2.7.3 Farm Road Development

Western Samar enjoys an advantage than the other provinces in Samar because it is accessible to major markets like Manila and Tacloban in Leyte passing thru the concrete pavement of Philippine-Japan Friendship Highway, which is running through the coastal area of Western Samar. It is easy therefore to transport agricultural and daily commodities in and out of Samar Island.

However, road density in Samar Island is comparatively smaller than that of the national average. Road density is only 160m/km. (1.7m/ha.). Hence, with the poor maintenance of the existing roads, farmers find it difficult to transport their daily farm goods thereby incurring heavy losses. Therefore, a farmer spends too much time traversing to and from the town and market.

To improve the present conditions, improvement of the existing roads and construction of new farm to market roads (gravel pavement) could provide valuable benefits to the regional economy. A road density of 10 to 15 m/ha. is necessary to improved social welfare.

2.7.4 Rural Water Supply Development

The Task Force on Rural Water Supply (TFRWS), under the auspices of the NWRC, has defined three levels of services. Level I is the most basic, and essentially consists of water point sources such as open wells, artesian wells, pumps, and springs designed to serve an average of 50 households. Level II consists of a point source from which water is pumped and distributed to communal faucets, and serve an average of 100 households. Level III is defined as a waterworks system which draws water from one or more sources, and distributes it through a pipe network directly into the user's homes. Water treatment is on a case to case basis. Level III service is provided in urban communities, whereas, Level I and II for rural centers.

The 1975 TFRWS survey showed a total of 639 registered public wells or an average of 10.5 wells per municipality providing Level I service to an estimated 183,115 population (or 16 percent of the total). Operating communal systems (Level II) serve a population of 13,680 or one percent of the total. And two level III systems, of which one serve a population over 10,000.

The Calbayog Waterworks serves the city proper, Oquendo, Ipao, and Obrero. It has a maximum capacity of 1.2MCM/year which served a population of 27,000. This consumption is estimated to be lower than 0.375MCM/year indicating

deficiencies in the distribution facilities. On the other hand, the Catbalogan Water System comprising of Catbalogan Waterworks and Catbalogan Water System has a maximum capacity of 0.692 MCM/year. However, only 0.27 MCM/year is served and used by 24,000 inhabitants which is also lower than the estimated water use of 1.01 MCM/year[1/]. Improvement was made in 1925 five years after the construction of the Catbalogan Water System increasing its capacity to 0.30 MCM/year.

Both Level III systems, supplemented with Level I and II facilities serve only about 26 percent of the total population in 1975, a condition which persisted up to the present time. With the present trend towards urbanization, efforts are being made to improve existing water supply facilities and the development of new sources that would meet the projected water withdrawals for domestic users in the year 2000 of about 111,000 CMD or 56 percent of the present urban intake.

In the year 2000, about 45 percent of the municipalities will have population over 20,000, 20 percent more than that of 1975. Five towns will have populations of over 10,000 three times more than the past figures.

2.7.5 Rural Electrification Development

The mini-hydropower generation is one of the main strategy in developing the area. Cheaper and consistent supply of power can provide direct and indirect impact to the rural area and its vicinity. Measured as direct impact, would be house lighting, cold storage for the daily goods, processing of farm products, and so on. While measured as indirect impact, would be oil saving briskness on the commercial activity of extended working hours during night time and others.

The generated power, of course, can be utilized for Barangay's power demand such as lighting and energy for agricultural processing and can be transmitted to town forming the center of several barangays. Although the power in the wet season will be secondary energy, such power can be transmitted to the trank transmission line between Leyte and Manila, or can be utilized for pumping energy for irrigation water in the downstream area of the main river along the coastal line.

Irrigation in the downstream area of the main river will be done through installation of pumping station in the main river. Construction of a diversion dam crossing the main river will be difficult due to a wide long river span and requir[illegible]siderable discharge in the wet season.

1/ Based on 1975 urban per capital withdrawal of 115 li/day.

The Survey Team, assumed that the total generated output of the mini-hydropower in the three river basin will be as follows:

500 to 1,000 KW/place x 20 places x 3 rivers = 3 to 60 MW.

The available irrigation water is also assumed as follows:

1 to 2 cu.m./sec/place x 20 places x 3 rivers = 60 to 120 cu.m./sec.

2.7.6 Agro-Processing Development

By using generated electric power on the mini-hydropower station, various kinds of agro-processing such as coconut oil, plant, abaca processing plant, ice plant, cooling and cold storage facility, etc. will be proposed in the study area. These proposed products will bring more benefits to the beneficiaries because of the additional value. These items should be carefully studied by the Study Team.

2.7.7 Development of Other Components

It is also considered indispensable to develop the following components under the Master Plan:

a. Agro-processing
b. Fisheries
c. Reforestation
d. Rural Health Services
e. Marketing and Institutional Supporting Services, etc.

2.8 Plan after the Study

Once the Master Plan concept study is completed, a system for ranking and prioritization will be conducted with consideration given to eocnomic, social, environmental and political aspects of the identified projects.

After which a top management decission will select the projects for implementation stages. At this point, the Philippine government will again look into other possibilities of funding these projects thru grant or lending institutions.

3.0 Concerning Implementation of the Study

3.1 Implementation organization (i.e., organization and activities of SIRDP and other government organization, etc.)

The Samar Integrated Rural Development Project (SIRDP) is the coordinating arm of the government, it provides technical and administrative support for the project.

SIRDP coordinates, and monitors the activities of the various line agencies of the government, such as the following:

NEDA	-	National Economic Development Authority
MPWH	-	Ministry of Public Works and Highways
NIA	-	National Irrigation Authority
MAF	-	Ministry of Agriculture and Food
MECS	-	Ministry of Education, Culture and Sports
MOH	-	Ministry of Health
NEA	-	National Electrification Authority
BFAR	-	Bureau of Fisheries and Aquatic Resources
PEO	-	Provincial Engineering Office
PAGASA	-	Philippine Atmospheric Geophysical and Astronomical Administration
PCA	-	Philippine Coconut Authority, etc.

3.2 Assignment of counterpart personnel

SIRDP has personnel of different fields of specializations who can be assigned to work with the Japanese team/consultants. It has an extension office in Manila located at 38 Timog Avenue, Quezon City, second floor C.C. Castro Building.

Its main office is in Catarman, Northern Samar and a field office in Western Samar located at the annex building of the City Hall of Calbayog City. All of these three offices can provide technical and administrative support for the study. (See attached organizational chart).

3.3 Support Service for the study (i.e., provision of office space, study, vehicles and others)

At any of the offices of SIRDP (Manila, Catarman and Calbayog City), office space can be provided for the Japanese consultants. Field vehicles of SIRDP can also be assigned for use of the study team. Whenever the Japanese team is in Manila, a vehicle can also be assigned for their use.

3.4 Existing Maps and Aerial Photos of the Study Area

There are three (3) available existing maps of the study area, as follows:

1. Map of Western Samar, scale 1:100,000
2. Map showing the road network of Western Samar, scale 1:333,000
3. Topo map, scale 1:50,000

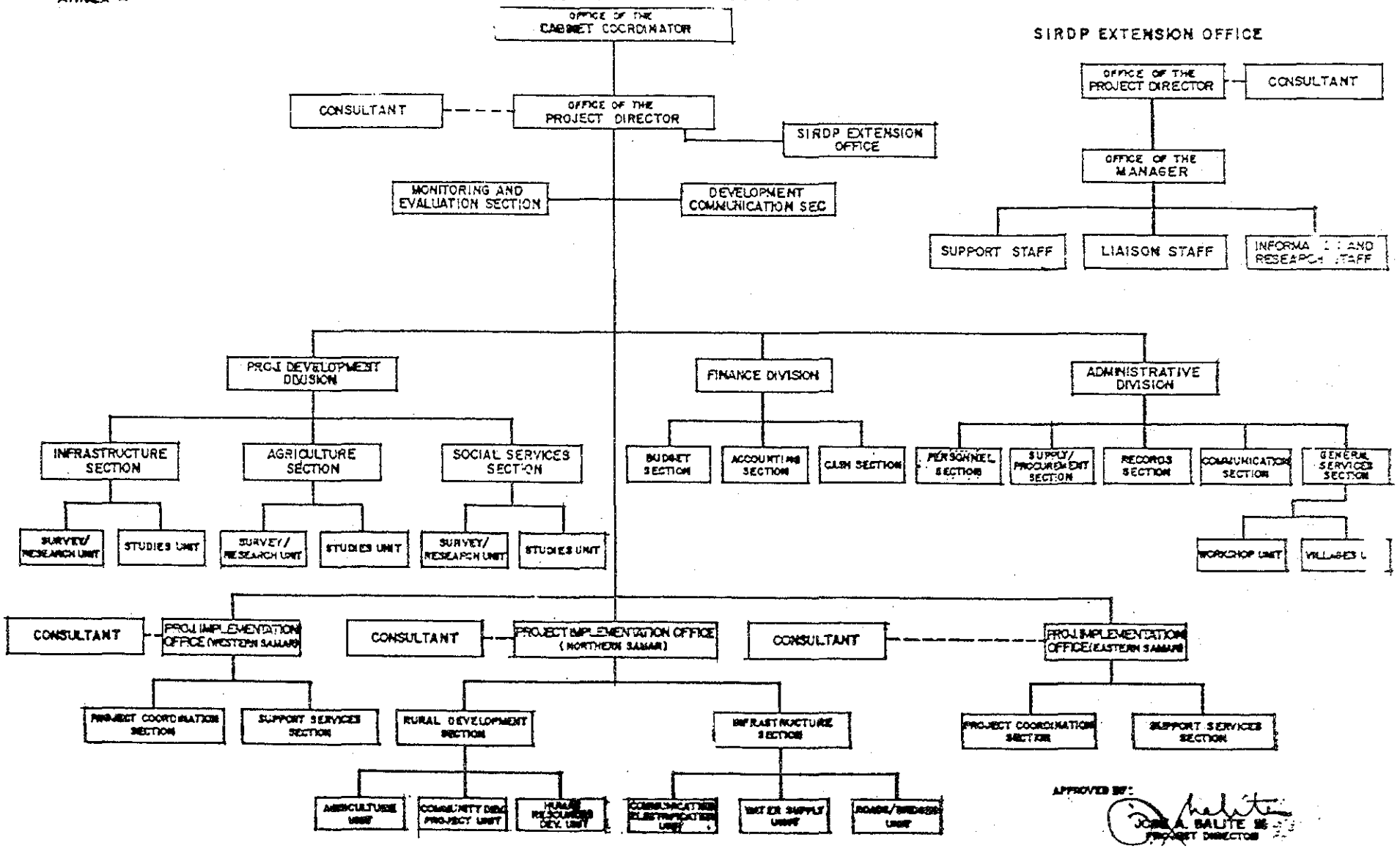
As to the aerial photos, there are two (2) surveying firms which could produce photo negatives with their corresponding quoted prices, as follows:

1. Certeza and Co. - ₱140/sheet, size 9" x 9" scale 1:15,000, Year 1971
2. F. F. Cruz - ₱60/sheet, size 9" x 9" scale 1:10,000, Year 1977

The required number of sheets as per estimate is not less than 1,130 pieces.

ANNEX A

SAMAR INTEGRATED RURAL DEVELOPMENT PROJECT
PROPOSED ORGANIZATIONAL STRUCTURE



APPROVED BY:

JOSE A. BALITE SR.
PROJECT DIRECTOR

4.0 Present Situation of the Study Area

4.1 Natural Condition - Topo maps of Samar hereto attached

4.1.1 Climatological data
4.1.2 River Discharge

DATA DESCRIPTION FOR NATURAL CONDITIONS

Rainful, temperature, humidity and wind velocity - For Western Samar, Catbalogan has its only observation station. The data was recorded from 1951-1980. No available data after this observation period. Table 1 & 2.

Sunshine hours, evaporation observation - There is only one observation site for the whole island of Samar. It is located in Catarman (Northern Samar). Our office is negotiating for the xerox copies of these raw data from the Philippine Atmospheric Geophysical and Astronomical Services Administration (PAGASA). This will take a little more time to reproduce due to the bulk of this information. Attached is a sample copy of PAGASA Form 800.

Flood and drought damages, etc. -· Available information is on the regional level which comprises the Samar and Leyte islands (Eastern Visayas). The data include various causes of crop damages such as typhoon, flood, pest and plant diseases, rats, drought, etc. Observation period from 1968-1985. See Table 3

Hydrological data (River discharge by season, Observation sites and duration, etc.) - From the office of the Natural Water Resources Council, only one river in Western Samar has the data, the Tenane River which is located in Wright, Western Samar. The rest is located outside the proposed project area. Table 4.

TABLE 1

(CLIMATOLOGICAL EXTREMES - CATBALOGAN (AS OF 1980)(12. 5.86) F28 PAGE 42

MONTH	TEMPERATURE (deg C)				GREATEST DAILY RAINFALL (mm)		HIGHEST WIND (mps)		SEA LEVEL PRESSURE (mb)			
	HIGH	DATE	LOW	DATE	AMOUNT	DATE	SPD/DIR	DATE	HIGH	DATE	LOW	DATE
JAN	35.0	29'73	16.1	8'49	274.0	10'29	15/ENE	24'75	1020.2	18'59	993.2	8'72
FEB	35.0	19'73	17.2	17'65	153.2	17'47	18/W	24'70	1019.2	1'62	1001.0	25'70
MAR	36.2	25'73	18.1	21'71	303.3	23'80	24/ENE	9'73	1020.2	30'58	1004.1	13'80
APR	36.6	24'66	17.9	4'63	201.6	6'35	26/ENE	15'79	1017.5	1'58	996.9	20'78
MAY	34.4	23'87	20.8	5'51	384.3	5'51	22/NE	15'66	1015.8	10'57	976.2	5'51
JUN	33.9	5'66	21.0	23'76	315.5	8'19	21/SE	25'71	1015.1	15'53	990.6	25'71
JUL	35.4	19'72	21.0	27'76	157.0	22'28	34/SW	14'71	1014.5	2'65 10'79	991.2	14'71
AUG	35.2	20'69	21.1	23'56 12'76	223.5	12'63	17/WNW	1'72	1014.5	8'62	993.9	4'62
SEP	33.0	4'80	21.1	15'56	227.6	18'56	21/W	26'78	1014.9	24'67	996.4	26'78
OCT	33.2	30'72	19.7	27'61	291.3	30'47	27/SW	12'70	1016.3	28'60	976.2	6'52
NOV	34.0	7'73	18.9	7'54	269.2	20'51	31/SW	3'67	1013.1	24'57	973.1	20'51
DEC	34.4	8'72	18.2	18'68	387.9	18'59	41/SW	26'68	1010.0	1'78	969.7	18'59
OVER-ALL	36.6	4/24/ 1966	16.1	1/8/ 1949	387.9	12/18/ 1959	51/SW	11/3/ 1967	1020.2	3/30/53 1/18/59	969.7	12/18/ 1959

comment : DOUBLE APOSTROPHE ('') MEANS FOR YEAR 1800

MONTH	TEMPERATURE (deg C)				GREATEST DAILY RAINFALL (mm)		HIGHEST WIND (mps)		SEA LEVEL PRESSURE (mb)			
	HIGH	DATE	LOW	DATE	AMOUNT	DATE	SPD/DIR	DATE	HIGH	DATE	LOW	DATE
JAN	33.3	3'59	17.2	12'72	531.3	10'29	21/NE	24'75	1020.2	30'73	996.5	7'72
FEB	32.7	26'70	17.0	19'14	298.5	10'39	18/SW	24'70	1019.3	4'64	998.1	24'70
MAR	33.8	3'72	16.3	4'72	253.7	15'39	18/SW	9'68	1019.5	12'64	1002.7	23'80
APR	35.6	20'54	18.1	4'63	282.2	6'35	23/SE	15'79	1018.2	7'70	998.9	24'71
MAY	36.0	16'79	19.6	30'72	402.1	4'51	45/NNE	15'66	1016.3	9'57	963.1	5'51
JUN	36.7	7'57	19.0	25'71	333.0	2'23	21/WSW	24'72	1015.7	2'57	983.1	24'71
JUL	37.8	24'72	19.2	14'71	101.6	13'71	34/SSW	14'71	1014.8	10'79	982.9	14'71
AUG	37.8	22'74	17.0	18'71	157.2	7'62	17/NE	29'72	1015.4	31'71	996.3	7'62
SEP	36.4	14'67	18.3	1'71	163.9	6'12	18/SE	3'73	1016.8	8'71	1002.5	3'62
OCT	35.3	3'62	18.6	25'71	196.1	28'26	18/W	15'67	1016.4	28'60	958.9	26'52
NOV	34.6	9'39	18.0	7'68	570.9	23'28	46/SSW	3'67	1017.8	24'57	968.1	20'51
DEC	33.4	18'60	18.3	18'68	274.6	21'69	26/S	26'66	1018.6	26'72	977.4	26'66
OVER-ALL	37.8	7/24/72 8/22/74	16.3	3/4/ 1972	570.9	11/23/ 1928	45/NNE	15/66/ 1966	1020.2	1/30/ 1973	958.9	10/26/ 1952

comment : DOUBLE APOSTROPHE ('') MEANS FOR YEAR 1800

MONTH	TEMPERATURE (deg C)				GREATEST DAILY RAINFALL (mm)		HIGHEST WIND (mps)		SEA LEVEL PRESSURE (mb)			
	HIGH	DATE	LOW	DATE	AMOUNT	DATE	SPD/DIR	DATE	HIGH	DATE	LOW	DATE
JAN	33.5	27'69	16.9	21'63	207.0	6'57	20/NE	24'75	1020.5	18'39	996.2	8'72
FEB	32.3	26'70	17.2	22'69	177.3	9'75 9'76	26/NW	25'70	1020.5	1'62	998.5	25'70
MAR	33.4	21'[illegible]	17.6	3'64	265.2	10'71	18/NNE	VAR'71	1020.5	30'38	1005.2	3'54
APR	34.3	20'[illegible]	19.0	4'63	119.4	23'69	21/ENE	20'70	1018.4	7'65	1001.4	24'71
MAY	36.6	20'80	20.3	8'55	145.0	22'65	29/WSW	24'72	1016.3	10'57	973.9	5'51
JUN	36.0	11'79	20.6	21'73	170.9	8'74	21/WSW	24'72	1013.6	15'53	993.5	24'72
JUL	35.8	31'70	20.8	21'63	203.5	12'70	23/ENE	14'71	1014.6	2'63	991.7	14'71
AUG	37.1	14'[illegible]	20.6	30'50	204.2	12'63	16/SW	13'73	1014.5	9'62	996.8	12'63
SEP	35.7	6'70	19.4	15'50	307.0	15'56	18/SW	30'69	1014.9	27'63	993.3	13'55
OCT	35.0	5'80	19.9	21'63	244.4	20'58	21/SW	16'67	1016.6	23'60	979.5	21'52
NOV	34.6	12'70	17.8	7'68	346.5	23'53	54/NE	3'67	1017.7	17'63	980.5	20'51
DEC	33.9	12'63	18.9	19'55	217.1	20'74	32/NE	26'66	1013.2	7'60	982.9	18'60
OVER-ALL	37.1	3/14/ 1930	16.9	1/21/ 1963	346.5	11/23/ 1953	54/NE	11/3/ 1967	1020.5	VARIOUS	973.9	5/5/ 1951

comment : DOUBLE APOSTROPHE ('') MEANS FOR YEAR 1800

MONTH	TEMPERATURE (deg C)				GREATEST DAILY RAINFALL (mm)		HIGHEST WIND (mps)		SEA LEVEL PRESSURE (mb)			
	HIGH	DATE	LOW	DATE	AMOUNT	DATE	SPD/DIR	DATE	HIGH	DATE	LOW	DATE
JAN	34.7	28'24	18.8	30'05	246.7	14'16	29/NNW	7'72	1020.3	30'73	993.4	8'72
FEB	34.8	26'19	17.6	24'05	132.6	10'39	20/W	24'70	1018.8	8'73	1001.9	24'70
MAR	35.9	31'24	18.0	4'05	178.6	15'37	16/NNW	19'71	1019.2	30'58	1002.9	23'80
APR	38.0	6'24	20.2	23'11	136.1	24'71	53/NNW	15'79	1017.4	7'70	972.9	15'79
MAY	37.9	2'24	20.6	4'51	325.9	2'59	55/SW	15'66	1015.9	10'57	985.8	4'51
JUN	36.2	17'33	20.9	23'75	244.0	2'23	27/WSW	24'71	1014.9	2'57	989.5	24'71
JUL	37.8	24'20	21.2	20'73	244.3	14'13	30/WSW	14'71	1014.6	2'65	994.4	3'71
AUG	38.0	18'24	20.6	2'20	106.7	12'63	22/WSW	8'68	1014.8	27'60	1000.4	6'64
SEP	37.2	10'24	21.4	4'71	116.0	6'12	18/SW	11'66	1015.4	6'53	997.7	26'78
OCT	36.0	23'22 8'47	19.8	30'20	150.1	12'32	32/W	26'52	1016.0	27'68	976.1	27'52
NOV	35.2	1'24	19.4	17'68	206.5	22'28	47/SW	23'68	1017.8	30'78	986.5	3'67
DEC	34.0	VARIOUS	17.5	3'04	192.8	6'58	30/N	9'51	1017.9	26'72	988.6	9'51
OVER-ALL	38.0	4/6/24 8/18/24	17.5	12/3/ 1904	325.9	5/2/ 1959	55/SW	5/15/ 1966	1020.3	1/30/ 1973	972.9	4/15/ 1979

comment : DOUBLE APOSTROPHE ('') MEANS FOR YEAR 1800

TABLE 2

(CLIMATOLOGICAL DATA) (6. 8.85) F27 PAGE 37

STATION : CATBALOGAN PERIOD OF RECORD- 1951-1980
COORDINATES: 11 47 N 124 53 E

MONTH	RAINFALL (MM)	NO OF RAINY DAYS	TEMPERATURE (DEG C) MAX-IMUM	MIN-IMUM	DRY BULB	WET BULB	DEW POINT	REL HUMI-DITY (%)	MEAN SEA LEVEL PRESSURE (MBS)	PREVAILING WIND DIRECT-ION	SPEED (MPS)	CLOUD-INESS (OKTA)	DAYS WITH THUNDER-STORM	LIGHT-NING
JAN	221.9	17	30.2	21.9	25.4	23.1	22	82	1012.1	NE	2	6	1	1
FEB	145.8	16	30.5	21.8	25.5	23.0	22	81	1012.3	NE	2	6	0	0
MAR	130.3	14	31.5	22.2	26.3	23.4	22	78	1012.1	NE	2	5	1	1
APR	107.6	14	32.6	23.2	27.4	24.4	23	78	1010.9	NE	2	4	3	4
MAY	176.2	15	33.0	24.1	28.1	25.1	24	78	1009.6	NE	2	5	12	12
JUN	205.3	17	32.6	24.1	27.9	25.1	24	80	1009.3	SW	2	6	14	15
JUL	233.9	18	32.1	24.2	27.7	25.0	24	80	1008.8	SW	2	6	13	14
AUG	234.4	17	32.2	24.4	27.9	25.0	24	79	1008.6	SW	2	6	10	12
SEP	245.9	18	32.1	24.2	27.3	25.0	24	83	1008.9	SW	2	6	11	13
OCT	306.8	21	31.7	23.5	27.0	24.7	24	83	1009.4	N/VAR	2	6	11	14
NOV	310.6	22	31.1	23.0	26.5	24.4	24	84	1009.8	NE	1	6	6	8
DEC	313.0	22	30.3	22.6	25.9	23.8	23	84	1010.9	NE	2	6	2	4
ANNUAL	2631.7	211	31.7	23.3	26.9	24.3	23	81	1010.2	NE	2	6	86	98

comment : Published by NATIONAL INSTITUTE OF CLIMATOLOGY

STATION : BORONGAN
COORDINATES: 11 35 N 123 26 E

PERIOD OF RECORD- 1931-1960

MONTH	RAINFALL (MM)	NO OF RAINY DAYS	TEMPERATURE (DEG C) MAX-IMUM	MIN-IMUM	DRY BULB	WET BULB	DEW POINT	REL HUMI-DITY (%)	MEAN SEA LEVEL PRESSURE (MB)	PREVAILING WIND DIRECT-ION	SPEED (KPH)	CLOUD-INESS (OKTA)	DAYS WITH THUNDER-	LIGHT NING
JAN	620.1	25	29.1	22.2	23.4	23.5	23	85	1012.4	NE	3	6	0	0
FEB	406.2	22	29.3	22.2	23.4	23.5	23	83	1012.5	NE	3	6	0	0
MAR	319.5	21	30.2	22.5	26.1	23.9	23	83	1012.5	NE	2	5	0	1
APR	255.5	21	31.3	23.1	27.0	24.7	24	83	1011.3	NE	2	5	2	3
MAY	310.6	19	32.1	23.4	27.4	25.1	24	83	1010.1	E	2	5	4	7
JUN	232.0	18	32.2	23.2	27.3	25.1	24	84	1009.7	W	2	5	7	10
JUL	195.2	17	32.3	23.1	27.2	24.8	24	82	1009.1	W	2	6	7	9
AUG	193.4	15	32.7	23.1	27.3	24.7	24	81	1008.7	W	2	6	6	11
SEP	199.8	16	32.6	23.0	27.2	24.8	24	82	1009.2	W	2	5	7	10
OCT	301.3	20	31.8	22.8	26.8	24.7	24	84	1009.8	W	2	6	6	9
NOV	341.8	23	30.7	22.8	26.3	24.5	24	83	1010.3	NE	2	6	3	5
DEC	657.7	27	29.7	22.7	25.9	24.1	23	86	1011.3	NE	2	6	1	2
ANNUAL	4055.1	244	31.2	22.8	26.6	24.5	24	84	1010.6	NE	2	6	43	67

comment : Published by NATIONAL INSTITUTE OF CLIMATOLOGY

STATION : CATARMAN PERIOD OF RECORD- 1951-1980
COORDINATES: 12 30 N 124 38 E

MONTH	RAINFALL (MM)	NO OF RAINY DAYS	TEMPERATURE (DEG C) MAX-IMUM	MIN-IMUM	DRY BULB	WET BULB	DEW POINT	REL HUMI-DITY (%)	MEAN SEA LEVEL PRESSURE (MBS)	PREVAILING WIND DIRECT-ION	SPEED (MPS)	CLOUD-INESS (OKTA)	DAYS WITH THUNDER-STORM	LIGHT NING
JAN	414.3	22	28.4	22.0	25.1	23.3	23	86	1011.9	NE	3	6	1	0
FEB	240.6	19	28.7	21.8	25.1	23.2	22	85	1012.1	NE	3	5	1	0
MAR	210.6	16	29.7	21.9	25.7	23.6	23	84	1012.2	NE	3	4	1	1
APR	157.9	15	30.8	22.4	26.5	24.4	24	84	1011.1	NE	2	4	5	4
MAY	145.2	13	31.9	23.0	27.3	25.1	24	84	1009.5	NE	2	4	14	12
JUN	188.4	16	32.0	23.2	27.1	25.0	24	84	1009.1	NE	2	5	15	15
JUL	199.3	16	31.6	23.2	27.0	24.8	24	84	1008.4	SW	2	6	11	15
AUG	159.2	14	31.9	23.5	27.2	24.8	24	82	1008.1	SW	2	6	9	12
SEP	200.0	16	31.6	23.2	26.9	24.7	24	83	1008.6	SW	2	6	10	13
OCT	379.1	21	30.7	23.0	26.5	24.7	24	86	1009.3	NE	2	5	10	12
NOV	511.6	23	29.9	22.8	26.1	24.4	24	87	1009.5	NE	3	6	6	6
DEC	483.2	26	28.8	22.6	25.6	24.0	23	88	1010.6	NE	3	6	3	2
ANNUAL	3289.4	217	30.5	22.7	26.3	24.3	24	85	1010.0	NE	2	5	86	92

comment : Published by NATIONAL INSTITUTE OF CLIMATOLOGY

STATION : TACLOBAN PERIOD OF RECORD- 1931-1980
COORDINATES: 11 15 N 125 00 E

MONTH	RAINFALL (MM)	NO OF RAINY DAYS	TEMPERATURE (DEG C): MAXIMUM	MINIMUM	DRY BULB	WET BULB	DEW POINT	REL HUMIDITY (%)	MEAN SEA LEVEL PRESSURE (MBS)	PREVAILING WIND DIRECTION	SPEED (MPS)	CLOUDINESS (OKTA)	DAYS WITH THUNDERSTORM	LIGHTNING
JAN	251.5	20	28.9	22.9	25.4	23.2	22	85	1012.0	NW	3	6	1	1
FEB	204.7	18	29.1	22.8	25.4	23.1	22	82	1012.2	NW	3	6	1	1
MAR	137.1	16	30.0	23.2	26.0	23.6	22	81	1012.1	NW	3	5	2	1
APR	126.5	16	30.8	24.1	27.0	24.4	23	81	1011.0	NW	3	5	6	6
MAY	146.8	15	31.1	24.8	27.7	25.1	24	81	1009.8	SE	3	6	14	15
JUN	156.0	16	31.1	24.6	27.8	25.0	24	82	1009.5	SE/ESE	3	6	14	19
JUL	157.6	17	31.2	24.5	27.8	24.7	24	81	1009.9	NW	3	6	13	19
AUG	155.1	18	31.4	24.6	27.8	24.7	24	79	1009.7	NW	3	6	14	14
SEP	159.4	16	31.4	24.6	27.5	24.8	24	80	1009.0	NW	3	6	13	19
OCT	178.2	19	31.1	24.3	27.1	24.7	24	82	1009.4	NW	3	6	13	19
NOV	236.9	20	30.3	23.9	26.5	24.4	24	84	1009.9	NW	3	6	9	11
DEC	304.7	23	29.5	23.5	25.9	23.9	23	85	1010.9	NW	3	6	3	5
ANNUAL	2172.5	211	30.3	24.0	26.7	24.3	23	82	1010.3	NW	3	6	111	130

comment : Published by NATIONAL INSTITUTE OF CLIMATOLOGY

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF NATIONAL DEFENSE

Coded for Direct Punching on IBM Cards

PHILIPPINE ATMOSPHERIC GEOPHYSICAL AND ASTRONOMICAL SERVICES ADMINISTRATION
(WEATHER BUREAU)
QUEZON CITY

PAGASA Form 80C
REVISED: JANUARY 19

UEP - PAGASA AGROMET
Station CATARMAN, N. SAMAR Geographical Coordinates _____ Month & Year August 19

Monthly Return of Daily Observation

STATION NUMBER	YEAR	MONTH	DAY	HOUR (LST)	Total Cloud Amount (Scale No.)	WIND AVG DIRECTION (tens of Deg.)	WIND AVG SPEED (Knots)	WIND MAX DIRECTION (tens of Deg.)	WIND MAX SPEED (Knots)	RUN OF WIND Kms & tenths	AIR TEMPERATURE (°C & tenths) MAXIMUM TEMP.	AIR TEMPERATURE MINIMUM TEMP.	AIR TEMPERATURE DRY BULB	AIR TEMPERATURE WET BULB	WATER TEMP. (°C & tenths) MAXIMUM	WATER TEMP. MINIMUM	WEATHER (Table IV) TSTM	WEATHER RAIN/RSHR	WEATHER DRIZZLE	WEATHER FOG/HAZE	WEATHER SMOKE	RAINFALL AMOUNT (mms) & tenths	DEW (mms & tenths)	STATE OF THE GROUND	EVAPORATION (mms. & tenths) OPEN PAN	EVAPORATION SUNKEN PAN	EVAPORATION BLACK POROUS ATMOMETER	RADIATION (Langley)	TOTAL MINUTES OF BRIGHT SUNSHINE	LENGTH OF DAY (MINUTES)
1 2 3	4 5	6 7	8 9	10 11	12 13	14 15	16 17	18 19	20 21	22 23 24	25 26	27 28	29 30	31 32	33 34	35 36	37 38	39 40	41 42	43 44	45 46	47 48	49 50	51 52	53 54	55 56	57 58	59 60	61 62	63 64	65 66	67 68	69 70	71 72	73 74	75 76	77 78
041	86	08	01	08						1883	322	255	268	258	350	250		+				00024		11	097					613	76
			02		12	33	10			1681	325	250	282	252	350	256		+				10006		11	087						
			03		03	23	08			1583	325	254	282	252	350	250						00000		03	044						
			04		01	23	06			0726	320	245	272	257	358	260		7				00048		01	063					772	766
			05		04	23	03			0858	325	250	276	256	340	260		+				10032		11	053					746	760
			06		04	33	06			0617	306	2442	280	256	328	250		8				00202		11	032					703	762
			07		08	23	06			0692	295	252	255	244	324	240		8				00248		11	047					648	779
			08		06	23	02			0857	306	265	265	251	370	256		+				00060		11	060						
			09		04	23	00			0676	330	245	265	258	370	260		+				00010		11	054					771	771
			10		05	00	01			0549	310	250	255	250	324	220		8				00154		11	022					828	757
			11		08	23	06			0846	286	245	260	255	300	248	38					00594		11	0VF					800	756
			12		08	23	04			0885	295	240	260	252	340	250	2					00042		12	018					815	751
			13		05	10	02			0621	322	250	284	258	350	220						00000		11	031						
			14		04	23	02			1116	315	258	274	258	360	254		7				X0000		11	063					400	755
			15		08	23	04			1512	330	256	278	248	350	256		7				00006		11	054					723	754
			16		05	33	02			1700	300	240	275	250	300	250		+				00042		11	027					800	753
			17		07	30	10			1422	315	256	280	252	344	254		7				X0000		11	043					246	752
			18		05	23	04			1156	315	256	268	256	360	254		7				00010		11	051					281	751
			19		04	23	05			0995	335	250	275	255	356	256		+				00004		11	070					308	751
			20		05	33	06			1040	320	255	290	260	348	260						00000		11	056					491	751
			21		08	00	00			0766	320	245	282	255	348	254						00000		01	051					723	750
			22		01	23	04			0883	335	256	295	262	360	260						00000		01	066						750
			23		02	23	06			1001	330	260	290	260	346	260						00000		01	076						749
			24		01	22	08			1358	330	258	290	260	354	254						00000		01	063						749
			25		01	23	05			1283	325	236	280	246	364	248		8				00074		01	065						748
			26		08	23	05			1174	320	260	290	260	360	260						00000		11	062						747
			27		02	33	04			1126	328	262	290	260	376	258						00000		03	061						746
			28		01	23	04			0912	332	244	292	248	370	258						00000		01	071						745
			29		01	23	02			0702	350	260	290	260	370	260						00000		01	076						744
			30		05	00	04			0766	340	260	295	260	370	265						00000		01	066						744
			31		01	20	06			0976	340	250	290	260	380	255						00000		01	073						743

Transcribed by: _____ Checked by: _____ Verified by: _____

TABLE 4

RIVER = TENANE R
STA ID= 08SW114250PW007 GRID NO.= 8 6 6 ABT 14 1/2 KMS FR TOWN PROPER,ALONG WRIGHT- TAFT PR
LAT: 11 48 25 LONG: 125 8 0 OV RD

DRAINAGE AREA(SQ.KM)= 392. ELEV.OF Z GAGE= 53.54 METERS ABV MSL GAGE TYPE=
START OBSERVATION =JUN 1959 GAGE OPERATION= WATER-STAGE RECORDER AGENCY =BPW-WRSD
OBS LAST CONSIDERED =DEC 1970 REMARKS= RECORDS GOOD,ABV 50 FAIR STATUS =OPERATING

A. ANNUAL DISCHARGE CHARACTERISTICS (Q IN CU.M./SEC.)

YEAR	PEAK Q	GAGE HT. -METERS-	DATE	TIME	MAX.DLY Q	MEAN Q	MIN.DLY Q	GAGE HT. -METERS-	DATE	RUNOFF --MM--
1959	1305.90	9.400	DEC 19	12NN	1036.80	*******	5.24	.76	JUN 30	******
1960	607.80	6.000	OCT 06	06AM	607.80	25.04	7.20	******	SEP 17	2019.8
1961	434.62	5.020	SEP 14	05PM	397.28	15.49	6.20	.71	AUG 08	1246.1
1962	580.80	5.850	NOV 06	05PM	231.10	22.58	6.60	.74	MAY 11	1816.7
1963	1045.08	8.140	AUG 13	08AM	786.33	22.81	5.52	.68	JUN 08	1834.6
1964	1154.79	8.670	NOV 19	06AM	1032.66	21.27	7.00	.76	APR 10	1715.9
1965	985.05	7.850	JUL 12	06AM	701.46	34.41	7.00	.76	MAY 21	2767.7
1966	60.96	1.870	JAN 04	06AM	52.54	*******	5.38	.67	APR 28	******
1967	201.34	3.360	DEC 17	06PM	147.72	*******	4.96	.64	JUN 25	******
1968	323.50	4.300	DEC 23	06AM	207.54	15.47	3.42	.53	SEP 11	1247.4
1969	193.90	3.300	DEC 22	06AM	176.70	11.65	2.84	.42	MAY 29	941.1
1970	255.90	3.800	OCT 14	06AM	166.00	18.10	3.00	.50	JUN 14	1454.4

B. EXTREMES OF DISCHARGE AND STATISTICAL PARAMETERS

EXTREME DISCHARGE IN CMS

MAX.Q = 1305.90 MIN.Q = 2.84
DATE = DEC 17,1959 DATE = MAY 29,1969
GAGE H= 9.70 GAGE H= .42
INSTANTANEOUS PEAK SEVERAL DAYS JUN

STATISTICS	PEAK Q	MAX.DLY Q	MEAN Q	MIN.DLY Q
MEAN FLW=	595.803	461.994	20.758	5.363
STD.DEV.=	425.257	356.438	6.692	1.564
SKEWNESS=	.481	.599	.842	-.549
KURTOSIS=	2.523	2.606	5.240	2.789
NO.YEARS=	12	12	9	12

C. MEAN MONTHLY DISCHARGE IN CU.M./SECOND

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1959	******	******	******	******	******	******	11.71	12.75	10.06	9.48	24.32	100.19
1960	25.65	14.44	11.79	15.45	12.13	25.48	16.36	15.13	10.01	61.61	48.52	43.17
1961	17.09	19.25	10.39	8.67	13.21	9.02	9.81	29.30	11.24	17.19	21.80	18.92
1962	25.63	18.23	19.07	7.74	12.01	14.51	20.28	21.90	39.49	26.02	40.41	25.66
1963	37.96	11.53	8.95	7.86	6.50	13.55	15.00	58.02	22.24	29.71	33.42	27.40
1964	14.02	20.33	11.45	10.19	13.88	8.09	18.38	10.64	18.60	19.75	69.10	41.44
1965	41.22	25.46	32.04	15.24	28.52	33.14	65.61	18.60	13.77	17.16	12.85	106.39
1966	19.49	10.79	8.49	6.33	7.81	8.25	26.09	14.13	7.59	16.04	25.88	29.74
1967	******	******	******	******	7.59	5.57	9.81	15.09	9.53	14.87	33.80	24.14
1968	30.00	20.19	12.58	6.75	5.44	5.83	10.39	11.04	6.16	12.00	38.25	27.12
1969	8.57	5.33	4.49	4.19	3.99	7.11	12.83	10.07	16.58	16.81	15.85	33.28
1970	28.61	17.46	7.92	5.34	3.97	5.37	19.30	10.72	10.62	30.68	41.37	35.49
MEAN =	24.82	16.30	12.72	8.78	10.46	12.3c	19.63	18.95	14.66	22.61	33.80	42.75
ST.DEV=	10.29	5.83	7.78	3.85	7.01	9.06	15.31	13.52	9.11	13.94	15.50	29.15
SKEWSS=	.089	-.474	1.966	.996	1.844	1.640	2.854	2.558	2.078	2.236	.878	1.812
KURTSS=	3.376	4.045	7.956	3.960	7.755	5.581	11.933	10.279	8.303	9.137	4.884	5.634
NO.YRS=	10	10	10	10	11	11	12	12	12	12	12	12

NOTE: ***** INDICATES MISSING DATA,NOT INCLUDED IN CALC OF STATISTICAL PARAMETERS

RIVER = JICONTROL R
STA ID= 08SW120251PW006 GRID NO.= 8 4 7
LAT: 12 1 35 LONG: 125 19 22

LOCATION= CABUWANAN,HINOLASO,DOLORES,SAMAR
AT SITIO CABUWANAN,APROX 1 1/2 KMS.FR BO HINOLAS

DRAINAGE AREA(SQ.KM)= 95. ELEV.OF 1 GAGE= 9.50 METERS OF B.M. NO.1GAGE TYPE=
START OBSERVATION =MAY 1959 GAGE OPERATION= WATER-STAGE RECORDER AGENCY =BPW-WRSD
OBS LAST CONSIDERED =DEC 1970 REMARKS= RECORDS FAIR,BM 1-16 M ASE STATUS =OPERATING

A. ANNUAL DISCHARGE CHARACTERISTICS (Q IN CU.M./SEC.)

YEAR	PEAK Q	GAGE HT. -METERS-	DATE	TIME	MAX.DLY Q	MEAN Q	MIN.DLY Q	GAGE HT. -METERS-	DATE	RUNOFF --MM--
1959	346.20	6.950	DEC 18	03PM	280.50	*******	2.08	1.30	OCT 22	******
1960	375.20	7.240	OCT 06	01PM	354.20	10.00	1.66	******	SEP 16	3334.0
1961	66.80	3.490	JAN 28	06AM	46.60	4.80	1.42	1.19	JUL 31	1593.5
1962	296.70	6.450	NOV 06	09AM	155.40	8.97	2.69	1.16	NOV 02	2978.6
1963	231.90	5.730	JAN 11	10AM	159.40	9.13	2.41	1.10	JUN 23	3031.0
1964	337.20	6.860	NOV 19	10PM	265.20	9.96	2.20	1.30	SEP 25	3313.8
1965	342.20	6.910	MAY 22	10PM	243.60	11.60	1.78	1.23	MAY 17	3851.4
1966	125.70	4.450	NOV 16	03PM	47.60	*******	5.22	1.37	SEP 30	******
1967	137.80	4.620	NOV 05	07AM	136.20	*******	3.98	1.29	SEP 22	******
1968	243.60	5.860	NOV 24	07AM	240.90	10.19	1.45	1.15	JUN 24	3391.6
1969	141.80	4.670	DEC 12	05PM	112.40	*******	1.33	1.11	APR 20	******
1970	130.60	4.520	NOV 12	07AM	129.20	*******	3.50	1.25	JUN 02	******

B. EXTREMES OF DISCHARGE AND STATISTICAL PARAMETERS

EXTREME DISCHARGE IN CMS

MAX.Q = 375.20 MIN.Q = 1.33
DATE = OCT 06,1960 DATE = APR 20,1969
GAGE H= 7.24 GAGE H= 1.11
INSTANTANEOUS PEAK SEVERAL DAYS JUN

STATISTICS	PEAK Q	MAX.DLY Q	MEAN Q	MIN.DLY Q
MEAN FLW=	231.308	180.933	9.236	2.477
STD.DEV.=	107.431	95.761	2.136	1.197
SKEWNESS=	-.075	.233	-1.734	1.298
KURTOSIS=	2.182	3.034	8.240	4.796
NO.YEARS=	12	12	7	12

C. MEAN MONTHLY DISCHARGE IN CU.M./SECOND

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1959	******	******	******	******	******	5.19	4.23	3.05	3.71	3.65	12.73	33.03
1960	8.37	8.56	6.09	6.20	5.99	5.18	6.33	3.23	2.54	36.61	19.62	10.99
1961	10.44	11.42	4.57	3.12	3.72	2.46	2.02	1.62	1.61	3.14	6.78	7.19
1962	11.19	13.18	8.23	3.63	10.29	5.20	5.18	5.80	5.67	5.22	18.30	16.08
1963	30.64	8.14	6.31	5.60	5.16	4.80	4.76	8.66	5.68	5.63	13.53	10.33
1964	9.06	20.85	4.91	8.16	10.02	3.18	4.50	3.09	2.90	2.97	26.43	24.17
1965	30.80	9.41	12.09	7.28	14.31	5.87	6.08	2.37	3.09	8.88	9.35	28.83
1966	12.85	10.53	10.10	7.49	10.33	8.93	11.02	7.74	5.71	8.15	13.81	******
1967	******	******	******	******	******	******	******	******	4.80	4.64	59.91	40.99
1968	10.07	9.61	10.82	1.82	1.50	2.35	2.23	2.04	9.74	2.72	32.89	36.64
1969	17.74	3.72	1.69	3.14	3.74	6.52	2.68	******	5.05	14.53	16.48	33.63
1970	11.29	8.99	9.85	4.59	4.40	8.16	******	******	7.04	11.31	64.34	24.88
MEAN =	15.24	10.44	7.47	5.10	6.95	5.26	4.90	4.18	4.79	8.95	24.51	24.25
ST.DEV=	8.55	4.41	3.29	2.17	4.04	2.11	2.62	2.58	2.23	9.45	18.97	11.61
SKEWSS=	1.437	1.335	-.269	-.002	.532	.266	1.377	.972	.760	2.633	1.502	-.184
KURTSS=	4.458	7.313	3.215	2.659	3.286	3.422	6.495	3.549	4.944	10.785	4.825	3.534
NO.YRS=	10	10	10	10	10	11	10	9	12	12	12	11

NOTE: ***** INDICATES MISSING DATA,NOT INCLUDED IN CALC OF STATISTICAL PARAMETERS

RIVER = CATUBIG R
STA ID= 08SW121250PW005 GRID NO.= 8 3 6
LAT: 12 17 19 LONG: 125 2 22

LOCATION= SAN ISIDRO,LAS NAVAS,SAMAR
ABT 200 M ABOVE PINIPISACAN FALLS

DRAINAGE AREA(SQ.KM)= 252. ELEV.OF 2' GAGE= 11.91 METERS OF B.M. NO 1GAGE TYPE=
STARY OBSERVATION =MAY 1955 GAGE OPERATION= GAGE READ 2X/DAY AGENCY =BPW-WRSD
OBS LAST CONSIDERED =DEC 197C REMARKS= RECORDS FAIR,BM 1-21M ASB STATUS =OPERATING

A. ANNUAL DISCHARGE CHARACTERISTICS (Q IN CU.M./SEC.)

YEAR	PEAK Q	GAGE HT. -METERS-	DATE	TIME	MAX.DLY Q	MEAN Q	MIN.DLY Q	GAGE HT. -METERS-	DATE	RUNOFF --MM--
1955	********	*******			*******	*******	******	******		******
1956	260.00	5.000	NOV 29	06AM	260.00	99.63	10.35	1.51	SEP 15	6314.9
1957	214.20	4.910	JAN 08	05PM	409.90	37.75	6.85	.03	SEP 15	6167.2
1958	219.10	4.980	DEC 07	05PM	419.50	59.21	10.26	******	JUN 12	9673.9
1959	221.90	5.020	DEC 18	04PM	421.90	50.63	10.14	******	JUN 15	8283.9
1960	269.50	3.720	OCT 05	05PM	259.90	*******	10.16	******	AUG 31	******
1961	204.58	3.140	NOV 20	05PM	191.74	33.17	10.16	.05	SEP 17	5419.2
1962	214.20	4.910	DEC 21	05PM	205.80	32.62	8.41	.17	APR 30	4081.9
1963	240.10	5.280	DEC 22	06AM	226.10	38.61	9.32	.23	JUN 23	4831.0
1964	220.50	5.000	DEC 27	05PM	213.50	27.47	7.76	.11	SEP 04	3446.4
1965	385.10	7.120	JAN 15	06AM	349.90	34.53	9.06	.21	SEP 24	4320.8
1966	219.10	4.980	DEC 27	05PM	208.60	22.81	7.26	.07	SEP 30	2854.7
1967	219.80	4.990	JAN 20	06PM	219.10	29.98	6.78	.04	SEP 11	3750.9
1968	217.00	4.950	JAN 27	06PM	214.00	*******	6.66	.03	OCT 31	******
1969	217.70	4.960	DEC 31	06AM	212.10	18.03	6.66	.03	APR 20	2256.6

B. EXTREMES OF DISCHARGE AND STATISTICAL PARAMETERS

EXTREME DISCHARGE IN CMS

MAX.Q = 385.10 MIN.Q = 6.66
DATE = JAN 15 1965 DATE = OCT 31 1968
GAGE H= 7.12 GAGE H= .03
INSTANTANEOUS PEAK INSTANTANEOUS

STATISTICS	PEAK Q	MAX.DLY Q	MEAN Q	MIN.DLY Q
MEAN FLW=	237.341	272.289	40.370	8.559
STD.DEV.=	46.266	87.584	21.763	1.524
SKEWNESS=	2.872	1.024	2.064	-.093
KURTOSIS=	11.978	2.898	8.339	1.826
NO.YEARS=	14	14	12	14

C. MEAN MONTHLY DISCHARGE IN CU.M./SECOND

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1955	******	******	******	******	******	13.74	13.62	11.51	11.00	23.02	103.02	151.86
1956	130.38	134.11	86.42	52.20	52.67	28.71	37.05	27.75	25.74	29.66	302.53	290.90
1957	193.66	86.25	26.12	26.32	15.42	8.54	15.33	8.82	7.69	17.77	37.04	12.39
1958	76.40	31.05	42.11	26.13	33.56	20.26	44.28	18.50	16.18	72.89	141.20	184.18
1959	79.37	40.30	68.33	24.77	76.22	11.77	17.70	13.38	13.03	18.91	86.24	154.42
1960	47.47	47.31	32.55	38.04	25.32	56.26	31.03	13.45	10.80	17.60	44.80	58.50
1961	80.82	92.67	27.21	17.32	22.52	15.98	11.83	10.88	10.80	12.59	64.76	35.64
1962	42.57	45.77	32.10	18.26	19.13	23.33	16.68	18.76	22.67	36.83	51.20	64.93
1963	94.81	33.65	29.95	27.42	13.58	18.68	29.13	48.00	20.57	26.20	64.55	55.54
1964	26.69	40.24	18.45	19.31	24.66	12.58	16.92	10.98	21.77	21.85	40.86	75.63
1965	60.45	32.94	48.58	28.20	32.33	43.17	35.80	13.28	10.79	16.29	27.97	63.50
1966	34.68	20.40	14.64	9.46	12.69	10.05	32.00	19.31	12.31	12.40	33.05	61.70
1967	81.25	51.57	45.16	15.96	12.07	11.07	10.10	13.59	9.93	11.33	42.22	56.26
1968	65.81	28.36	37.29	13.62	8.85	8.11	8.85	10.38	8.80	10.19	35.41	******
1969	28.11	13.41	8.30	10.37	10.04	9.54	15.44	12.22	15.75	12.87	16.60	62.30
MEAN =	74.46	49.86	36.94	23.38	25.65	19.51	22.38	16.72	14.52	22.69	72.76	223.77
ST.DEV=	44.63	32.85	20.80	11.42	18.76	13.78	11.31	9.91	5.65	15.76	71.37	504.49
SKEWSS=	1.565	1.578	1.103	1.243	1.814	1.820	.603	2.580	.795	2.583	2.711	3.745
KURTSS=	6.500	5.742	4.904	5.484	6.742	6.299	2.557	10.488	2.905	10.803	11.248	16.697
NO.YRS=	14	14	14	14	14	15	15	15	15	15	15	15

NOTE: ***** INDICATES MISSING DATA,NOT INCLUDED IN CALC OF STATISTICAL PARAMETERS

RIVER = NIRAWAHAN R
STA ID= 08SW122250PW004
LAT: 12 25 12
GRID NO.= 8 2 6
LONG: 125 1 54
LOCATION= NIRAWANAN,CATUBIG,SAMAR
ABT 3 1/2 KMS NW OF CATUBIG AND ABT 4 KMS FR MOUTH

DRAINAGE AREA(SQ.KM)= 19.
START OBSERVATION =JAN 1957
OBS LAST CONSIDERED =DEC 1970
ELEV.OF Z GAGE= .76 METERS OF B.M. NO.1
GAGE OPERATION= GAGE READ 2X/DAY
REMARKS= RECORDS GOOD,ABV 3 FAIR
GAGE TYPE=
AGENCY =BPW-WRSD
STATUS =OPERATING

A. ANNUAL DISCHARGE CHARACTERISTICS (Q IN CU.M./SEC.)

YEAR	PEAK Q	GAGE HT. -METERS-	DATE	TIME	MAX.DLY Q	MEAN Q	MIN.DLY Q	GAGE HT. -METERS-	DATE	RUNOFF --MM--
1957	54.20	3.800	NOV 10	07PM	54.20	*******	.01	.26	SEP 15	******
1958	296.10	8.520	OCT 20	01PM	264.72	3.44	.06	******	JUN 12	5713.6
1959	97.20	5.000	DEC 17	05PM	97.20	2.79	.10	******	SEP 15	4637.6
1960	134.00	5.430	OCT 06	02AM	118.00	1.54	.09	******	AUG 28	2557.2
1961	41.55	2.910	SEP 21	01PM	5.32	.41	.06	.26	SEP 15	688.6
1962	63.60	3.960	NOV 06	05PM	63.60	.94	.08	.29	MAY 15	1575.3
1963	176.00	6.450	AUG 13	06AM	122.40	1.95	.06	.25	JUN 12	3233.0
1964	86.70	4.200	DEC 26	05PM	48.90	1.75	.10	.31	JUN 21	2918.2
1965	80.40	4.020	MAY 22	05PM	46.45	2.29	.23	.40	MAY 20	3792.4
1966	98.25	4.530	NOV 20	06AM	44.70	1.47	.06	.27	SEP 26	2431.8
1967	79.70	4.000	NOV 03	05PM	63.25	2.36	.06	.25	OCT 10	3915.8
1968	86.70	4.200	NOV 24	05PM	82.15	1.68	.06	.26	JUN 03	2793.3
1969	22.36	2.200	DEC 29	05PM	20.11	1.06	.04	.21	MAY 23	1748.3
1970	105.20	4.700	OCT 13		105.20	2.23	.10	.31	JUN 18	3693.6

B. EXTREMES OF DISCHARGE AND STATISTICAL PARAMETERS

EXTREME DISCHARGE IN CMS

MAX.Q = 297.20
DATE = OCT 28,1958
GAGE H= 8.54
INSTANTANEOUS PEAK

MIN.Q = .04
DATE = MAY 23,1969
GAGE H= .21
SEVERAL DAYS JUN

STATISTICS	PEAK Q	MAX.DLY Q	MEAN Q	MIN.DLY Q
MEAN FLN=	101.569	81.157	1.839	.079
STD.DEV.=	67.600	63.244	.807	.050
SKEWNESS=	2.007	1.953	.197	2.146
KURTOSIS=	8.334	8.514	3.839	9.803
NO.YEARS=	14	14	13	14

C. MEAN MONTHLY DISCHARGE IN CU.M./SECOND

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1957	*****	.78	.30	.47	.17	.22	.61	.64	.60	1.31	1.71	.33
1958	2.04	1.18	.33	.41	.15	.32	.45	1.18	.51	24.35	2.58	7.27
1959	.95	.43	3.42	.61	.77	.35	.74	.70	.23	.82	4.85	19.27
1960	1.81	.98	2.10	.44	.28	.71	.49	.27	.15	8.01	2.27	.81
1961	.93	.78	.34	.20	.18	.11	.34	.30	.22	.46	.66	.48
1962	.60	1.10	.34	.16	.83	.25	.26	.43	2.39	.40	3.38	1.23
1963	1.31	.20	.16	.13	.09	1.69	.20	6.96	.53	2.64	6.16	3.18
1964	.99	2.47	.23	.45	.78	.26	1.09	.35	.48	1.22	3.11	9.57
1965	4.51	1.10	2.13	1.14	1.90	2.09	2.84	.78	.46	3.28	.90	6.03
1966	3.73	1.00	.09	.14	2.26	.42	2.06	.29	.08	.87	2.96	3.56
1967	9.04	4.76	.65	.23	.18	.09	.14	.12	.06	.14	5.26	7.75
1968	3.50	.70	.53	.12	.08	.10	.15	.28	.15	.22	13.02	1.45
1969	.32	.19	.08	.19	.06	.10	.75	.54	.55	1.96	2.50	5.29
1970	4.45	7.39	.47	.27	.14	.20	1.63	.59	.47	3.66	.88	1.83
MEAN =	2.63	1.65	.80	.35	.56	.49	.84	.96	.49	3.88	3.59	4.86
ST.DEV=	2.42	2.02	1.01	.27	.70	.62	.81	1.75	.58	6.49	3.18	5.12
SKEWSS=	1.662	2.271	1.843	1.971	1.720	2.070	1.528	3.588	3.046	2.779	2.201	1.857
KURTSS=	6.624	8.177	6.035	8.000	5.544	6.749	5.227	15.863	13.334	11.403	9.151	7.536
NO.YRS=	13	14	14	14	14	14	14	14	14	14	14	14

NOTE: ***** INDICATES MISSING DATA, NOT INCLUDED IN CALC OF STATISTICAL PARAMETERS

RIVER = CATARMAN R
STA ID= 08SW122243PW003 GRID NO.= 8 2 3
LAT: 12 21 30 LONG: 124 39 22

LOCATION= POLANGUI,CATARMAN,SAMAR
ABT 30M SW OF POLANGUI BARRIO SCHOOL

DRAINAGE AREA(SQ.KM)= 472.
START OBSERVATION =JUN 1959
OBS LAST CONSIDERED =DEC 1970

ELEV.OF Z GAGE= 37.76 METERS OF BM NO.1
GAGE OPERATION= WATER-STAGE RECORDER
REMARKS= RECORDS GOOD,ABV 25 FAIR

GAGE TYPE=
AGENCY =BPW-WRSD
STATUS =OPERATING

A. ANNUAL DISCHARGE CHARACTERISTICS (Q IN CU.M./SEC.)

YEAR	PEAK Q	GAGE HT. -METERS-	DATE	TIME	MAX.DLY Q	MEAN Q	MIN.DLY Q	GAGE HT. -METERS-	DATE	RUNOFF --MM--
1959	123.99	2.990	DEC 20		*******	*******	2.40	.77	SEP 12	******
1960	1075.90	8.100	OCT 06	04AM	910.70	35.88	2.60	.70	AUG 28	2403.2
1961	317.40	4.600	JUL 05	06AM	257.14	19.24	2.84	.70	SEP 12	1283.4
1962	1009.82	7.820	NOV 07	06AM	854.06	44.25	2.84	.71	MAY 11	2956.5
1963	1642.30	10.500	AUG 13	05PM	1465.30	*******	2.40	.64	JUN 23	******
1964	1075.90	8.100	JAN 09	06AM	922.50	37.14	5.53	.39	JUN 09	2488.0
1965	1429.90	9.600	JAN 17	08AM	1368.54	43.55	4.34	.70	SEP 05	2909.4
1966	816.30	7.000	NOV 20	06AM	721.90	23.36	2.40	.50	MAY 05	1560.0
1967	1359.10	9.300	JAN 14	05PM	1217.50	39.87	2.46	.51	AUG 12	2663.2
1968	1146.70	8.400	NOV 24	06AM	1075.90	32.97	3.02	.59	SEP 11	2211.1
1969	456.20	5.400	DEC 22	06AM	400.40	28.06	2.58	.52	APR 15	1874.0
1970	349.60	4.800	OCT 17	05PM	301.30	26.68	2.94	.57	MAY 08	1782.5

B. EXTREMES OF DISCHARGE AND STATISTICAL PARAMETERS

EXTREME DISCHARGE IN CMS

MAX.Q = 1642.30
DATE = AUG 13,1963
GAGE H= 10.50
INSTANTANEOUS PEAK

MIN.Q = 2.40
DATE = MAY 05,1966
GAGE H= .50
INSTANTANEOUS

STATISTICS	PEAK Q	MAX.DLY Q	MEAN Q	MIN.DLY Q
MEAN FLW=	900.259	863.204	33.100	3.029
STD.DEV.=	488.588	413.728	8.544	.951
SKEWNESS=	-.225	-.173	-.235	2.128
KURTOSIS=	2.658	2.841	2.906	7.595
NO.YEARS=	12	11	10	12

C. MEAN MONTHLY DISCHARGE IN CU.M./SECOND

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1959	******	******	******	******	******	******	******	******	******	******	******	******
1960	22.07	36.91	27.87	14.69	19.50	25.66	25.44	11.15	8.31	92.96	95.08	50.95
1961	32.11	29.71	9.02	7.74	9.85	16.86	25.62	10.94	9.36	16.10	35.75	28.62
1962	32.06	30.71	23.28	10.65	22.20	21.21	17.60	24.24	47.50	36.77	190.43	76.05
1963	133.40	9.75	16.44	8.87	9.25	33.45	12.23	122.26	******	49.94	78.90	59.29
1964	79.05	31.56	24.70	22.07	18.18	8.36	20.92	15.19	32.60	32.35	43.62	115.30
1965	164.96	28.14	38.74	38.57	60.18	22.31	17.45	11.83	6.26	19.25	20.29	90.36
1966	31.53	8.22	4.84	3.07	12.13	14.50	34.90	9.50	4.87	12.50	66.13	76.53
1967	210.68	47.75	41.43	4.83	3.86	6.37	4.87	9.69	8.18	14.41	68.41	56.46
1968	70.71	20.83	10.13	5.12	9.58	23.92	17.62	18.35	8.08	18.77	151.05	42.57
1969	11.71	4.65	3.02	10.41	16.58	15.02	17.57	18.57	23.09	17.44	37.42	158.16
1970	63.74	24.28	16.87	11.31	6.20	10.52	26.47	8.80	8.40	59.35	45.95	37.10
MEAN =	77.46	24.77	19.67	12.48	17.05	18.02	20.06	23.68	15.66	33.62	75.73	71.94
ST.DEV=	65.11	13.09	12.89	10.12	15.42	8.17	7.99	33.05	14.22	25.04	52.36	38.06
SKEWSS=	1.093	-.084	.454	1.982	2.514	.329	-.046	3.191	1.620	1.540	1.356	1.252
KURTSS=	3.970	3.407	3.091	7.807	10.445	3.477	4.492	13.330	5.564	5.766	4.950	5.200
NO.YRS=	11	11	11	11	11	11	11	11	10	11	11	11

NOTE: ***** INDICATES MISSING DATA,NOT INCLUDED IN CALC OF STATISTICAL PARAMETERS

RIVER = BOBON R. LOCATION= CASULGAN,BOBON,SAMAR
STA ID= 08SW122243PW002 GRID NO.= 8 2 3 ABT 100M S OF CASULGAN BO SCH BLDG AND APROX 10KMS U
LAT: 12 29 25 LONG: 124 32 37 /S OF HWY BR

DRAINAGE AREA(SQ.KM)= 91. ELEV.OF Z GAGE= 92.79 METERS OF B.M. NO.1 GAGE TYPE=
START OBSERVATION =DEC 1957 GAGE OPERATION= GAGE READ 2X/DAY AGENCY =BPW-WRSD
OBS LAST CONSIDERED =DEC 1970 REMARKS= RECORDS GOOD,ABV 10 FAIR STATUS =OPERATING

A. ANNUAL DISCHARGE CHARACTERISTICS (Q IN CU.M./SEC.)

YEAR	PEAK Q	GAGE HT. -METERS-	DATE	TIME	MAX.DLY Q	MEAN Q	MIN.DLY Q	GAGE HT. -METERS-	DATE	RUNOFF --MM--
1958	147.24	7.420	OCT 20	06AM	147.24	10.16	.50	******	MAY 04	3519.3
1959	126.12	6.460	DEC 05	06AM	126.12	13.68	.45	.48	APR 16	4739.6
1960	171.88	8.540	OCT 03	06AM	171.44	*******	.62	******	MAY 07	******
1961	58.80	3.400	NOV 27	08PM	*******	*******	.39	.45	SEP 17	******
1962	47.80	2.900	MAR 30	04AM	22.50	*******	.24	.40	APR 30	******
1963	120.18	6.190	NOV 07	05PM	114.90	*******	2.00	.70	NOV 01	******
1964	184.64	9.120	NOV 20	06PM	158.24	10.05	.39	.45	JUN 07	3492.7
1965	94.44	5.020	JAN 05	06AM	91.14	8.92	.49	.48	SEP 07	3090.6
1966	116.00	6.000	NOV 20	06AM	113.80	5.16	.17	.33	MAY 15	1786.9
1967	160.00	8.000	JAN 14	06AM	154.50	*******	.33	.43	MAY 05	******
1968	89.60	4.800	NOV 24	05PM	86.30	*******	.49	.48	NOV 10	******
1969	110.72	5.760	DEC 21	06AM	109.40	9.30	.22	.38	MAR 18	3222.1
1970	173.20	8.600	OCT 13	06PM	154.50	12.47	.17	.33	AUG 28	4319.9

B. EXTREMES OF DISCHARGE AND STATISTICAL PARAMETERS

EXTREME DISCHARGE IN CMS

MAX.Q = 184.64 MIN.Q = .17
DATE = NOV 20,1964 DATE = MAY 15,1966
GAGE H= 9.12 GAGE H= .33
INSTANTANEOUS PEAK INSTANTANEOUS

STATISTICS	PEAK Q	MAX.DLY Q	MEAN Q	MIN.DLY Q
MEAN FLW=	123.125	120.840	9.963	.497
STD.DEV.=	43.388	41.464	2.731	.473
SKEWNESS=	-.264	-1.138	-.517	3.056
KURTOSIS=	2.880	5.281	5.609	13.152
NO.YEARS=	13	12	7	13

C. MEAN MONTHLY DISCHARGE IN CU.M./SECOND

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1958	10.17	8.57	11.29	6.85	1.16	1.68	1.84	6.34	3.95	28.07	23.70	17.95
1959	23.27	5.98	15.53	1.72	6.57	4.63	1.61	3.69	.18	2.98	22.26	72.48
1960	******	******	******	******	******	******	******	******	******	******	14.64	11.26
1961	7.06	7.37	1.46	1.73	1.92	1.69	******	******	1.07	1.22	8.61	3.21
1962	3.47	7.66	3.18	******	******	******	******	******	******	******	******	******
1963	******	******	******	******	******	******	******	******	******	6.28	19.20	21.57
1964	10.99	15.07	3.89	2.79	2.71	2.23	3.67	1.56	7.13	7.64	14.55	48.27
1965	28.08	10.07	7.91	7.50	9.49	3.29	4.20	1.86	.89	4.00	8.58	20.78
1966	10.78	2.88	1.51	1.35	2.82	2.78	4.89	2.63	1.22	3.49	16.27	11.07
1967	28.42	22.04	7.99	1.12	1.02	1.98	3.01	3.54	2.24	2.90	******	******
1968	******	******	2.25	1.43	2.33	2.66	1.45	1.79	.99	7.45	20.92	5.84
1969	1.79	.97	.48	5.77	9.58	6.31	3.55	2.34	2.02	4.12	23.29	50.57
1970	33.76	34.13	26.39	7.70	.85	1.41	17.28	2.38	1.95	14.99	3.30	6.43
MEAN =	15.78	11.47	7.44	3.80	3.84	2.87	4.61	2.90	2.16	7.56	15.88	24.49
ST.DEV=	11.51	9.97	7.85	2.80	3.41	1.54	4.90	1.48	2.03	7.76	6.86	22.57
SKEWSS=	.404	1.507	1.605	.511	1.074	1.490	2.662	1.771	1.912	2.210	-.594	1.217
KURTSS=	2.543	5.936	6.157	2.194	3.476	5.652	10.885	7.254	7.541	8.509	3.112	4.260
NO.YRS=	10	10	11	10	10	10	9	9	10	11	11	11

NOTE: ***** INDICATES MISSING DATA,NOT INCLUDED IN CALC OF STATISTICAL PARAMETERS

RIVER = MAWO R LOCATION= SAN RAMON,SAN ISIDRO,SAMAR
STA ID= 08SW122242PWDC1 GRID NO.= 8 2 2 ABT 1KM FR SAN ISIDRO- SAN RAMON RD
LAT: 12 26 30 LONG: 124 20 20

DRAINAGE AREA(SQ.KM)= 138. ELEV.OF Z GAGE= 34.55 METERS OF B.M. NO.1 GAGE TYPE=
START OBSERVATION =JUL 1968 GAGE OPERATION= GAGE READ 2X/DAY AGENCY =BPW-WRSD
OBS LAST CONSIDERED =DEC 1970 REMARKS= RECORDS FAIR,BM 1-40.95 M STATUS =OPERATING

A. ANNUAL DISCHARGE CHARACTERISTICS (Q IN CU.M./SEC.)

YEAR	PEAK Q	GAGE HT. -METERS-	DATE	TIME	MAX.DLY Q	MEAN Q	MIN.DLY Q	GAGE HT. -METERS-	DATE	RUNOFF --MM--
1968	84.37	2.140	NOV 24		84.37	*******	4.39	.34	SEP 13	******
1969	37.15	1.380	DEC 30	06AM	32.95	7.97	3.59	.29	APR 21	1821.0
1970	174.16	3.080	OCT 13	06AM	146.41	9.60	5.03	.38	SEP 07	2194.7

C. MEAN MONTHLY DISCHARGE IN CU.M./SECOND

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1968	******	******	******	******	******	******	6.77	7.01	5.27	7.80	14.93	10.10
1969	7.85	5.70	4.38	4.92	7.17	6.95	7.90	8.28	7.42	7.16	9.83	17.76
1970	11.53	10.75	9.21	8.59	7.27	7.38	9.53	6.73	6.59	15.27	11.64	10.74

NOTE: ***** INDICATES MISSING DATA,NOT INCLUDED IN CALC OF STATISTICAL PARAMETERS

TABLE 3
EASTERN VISAYAS
PRODUCTION LOSSES DUE TO VARIOUS CAUSES

CROP	Estimated Affected Area (ha)			Possible Production Loss		Cause of Losses
	Total	Partially Damage	Totally Damage	Sack of 44 kgm.	Pesos	
CROP YEAR 1968						
Palay	27,160	25,600	1,560	264,900	4,437,400	Typhoon & Flood
	160	120	40	3,500	53,400	Plant Pest and Diseases
Corn	3,570	3,140	430	32,800	544,200	Typhoon & Flood
Coconut	60,720	57,480	3,240	318,419,000	41,391,400	Typhoon & Flood
Abaca	7,950	7,380	510	1,888,000	1,132,800	Typhoon & Flood
Banana	10,390	8,150	2,240	3,425,200	4,452,800	Typhoon & Flood
Vegetables	10	10	-	2,800	1,700	Typhoon & Flood
	**	**	-	300	200	Plant Pest and Diseases
Rootcrops	2,310	1,860	450	3,490,800	371,600	Various Causes
	2,300	1,850	450	3,490,000	371,500	Typhoon & Flood
	10	10	-	800	100	Plant Pest and Diseases
CROP YEAR 1969						
Palay	16,210	11,990	4,220	276,500	4,915,800	Typhoon & Flood
	360	340	20	2,700	39,200	Plant Pest and Diseases
	8,270	3,450	4,820	182,900	2,906,400	Drought
Corn	12,250	7,070	5,180	85,200	1,255,900	Typhoon & Flood
	50	50	-	200	3,000	Plant Pest and Diseases
	5,050	4,800	250	18,800	300,300	Drought
Coconut	84,500	54,500	30,000	206,981,700	20,837,800	Typhoon & Flood
Copra	72,240	72,240	-	3,368,200	2,009,300	Typhoon & Flood
	55,000	55,000	-	4,250,000	2,612,500	Drought
Abaca	26,250	21,250	5,000	307,500	72,400	Typhoon & Flood
Banana	7,850	7,850	-	6,495,000	6,894,000	Typhoon & Flood
Vegetable	90	70	20	192,000	59,000	Typhoon & Flood
Rootcrops	2,100	1,900	200	5,192,000	2,115,200	Typhoon & Flood
	420	420	-	2,080,000	208,000	Drought
CROP YEAR 1970						
Palay	3,650	1,480	2,170	50,400	806,100	Typhoon & Flood
Coconut	3,950	3,950	-	63,200	3,800	Typhoon & Flood
Banana	1,200	480	720	136,400	122,800	Typhoon & Flood
CROP YEAR 1971						
Palay	5,840	9,460	380	22,800	485,100	Typhoon & Flood
Corn	2,200	2,200	200	13,600	452,500	Typhoon & Flood
Coconut	30,640	30,620	20	3,753,000	623,200	Typhoon & Flood
Copra	750	750	-	562,500	337,500	Typhoon & Flood
Abaca	3,500	1,920	1,580	2,823,400	1,988,500	Typhoon & Flood
Sugarcane	3,700	3,700		7,600	384,800	Typhoon & Flood
Banana	5,870	5,700	170	981,600	1,342,100	Various Causes
	5,870	5,700	170	981,600	1,342,100	Typhoon & Flood
Rootcrops	80	30	50	66,600	6,700	Typhoon & Flood

Note: ** Less than 10 has.

Other causes - Other than typhoon, flood, drought, pest and diseases and rats

All units under Possible Production Loss are in kilograms except for palay and coconut where units are in sacks (50 kgm./sack) and number of nuts respectively.

Source: BAECON

TABLE 3
EASTERN VISAYAS
PRODUCTION LOSSES DUE TO VARIOUS CAUSES

CROP	Estimated Affected Area (ha)			Possible Production Loss		Cause of Losses
	Total	Partially Damage	Totally Damage	Sack of 44 kgs.	Pesos	
CROP YEAR 1972						
Palay	16,770	16,550	220	31,000	735,400	Typhoon & Flood
	330	240	90	4,400	93,200	Plant Pest and Diseases
	2,380	2,240	140	29,300	675,100	Rats
Corn	5,520	5,000	250	23,700	847,200	Typhoon & Flood
	280	190	60	2,100	44,500	Plant Pest and Diseases
	10	10	-	100	700	Rats
Coconut	30,040	29,840	200	60,280,000	9,042,000	Typhoon & Flood
	50	50	-	25,400	3,800	Plant Pest and Diseases
	30	30	-	900	100	Rats
Copra	31,120	31,120	-	10,708,500	5,980,000	Typhoon & Flood
Sugarcane	2,000	2,000	-	1,000	90,000	Typhoon & Flood
Abaca	11,350	11,340	10	1,143,800	654,000	Typhoon & Flood
Banana	13,140	11,080	2,060	6,462,400	13,229,400	Typhoon & Flood
Fruit	100	100	-	80,000	64,000	Typhoon & Flood
Vegetables	260	50	210	171,100	120,700	Typhoon & Flood
	10	10	-	11,000	8,800	Plant Pest and Diseases
	**	**	-	300	300	Rats
Peanut	10	10	-	300	600	Rats
Rootcrop	3,220	3,220	-	1,349,000	402,400	Typhoon & Flood
	10	10	-	3,100	700	Rats
CROP YEAR 1973						
Palay	12,650	11,850	800	56,300	1,433,400	Plant Pest and Diseases
	51,730	36,300	15,430	996,200	24,953,200	Drought
Corn	1,950	1,410	540	15,800	487,600	Plant Pest and Diseases
	18,100	15,040	3,060	184,700	5,834,100	Drought
Coconut	1,530	1,530	-	23,100	1,400	Typhoon & Flood
	40	40	-	14,000	3,200	Plant Pest and Diseases
Abaca	40	40	-	6,000	6,600	Drought
Tobaco	400	390	10	205,000	1,025,000	Drought
Sugarcane	70	70	-	100	7,700	Plant Pest and Diseases
Rootdrop	10	10	-	5,100	2,300	Plant Pest and Diseases
CROP YEAR 1974						
Palay	20,040	11,280	8,760	355,900	13,095,700	Typhoon & Flood
	26,040	17,150	8,890	403,600	16,872,200	Plant Pest and Diseases
	920	880	40	6,400	236,800	Rats
	470	400	70	3,900	35,500	Other causes

Note: ** Less than 10 has.

Other causes- Other than typhoon, flood, drought, pest and diseases and rats

All units under Possible Production Loss are in kilograms except for palay and coconut where units are in sacks (50 kgs./sack) and number of nuts respectively.

Source: BAECON

TABLE 3
EASTERN VISAYAS
PRODUCTION LOSSES DUE TO VARIOUS CAUSES

CROP	Estimated Affected Area (ha)			Possible Production Loss		Cause of Losses
	Total	Partially Damage	Totally Damage	Sack of 44 kgm.	Pesos	
Corn	3,120	1,670	1,450	32,300	1,428,600	Typhoon & Flood
	3,480	2,170	1,310	33,500	1,662,000	Plant Pest and Diseases
	130	120	10	400	14,800	Due to Rats
	60	30	30	500	17,300	Other causes
Coconut	250	250	-	53,600	26,800	Due to Rats
	10	10	-	3,600	1,800	Other causes
Rootcrop	10	10	**	14,600	8,200	Plant Pest and Diseases
	120	120	**	47,200	13,000	Due to Rats
CROP YEAR 1975						
Palay	25,910	16,890	9,020	197,600	9,800,000	Typhoon & Flood
	19,150	12,840	6,310	199,300	9,394,700	Plant Pest and Diseases
	14,960	11,660	3,300	201,800	10,115,100	Drought
Corn	9,050	6,610	2,440	226,700	14,705,200	Typhoon & Flood
	4,460	2,920	1,540	29,100	1,258,700	Plant Pest and Diseases
	3,360	2,840	560	14,100	564,500	Drought
Coconut	30,110	30,100	10	303,600	70,900	Typhoon & Flood
	720	710	10	154,000	57,000	Plant Pest and Diseases
Abaca	3,800	3,780	20	479,400	988,200	Typhoon & Flood
Banana	780	760	20	2,595,500	814,000	Typhoon & Flood
Vegetables	30	10	20	140,000	140,000	Typhoon & Flood
Dry Beans & Mongo	30	30	-	2,100	9,100	Plant Pest and Diseases
Peanuts	30	30	-	13,600	47,700	Plant Pest and Diseases
Rootcrops	120	120	-	57,900	18,800	
	60	60	-	30,200	10,500	Plant Pest and Diseases
	60	60	-	27,700	8,300	Drought
CROP YEAR 1976						
Palay	10	10	-	100	4,800	Typhoon & Flood
	3,080	2,020	460	29,700	1,471,300	Plant Pest and Diseases
Corn	20	10	10	300	13,900	Typhoon & Flood
	780	620	100	7,000	330,700	Plant Pest and Diseases
	20	20	-	100	3,300	Drought
Coconut	440	410	30	288,700	56,500	Plant Pest and Diseases
Abaca	30	30	-	7,900	7,900	Plant Pest and Diseases
Dry Beans & Mongo	10	10	-	2,200	6,900	Plant Pest and Diseases
Rootcrops	100	90	10	139,700	41,000	Plant Pest and Diseases

Note: ** Less than 10 has.

Other causes - Other than typhoon, flood, drought, pest and diseases and rats

All units under Possible Production Loss are in kilograms except for palay and coconut where units are in sacks (50 kgm./sack) and number of nuts respectively.

Source: BAECON

TABLE 3
EASTERN VISAYAS
PRODUCTION LOSSES DUE TO VARIOUS CAUSES

CROP	Estimated Affected Area (ha)			Possible Production Loss		Cause of Losses
	Total	Partially Damage	Totally Damage	Sack of 44 kgm.	Pesos	
CROP YEAR 1977						
Palay	70	50	20	900	50,900	Typhoon & Flood
	2,260	2,100	160	16,800	868,200	Plant Pest and Diseases
Corn	90	80	10	600	27,700	Typhoon & Flood
	660	650	60	3,400	176,600	Plant Pest and Diseases
	10	10	-	**	600	
Coconut	1,830	1,780	50	323,200	6,178,000	Plant Pest and Diseases
	10	10	-	1,100	200	Rats
Vegetables	**	**	**	400	400	Plant Pest and Diseases
Rootcrops	1,170	1,030	140	595,900	265,800	Plant Pest and Diseases
	10	10	-	5,100	400	Rats
CROP YEAR 1978						
Palay	16,730	13,900	2,830	199,700	9,643,500	Typhoon
	1,610	1,460	150	18,300	883,700	Flood
	17,170	13,790	3,380	308,200	14,883,000	Plant Pest and Diseases
	24,600	21,550	3,050	305,700	14,762,300	Drought
	70	70	-	700	33,800	Other causes
Corn	950	750	150	5,800	297,400	Flood
	3,930	3,090	840	43,600	2,235,800	Typhoon
	2,280	2,010	270	11,200	574,300	Plant Pest and Diseases
	530	500	30	7,000	359,000	Drought
Coconut	18,000	17,870	130	15,713,500	6,091,100	Typhoon & Flood
	3,510	3,460	50	866,500	293,100	Plant Pest and Diseases
Abaca	200	200	-	19,400	19,900	Typhoon & Flood
Tobaco	150	150	50	39,000	468,000	Typhoon & Flood
Banana	1,420	620	800	610,100	4,405,400	Typhoon & Flood
Fruits and nuts	150	150	-	1,304,000	581,600	Typhoon & Flood
Vegetables	**	**	**	1,600	2,900	Plant Pest and Diseases
Peanut	150	130	20	39,000	46,800	Typhoon & Flood
Rootcrops	990	980	10	34,900	215,600	Typhoon & Flood
	2,990	2,920	70	406,600	523,400	Plant Pest and Diseases
CROP YEAR 1979						
Palay	4,230	2,580	1,650	80,700	4,139,100	Flood
	24,930	19,680	5,250	352,700	18,090,100	Typhoon
	13,330	10,880	2,450	191,500	9,322,000	Pest and Diseases
	18,540	14,040	4,490	243,100	12,468,600	Drought

Note: ** Less than 10 has.

Other causes - Other than typhoon, flood, drought, pest and diseases and rats

All units under Possible Production Loss are in kilograms except for palay and coconut where units are in sacks (50 kgm./sack) and number of nuts respectively.

Source: BAECON

TABLE 3
EASTERN VISAYAS
PRODUCTION LOSSES DUE TO VARIOUS CAUSES

CROP	Estimated Affected Area (ha)			Possible Production Loss		Cause of Losses
	Total	Partially Damage	Totally Damage	Sack of 44 kgm.	Pesos	
Corn	4,950	3,520	1,430	28,800	1,440,000	Typhoon
	240	70	120	3,300	165,000	Flood
	2,100	1,790	310	14,200	700,000	Pest & Diseases
	1,580	1,370	210	10,00	505,000	Drought
Coconut	400	390	10	209,600	209,600	Typhoon & Flood
	510	490	20	222,500	133,800	Pest & Diseases
Vegetables	10	10	-	7,600	6,100	Pest & Diseases
Rootcrops	20	20	-	3,400	1,600	Typhoon & Flood
	750	720	30	522,900	411,000	Pests & Diseases
Peanut	20	20	-	5,100	29,600	Pests & Diseases
CROP YEAR 1980						
Palay	9,290	8,940	350	58,300	3,322,300	Pests & Diseases
	750	720	30	7,500	532,000	Drought
Corn	3,190	3,070	120	24,300	1,107,000	Pests & Diseases
	480	1,460	20	13,100	1,088,900	Drought
Coconut	2,850	2,790	60	648,000	315,900	Pest & Diseases
Banana	100	90	10	61,200	489,600	Pests & Diseases
Fruits	**	**	**	700	3,400	Other causes
Vegetables	200	200	-	377,000	355,700	Pests & Diseases
Rootcrops	4,590	4,350	240	4,993,900	4,870,400	Pests & Diseases
Peanuts	220	200	20	17,000	93,900	Pests & Diseases
CROP YEAR 1981						
Palay	15,730	15,250	480	157,200	10,653,000	Pests & Diseases
Corn	2,700	2,590	110	22,100	1,299,300	Pests & Diseases
Coconut	840	830	10	160,600	53,200	Pests & Diseases
Vegetables	100	100	-	150,500	98,600	Pests & Diseases
Rootcrops	540	500	40	223,100	115,400	
CROP YEAR 1982						
Palay	14,460	6,680	7,780	434,400	29,788,600	Typhoon & Flood
	11,280	11,060	220	102,500	7,501,700	Pests & Diseases
	3,510	3,480	50	25,300	1,755,100	Drought
Corn	3,590	2,660	930	26,500	1,323,200	Typhoon & Flood
	4,640	4,560	80	35,600	2,135,500	Pests & Diseases
	570	540	30	4,900	285,400	Drought
Coconut	21,600	6,000	15,600	28,560,000	7,140,000	Typhoon & Flood
	2,560	2,510	50	667,200	253,100	Pests & Diseases
Abaca	3,980	1,470	2,510	1,200,900	3,002,300	Typhoon & Flood
Banana	9,060	1,940	7,120	4,293,100	34,664,800	Typhoon & Flood
	6,470	2,220	4,250	62,200	508,400	Pests & Diseases
Rootcrops	1,720	1,400	320	2,086,200	1,460,300	Typhoon & Flood
	800	760	40	332,100	219,700	Pests & Diseases
CROP YEAR 1983						
Palay	150	140	10	1,000	65,200	Typhoon & Flood
	9,460	9,340	120	55,900	3,913,500	Pests & Diseases
	58,410	33,650	24,760	1,521,700	99,992,800	Drought
Corn	1,610	1,180	430	21,600	1,469,900	Pests & Diseases
	13,580	10,820	2,760	145,400	10,262,200	Drought

Note: ** Less than 10 has.

Other causes- Other than typhoon, flood, drought, pest and diseases and rats

All units under Possible Production Loss are in kilograms except for palay and coconut where units are in sacks (50 kgm./sack) and number of nuts respectively.

Source: BAECON

TABLE 3
EASTERN VISAYAS
PRODUCTION LOSSES DUE TO VARIOUS CAUSES

CROP	Estimated Affected Area (ha) Total	Partially Damage	Totally Damage	Possible Production Loss Sack of 44 kgs.	Pesos	Cause of Losses
Coconut	1,000	980	20	422,000	147,700	Typhoon & Flood
	3,360	3,340	20	1,575,200	472,000	Pests & Diseases
	3,000	1,710	1,230	2,693,700	856,500	Drought
Banana	30	-	30	11,100	88,800	Drought
Rootcrops	3,130	2,750	380	1,661,200	1,137,500	
	2,410	2,410	-	482,200	394,000	Pests & Diseases
	720	340	380	1,179,000	743,500	Drought
Beans and Peas	10	-	10	5,000	19,700	Drought
Vegetables	**	-	**	4,000	15,800	Drought
CROP YEAR 1984						
Palay	12,350	9,770	2,580	293,500	22,752,600	Typhoon & Flood
	20,040	16,260	3,780	308,000	23,432,400	Pests & Diseases
	3,330	1,550	1,780	85,800	6,526,000	Drought
Corn	2,920	1,650	1,270	44,300	3,039,500	Typhoon & Flood
	4,220	3,500	720	23,700	1,785,600	Pests & Diseases
	460	270	190	4,700	282,800	Drought
Coconut	16,410	16,290	120	12,241,400	13,042,600	Typhoon & Flood
	460	440	20	238,900	131,000	Pests & Diseases
Abaca	6,700	6,180	520	979,000	3,634,000	Typhoon & Flood
Banana	1,490	1,180	310	604,200	2,557,300	Typhoon & Flood
Fruit Trees	160	110	50	582,500	349,500	Typhoon & Flood
Rootcrops	2,430	1,830	600	3,211,500	2,014,000	Typhoon & Flood
	500	480	20	113,700	112,000	Pests & Diseases
Peanuts	10	10	-	6,000	36,000	Typhoon & Flood
CROP YEAR 1985						
Palay	11,010	7,690	3,320	355,200	44,537,500	Typhoon & Flood
	10,900	8,370	2,530	196,200	28,379,900	Pests & Diseases
	1,090	940	150	14,700	2,247,600	Drought
Corn	1,210	490	720	12,3000	1,635,800	Typhoon & Flood
	1,690	1,430	200	10,000	1,452,500	Pests & Diseases
	630	620	10	3,900	559,100	Drought
Coconut	78,450	60,880	11,570	85,123,100	176,294,200	Typhoon & Flood
	1,860	1,790	70	604,200	1,087,600	Drought
Abaca	3,140	2,570	570	891,800	7,693,500	Typhoon & Flood
Banana	10,450	4,220	6,230	3,483,400	44,547,900	Typhoon & Flood
	650	610	40	57,200	606,100	Drought
Vegetables	10	-	10	8,300	50,000	Typhoon & Flood
Beans & Peas	10	-	10	4,500	8,900	Typhoon & Flood
Rootcrops	4,260	2,270	1,990	16,309,100	15,711,500	Typhoon & Flood
	470	430	40	134,600	204,500	Pests & Diseases
	270	250	20	66,200	54,400	Other causes

Note: ** Less than 10 has.

Other causes - Other than typhoon, flood, drought, pest and diseases and rats

All units under Possible Production Loss are in kilograms except for palay and coconut where units are in sacks (50 kgs./sack) and number of nuts respectively.

Source: BAECON

4.2 Social Conditions

4.2.1 Population and Villages

Western Samar has a population of 501,439; 51% of which are males. It has relatively young inhabitants of 0-14 and 15-64 years old brackets which comprise 46% and 51% of the total population count, respectively. The rural sector absorbs 85% of the population.

Western Samar registers a total labor force of 15 years old and above at 272,185; of this number, 85% are in the rural areas. Records show that only 54% of the labor force population are gainfully employed. As shown in table below, those employed are predominantly engaged in agriculture, fishery and forestry related activities.

LABOR FORCE POPULATION BY INDUSTRY GROUP
Western Samar NCSO-1980

Industry Group	Number	%
Agriculture, fishery and industry	110,747	74.87
Mining and Quarrying	419	0.28
Manufacturing	7,356	4.97
Electricity, gas and water	283	0.19
Construction	2,340	1.58
Wholesale and retail trade	5,306	3.59
Transportation, storage and communication	3,652	2.47
Financing, insurance, real estate and business services	1,235	0.83
Community, social and personal services	14,862	10.05
Activities not adequately defined	1,716	1.16
Total gainfully employed population	147,916	100.00

Population density is placed at 89 per square kilometer.

The province consists of 25 municipalities and one city which constitute a total of 891 barangays or villages. Nine-three percent of the villages are classified as rural.

4.2.2 Income

NCSO (National Census and Statistics Office) figures as of 1983 revealed that of the 97,708 households, 82% subsisted on a quarterly income of less than ₱4,000 (US$ 285.71). Below is the detailed income distribution.

Household Income Distribution
Western Samar
As of 1st Quarter 1983
NCSO Preliminary Figues

Income Class	No. of Households	
	No.	%
Below ₱1,000	20,908	21.8
₱1,000 - 1,999	28,322	29.6
2,000 - 3,999	28,889	30.2
4,000 - 4,999	5,395	5.6
5,000 - 7,499	5,618	5.9
7,500 - 9,999	3,081	3.2
10,000 -14,999	2,461	2.6
15,000 and above	1,034	1.1
TOTAL	95,708	100.00

4.2.3 Infrastructure

Roads and Bridges. The area has a total road length of 828.351 kilometers. Forty-eight percent of which are classified as barangay, 28% national, 18% provincial and city, and 6% as municipal roads.

The bridges have a total length of 1,891 linear meters; 88% or 1,662 l.m. are classified as permanent and the rest are temporary.

Electricity. Sources of power in 1982 come from two electric cooperatives with generating capacities of 950 kilowatts and 5 megawatts, and a barge. The cooperative energized a total of 18 municipalities in the province and the barge served a number of towns in the area and in its neighboring provinces.

Airports. Calbayog City airport is open to Philippine Airlines commercial flights. There is also a feeder airport in Catbalogan and a private airport in Hinabangan which is used for business operations of a mining firm.

Ports. There are 29 ports serving the area; 25 of which are municipal, 2 national and 2 are private ports.

Health. Western Samar has 6 hospitals and 4 clinics with a total bed capacity of 308. This reflects a bed-population ratio of 1:1,628.

Other health facilities are 20 rural health units, a number of barangay health centers, family planning clinics, nutrition centers, filariasis control unit, malaria control unit and schistosomiasis control unit.

Education. There are 1,581 elementary schools, 54 secondary schools, and nine tertiary schools. Four of the tertiary schools offer vocational education. (Please see 1.5)

Financing. Banking requirements are taken cared of 5 rural banks, 4 private commercial and savings banks and 2 government owned banks.

4.3 Agriculture

Western Samar
Agricultural Area and Production, 1980

Crops	Area (ha.)	Average Production	Total Production
Rice			
Irrigated	4,092	81 cavans	359,975
Regular	2,046	81 cavans	183,748
Palagad	2,046	78 cavans	176,026
Rainfed	12,621	45 cavans	608,701
Upland	19,717	16 cavans	303,801
Corn	18,544	30 cavans	1,124,729
Coconut	54,705	2.5 (tons)	
Abaca	1,415		
Banana	8,132*		40,442 M.T.
Rootcrops	23,604*		71,197.77 M.T.
Vegetables	436		6,681 M.T.

* 1978 Data

TABLE 1.1. FARMS - NUMBER REPORTING AND AREA BY NUMBER OF FARM PARCELS AND BY SIZE OF FARM : 1980

(AREA IN HECTARES. DETAIL MAY NOT ADD UP TO TOTAL BECAUSE OF ROUNDING.
DATA ARE TABULATED BY RESIDENCE OF FARM OPERATORS.)

NUMBER OF FARM PARCELS	SIZE OF FARM									
	ALL FARMS	UNDER 0.50 HA.	0.50 TO 0.99 HA.	1.00 TO 1.99 HA.	2.00 TO 2.99 HA.	3.00 TO 4.99 HA.	5.00 TO 7.00 HA.	7.01 TO 9.99 HA.	10.00 TO 24.99 HA.	25.00 HA. AND OVER
SAMAR										
NUMBER OF FARMS REPORTING										
ALL PARCELS	46,423	3,094	7,364	14,665	8,030	7,678	2,160	974	1,216	142
1 PARCEL 1/	22,878	2,511	4,795	7,728	3,467	2,701	1,181	171	307	17
2 PARCELS	14,594	527	2,097	5,031	2,690	3,626	926	267	399	31
3 PARCELS	6,759	56	447	1,627	1,532	809	693	288	308	19
4 PARCELS	1,640	-	25	245	323	447	298	138	133	41
5 PARCELS	237	-	-	23	35	55	31	37	65	11
6 PARCELS	80	-	-	11	23	16	5	30	57	8
7 PARCELS	50	-	-	-	-	13	5	18	11	3
8 PARCELS	43	-	-	-	-	-	1	12	28	2
9 PARCELS	20	-	-	-	-	11	-	1	6	2
10 PARCELS AND OVER	22	-	-	-	-	-	-	12	2	8
AREA										
ALL PARCELS	119,977	811	4,458	18,301	17,515	27,112	19,251	8,082	18,468	5,979
1 PARCEL 1/	41,951	614	2,754	8,923	7,291	9,313	6,813	1,420	4,093	630
2 PARCELS	37,608	177	1,346	6,613	5,899	9,267	5,362	2,187	5,447	1,309
3 PARCELS	24,605	20	340	2,335	3,485	6,496	4,012	2,361	4,431	1,124
4 PARCELS	8,928	-	18	396	749	1,680	1,636	1,167	1,894	387
5 PARCELS	2,193	-	-	27	35	195	178	326	1,016	406
6 PARCELS	1,917	-	-	17	56	65	210	268	884	316
7 PARCELS	582	-	-	-	-	46	34	159	187	157
8 PARCELS	576	-	-	-	-	-	5	56	416	59
9 PARCELS	197	-	-	-	-	50	-	9	74	65
10 PARCELS AND OVER	530	-	-	-	-	-	-	89	25	417

1/ INCLUDES FARM PARCELS THAT ARE LESS THAN 0.01 HECTARE OR FARMS WITH NO REPORTED AREA

LAND CLASSIFICATION AND LAND USE OF WESTERN SAMAR BY MUNICIPALITY
(1980)

(In Hectares)

MUNICIPALITY	COMMERCIAL FOREST	NON-COMMERCIAL FOREST	BRUSH LAND	SWAMP LAND	OPEN LAND	CULTIVATED LAND	RESIDENTIAL LANDS
1. Basey 2. Calbiga 3. Marabut 4. Pinabacdao 5. Sta. Rita 6. Talalora 7. Villareal	57,170	44,279	4,432	5,902	2,557	152,151	
8. Almagro 9. Catbalogan 10. Daram 11. Gandara 12. Hinabangan 13. Jiabong 14. Matuguinao 15. Motiong 16. Pagsanghan 17. San Jorge 18. San Jose de Buan 19. San Sebastian 20. Sta. Margarita 21. Sto. Nino 22. Tagapul-an 23. Tarangnan 24. Wright 25. Zumarraga	99,071	70,279	34,433	33,970	32,557	94,378	
	156,341	114,558	38,865	39,872	35,114	246,529	

SOIL TYPE

Province/ Municipality	Description Soil Type/Series	Area (Ha)	% Municipal Total	REMARKS (Constraints & Problems)	Recommended Use
Western Samar: Sta. Margarita 14,444 Ha.	Silay loam - derived from alluvial deposits underlain by structureless marine & compost silt loam caused by cementing substance, highly suitable for lowland rice, characterized by dark gray to dark grayish brown	144.0	1.00	About 0-3% slope, nearly level, slightly eroded, pH 55, low organic matter content	Lowland rice, gabi/galiang
	Bigaa loam - derived from alluvial deposits, deep, moderately fertile, characterized by brown, dark brown	2,888.0	28.10	With Fe concretions, poorly drained, slight flooding	Lowland rice gabi/galiang
	Catbalogan clay loam - derived from stratified shales, moderately deep, low fertility, characterized by grayish brown to gray	10,111.0	70.00	Rolling to steep 15-40% slope, excessive external drainage, erosion hazard	Upland rice, corn, coconut fruit trees, forest, pasture
	Hydrosol - brackish water	1,301.0	0.90	Underwater	Fishpond, nipa palm
Calbayog City 90,304 Ha.	Silay loam - derived from alluvial deposits, underlain by massive and compact brown silt loam caused by cementing substance highly similar to lowland rice, characterized by dark gray to dark grayish brown	1,709.0	1.89	Slightly acidic with pH 5.5. nearly level 0-3% slope	Lowland rice, galiang
	Pulupandan sandy loam - derived from recent coastal deposits with marine shales, characterized by dark surface soil	856.0	0.95	Nearly level, 0-3% slope excessive internal drainage due to coarse sandy material in the river horizon	Coconut, gabi rice
	San Manuel sandy loam - derived from alluvial deposits, very deep soil, fertile, characterized by grayish brown to pale brown	2,709.0	3.00	Well-drained, about 0-3% slope, slight flooding low water holding capacity	Diversified crops, rice, corn, camote, cassava, vegetables.

Province/ Municipality	Description Soil Type/Series	Area (Ha)	% Municipal Total	REMARKS (Constraints & Problems)	Recommended Use
Western Samar: Calbayog City	San Manuel loam - derived from alluvial deposit , very dark, fertile, characterized by grayish brown to pale brown	5,418.0	6.00	Well-drained, about 0-3% slope, nearly level, slight flooding	Diversified crops, rice corn, camote, cassava, vegetables
	Catbalogan clay loam - derived from stratified shales, moderately deep low fertility, characterized by grayish brown to gray	78,395.0	86.81	Rolling to steep, 15-40% slope, slow permeability, excessive external drainage, erosion hazard	Upland rice, corn, coconut banana, fruit trees, pasture forest
	Hydrosol - brackish water	756.0	0.84	Underwater	Fishpond, nipa palm
	La Castellana clay - derived from primary soil of igneous rocks, limestone basalt, breccia, volcanic tuff, characterized by brown to black	461.0	0.51	Rolling to hilly with boulders on the surface, excessive external drainage	Coconut, camote pasture, forest
Tinambacan 20,000 Ha.	San Manuel loam - derived from alluvial deposits, very deep, fertile, characterized by grayish brown to pale brown	455.0	2.28	Nearly level 0-3% slope, slight flooding hazard	Diversified crops, rice, corn, legumes, vegetables.
	Pulupandan sandy loam - derived from recent coastal deposits with marine shales, characterized by dark surface soil	95.0	0.48	Nearly level, 0-3% excessive internal drainage due to coarse sandy materials in the driver horizon	Coconut, gabi, rice
	La Castellana clay - derived from primary soils developed from mixture of igneous rocks like basalt, andesite, breccia, volcanic tuff, characterized by brown to black	19,300.0	96.50	Rolling to hilly with boulders on the surface, excessive external drainage, erosion hazard	Coconut, camote, pasture forest
	Hydrosol- brackish water	150.0	0.74	Underwater	Fishpond

Province/ Municipality	Description Soil Type/Series	Area (Ha)	% Municipal Total	REMARKS (Constraints & Problems	Recommended Use
Western Samar: Gandara 67,402 Ha.	San Manuel clay loam - derived from alluvial deposits, very deep, fertile, characterized by grayish brown to pale brown	2,696.0	4.00	Nearly level 0-3% slopes, slight flooding, well-drained	Lowland rice, gabi, galiang corn, mangrove
	San Manuel loam - derived from alluvial deposits, very deep, fertile, characterized by grayish brown to pale brown	750.0	1.12	Well-drained, 0-3% slopes, slight flooding	Diversified crops, rice, corn, camote, cassava, vegetables
	Bigaa loam - derived from alluvial deposits deep & moderate fertile, characterized by brown, dark brown	6,740.0	10.00	With iron concretions, nearly level, 0-3% slope, poorly drained, slight flooding	Lowland rice, galiang, coconut, abaca
	Catbalogan clay loam - derived from stratified shales, moderately deep, low fertility, characterized by grayish brown to gray	48;122.0	71.40	Rolling to steep, 15-40% slope, excessive external drainage, erosion hazard	Upland rice, coconut, corn, pasture, forest
	Fareon clay - derived from corralline limestone, shallow characterized by dark gray to black	7,740.0	11.48	Hilly to mountainous, excessive external drainage, erosion hazard	Camote, upland rice, corn, coconut, fruit trees
	Hydrosol - brackish water	1,348.0	2.00	Underwater	Fishpond, nipa palm
Almagro 5,587 Ha.	Tacloban clay loam-derived from shale, deep, characterized by dark brown to brown	5,587.0	100%	Hilly to mountainous, erosion hazard	Forest
Sto Nino 3,171 Ha.	Tacloban clay loam-derived from shale, deep, characterized by dark brown to brown	3,171	100%	- do -	-do-

Province/ Municipality	Description Soil Type/Series	Area (Ha)	% Municipal Total	REMARKS (Constraints & Problems)	Recommended Use
Western Samar: Hinabangan 37,215 Ha.	Catbalogan clay loam - derived from stratified shales, moderately deep, low fertility, characterized by grayish brown to gray	1,488.5	4.00	Rolling to steep 15-40% slope, excessive external drainage, erosion hazard	Coconut, fruit trees, pasture & forest
	Faraon clay - derived from corralline limestone, shallow, characterized by dark gray to black	11,164.5	30.00	Hilly to mountainous, excessive external drainage, erosion hazard	Coconut, upland rice, corn, banana, gabi, forest
	Hydrosol - brackish water	756.0	2.03	Underwater throughout the year	Fishpond, nipa palm
	Mountain soils - undifferentiated	23,806.0	63.97	Rolling to hilly and mountainous, eroded	Forest
Motiong 17,436 Ha.	Catbalogan clay loam - derived from stratified shales, moderately deep, low fertility, characterized by grayish brown to gray	3,487.0	20.00	Rolling to steep 15-40% slope, excessive external drainage, erosion hazard	Upland rice, corn, coconut, fruit trees, pasture and forest
	Bigaa loam - derived from alluvial deposits, deep and moderately fertile, characterized by brown to dark brown	81.0	0.47	With iron concretions in all layer, poor drainage, high water table, slight flooding	Lowland rice, galiang, coconut
	Palapag clay loam - derived from alluvial deposits, deep, fertile, characterized by brown to grayish brown	1,613.0	9.26	0-3%, nearly level poorly drained, slight flooding	Upland rice, coconut, camote, corn, banana, cassava, abaca
	Faraon clay - derived from corralline limestone, shallow, characterized by dark gray to black	6,212.0	36.63	Hilly to mountainous, excessive external drainage, erosion hazard	Camote, upland rice, corn, banana, fruit trees, forest

Province/ Municipality	Description Soil Type/Series	Area (Ha)	% Municipal Total	REMARKS (Constraints & Problems)	Recommended Use
Western Sam Hinabangan 37,215 Ha.	Catbalogan clay loam - described from stratified shales, moderately deep, low fertility, characterized by grayish brown to gray	1,488.5	4.00	Rolling to steep, 15-40% slopes, excessive external drainage, erosion hazard	Coconut, fruit trees, pastures and forest
	Faraon clay - derived from corralline limestone, shallow characterized by dark gray to black	11,164.5	30.00	Hilly to mountainous, excessive external drainage, erosion hazard	Coconut, upland rice, corn, bananas, gabi, & forest
	Hydrosol - brackish water	756.0	2.03	Underwater throughout the year.	Fishpond, nipa palm.
	Mountainous soils, undifferentiated	23,806.0	63.97	Hilly to mountainous terrain	Forest
Wright 45,737 Ha.	Bigaa loam - derived from alluvial deposits, deep moderate fertility, characterized by brown to dark brown	914.0	2.00	With Fe concretions, poor drainage, slight flooding	Lowland rice, coconut, galiang, abaca
	Bay clay loam - derived from accumulated sediments carried by streamer by sea waves, deep characterized by dark brown	246.0	0.54	Very poor, internal drainage, slight flooding	Lowland rice, galiang
	Catbalogan clay loam - derived from stratified shales, moderately deep, low fertility, characterized by grayish brown to gray	9,000.0	19.68	Rolling to steep, 15-40% slope, excessive external drainage, erosion hazard	Coconut, fruit trees, pasture and forest
	Faraon clay - derived from corralline limestone, shallow characterized by dark gray to black	10,432.0	22.81	Hilly to mountainous, excessive external drainage, erosion hazard	Coconut, upland rice, corn, banana, gabi, forest
	Ubay Clay loam	751.0	1.65		

Province/ Municipality	Description Soil Type/Series	Area (Ha)	% Municipal Total	REMARKS (Constraints & Problems)	Recommended Use
Western Samar: Motiong	Mountain Soils - undifferentiated	6,000.0	34.41	Rolling, hilly to mountainous, excessive external drainage	Forest
	Hydrosol - brackish water	151.0	0.86	Underwater	Fishpond, nipa palm
Jiabong 6,786 Ha.	Catbalogan clay loam - derived from stratified shale, moderately deep, low fertility, characterized by grayish brown to gray	2,368.0	35.0	Rolling to steep 15-40% slope, excessive external drainage, erosion hazard	Upland rice, corn, coconut, fruit trees, pasture, forest
	Faraon clay - derived from corralline limestone, shallow, characterized by dark gray to black	4,059.5	60.0	Hilly to mountainous, excessive external drainage, erosion hazard	Camote, upland rice, corn, fruit trees, banana, forest
	Hydrosol - brackish water	340.5	5.0	Underwater	Fishpond, nipa palm
Catbalogan 11,985 Ha.	Catbalogan clay loam - derived from stratified shale, moderately low fertility, characterized by grayish brown to gray	11,533.0	96.23	Rolling to steep 15-40% slope, excessive external drainage, erosion hazard	Coconut, fruit trees, pasture and forest
	Faraon clay - derived from corralline limestone, shallow characterized by dark gray to black	452.0	3.77	Hilly to mountainous, excessive external drainage, erosion hazard	Camote, upland rice, corn, banana, fruit trees, forest
Tarangnan	Catbalogan clay loam - derived from stratified shale, moderately deep low fertility, characterized by grayish brown to gray	15,100.5	95.00	Rolling to steep 15-40% slope, excessive external drainage, erosion hazard, slow permeability	Coconut, fruit trees, upland rice, pasture and forest
	Hydrosol - brackish water	794.5	5.00	Underwater	Fishpond, nipa palm, mangrove

Province/ Municipality	Description Soil Type/Series	Area (Ha)	% Municipal Total	REMARKS (Constraints & Problems)	Recommended Use
Western Samar: Wright	Luisiana clay - primary soil derived from igneous rock, very deep, characterized by reddish brow to yellowish red	5,597.0	12.24	Rolling to steep, 15-40% slope, excessive external drainage, erosion hazard	Coconut, upland rice, corn, banana, fruit trees, forest
	Mountain soils - undifferentiated	13,295.0	40.00	Rolling to hilly and mountainous, excessive external drainage, erosion hazard	Forest
	Bigaa clay l.	239.0	0.51	With Fe concretions, slight flooding	Lowland rice
	Hydrosol - brackish water	1,014.0	2.22	Underwater	Fishpond, nipa palm
Talalora 3,233 Ha.	Tacloban clay loam - primary soil derived from shale, deep, characterized by dark brown to brown	3,233.0	100	Hilly to mountainous, stone & boulders present, excessive external drainage, erosion hazard	Pasture and forest, coconut & fruit trees
Villareal 23,943 Ha.	Catbalogan clay loam derived from stratified shale, moderately deep, low fertility, characterized by grayish brown to gray	10,353.0	43.23	Rolling to steep 15-40% slope, excessive external drainage, erosion hazard	Coconut, fruit trees, pasture forest
	Faraon clay - primary soil derived from corralline stone, shallow characterized by dark gray to black	5,356.0	22.37	Hilly to mountainous relief, excessive external drainage, erosion Hazard	Coconut, upland rice, corn, bananas, gabi
	Hydrosol - brackish water	352.0	0.40	Underwater throughout the year	Fishpond, nipa palm, mangrove
	Mt. Soils-Undifferentiated	7,112.0	30.00	Hilly to mountainous	Forest
Pinabacdao 8,245 Ha.	Tinglib clay loam - secondary soil developed from local alluvium, characterized by light grayish brown to light gray	406.0	4.92	0-3% nearly level high water table, with reddish brown streaks mottlings & concretions, with slight flooding	Lowland rice, Palawan, gabi or galiang

Province/ Municipality	Description Soil Type/Series	Area (Ha)	% Municipal Total	REMARKS (Constraints & Problems)	Recommended Use
Western Samar: Pinabacdao	Catbalogan clay loam - derived from stratified shales, moderately deep, low fertility, characterized by grayish brown to gray	7,641.0	92.77	Rolling to steep 15-40% slope, excessive external drainage, erosion hazard	Coconut, fruit trees, pasture and forest
	Hydrosol - brackish water	198.0	2.31	Underwater throughout the year	For fishpond, nipa palm and mangrove.
Calbiga 28,367 Ha.	Catbalogan clay loam - derived from stratified shales, moderately deep, low fertility, characterized by grayish brown to gray	3,342.0	29.43	Rolling to steep 15-40% slope, excessive external drainage, erosion hazard	Coconut, fruit trees, pasture & forest
	San Manuel loam - derived from alluvial deposit, very deep, fertile, characterized by grayish brown to pale brown	425.0	1.50	Slight flooding, about 0-3% slope, nearly level, well drained	Diversified crops, rice, corn, coconut, camote, cassava, gabi
	Faraon clay - derived from corralline limestone, shallow, characterized by dark gray to black	3,271.0	39.16	Hilly to mountainous, excessive external drainage, erosion hazard	Camote, upland rice, corn, banana, fruit trees
	Hydrosol - brackish water	104.0	1.25	Underwater	Fishpond, nipa forest and recreation
	Mountainous soils, undifferentiated	11,5[illegible].0	40.73	Rolling to hilly and mountainous eroded	
San Sebastian 2,733 Ha.	Faraon clay - derived from corralline limestone, shallow, characterized by dark gray to black	1,14[illegible].0	42.74	Hilly to mountainous, excessive external drainage, erosion hazard	Camote, upland rice, corn, banana, fruit trees
	Cattaloman clay loam	819.0	30.0	Rolling to steep slope, excessive external drainage	coconuts, fruit trees pasture and forest
	Hydrosol-brackish water	746.0	27.26	Underwater throughout the year	Fishpond

LAND RESOURCE TABLE

Province/ Municipality	Description Soil Type/Series	Area (Ha)	% Municipal Total	REMARKS (Constraints & Problems)	Recommended Use
Western Samar: Marabut 9,889 Ha.	Tacloban clay loam - primarily soil derived from shale, deep, characterized by dark brown to brown	6,889.0	69.66	Hilly to mountainous, stony and boulders, excessive external drainage, erosion hazard	Pasture and forest, coconut and fruit trees
	Beach sand - no developed soil profile, sand deposited through wave action	452.0	4.56	Very sandy, excessive drainage condition	Coconut, forest, recreation
	Mountain soil - undifferentiated, shallow	2,543.0	25.78	Steep slopes, excessive run-off, erosion hazard, stony	Coconut, forest
Basey 57,267 Ha.	Faraon clay - primary soil derived from corralline, limestone, shallow, soil characterized by dark gray to black	13,171.0	23.00	Hilly and mountainous relief, excessive internal drainage, erosion hazard	Coconut, upland rice, corn, bananas, gabi
	Tingib clay loam - secondary soil developed from local alluvium, deep soil characterized by light grayish brown to light gray	11,626.0	20.30	High water table, about 0-3% slopes, nearly level, with reddish brown streaks	Lowland rice, coconuts, bananas, fruit trees, vegetables
	Dolongan loamy sand - derived from accumulation of organic materials and fine soil material from the highly uplands, organic material highly characterized by very dark gray to black	5,581.0	9.75	Very high water table 1/2 m. from surface, poor drainage about 0-3% slope, nearly level	Gabi, galiang, pineapple, lowland rice

ince/ cipality	Description Soil Type/Series	Area (Ha)	%Municipal Total	REMARKS (Constraints & Problems)	Recommended Use
ern Samar: sey	Catbalogan clay loam - derived from stratified shales, moderately deep, low fertility, characterized by grayish brown to gray	5,125.0	8.95	Rolling to steep, 15-40% steep, excessive erosion hazard	Coconut, fruit trees, pasture and forest.
	Tacloban clay loam - primary soil derived from shale, deep, characterized by dark brown to brown	4,584.0	8.01	Hilly to mountainous, stones and boulders present, excessive external drainage, erosion hazard	Pasture and forest, coconut, fruit trees
	Mountain soils - undifferentiated shallow	17,180.0	30.00	Steep slope, excessive run-off, erosion hazard and stony	Coconut, forest
s. Rita 2,248 Ha.	Tingib clay loam - secondary soil derived from local alluvium, deep soil characterized by light grayish brown to light gray	890.0	4.00	High water table, 0-3% slope, nearly level with reddish brown streaks	Lowland rice, coconut, banana, vegetables.
	Catbalogan clay loam - derived from stratified shale, moderately deep, low fertility, characterized by grayish brown to gray	13,853.0	62.37	Rolling to steep, 15-40% external drainage excessive	Coconut, fruit trees, pasture and forest
	Hydrosol - brackish water	586.0	2.63	Underwater	Fishpond
	Paraon clay - primary soil derived from corralline limestone, shallow, characterized by dark gray to black	355.0	1.60	Hilly to mountainous relief, excessive external drainage, erosion hazard	Coconuts, upland rice, corn, banana, gabi
	Catbalogan-Tingib complex	6,564.0	29.50		

Irrigation Schemes

FARM SYSTEMS DEVELOPMENT CORPORATION
Catbalogan Samar
As of June, 1980

MASTER LIST OF IRRIGATION PROJECTS IN SAMAR

NAME OF ISA	AREA	FARMER MEMBERS	NAME OF ISA	AREA	FARMER MEMBERS
1) Bulao Proper, San Jorge	115	58	12) Natimonan, Gandara	38	12
2) Bulao Tabuk, San Jorge	20	15	13) San Pelayo, Gandara	112	20
3) Erenas, San Jorge	25	12	14) San Miguel, Gandara	15	18
4) L. Par., San Jorge	58	11	15) Bangahon, Gandara	25	16
5) Patitibak, San Jorge	28	15	16) Rawis-Piñaplata, Candara	34.5	12
6) Sapinit, San Jorge	23	19	17) Dolores, Pinabacdao	23	30
7) Calirucan, Gandara	47	13	18) Mambog, Pinabacdao	10	16
8) Casandig Proper, Candara	65	23	19) Sta. Elena, Sta. Rita	38	18
9) Casandig Tabuk, Gandara	40	20	20) Danao I, Calbayog City	43	32
10) Sto. Niño Proper, Candara	30	15	21) Casayao, Sta. Rita	30	17
11) Sto. Niño Tabuk, Candara	53	22	22) Lawa-an, Wright	20	24
TOTAL	542	244	TOTAL	350.5	203

B. CIP (NIA-FSDC TIE UP)

NAME OF ISA	AREA	FARMER MEMBERS	NAME OF ISA	AREA	FARMER MEMBERS
1) Aurora, San Jorge	45	11	E. CIP (UNDER SIRDP REHAB)		
2) Placer, Talalora	20	10	1) Tabucan, Wright	70	28
3) Pagsulhogon, Sta. Rita	195	54	2) Can-abay, Basey	60	15
4) Ca[illegible]agan, Sta. Rita	70	24	3) Salukigue, Basey	90	16
5) San Agustin, Candara	40	16	4) San Antonio, Basey	20	19
6) La Paz, San Jorge	80	28	5) Mawacat, Calbayog City	60	15
7) Sol[illegible]ogon, Sta. Margarita	75	27			
C. CIP (FSDC PILOT PROJECT)					
1) Napiro, Sta. Margarita	50	35			
D. CIP (SIRDP)					
1) Calapi, Motiong	300	32			
TOTAL	875	237	TOTAL	300	93

Agricultural Organization

SAMAHANG MAYON (SN) PROGRAMS, BY MUNICIPALITY/CITY

As of: May 31, 1980

MUNICIPALITY/CITY	PROGRAMS STATUS							FINANCIAL STATUS			
	FIELDWORKER STRENGTH	BARANGAYS TOTAL NO.	BARANGAYS COVERED NO. ACTUAL	ORGANIZED SN: NO.	ORGANIZED SN: SN MEMBERS (NO.)	REGISTERED SN: NO.	REGISTERED SN: SN MEMBERS (NO.)	GENERAL FUND	BARRIO SAVING FUND	BARRIO GUARANTEE FUND	TOTAL SN FUND
. Aragro	1		17	17	643	17	643	₱ 8,165.25	₱ 3,500.00	₱ 9,814.64	₱21,479.89
. Jay	2		9	9	480	9	455	6,247.00	1,513.00	6,940.00	14,700.00
. Calbiga	1		11	11	366	11	317	4,520.00	200.00	12,290.00	17,010.00
. Catbalogan	2		22	22	867	21	678	12,713.00	2,740.00	39,745.50	55,200.50
. Daram	1		10	10	299	9	250	3,325.00	3,344.88	-	6,669.88
. Gandara	4		23	23	785	23	785	9,718.79	4,087.00	5,483.15	19,288.94
. Hinabangan	1		10	10	321	8	221	4,075.00	135.00	-	4,210.00
. Jiabong	1		22	22	741	19	628	6,916.14	951.28	3,845.25	11,712.67
. Marabut	1		9	9	381	8	367	4,800.00	-	1,619.76	6,419.76
. Matuguinao	1		8	8	225	8	225	2,870.00	-	3,700.00	6,570.00
. Motiong	2		22	22	638	22	638	11,040.02	681.00	13,042.00	24,763.02
. Pinabacdao	1		15	15	487	13	455	7,736.00	1,797.00	20,698.01	30,231.01
. San Jose de Buan	1		5	5	127	3	77	1,583.00	-	575.00	2,158.00
. San Sebastian	1		5	5	152	5	152	2,577.32	605.67	2,994.89	6,177.88
. Sta. Margarita	1		22	22	585	12	578	10,440.00	2,680.00	8,121.72	21,241.72
. Sta. Rita	1		36	36	1403	36	1403	16,419.00	6,360.00	370.00	23,149.00
. Sto. Niño	1		13	13	364	12	361	4,863.60	875.00	3,350.43	9,089.03
Talalora	1		7	7	183	4	183	2,180.00	-	-	2,180.00
. Tarangan	1		28	28	1084	28	1084	11,840.00	5,345.00	13,660.00	30,845.00
. Villareal	1		14	14	406	11	329	4,791.00	2,952.00	9,017.00	16,760.76
. Wright	1		17	17	634	14	448	6,419.30	414.00	9,511.46	16,344.76
. Zumarraga	1		17	17	493	9	292	3,209.00	255.00	1,003.73	6,467.73
TOTAL	28		342	342	11664	302	10,569	₱143,450.42	₱38,435.83	₱165,783.32	₱352,669.57

PREPARED BY:

SOURCE/S:

1) Marketing, Processing, Storage Facilities

The major crops such as rice, copra, banana and rootcrops are transported by land and water. Usually, the transportation used are public utility jeeps and buses as well as motorboats. From the farms, the farmers bring their produce to procurement centers by using carabao sleds. From here, buyers, such as in the case of rice, the National Food Authority (NFA) purchase the goods. Others are brought directly to the town market. However, in interior barrios where accessibility is difficult, middlemen purchase the produce in the farm itself thus depressing prices at which the farmers sell their produce. Tacloban and Manila are usually the destination points of copra. There are existing warehouses for rice and copra in Calbayog and Catbalogan. Other dry good items flow in from Tacloban and Manila.

In the case of fish products, the mode of transportation is also by land and ship. Fish products are brought daily in Tacloban and Manila in vans. Large commercial fishing vessels deliver fish to Manila twice a week. In the local market, excess supply are either made into fish meal, salted, dried or smoked. There are 16 fish processing plants and 5 ice plants in Western Samar.

5.0 Security

5.1 Security condition in the study area

The peace and order situation on the island of Samar appears to have improved since early this year. This may be attributed to the call of the President for reconciliation and peace talks with the insurgents. An interview with one of the NPA commanders in Samar revealed their cooperative attitude with regards to developmental projects. (See attached press release).

5.2 Proposed measures to be taken to secure the safety of the study

It would be advisable that a briefing with the military command in the area be arranged for a more detailed statement of the security situation on the island.

. . .but go on media campaign

COMMUNIST insurgents have launched a public relations campaign as they prepared to hold crucial cease-fire negotiations with President Corazon Aquino's government.

Newspapers yesterday carried accounts and pictures of a weekend visit by newsmen to a camp of the New People's Army (NPA), armed wing of the banned Communist Party of the Philippines (CPP), in the central island of Samar.

CPP-NPA spokesmen expressed hope for a successful cease-fire, praised Mrs. Aquino and promised to hold back their forces during the talks, but blasted military leaders allegedly bent on derailing the peace negotiations.

'Liberation', an insurgent magazine, in turn sought to present a softer image of the NPA guerrilla. It had pictures of a rebel coddling an infant, guerrillas at play, and child revolutionaries.

The news reports came a day after rebel emissaries held preliminary talks with Mrs. Aquino's negotiators, Foreign Affairs Minister Ramon [illegible] and Jose Diokno, head of a presidential committee [illegible]

The Manila Chronicle

National News

Friday, July 4, 1986

Rebels allow aid

REBEL leaders in Samar Island said they were "open" to allowing the controversial Australian aid program in Norther Samar province to continue.

Meeting with reporters at a New People's Army camp in Basey, Western Samar, Ka Larry, spokesman for the Communist Party in the island, said the rebels would let the project go on "if the people will be benefited."

In the past, the rebels had condemned the aid project and, in fact, stopped its implementation in the interior towns of Northern Samar.

"We did this because the project was used to prop up the Marcos government," Ka Larry said. But conditions have changed with a new and popular Government in power, he said.

The Northern Samar Integrated Area Development Program was funded with an initial grant of 25 million Australian dollars from the Australian government and a US $27 million loan from the World Bank.

Its major components include the construction of roads, ports and an airport, an agricultural project and a health program.

Critics, both here and Australia, have charged that the program benefits rich farmers, to the detriment of landless tenants and farm workers. Its infrastructure component has also been criticized as oriented more toward counter-insurgency than rural development.

"Basically, we think that the project is part of counter-insurgency efforts," Ka Larry said, "but we are open to letting it continue."

Nella Corona