Botolan, Zambales	1,968	1,669	1,669 plus undetermined area coming from other provinces	251,099 (44,491 from CAREBI only)	172,724 (29,388 from CAREBI only)	17.61	1.45	26.65
TOTAL	19,784	61,775	55,850	3,271,077	2,276,660			
AVERAGE						31.65	1.44	52.73

Source: PHILSUGIN, Annual Reports 1974-75, Mill District Offices, Region III

TABLE I-33 HOUSEHOLD POPULATION GAINFUL WORKERS 10 YEARS OLD AND OVER BY MAJOR INDUSTRY, 1975 (PAMPANGA PROVINCE)

	No. of Household	(%)
Agriculture, Forestry Fishing	85,091	31.9
Mining and Quarrying	208	0.1
Manufacturing	36,017	13.5
Electricity, gas, water and Sanitary Services	1,079	0.4
Construction	28,741	10.8
Commerce	32,780	12.3
Transport, Communication and Storage	18,101	6.8
Services	59,111	22.2
Industry Not Adequately Described	5,448	2.0
Total	266,576	100.0

Source: "1975 Integrated Census of the Population and Its Economic Activities, Pampanga"

TABLE I-34 AGRICULTURAL CROPS PRODUCTION, AREA AND YIELD BY PROVINCE

CROP YEAR 1974-1975

TYPE OF CROP	BATAAN	BULACAN	N. ECIJA	PAMPANGA	TARLAC	ZAMBALES	TOTAL
I. FOOD CROPS (Area in Hectares)							600,695
A. PALAY							
1. Production (in cavans)	1,192,141	5,472,180	13,897,466	6,978,712	6,815,509	1,457,458	35,813,466
2. Area (in hectares)	19,133	96,336	207,842	75,643	96,167	30,561	525,682
a. Irrigated	14,000	48,919	117,662	54,388	61,820	18,184	314,973
b. Non-Irrigated	5,133	47,417	90,180	21,255	34,347	12,377	210,709
3. Yield per hectare (in cavans)	62	57	67	92	71	48	68
B. CORN (yellow)							
1. Production (in cavans)	7,295	750	5,463	15,325	14,420	1,768	45,021
2. Area (in hectares)	344	110	816	525	721	219	2,735
3. Yield per Hectare (in cavans)	21	6	6	29	20	8	16
C. OTHER FEEDGRAINS							
1. Production (in cavans)	7,057	15,540	1,452	20,345	3,262	5,192	52,848
2. Area (in hectares)	362	619	107	825	116	419	2,448
3. Yield per Hectare (in cavans)	19	25	14	25	28	12	22
D. WATERMELONS							
1. Production (M.T.)	3,750	5,620	23,092	60,060	43,960	32	136,514
2. Area (in hectares)	425	281	1,981	4,008	2,783	7	9,485
3. Yield Per Hectare (M.T.)	9	20	12	15	16	5	14
E. ROOT CROPS							
1. Production (M.T.)	7,495	660	8,824		39,619		56,598
2. Area (in hectares)	802	33	435		2,295		3,565
3. Yield per Hectare (M.T.)	9	20	20		17		16

TABLE I-34 (CONTINUE)

	BATAAN	BULACAN	N. ECIJA	PAMPANGA	TARLAC	ZAMBALES	TOTAL
F. VEGETABLES & BEANS							
1. Production (M.T.)	17,351	52,900	170,982	142,708	143,288	6,843	534,072
2. Area (in hectares)	2,143	3,163	15,604	13,713	15,087	1,852	51,562
3. Yield per hectare (M.T.)	8	17	11	10	9	4	10
G. ONIONS (Native)							
1. Production (M.T.)			69,829			186	70,015
2. Area (in hectares)			3,773			51	3,824
3. Yield per hectare (M.T.)			19			4	13
H. MANGOES							
1. Production (in kilograms)	1,207,375	92,826,000	14,682,000	827,000	1,768,700	17,668,500	128,979,575
2. Number of Mango trees	11,077	92,826	15,583	3,779	2,025	88,600	213,890
3. Yield per Tree (in kgs.)	109	1,000	942	219	873	199	603
I. OTHER FRUITS							
1. Production (M.T.)	4,166		113,520	828	2,460	140	121,114
2. Area (in hectares)			468		205	246	919
3. Yield per hectare (M.T.)			243		12	1	85
J. PEANUTS							
1. Production (M.T.)	1,895		146				2,041
2. Area (in hectares)	360		115				475
3. Yield per hectares (M.T.)	5		1				4
II. COMMERCIAL CROPS							
A. SUGARCANES							
1. Production (tons)				980,817	1,123,119	29,388	2,133,324
2. Area (in hectares)	3,994			46,606	9,500	1,669	61,769
3. Yield per hectare (tons)				39	45	18	32

NOTE: This is the result on the Food Production Program, Crop Year 1974-75.

TABLE I-35 RICE PRODUCTION IN PAMPANGA PROVINCE
1970 - 1976

	Cult. Area (ha)	Total Product (t)	Av. Yield (t/ha)
1970	88,663	232,484	2.62
1971	88,076	229,670	2.61
1972	69,961	141,215	2.02
1973	92,076	311,275	3.38
1974	106,518	335,444	3.15
1975	102,580	349,302	3.41
1976	118,124	482,491	4.1

Source: Bureau of Agricultural Extension.

TABLE I-36 RICE PRODUCTION ON IRRIGATED AREA AND NON-IRRIGATED AREA IN PAMPANGA PROVINCE
(1975 - 1976)

	Cult. Area (ha)	Total Product (t)	Av. Yield (t/ha)
Irrigated Area	81,325	292,807	3.60
Non-Irrigated Area	21,255	56,495	2.66
Total	102,580	349,302	3.41

Source: Bureau of Agricultural Extension

TABLE I-37 LIVESTOCK AND POULTRY POPULATION IN REGION III, BY PROVINCE
SIX MONTH PERIOD BY 1975-1976
(July to December 1975)
(in animal heads)

PROVINCE	LIVESTOCK				POULTRY			GRAND TOTAL
	CATTLES	CARABAOS	HOGS	TOTAL	CHICKEN	DUCKS	TOTAL	
BATAAN	24,860	15,900	21,030	61,790	151,250	94,690	245,940	307,730
BULACAN	10,890	38,990	260,640	310,520	1,870,450	281,710	2,152,160	2,462,680
NUEVA ESIJA	22,170	93,570	141,800	267,540	1,774,070	139,610	1,913,680	2,181,220
PAMPANGA	1,360	60,410	147,010	208,780	1,393,480	512,140	1,905,620	2,114,400
TARLAC	16,510	65,700	117,050	199,260	899,120	97,010	996,130	1,195,390
ZAMBALES	8,000	23,780	51,580	83,360	347,250	4,430	351,680	435,040
TOTAL	93,790	298,350	739,110	1,131,250	6,433,620	1,129,590	7,565,210	8,696,460

Source: Bureau of Agricultural Economics, Region III.

TABLE I-38 COMPARATIVE DATA ON INLAND FISH PRODUCTION, BY PROVINCE FY 1975 AND FY 1976

PROVINCE	1975/1		1976/2	
	AREA (ha)	PRODUCTION (t)	AREA (ha)	PRODUCTION (t)
BATAAN	3,702.67	7,402.67	3,703.18	9,253.175
BULACAN	17,482.88	23,786.60	17,482.88	23,408.44
NUEVA ECIJA	570.73	371.42	611.87	307.94
PAMPANGA	22,381.59	13,890.98	29,545.30	18,583.11
TARLAC	274.47	82.34	306.00	91.80
ZAMBALES	885.13	531.08	885.13	600.311
TOTAL	45,297.47	46,065.1	52,504.36	52,244.776

Source: BFAR, Region III

/1 Reconstructed

/2 Preliminary estimates

TABLE I-39 NON-METALIC PRODUCTION IN PAMPANGA (As of 1976)

Kind of Products	Quantity	Value (P)
Gravel, Sand & Earth	44,000 m^3	520,430
Concrete Products		
Harrow Blocks	700,000 pcs.	3,850,000
Cement Pipes	10,000 "	50,000
Decoration	5,000 "	2,500

Source: Provincial Road Network Development Plan 1976-1978, Pampanga

TABLE I-40 MANUFACTURING ESTABLISHMENT IN PAMPANGA
(As of 1975)

Kind of Manufacturing	No. of Establishments	Kind of Manufacturing	No. of Establishments
Food Products	178	Wood Products	173
Fish Products	8	Printing Press	14
Wine, Liquar & Beverages	10	Non-Melalic Products	83
Agricultural Processing		Metal Products	145
Sugar Mill	2	Cottage Industries	98
Rice Mill	256		
Rice Thresher	1		
Cigas & Cigarette Factory	2		
Textile, Leather & Related Products	949		

Source: Provincial Road Network Development Plan
1976 - 1986, Pampanga

TABLE I-41 BUDGET FOR FLOOD CONTROL WORKS

(10^3 Peso)

	Pasig Potorero River	PRCS/1
1973	4,000	13,050
1974	5,000	51,000
1975	5,000	37,306
1976	3,500	24,500
1977	6,739	34,850
Sub-total	24,239	160,706
1978	3,929	28,212
1979	5,000	30,000
1980	5,000	30,000
1981	5,000	30,000
1982	5,000	30,000
Sub-total	23,929	148,212
Total	48,168	308,918

Source: PRCS Apalit Office

Note : Figures from 1973 to 1977 are actual budget while those of 1978 to 1982 are expected ones.

/1 : Pampanga River Control System

TABLE 1-42 STRUCTURES ON THE NATIONAL ROAD

KM	Material and Type	Year built	Length of each span (m)	Remarks
Manila North Road				
66.232	R. C. A.	1943	22.00	Baluyut
68.724	Ms. A.	1952	4.40	
69.641	C. Pp.	1925	0.60	
720	"	1918	0.60	
70.601	"	1925	0.60	
71.954	"	1961	2x 1.50	
72.327	"	1913	1.50	
875	"	1929	0.60	
73.055	C. Bx	"	0.60	
.208	C. Pp.	"	0.60	
.692	"	"	0.60	
.882	"	"	0.60	
74.207	"	"	0.60	
.675	"	"	0.60	
.996	"	"	0.60	
75.417	"	"	0.60	
.667	"	"	0.60	
.884	"	"	0.60	
76.373	"	"	0.60	
.682	"	1948	2x 0.60	
77.056	"	"	2x 0.60	
.0441	"	1929	0.60	
.832	"	"	0.60	
78.181	"	"	0.60	
542	"	"	0.60	
79.045	"	"	0.60	
.277	"	1926	2x 0.60	
.635	C. Bx	1948	1.00	

(to be continued)

A: Arch
Bx: Box
Bm: Beam=
C: Concrete
DG: Deck & Girder
I: I-Beam
Ms: Masonry
Pp: Pipe
Rc: Reinforced concrete
Sl: Slab

KM	Materials and Type	Year built	Length of each span (m)	Remarks
San Fernando - Bataan Boundary Road				
66.322	C. Pp.	1968	0.60	
.458	C. Bx	1930	0.60	
.530	"	Spanish	0.60	
.561	C. Pp	1968	0.60	
.639	"	"	0.60	
.778	C. Bx	"	0.60	
.807	Ms. A	Spanish	4.80	Sta. Nino
.886	C. pp	1930	0.60	
67.012	"	1968	2x0.60	
.250	"	1931	2x0.60	
.363	"	1968	0.60	
.429	C. Bx	1968	0.60	
.629	"	"	0.80	
78.291	RC DG	1948	5.20	S. Juan
.630	"	"	8.00	Palawi
69.308	C. Pp	1968	2x1.00	
.634	"	1962	1.00	
.734	"	"	1.00	
.810	R.C.Bx C.	Spanish	3x2.95	
.906	C. Pp	1962	1.00	
70.210	RC S1	1964	6.00	Banlic
.384	C. Pp	1958	5x1.00	
.500	Ms. A	Spanish	3x1.00	
.667	C. Pp	1965	2x0.60	
.997	RC DG	1950	12.00	Gugu
71.471	C. Pp	1945	0.60	
.622	"	1964	0.60	
.715	"	"	0.60	
72.022	"	"	0.60	
.590	"	1973	2x0.60	
.630	"	"	2x0.60	
.670	"	"	2x0.60	
.710	"	"	2x0.60	
.750	"	"	2x0.60	
.790	"	"	2x0.60	
.870	"	"	2x0.60	
.910	C. Pp	"	2x0.60	
.950	"	"	2x0.60	
73.040	"	1971	2x0.60	
.120	"	"	2x0.60	
.200	"	"	2x0.60	
.240	"	"	2x0.60	
.280	"	"	2x0.60	
.320	"	"	2x0.60	

(to be continued)

KM	Materials and Type	Year built	Length of each span (m)	Remarks
San Fernando - Bataan Boundary Road (continued)				
.414	RC DG	1950	2x11.00	Cabetican
.644	C. Pp	1964	0.60	
.680	"	1971	0.60	
.720	"	"	0.60	
.760	"	"	0.60	
.791	"	1964	0.60	
.800	"	1971	0.60	
.840	"	"	0.60	
.880	"	"	0.60	
74.000	"	"	0.60	
.310	RC DG	1948	7.20	S. Miguel
.560	C. Pp	1924	0.60	
.654	"	"	0.60	
75.393	"	1964	0.60	
76.091	RC DG	1948	8.00	S. Juan
.430	C. Pp	"	0.60	
.642	"	"	0.60	
.817	"	"	0.60	
77.004	"	"	0.60	
.174	RC DG	1950	13.50	Purc.
.618	C Pp	1964	0.60	
.737	"	"	1.00	
.854	"	"	0.60	
79.307	RC DG	1952	6.00	S. Juan

(to be continued)

KM	Materials and Type	Year built	Length of each span (m)	Remarks
Angeles - Porac Road				
85.472	C. Pp	1964	2x1.00	
.562	"	1935	0.60	
.676	"	"	1.00	
.892	"	"	1.00	
86.052	RC DI	1964	15.24	Sta. Cruz
.450	RC DG	1950	7.60	Manibaug #1
.599	C Pp	1935	0.60	
.990	"	1939	1.00	
87.313	Ms. Bx	"	1.00	
88.035	C. Pp	"	1.00	
.240	RC SI	1950	6.20	Manibaug #2
.489	RC DG	"	2x13.50	Pasig
.855	Ms. Bx	1936	1.90	
89.122	C. Pp	1962	4x1.00	
.312	"	"	5x1.00	
.740	"	"	10x1.00	
.983	R.C.1.Bm	1968	2x15.70 2x18.70	Mancatian #1
90.125	C. Pp	1936	0.60	
.134	R.C. I.Bm	1968	6x18.70	Mancatian #2
91.212	C. Pp	1964	2x1.00	
92.099	"	1934	0.60	
.215	Ms. A	1935	1.80	

(to be continued)

KM	Type	Size (m)	Capacity (m^3/sec)	Remarks
Structures in Olangapo - Gapan Road				
67.751	RC Bx	2x4.00x2.50	18.10	
68.018	"	1x1.80x1.80	4.94	
.095	C Cp	0.9	1.22	
.255	"	0.9	"	
.532	RCBx	2x3.00x2.10	10.38	
.863	"	3x1.50x1.25	58.40	
69.120	"	3x1.25x1.00	13.76	
.215	"	1x4.00x2.50	1.24	
.675	"	1x3.00x2.10	16.86	
.930	"	1x1.25x1.00	1.77	
70.137	"	1x3.00x2.10	16.86	
.166	"	1x3.00x2.10	16.86	
.295	CPp	2x1.5	8.86	
.480	RC Bx	2x4.00x2.50	36.20	
.575	CPp	1.05	1.77	
.705	"	1.05	1.69	
.855	"	1.05	1.77	
.973	"	0.90	1.22	
71.005	RC Bx	2x4.00x2.50	49.20	
.055	CPp	1.05	1.77	
.143	RCBx	1x3.00x2.10	13.76	
.212	CPp	0.75	0.83	
.355	"	0.75	0.83	
.455	"	0.75	0.76	
.519	RC Bx	1x1.50x1.50	4.54	
.676	CPp	0.75	0.83	
.915	"	0.75	0.83	
72.165	"	0.75	0.83	
.375	"	0.75	0.83	
72.539	RC Bx	1x4.00x2.50	18.10	
.625	CPp	0.75	0.83	
.843	RC Bx	1x3.00x2.10	13.76	
.955	CPp	0.75	0.83	
73.395	"	1.50	5.43	
.633	RC Bx	1x3.00x2.10	10.39	
.923	"	1x3.00x2.10	17.73	
74.166	"	1x3.00x2.10	10.39	
.263	"	1x3.00x2.10	16.86	
.450	"	1x4.00x2.50	24.60	
.664	C.Pp	1.50	1.69	
.704	RC Bx	1x4.00x2.50	18.10	
.980	C Pp	0.75	0.76	

(to be continued)

KM	Type	Size (m)	Capacity (m^3/sec)	Remarks
Structures in Olangapo - Gapon Road (continued)				
75.953	RC Bx	1x4.00x2.50	21.50	
76.273	"	1x3.00x2.10	13.76	
.473	"	1x3.00x2.10	16.86	
.633	"	1x3.00x2.10	16.86	
.773	"	1x3.00x2.10	10.39	
77.021	"	2x4.00x2.50	36.20	
.136	CPp	2x1.50	6.90	
.590	"	2x1.05	5.08	
.730	"	1.50	3.45	
.830	"	0.90	1.22	
.848	"	0.90	1.22	
78.020	"	2x0.90	2.44	
.461	"	0.90	1.22	
.675	"	2x0.90	2.44	
.705	RC Bx	1x3.00x3.00	17.73	
.720	"	1x3.00x3.00	21.60	
.837	CPp	2x1.50	8.86	
.980	"	2x1.50	6.90	
.135	"	2x1.50	6.90	
79.325	"	0.90	1.20	
.475	"	2x0.90	2.44	
.650	RC Bx	1x3.00x2.10	10.39	
.747	CPp	1.50	3.45	
.875	RC Bx	1x3.00x2.10	10.39	
79.985	"	1x3.00x2.10	10.39	

PRESENT CONDITION OF AGRICULTURE

II. PRESENT CONDITION OF AGRICULTURE

2.1 Physical Background

2.1.1 Location and Topography

The project area locates at the central part of Pampanga province, due east of San Fernando, capital of the province. The area stretches from northwest to southeast along Pasig-Potrero river, one of the largest tributaries of Guagua river, with a gross acreage of the 23,540 ha consisting of about 11,950 ha of agricultural land (hereinunder described objective area) and 7,800 ha of the mountainous forest land.

The project area lies on the recent alluvial fun being fed by Pasig-Potrero river. The topography of the land is a very gentle, sloping downwards from northwest to southeast with altitudes ranging from EL. about few meters to EL. about 220 meters. An average slope is about 2 % in the upper-stream area and about 0.07% in the middle to downstream area. The area is divided into several tracts by a number of small tributaries of Pasig-Potreró river. Paddy field spreads intensively in about one second of the objective area, using water of these streams. Recently, this area has affected by several distractive flooding by Pasig-Potrero river and the land has deeply covered by sand sedimentation in certain extent. The remaining one second extends rather elevated land at more than EL. 20 meters and mainly exploited as the sugar cane field.

2.1.2 Eco-climate

The climate in the project area characterized by distinct wet and dry seasons. The dry season is generally from December to April, and the wet season from May to November.

Eco-climate refers to various phonomena of the atmosphere, such as air temperature, rain-fall, relative humidity, cloudiness and/or sun-shine hours, wind direction and velocity, etc. as they directly affect vegetable and animal life. Out of those climatic elements, rain-fall is the most notable factor in the area. Heavy rainfall in the wet season cause flooding of river causing serious damages to the agricultural production and properties. Particularly, destructive typhoon seldom occured during the month from July to September put spurs to those damages. Damages to crops and properties due to flood are confined to the low-lying area extended over the down-stream of the Pasig-Potrero river.

Seasonal variation of climatic conditions except rainfall are generally gentle as seen in the TABLE II-1 and FIGURE II-1. Blessing with such favourable climate, agricultural activities particularly of paddy rice and sugar cane production have long been practised extensively whole over the project area.

2.1.3 Soils

The general reconnaissance soil survey in the project area has been conducted in 1939 by the Department of Agriculture and Natural Resources. The soils were further investigated and studied in 1956 in attempt to rivise the former results to bring the present agricultural concepts for improving farming practices and increase crop yield. Besides, semi-detailed soil survey were carried out by the Bureau of Soils for evaluating the damaged area caused by flooding and sand-sedimentation.

According to the previous soil investigation and study in the above, the soils in the project area are derived from the recent alluvium deposited by the Pasig-Potrero river and its tributaries. Based upon the morphological features of the soil profile and chemical characteristics of the soils, they are classified into three soil groups in terms of soils series in order, namely, the Angeles series, the La Poz series and a soil series associated with the Hydrosoils. These soils are further sub-classified into seven soil types according to the texture qualities of soils. The soils classified are summarized in the following TABLE II-2.

Among three soil series, the soils of Angeles and the La Poz series are widely extended in the most part of the objective area and have long been cultivated to their maximum possible, principally with paddy rice and/or sugar cane. While, the soils associated with the Hydrosols are mainly lie in the southeast-most of the project area. Due to the swamp and frequent occurence of deep flooding in this soil area, the land is utilized for limited purpose to the inland fishery.

All the soils consist of sandy particles ranging from coarse to very fine in size. Coarser textured soils mainly extend over along the Pasig-Potrero river, while finer textured soils in other most. Both external and internal drainability are fairly good to parfect. These soils are easily to till and responsive to soil management. However, because of sandy texture qualities of soils, crops suffer from lack of moisture during the period of drought. Accordingly, irrigation practice is a pressing need in this area.

Regarding to the chemical properties, all the soils are rich in mineral elements, while poor organic matters even in the surface soil. An average condition of soil properties is 0.02 to 0.1% of nitrogen; 0.06 to 0.28% of phosphate; 0.14 to 0.39% of potassium; 1.63 to 5.81% of calcium; 0.46 to 1.74% of magnecium; 0.41 to 3.02% of organic carbon; 5.61 to 7.0 of pH value.

In recent year, the land in the low-lying area has been deeply covered by the fresh sand deposited by the flooding of the Pasig-Potrero river. As the results, estimated to be 4,440 ha of paddy field is, more or less, missed its arability, productivity and irrigability. The area affected by sand-sedimentation is summarized as below and its extending area is illustrated in the following map attached to this report.

Area Affected by Sand Sedimentation (1972)

Area Affected (ha)	Land Category	Texture	Sedimentation Depth (cm)
1,530	Liver-wash (Rwg)	coarse sand with gravel	more than 50 cm
1,060	Paddy field (PwB4)	coarse sand	more than 50 cm
1,330	Paddy field (CbB4)	medium to fine sand	20 to 50 cm
160	Paddy field (QgvB2)	silty loam to coarse loam	20 to 50 cm
60	Paddy field (LpB2)	fine sand	50 to 100 cm
230	Paddy field (CbA4)	fine sandy loam	50 to 100 cm
30	Paddy field (CbD4)	fine loam to silty loam	20 to 50 cm
40	Paddy field (SmsD4)	fine sandy loam to loam	20 to 50 cm

4,440 ha in total

Note; Data Source; Semi-detailed soil survey and land capability study for rehabilitation of flood sedimented area in Central Luzon, 1972

2.1.4 Water Resources

The major water resources inthe project area are the river water of the Pasig-Potrero river and its tributaries. The Pasig-Potrero river, flowing east-westwards in the center of the area, has relatively abundant discharge in the wet season, while the run-off is remarkably decrease and almost all get into river bet in the dry season. The streams of tributaries are also easily dried up during the dry season when rainfall can be scarcely obtained, and even in the wet season the area suffered from water shortage due to the uneven distribution in time and the small water holding capacity of the drainage basin of the streams.

The ground-water is the other water resource in the area. At present, although no systematic observation is made, considerably high potential of the groundwater can be estimated. The majority of the waterworks in each village is traditionally utilized the groundwater by installation of deep wells and/or artision wells.

In recent year, in attempt to cope with such shortage of surface water particularly for the irrigation purpose, a number of tube wells

has been exploited by the village communities or individual farmers themselves with the technical guidance of the provincial office of the National Irrigation Authority under the rural development programme of Pampanga province. As of the end of December, 1976, some 1,060 numbers of tube wells covering approximately 2,770 ha in total of paddy field has been established in the area.

2.2 Socio-Economic Background

2.2.1 Administration and Population

The project area belongs to Pampanga province of the Central Luzon. The area includes four Mjnicipalities, i.e. M. Bacolor, M. Guagua, M. Sta. Rita and M. Porac and 43 Barrangais (villages). The location of these Municipalities and Barrangais is shown in the administration map attached to this report.

According to the demography of Pampanga province in February, 1978, the project area except mountaneous ranges is being densely inhabited with about 93,170 people, representing about 7 persons per ha or 704 persons per km^2. The number of household are 15,290 families and an average family size is about 6.1 persons.

Out of the total household, some 2,625 families or about 17% are engaged in agriculture, of which 30% or 776 farm families are owner farmer, while 70% or 1,849 farm families are tenant or farm labour. The remaining are the primary economic sector as fishery, forestry, etc. 4.4% or 679 families; Manifacturing and engineering, 28.5% or 4,355 families; Commerce, 22% or 3,360 families; Social services, 25.5% or 3,906 families and other business, 2.4% of 361 families. The distribution of population and household in each Municipality are as shown below and their detailed breakdown is shown in the following TABLES II-3, II-4 and II-5.

Population and Household

(as of Feb., 1978)

Name of Municipality	Population			Household	
	Male	Female	Total	Non-farming	Farming
M. Bacolor	23,085	22,785	45,870	6,403	1,018
M. Guagua	8,350	8,402	16,752	2,672	262
M. Sta. Rita	6,841	6,591	13,432	1,569	672
M. Porac	8,881	8,234	17,115	2,023	673
Total	47,157	46,012	93,169	12,667	2,625

2.2.2 Land Use

The project area delineated is at approximately 21,040 ha in gross. Out of the gross area, some 7,800 ha is categorized into forest land mostly lying in the mountaneous range. The remaining area of 13,240 ha extends on the alluvial plain of the Pasig-Potrero river basin and it has long been exploited as the farm land to its possible maximum. The area of 13,240 ha is broadly categorized into:

(1)	Agricultural land	10,010 ha	(75.6%)
	- paddy field	3,550 ha	(26.8%)
	- upland field	2,740 ha	(20.7%)
	- other purpose	870 ha	(6.6%)
	- fallow or waste land	2,850 ha	(21.5%)
(2)	Fish pond	1,190 ha	(9.1%)
(3)	Village accommodation	2,030 ha	(15.3%)

The detailed breakdown on the above is shown in the following TABLE II-6 and extending areas are illustrated on the map of the present land use attached to this report.

2.2.3 Land Owner-ship and Tenure System

The Agricultural Land Reform Code (Public Act. 3844) or so-called "Land-to-the tillers law" was legislated in 1963, aiming to creat a truly viable and social economic structure in agriculture which would enhance greater productivity and higher farm income. The objective was strengthened by the promulgation of the Presidential Decree No.2 in 1972, declaring the whole country as a land reform area and further supplemented by the Presidential Decree No.27 in 1973, emancipating the tenant-tillers from the bondage of the soil by turing them into amortizing owners of the land they cultivated. These two decrees were intended to facilitate and enhance programme implementation for the immediate attainment of the objectives of the agrarian reform.

The present strategy in implementation of the land reform programme, particularly on the paddy field is being through an integrated approach whereby tenurial improvement as the core of the programme is supported by a package of (1) services to faster agricultural productivity, (2) provide much-needed credit and (3) infrastructural and institutional developments.

Under the prevailing programme of the agrarian reform introduced in the above, registration of the land title to the tillers is being proceeded on paddy field in the project area. According to the informations provided by the Provincial office of the Bureau of Agrarian Reform. The land reformation programme has been covered at about 77% or about 600 families of rice producer or 4,930 ha of paddy field by the end of 1977. The

remaining about 1,470 ha of paddy field and about 2,740 ha of upland field are mainly cultivated with a tenant systems.

The tenant systems in the project area are traditionally of:

(1) Land rent by cash contructed at P$2,500/ha on an average;

(2) Land rent by crop sharing arrangement with such ratio as 50-50, 30-70, 35-65, etc. The most common arrangement of share is at 50-50 in rate;

(3) Land rent by fixed amount of production; and

(4) Land rent with free charges as the minor exception.

The total number of farm families in the area is 2,625, of which land owner constitutes 777 families (or 29.6%) and the remaining 1,848 farm families (or 70.4%) are grouped into the tenant, as shown in the TABLE II-8. A major portion of farm families, representing about 2,130 farm household or 80% are engaged in paddy cultivation, while about 490 farm household or 20% in sugar cane production. Distribution of area and farm household in each tenure system are as shown in TABLES II-7, II-9 and II-10.

Taking into account all the farms, some 10.1% or 265 household is of farm holding size less than 1.0 ha; 49.4% or 1,297 household, 1.0 to less than 3.0 ha; 29.4% or 773 household, 3.0 to less than 5% and 11.1% or 290 household, more than 5.0 ha. The small farms less than 5.0 ha comprise at about 89% of all the farm household and contribute at 50% of the total farm land, while the large farms more than 5 ha at 11% of all the farms or 50% of total farm land. As for the rice cultivator alone, all the household is grouped into the farm holding size less than 5 ha and an average farm size per household is at 2.4 ha, as shown below. An average farm size of sugar cane cultivator is estimated about 5.5 ha.

Cultivation Size of Paddy Rice

(as of end of 1977)

	Less than 0.5 ha	0.5 - 1.0	1.1 - 1.5	1.5 - 2.0	2.1 - 2.5	2.5 - 3.0	3.1 - 3.5	More than 3.5 ha
Proportional extent of household (%)	4.5	27.3	21.0	25.1	4.9	10.0	1.4	5.8

2.2.4 Agricultural Supporting Services

The agricultural supporting services such as agricultural research and extension programme, agricultural credit, seed multiplication, etc. have been schematically organized and extensively operated in the project area. Besides, village community as the rural organization for agricultural development has also been systematized comprehensively under the guidance of the Central Government in recent year. These services are,

at present, propaganted with farmers at sufficiently intensive level for achievement of the agricultural exploitation particularly for paddy rice production in the area.

(1) Extension services

The agricultural extension services are conducted by the Agricultural Extension office in each Mjnicipality under the guidance of the Provincial office of the Bureau of Agricultural Extension. Under the direction of the Municipal Extension offices, one extension worker is stationed at each Barrangai (village).

The present extension services are concentrated on the extension of the MASAGANA 99 putting emphasis upon paddy cultivation including introduction of high-yielding varieties and proper use of chemical fertilizer and agro-chemicals. Most of farmers are in need of sufficient quantity of farm inputs, but the technical extension is rather behind from the sufficient quality.

(2) MASAGANA 99

The MASAGANA 99 is the agricultural supporting programme aiming at self-sufficiency in foodstuff in Philippines. This effort are so far concentrated mainly on rice cultivation, at present.

The programme, which provide farmers with the extension advices, credit for farm inputs of high-yielding varieties, fertilizer, agro-chemicals and credit for labour and living allowance, was initiated since 19 and has rapidly extended over whole Philippines, contributing considerably to the recent increase of paddy production. In the project area, about 21% of the total farmers take part in this programme.

Under the programme, a farmer gets a package of subsidized inputs with the credit from the Government through the Rural Bank and Philippine National Bank (PNB). The interest rate of the credit is one percent per month and liquidation period is six month after the borrowing or after the harvesting of paddy. Generally, the farmer can borrow money at Rs 1,200/ha as the maximum.

2.2.5 Irrigation Systems and Processing Facilities

(1) Existing irrigation systems

Since long, there have been exploited 10 irrigation systems in the project area using the surface water, commanding a total irrigated area of about 1,670 ha. All of them are managed by the water user's association organized under the village community. The following Table show a general information on those irrigation systems.

Inventory of Irrigation System

Name of System	Location (Municipality)	Irrigation Area (ha) Wet season	Dry season
Bacolor	Bacolor	602	300
Macabacle	- do -	86	0
Sta. Barabara	- do -	167	30
San. Juan Betis	Guagua	66	0
Paligui Libutad	Sta. Rita	93	45
Dila-Dila	- do -	38	0
Dampol	- do -	96	45
Magsaysay	- do -	228	0
Lacsamana	- do -	120	0
Manibaug	Porac	175	50
Total		1,671	470

Data Source; Short Report on Irrigation System in Pampanga prepared by NIA, San Fernando Pampanga Province, 1976

However, as those irrigation facilities are mainly fed by small tributaries of the Pasig-potrero river or small springs, parfect irrigation can not promiss even in the wet season due to shortage of water in such stream. Furthermore, an actual irrigability by those facilities are, more or less, missed causing to the serious flooding and sand-sedimentation by the Pasig-Potrero river.

In recent year, in attempt to cope with such meager watered condition, a number of groundwater irrigation system by means of deep tube wells has been developed by the community and/or individual farmers themselves. The inventory of those pump irrigation facilities is as shown below:

Inventory of Pump Irrigation Facilities

Irrigation Facility	Bacolor	Guagua	Sta. Rita	Porac	Total
- No. of pump	192	31	206	10	439
- Covering area (ha)	535	74	515	25	1,149
- Average size (ha/pump)	2.79	2.35	2.50	2.36	2.62

Data Source; Short Report on Irrigation Facilities prepared by the NIA, San Fernando, Pampanga Province, 1976

(2) Rice mill and sugar mill

The rice mill as one of the important agricultural processing facilities has long been established in and around the project area. According to the information obtained from the National Grain Authority who is incharge of the control system of rice and other food-crops, there are total about 35 rice mills, of which 18 mills are large in capacity ranged between 0.6 tons/ha and 3 tons/ha, while the remaining 17 are

small mills having at 0.25 ton/ha to 0.4 ton/ha in milling capacity. It is estimated that the total milling capacity of whole mills is about 196 tons/day (8 hrs) or 24 tons/hour which will be far sufficient capacity to the present paddy production in the project area. The detailed inventory of rice mills is listed in the following TABLE II-11.

2.2.6 Marketing and Price

(1) Marketing system of rice and sugar

There exist three alternative marketing channels for rice distribution. In every case, consumers get rice from the last distributor, "licenced retailers".

For the first case, middlemen or rice mill owners buy rice from farmers and sell it to wholesalers. Wholesalers in turn sell it to the licenced retailers. In the second case, National Grain Authority (NGA) buys rice from farmers in the first place and sell it to the retailers. In the last case, rice is purchased by farmers cooperatives. The cooperatives sell it to the rice mill owners and NGA. About sixty percent of the marketed rice is through the first channel, thirty percent through second and ten percent through the third in recent years. The distribution flow of rice is summarized in FIGURE II-2.

National Grain Authority (NGA) regulates and controls the marketing of rice with the object of stabilizing the price of rice. NGA buys rice and other food crops when there is excess supply of rice and releases the stock to the market when demand is in excess of supply of rice.

Sugarcane produced by farmers or estate farms of sugar mill is milled in Integrated Sugar Central Company Incorporated (ISCCO) and Pampanga Sugar Development Company Incorporated (PASDECO). ISCCO is a semi-governmental corporation owned by National Sugar Development Corporation. ISCCO collected sugarcane from its estate farm (around 1,400 ha) and also from private farmers PASDECO is a private company operate sugar mill wholly under the contract bare with farmers. After milling in ISCCO or PASDECO, sugar is sold to the Phillippine National Bank (PNB) from which all the cash payment is made to planters. The sugar, then, delivered to the Philippine Sugar Commission (PSC), which is the governmental organization for controlling the price of sugar and the amount to be sold. From PSC, a part of the sugar is exported overseas and a part to domestic consumption through the licenced trader. The distribute flow of sugar is presented in FIGURE II-3.

(2) Price of food crops

Price of rice increased considerably during the past five years. Retail price of rice (fancy variety) was P631 per ton in 1973, which went up to P1,299 per ton in 1977. Annual average price increase was about 20 % during the period. Farmgate price of rice also increased during 1971 - 1976. The price was P1,116 per ton in 1976 which is around 1.7 times of that in 1971. The farmgate price and retail price

are summarized in TABLES II-12 and II-13.

As mentioned earlier, the Philippine National Bank purchased sugar from ISCCO and PADDECO. The price /1 is P90 per picul or US$192.3 per ton during 1977 - 1978. The purchasing price has also fluctuated, reflecting the world market price. During 1974 - 1975. the price was P134.4 per picul or US$287.2 per ton, which is about 50 % higher than that of the current price. Market price and Purchasing price by PNB is presented in TABLE II-14.

2.3 Present Agricultural Setting

2.3.1 Agricultural Land Use and Land Classification

The project area has long been developed as the farm land to its possible maximum. Out of 11,950 ha of the total farm land, estimated about 11,080 ha is an arable land. Paddy field constitutes about 3,550 ha and upland field is 5,780 ha. The remaining 1,750 ha of the land is lie fallow or waste mainly caused by deep sand-sedimentation transported by the heavy flooding of the Pasig-Potrero river in the past several years.

From both hydrological and agricultural investigation and study, it is observed that most of the farm land is, more or less, affected to a limitation on crop-production caused by the seasonal occurrence of the flooding and/or sand-sedimentation and sheet erosion of surface soil by heavy rain. According to the prevailing land use pattern which is characterized by degree of agricultural constraints, the project area is defined into six agricultural blocks as shown in the following TABLE II-15 and also in the classification map attached to this report.

The area defined into the Agricultural Block I extends over the upper-reach of the Pasig-Potrero river. The area occupies about 8,670 ha or 55.1% of the total farm land. The land, having an elevation at more than 10 m above sea level, is quite free from the seasonal occurrence of the river flooding. The land have long been cultivated with sugar-cane under rain-fed condition. No irrigation facilities are provided in this area due to lack of water source. Almost all of the land is still being owned by several big land-owner and cultivated by the tenant with fifty-fifty in rate of sharing arrangement. An average land holding per farm house-hold is estimated about 5.5 ha.

The Agricultural Block II is an area which occupies about 930 ha or 5.9% of the total farm land. The land of this area is also free from the seasonal flooding similar to the Block I area. However, the land is distinguished from the Block I in due consideration of the land category to paddy field. The land mainly extends over the vicinity of the Block I area as shown in the classification map. In this Block II area, the irrigation facilities using both surface and groundwater have long been developed by the village communities under technical supervision of the Irrigation office, Pampanga province. With secure irrigated condition, paddy cultivation two to three times a year has been started to practise

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/1: Price of brown sugar

under the national campain of the MASAGANA 99. Besides, some vegetables are also introduced as the secondary crop and those cropping acreages are gradually extending in the production pattern of the dry season. Land reformation programme (land title to tenant) has been satisfyingly completed in this area. A size of the land title varies from 1.0 ha to 3.5 ha and 2.4 ha on an average.

The area of the Agricultural Block III is mainly composed of paddy field which constitutes about 2,420 ha or 15.4% of the total farm land. Because of the lowlying topography, the land in this Block III area is occasionally affected by the flooding of the Pasig-Potrero river and its tributaries when it can be obtained heavy rain. Since long, man-made creeks as the irrigation purpose have been rather densily networked in this area. In reality, however, most of these creeks miss their function caused by deep sand sedimentation in their bottom. In stead of such surface water irrigation systems, some number of the pump irrigation systems by use of groundwater are recently exploited by the farmers themselves but those conditions are still so far from meeting with the fully irrigated condition. With supplemental irrigation by means of the prevailing irrigation facilities to the rainfed conditions, double cropping of paddy rice is practised in certain extent, while most land is grown paddy rice once time in the wet season. The land reformation in this area has been mostly completed and then, an average holding size of paddy field per farm house-hold is about 2.4 ha.

The Agricultural Block IV is the area which defined into the paddy field frequently affected by the deep flooding in every wet season. As seen in the land classification map, the area extends over the southeast-most of the project area and its extent is about 1,250 ha or 7.9% of the total farm land. Since no irrigation facilities are provided in this area, paddy rice cultivation is practised only once time in the wet season. The seasonal occurrence of flood causes yearly distruction to the paddy rice and then, the farmers adjust their cropping schedule so as not to coincide with the time of flood and heavy rain to minimize the loss of crop due to flood constraints. Local varieties of paddy is dominant in this area. In this area, some 1,190 ha of fish-pond has also been exploited in the reparian land along the Guagua river.

The area defined into the Agricultural Block V extend mainly along the mid-reaches of the Pasig-Potrero river. The total extent is about 1,570 ha or 10.0% of the gross agricultural land. The land is categorized into paddy field but of which estimated to be 1,300 ha of the land is, at present, lie fallow due to deep sand sedimentation mainly caused by the serious flooding in 1972. This area is also frequently affected by flooding in every rainy season.

The last area defined into the Agricultural Block VI is a waste land. The area occupies a part of fun-head of the plain and have a total extent of approximately 900 ha or 5.7% of the total farm land. In this area, surface wash (or sheet erosion) and gullying have taken place seriously by the past flood of the Pasig-Potrero river in 1966 and 1972.

The detailed breakdown on the present agricultural land use in each Agricultural Block is shown in the following TABLE II-15.