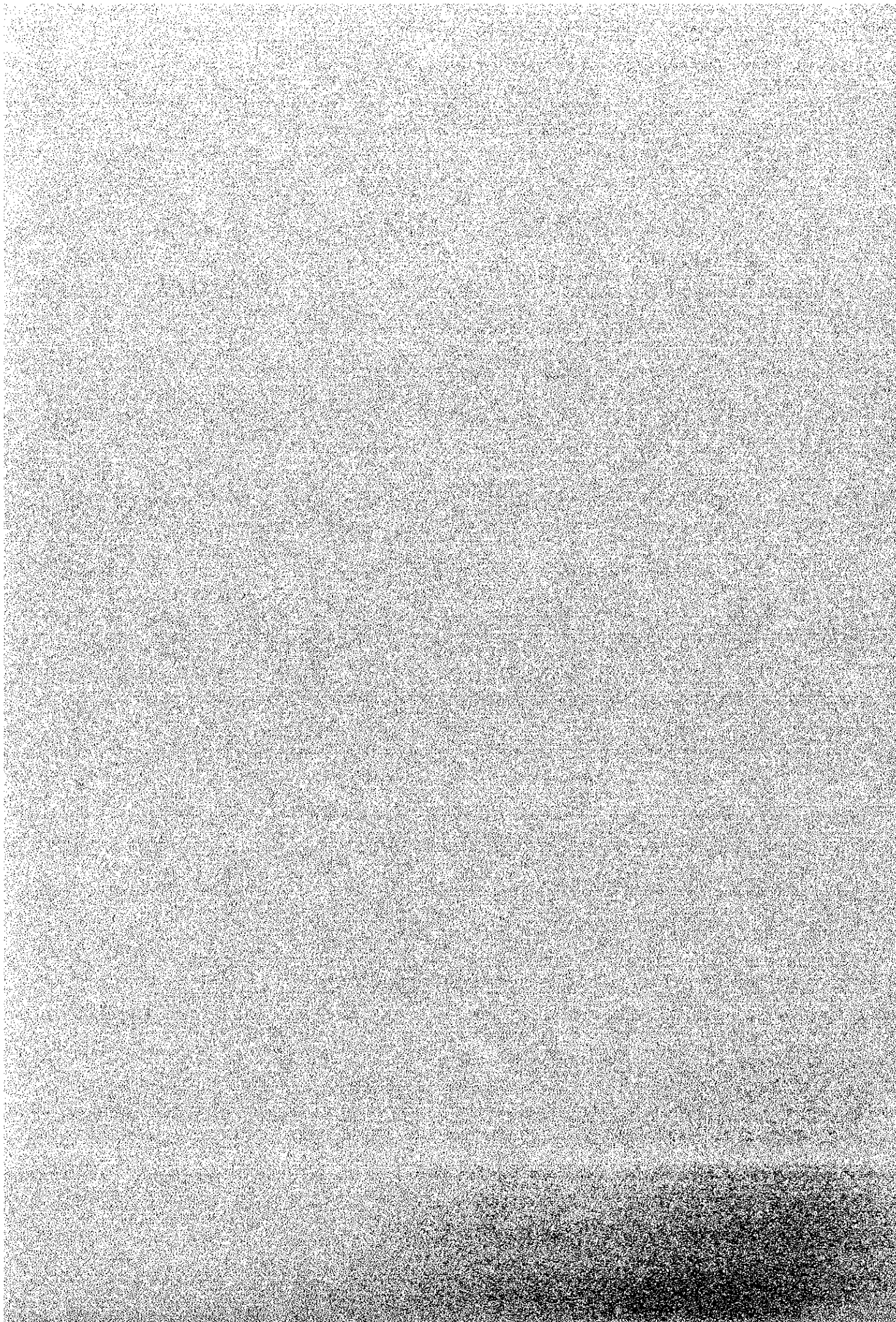
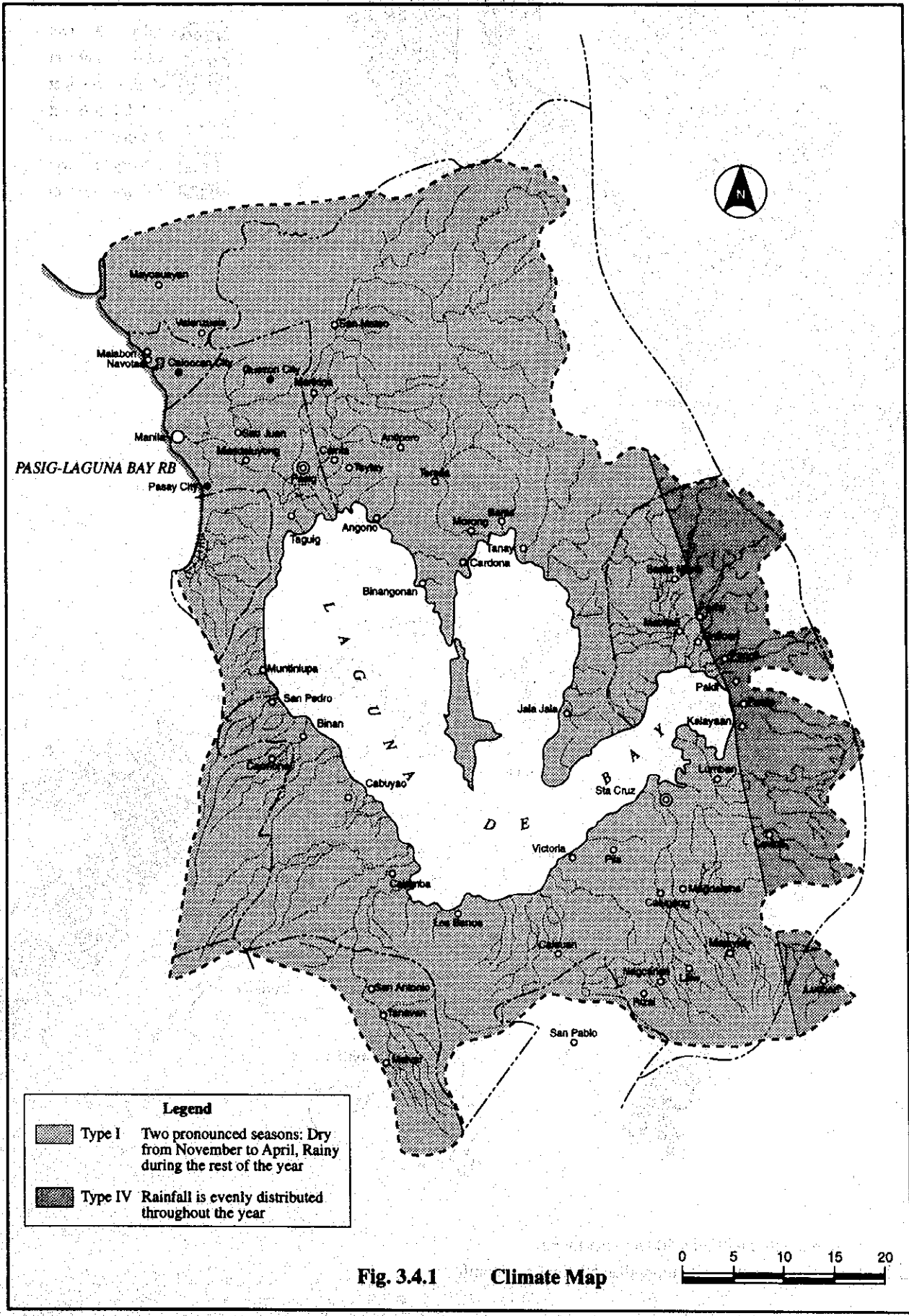
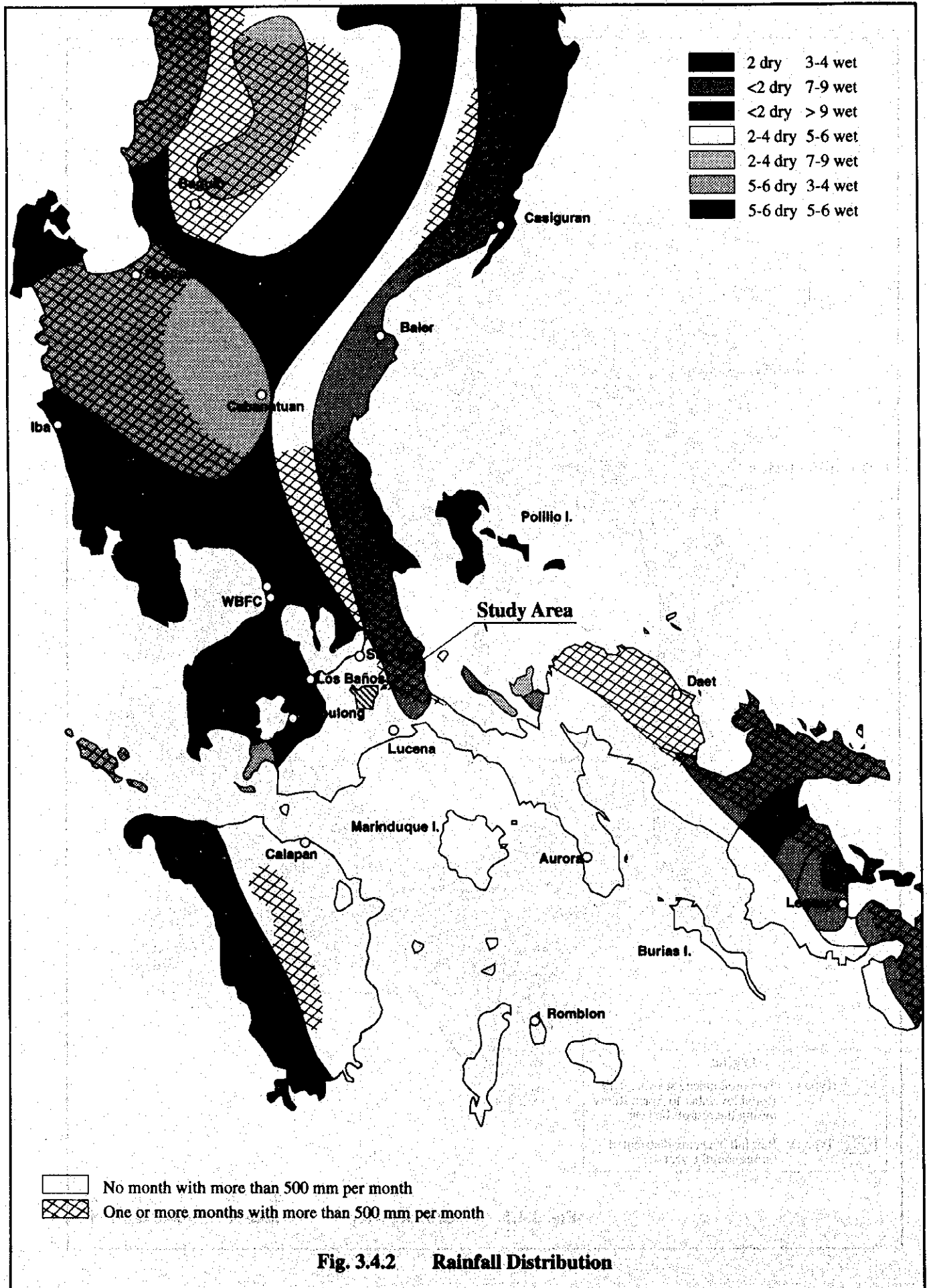


Figures







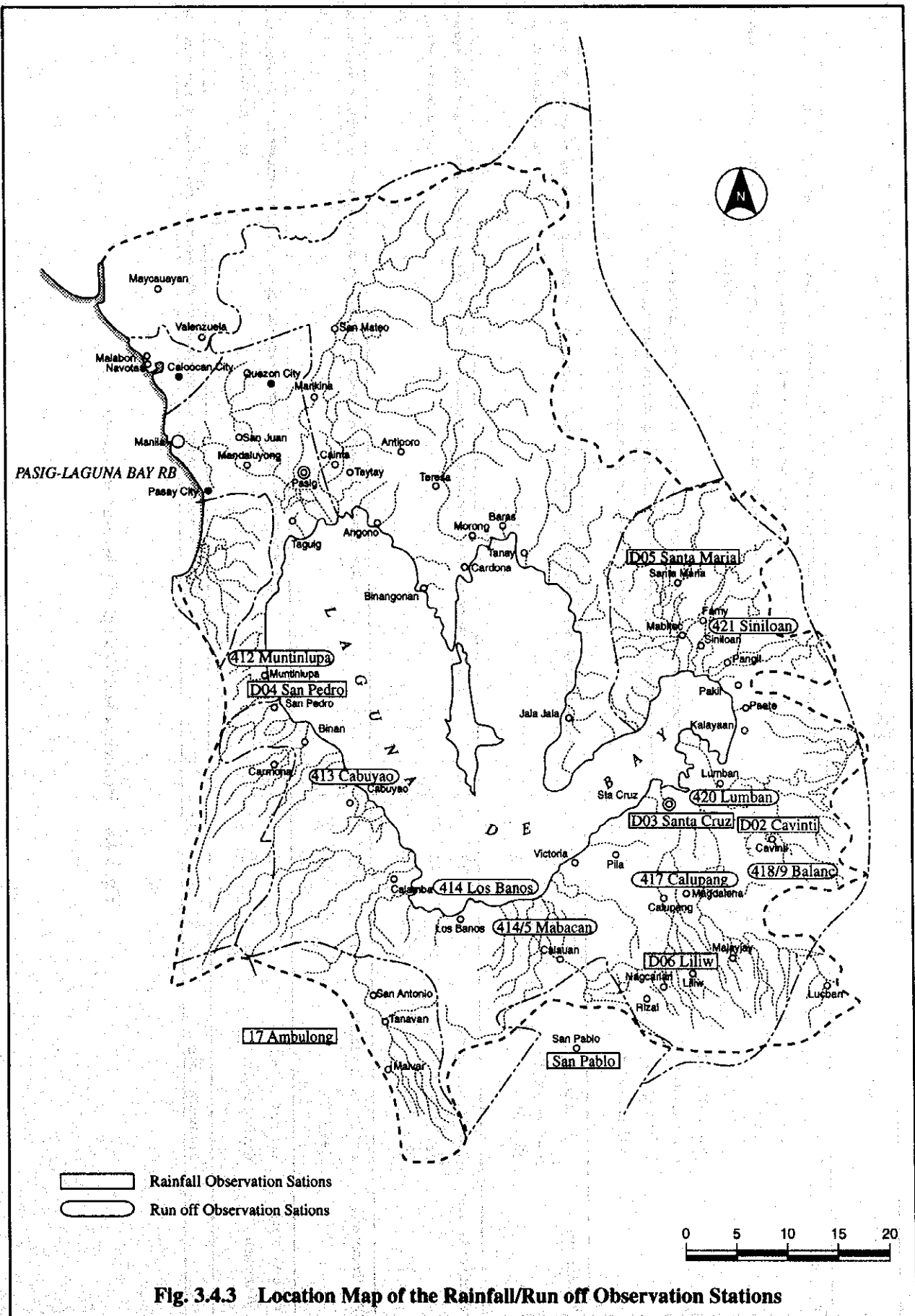
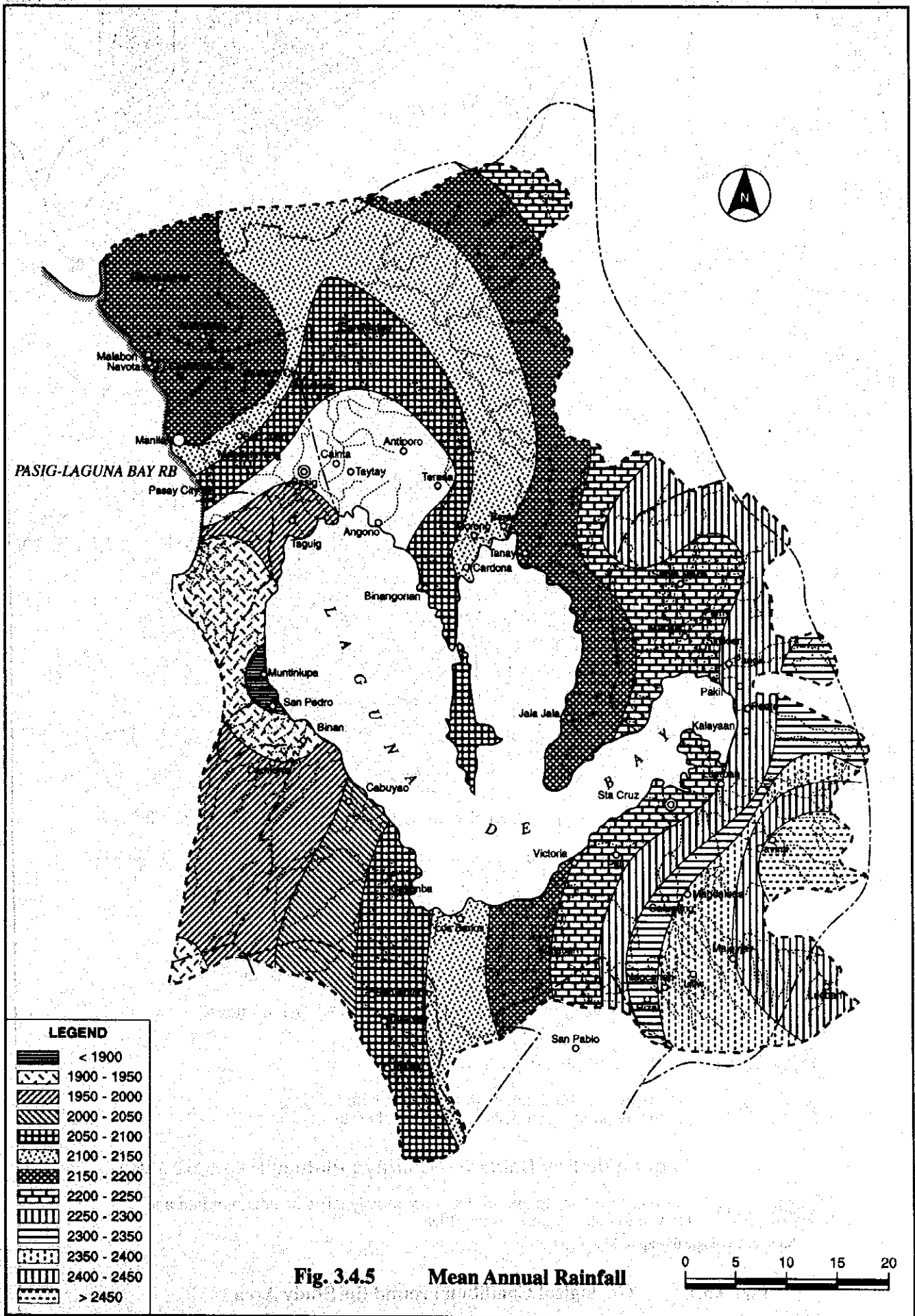
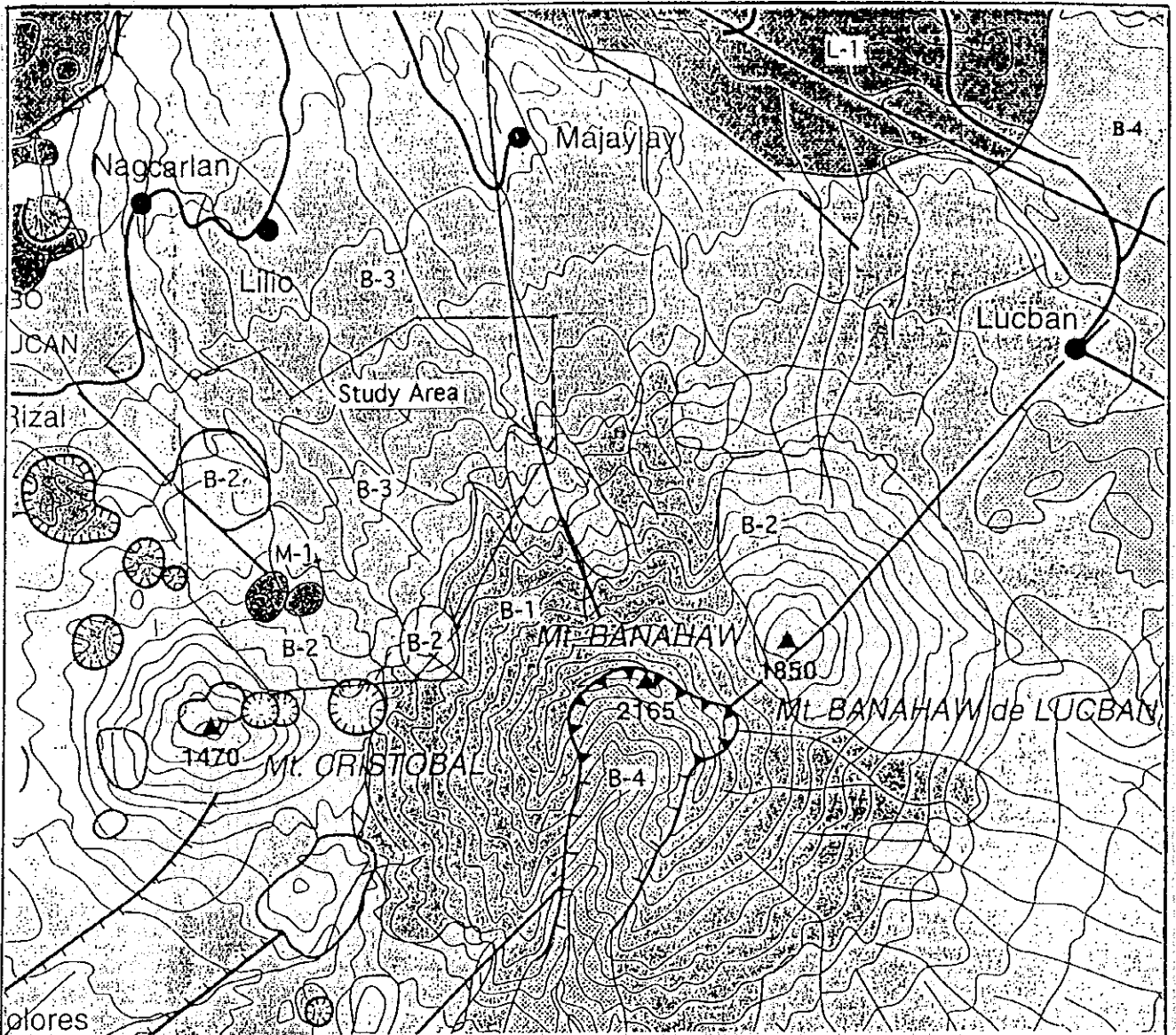


Fig. 3.4.3 Location Map of the Rainfall/Run off Observation Stations

Items	Location	Coordinates	
		Latitude	Longitude
Rainfall	Los Banos, Laguna	14° 11'	121° 15'
	Lumot, Cavinti, Laguna	14° 15'	121° 30'
	Sta. Cruz, Laguna	14° 17'	121° 25'
	Liliw, Laguna	14° 08'	121° 26'
	Nagcarlan, Laguna	14° 05'	121° 26'
	Lucena, Quezon	13° 56'	121° 37'
	Infanta, Quezon	14° 45'	121° 39'
	Alabat, Quezon	14° 01'	122° 01'
Temperature	Los Banos, Laguna	14° 11'	121° 15'
	Cavinti, Laguna	14° 17'	121° 30'
	Nagcarlan	14° 05'	121° 26'
Relative Humidity	Los Banos, Laguna	14° 11'	121° 15'
	Cavinti, Laguna	14° 17'	121° 30'
	Nagcarlan	14° 05'	121° 26'
Pan Evaporation	Los Banos, Laguna	14° 11'	121° 15'
	Nagcarlan	14° 05'	121° 26'
Wind Velocity /Direction	Los Banos, Laguna	14° 11'	121° 15'
	Cavinti, Laguna	14° 17'	121° 30'
	Los Banos, Laguna	14° 11'	121° 15'

Fig. 3.4.4 Historical Meteorological Observation Records





Basalt Volcanoes of the Macolod Corridor (ca. 2 Ma to 1969 A.D.)

(M-1) Basalt and basaltic andesite: lava flows and tephra deposits (e.g. Mt. Macolod, Mt. Alimbia, ...), ash and scoria cones (e.g. Imoc Hill, Mt. Mayabobo, ...), on Taal area partly covered by base surge deposits

Mt. Banahaw (ca. 1.6 Ma to 1743 A.D.)

- (B-1) Andesitic lava flows and tephra deposits of the main cone
- (B-2) Andesitic lava domes (secondary cones, e.g. Mt. San Cristobal, Mt. Banahaw de Lucban, ...)
- (B-3) Ash-flow and lahar deposits
- (B-4) Debris avalanche deposits (Mt. Banahaw de Lucban). Debris avalanche deposits of the central crater

Laguna de Bay Caldera – Caliraya Plateau (ca. 2.3 to 0.9 Ma.)

(L-1) Andesitic to rhyolitic tephra deposits, mainly large scale ignimbrite and lahar deposits. Andesitic lava flows

Source: Geological Map of Macolod Corridor

Fig. 3.5.1 Geological Condition around the Study Area

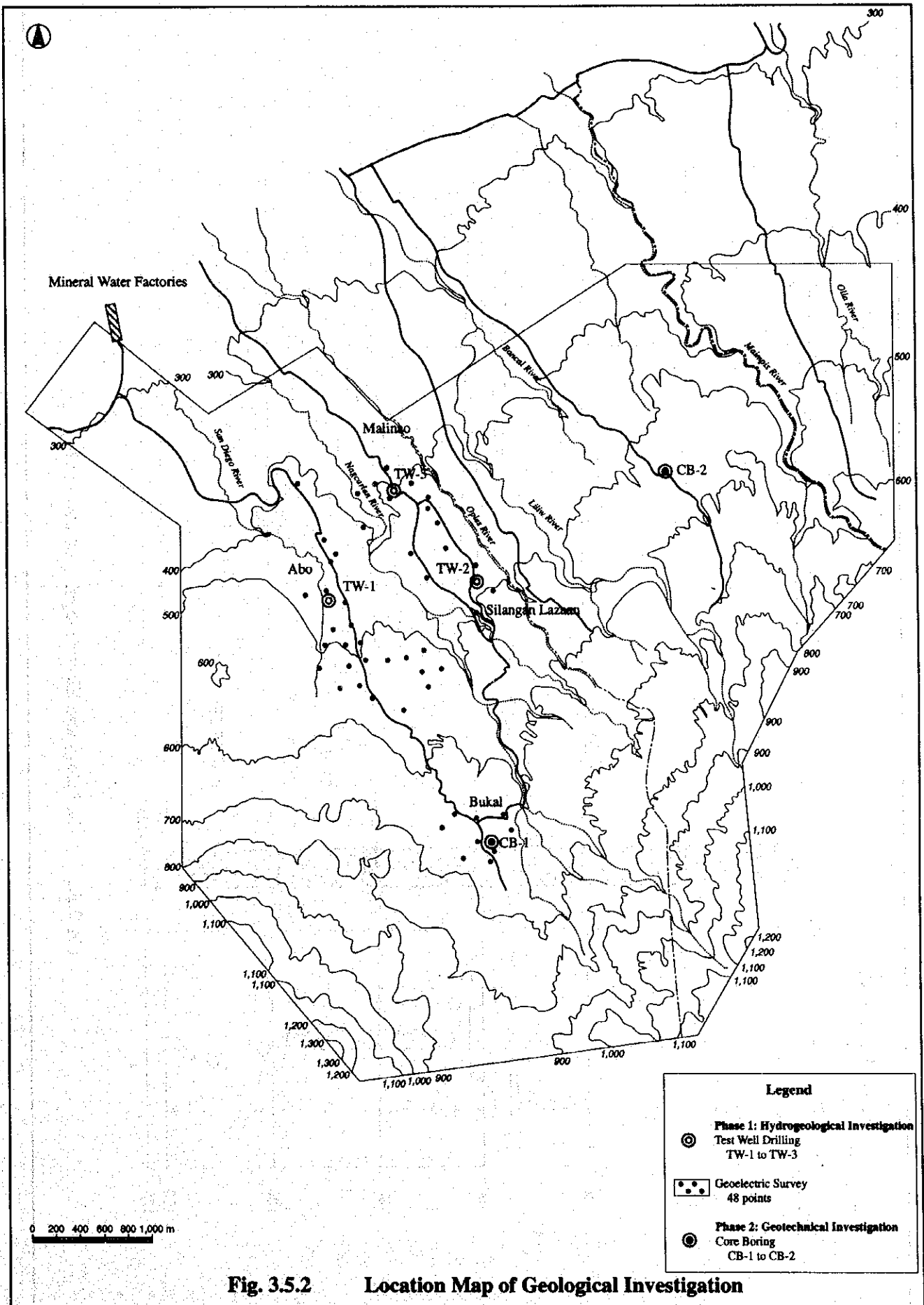


Fig. 3.5.2 Location Map of Geological Investigation

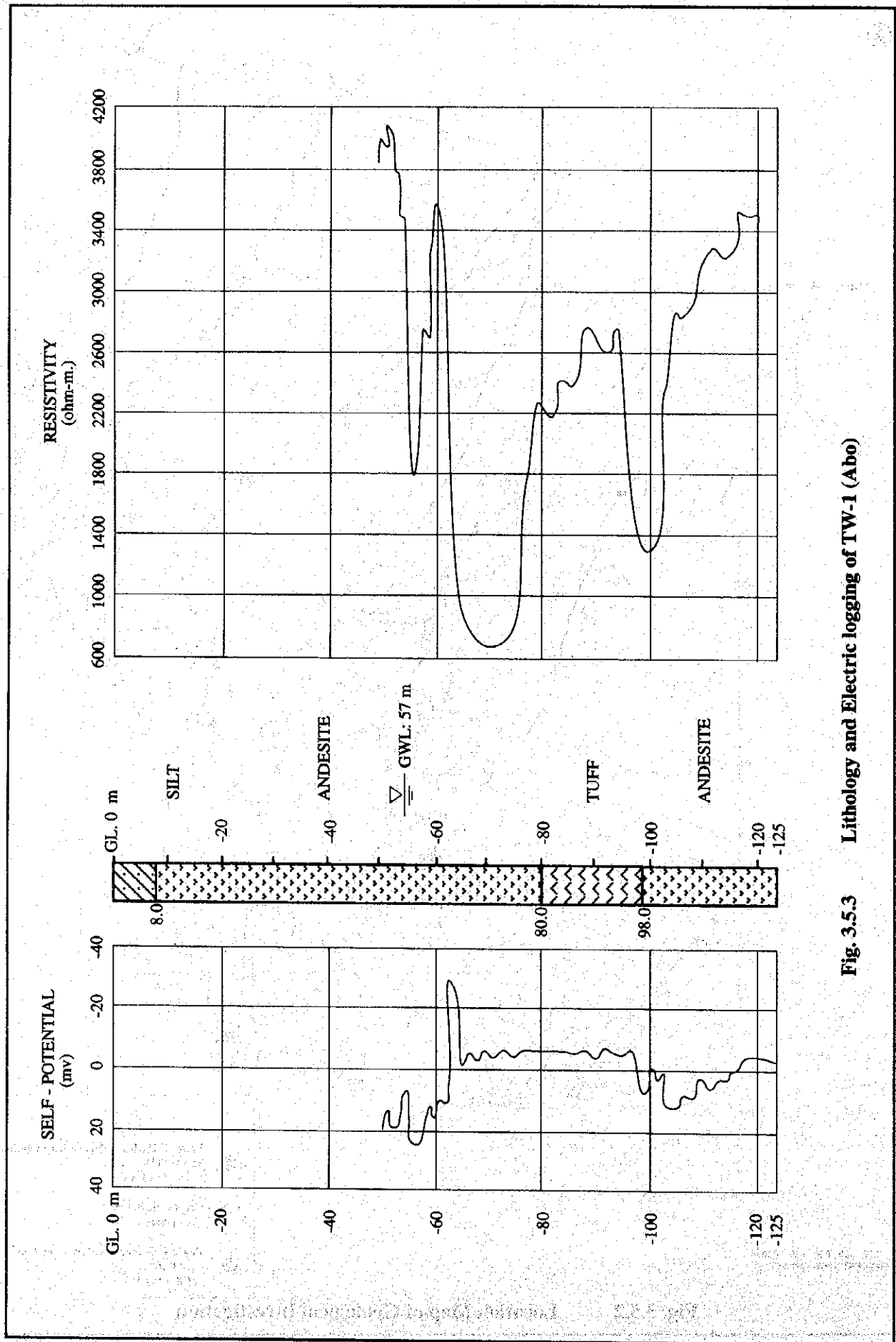


Fig. 3.5.3 Lithology and Electric logging of TW-1 (Abo)

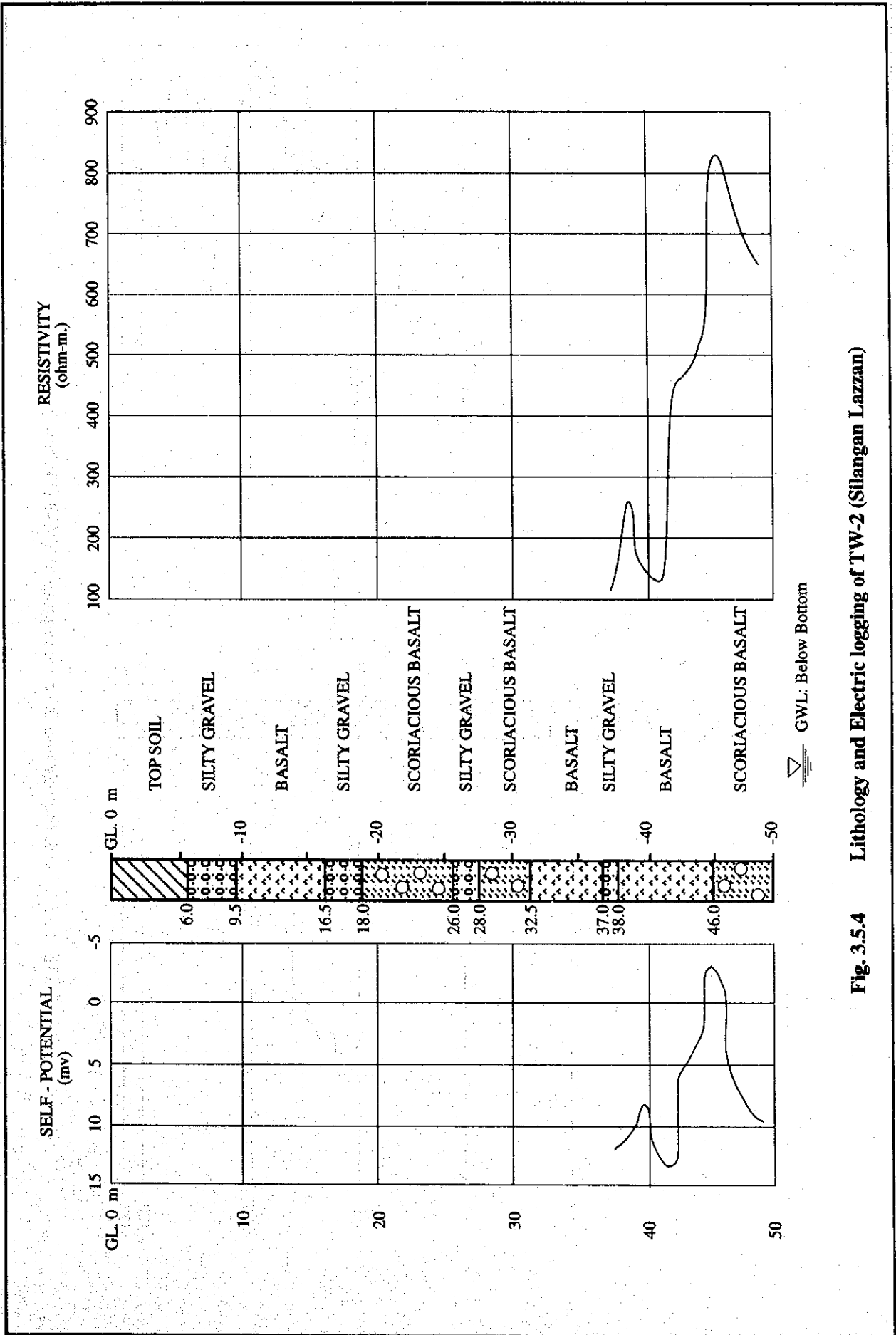


Fig. 3.5.4 Lithology and Electric logging of TW-2 (Silangan Lazzan)

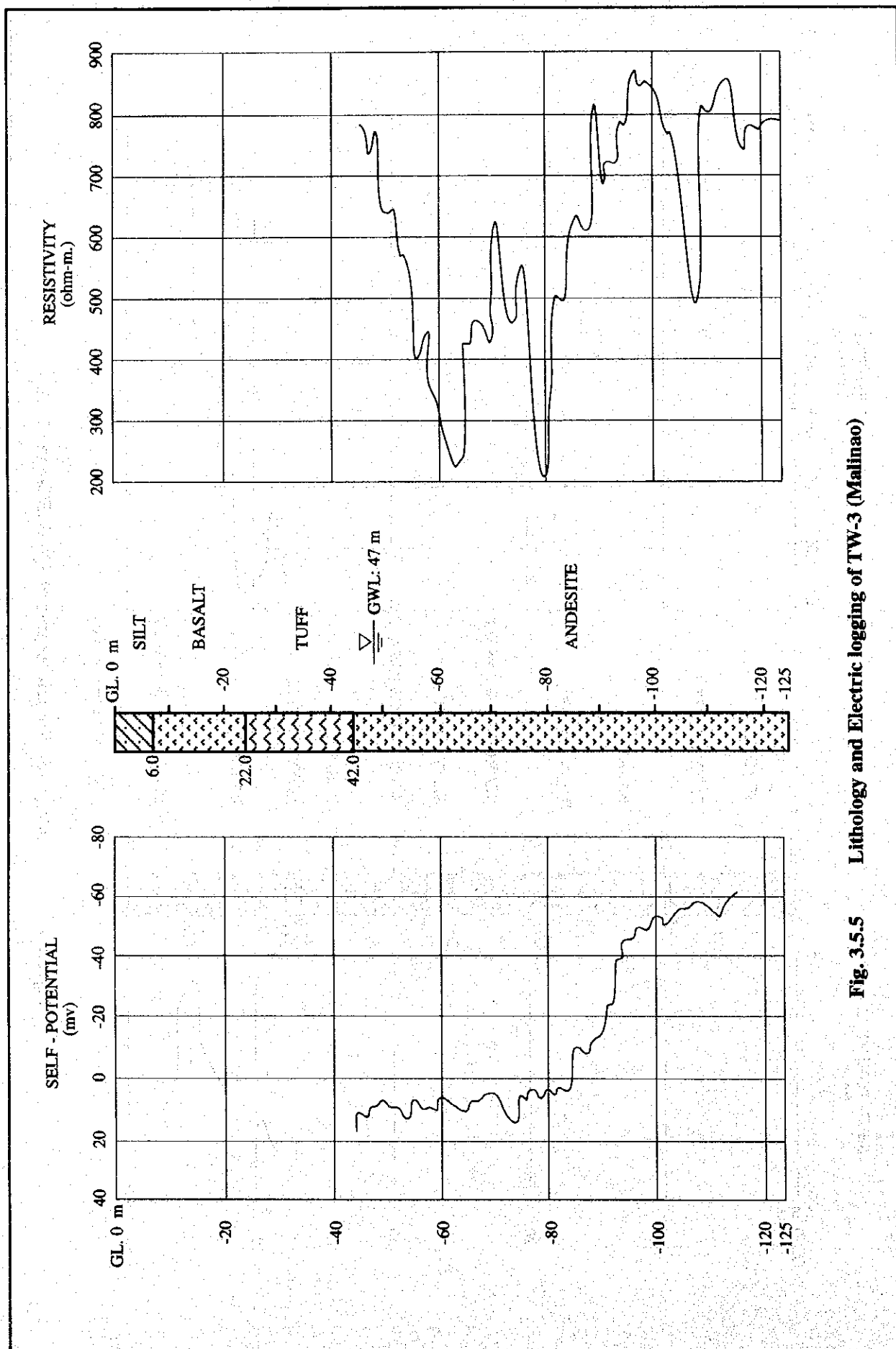


Fig. 3.5.5 Lithology and Electric logging of TW-3 (Malinao)

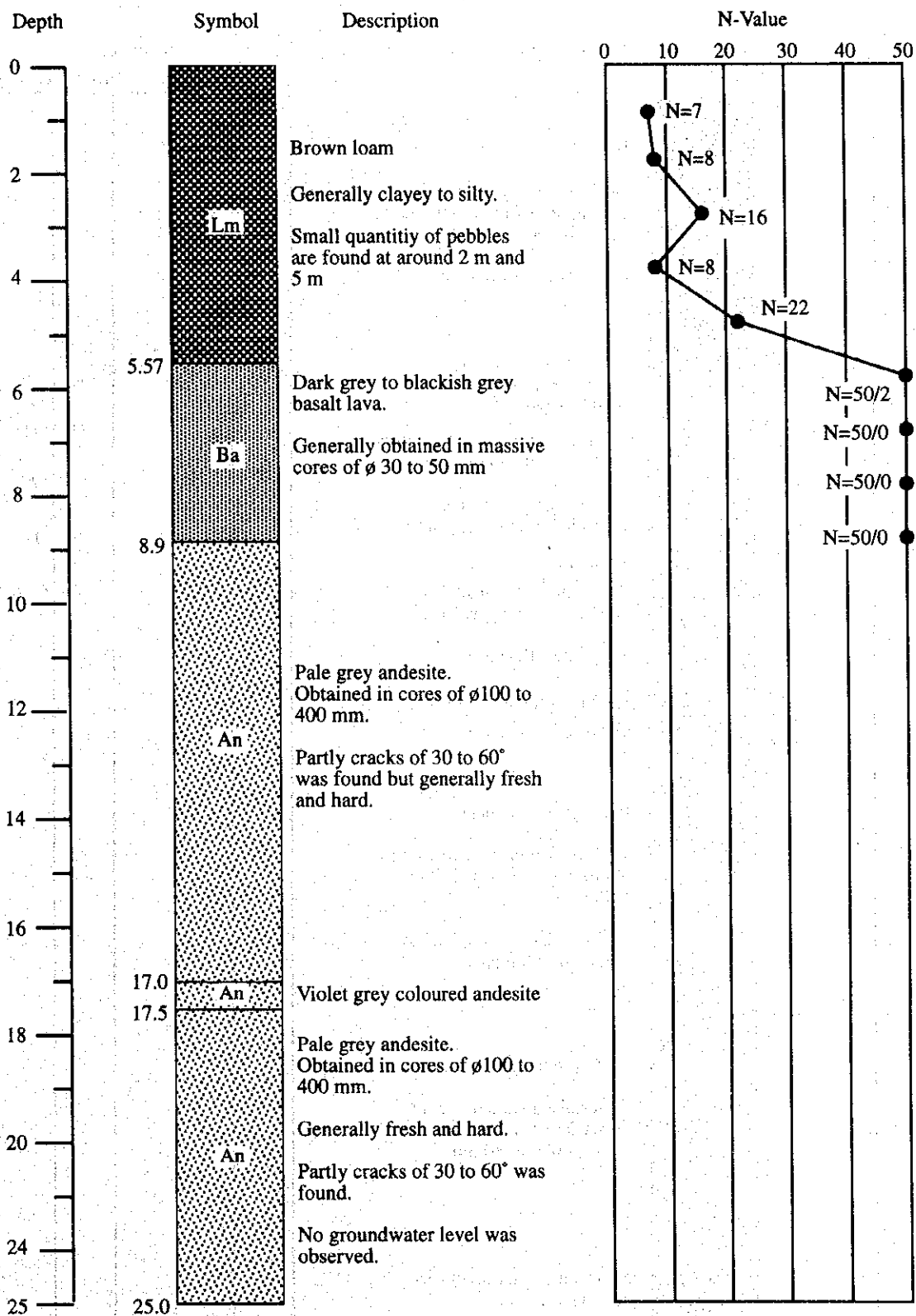


Fig. 3.5.6 Boring Log and N-Values of CB-1

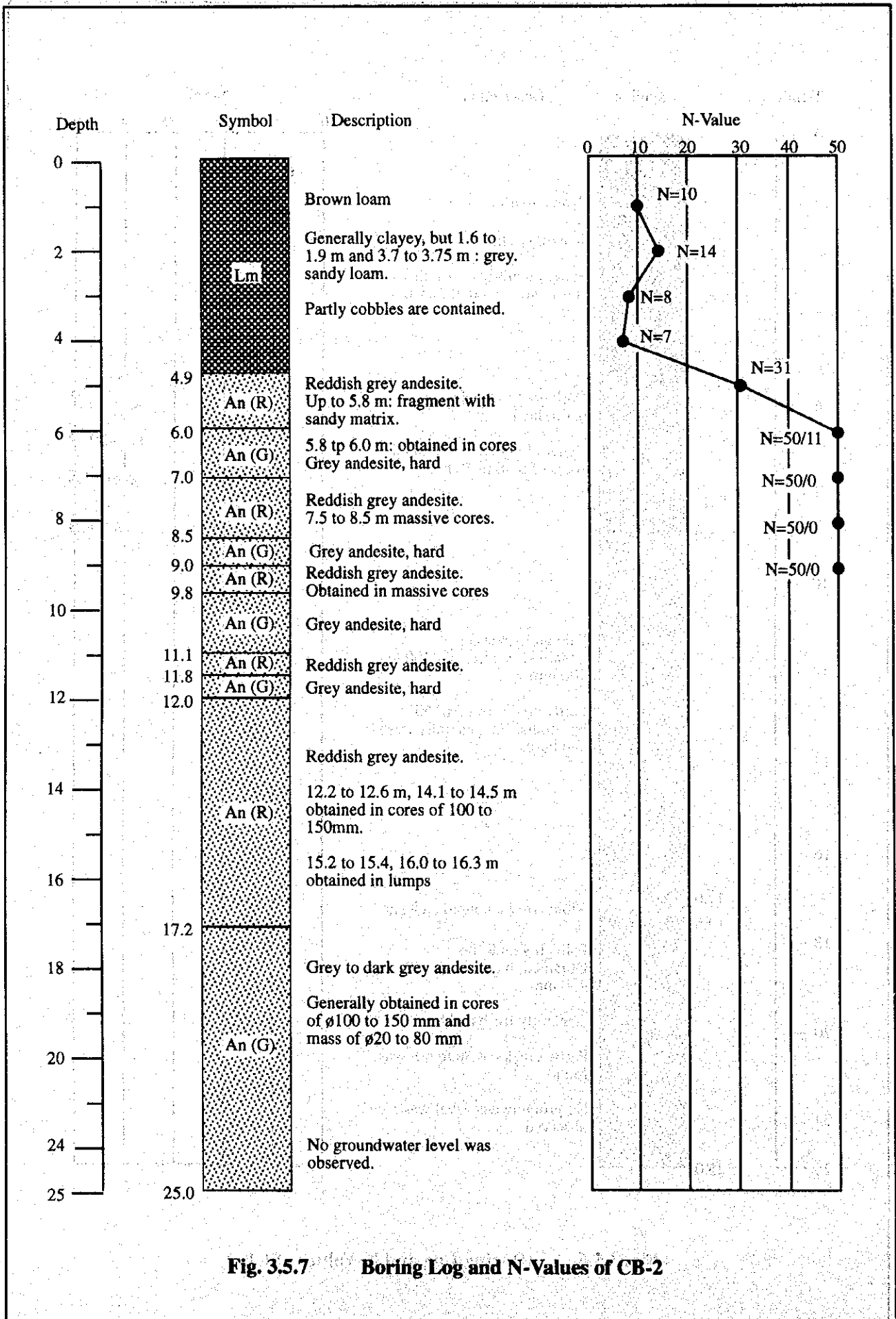


Fig. 3.5.7 Boring Log and N-Values of CB-2

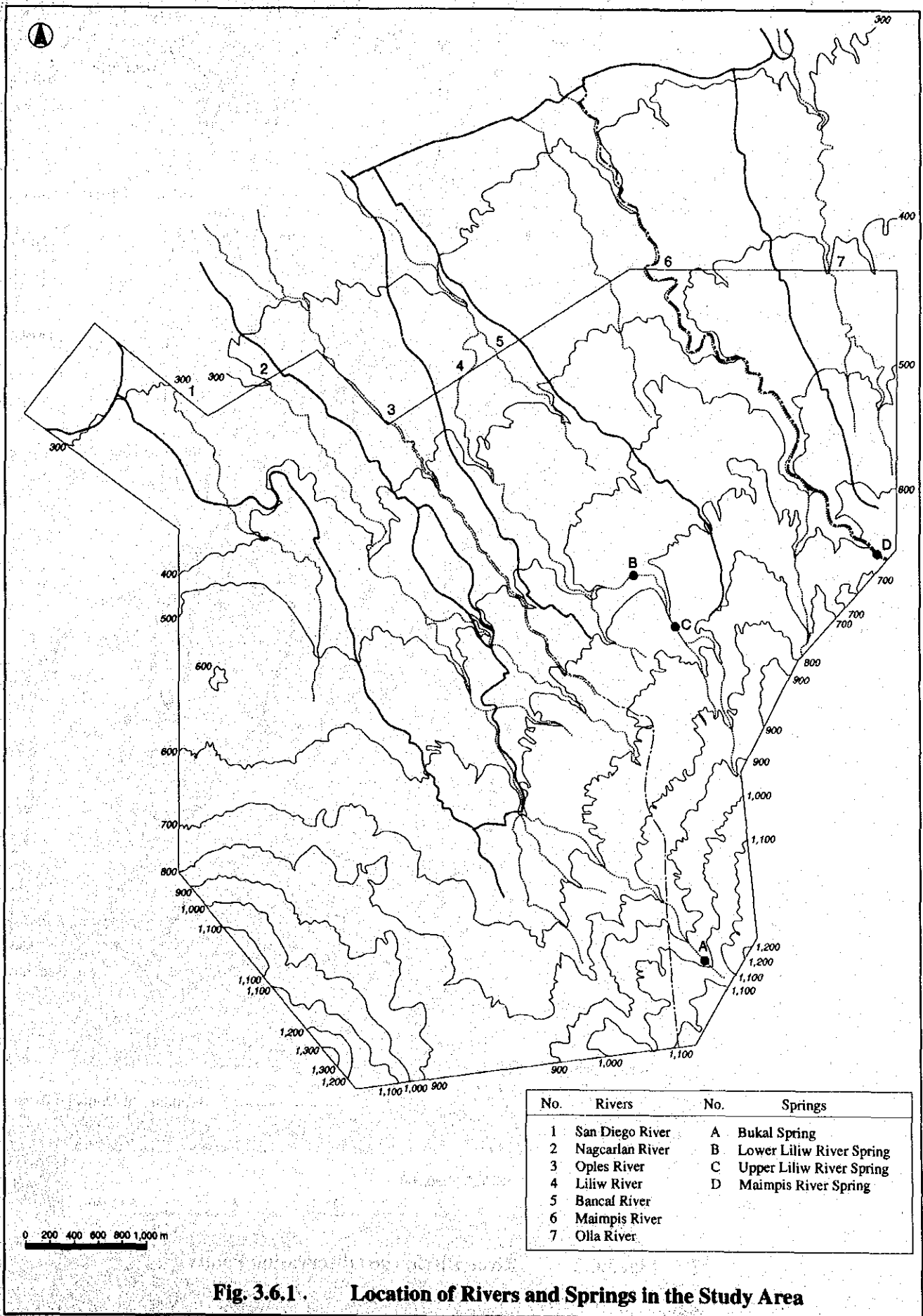


Fig. 3.6.1 . Location of Rivers and Springs in the Study Area

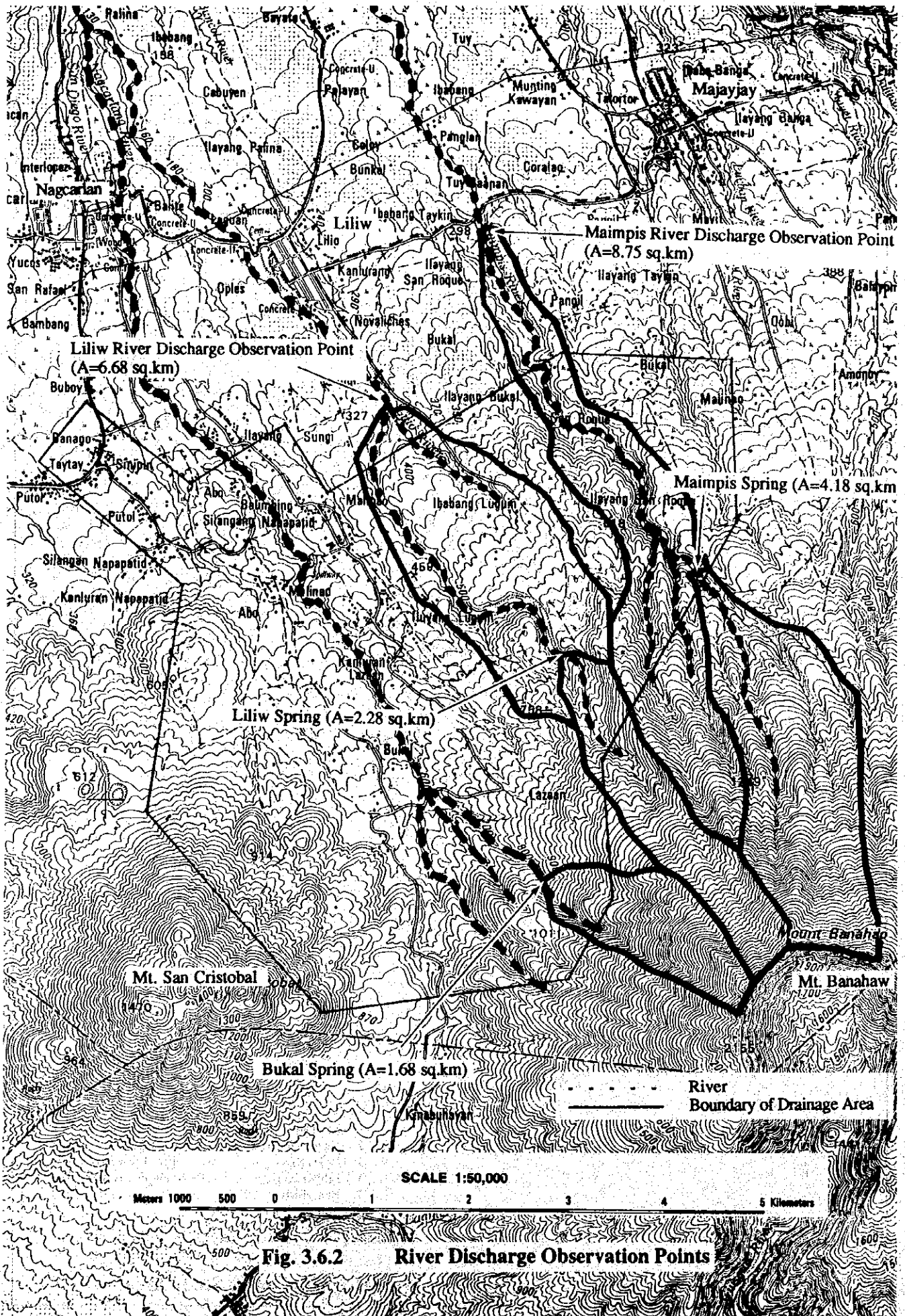
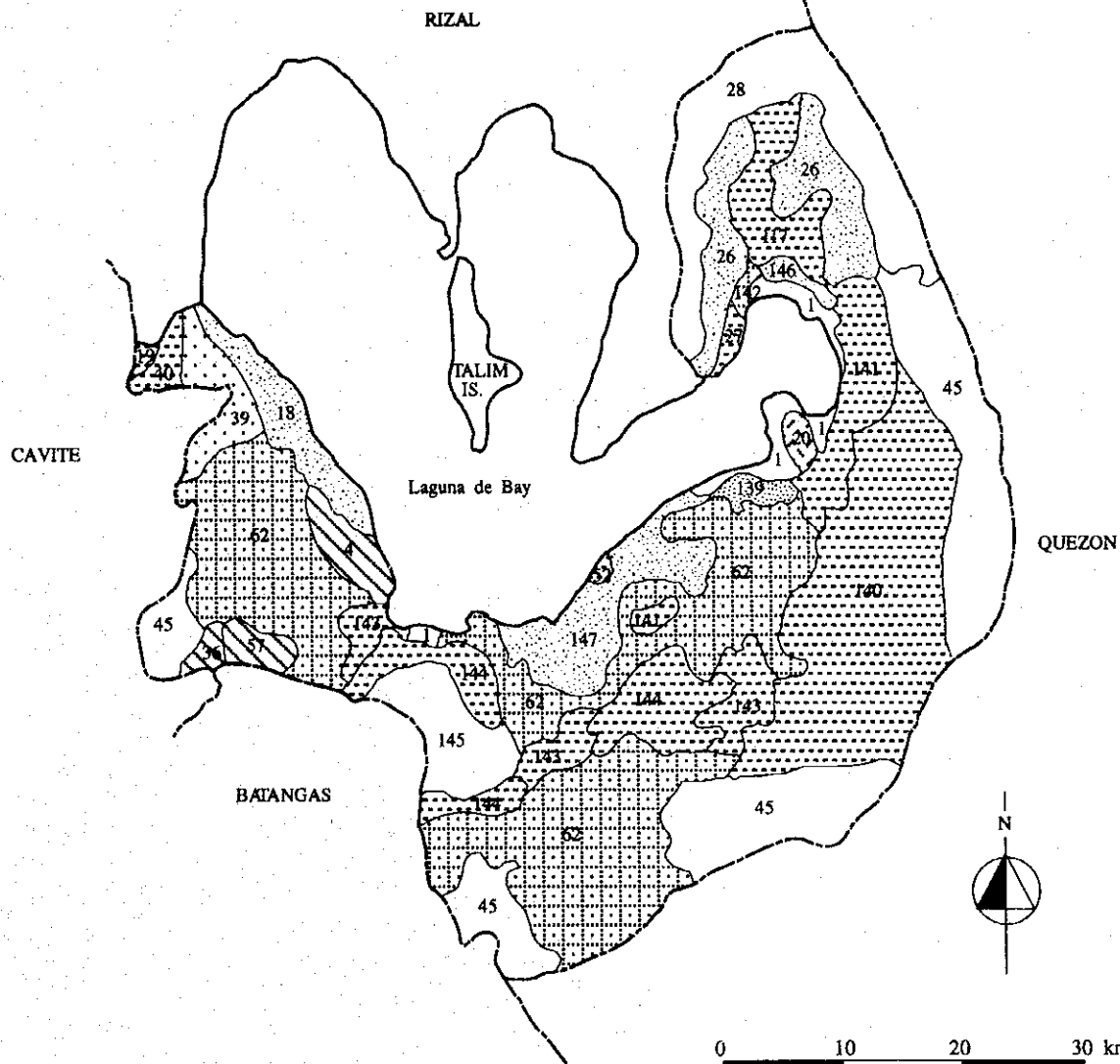


Fig. 3.6.2 River Discharge Observation Points



A - Soil Types

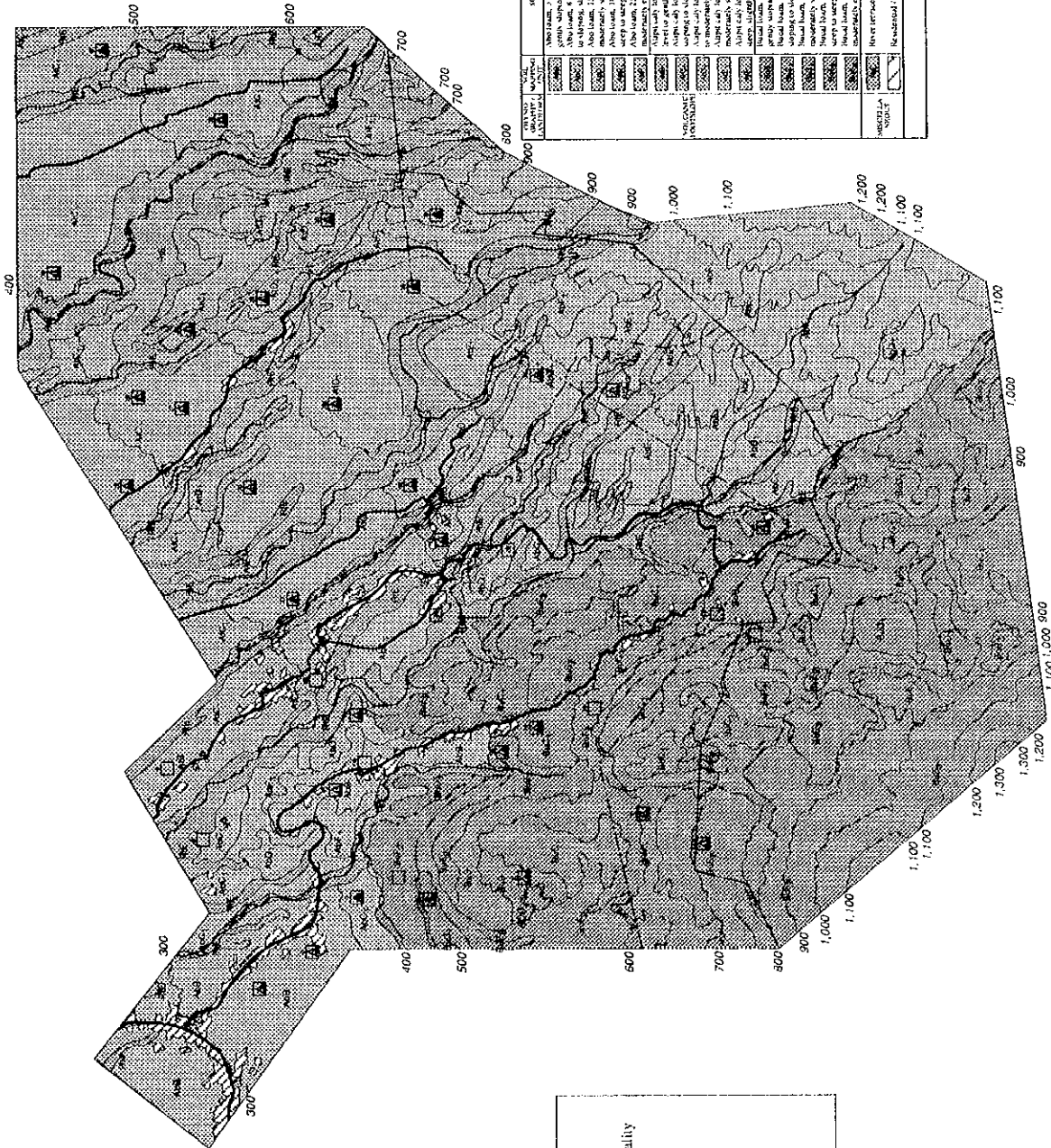
	Quingua Fine Sandy Loam		40	Carmona Clay Loam			
	18	Guadalupe Clay		52	Calumpang Clay Loam		
	19	Guadalupe Clay Adobe		57	Taal Fine Sandy Loam		
	20	Markina Silt Loam		62	Lipa Loam		
	26	Antipolo Clay		117	Maligaya Clay Loam		
	27	Antipolo Clay Loam		139	Marikina Silty Clay Loam		
	28	Antipolo Soil (Undifferentiated)		140	Luisiana Clay Loam		
	36	Tagaytay Sandy Loam		141	Pacte Clay Loam		
	39	Carmona Sandy Clay Loam		142	Lipa Laom		
	clay		silty clay loam		clay loam		sandy clay loam
	silty loam		loam		sandy loam		others

B - Miscellaneous Land Type

	1	Hydrosols
	45	Mountain Soils (Undifferentiated)

Source: Provincial Irrigation Profile, Province of Laguna, NIA, 1987

Fig. 3.7.1 General Soil Map of Laguna Province



Map Scale: 1:50,000
 1 cm = 500 m

SOIL TYPE	AREA (HA)	PERCENTAGE (%)	SOIL CLASSIFICATION	SOIL DESCRIPTION	AREA (HA)	PERCENTAGE (%)
1	135	5.30	UPLAND SANDY SOILS	Very sandy, 10-15% slope, heavy gravel to stones, slightly eroded	135	5.30
2	100	4.00	UPLAND SANDY SOILS	Very sandy, 15-20% slope, gravel to stones, slightly eroded	100	4.00
3	40	1.60	UPLAND SANDY SOILS	Very sandy, 20-25% slope, gravel to stones, slightly eroded	40	1.60
4	270	10.80	UPLAND SANDY SOILS	Very sandy, 25-30% slope, gravel to stones, slightly eroded	270	10.80
5	210	8.40	UPLAND SANDY SOILS	Very sandy, 30-35% slope, gravel to stones, slightly eroded	210	8.40
6	300	12.00	UPLAND SANDY SOILS	Very sandy, 35-40% slope, gravel to stones, slightly eroded	300	12.00
7	15	0.60	UPLAND SANDY SOILS	Very sandy, 40-45% slope, gravel to stones, slightly eroded	15	0.60
8	385	15.40	UPLAND SANDY SOILS	Very sandy, 45-50% slope, gravel to stones, slightly eroded	385	15.40
9	170	6.80	UPLAND SANDY SOILS	Very sandy, 50-55% slope, gravel to stones, slightly eroded	170	6.80
10	170	6.80	UPLAND SANDY SOILS	Very sandy, 55-60% slope, gravel to stones, slightly eroded	170	6.80
11	40	1.60	UPLAND SANDY SOILS	Very sandy, 60-65% slope, gravel to stones, slightly eroded	40	1.60
12	46	1.84	UPLAND SANDY SOILS	Very sandy, 65-70% slope, gravel to stones, slightly eroded	46	1.84
13	215	8.60	UPLAND SANDY SOILS	Very sandy, 70-75% slope, gravel to stones, slightly eroded	215	8.60
14	100	4.00	UPLAND SANDY SOILS	Very sandy, 75-80% slope, gravel to stones, slightly eroded	100	4.00
15	195	7.80	UPLAND SANDY SOILS	Very sandy, 80-85% slope, gravel to stones, slightly eroded	195	7.80
16	43	1.72	UPLAND SANDY SOILS	Very sandy, 85-90% slope, gravel to stones, slightly eroded	43	1.72
17	16	0.64	UPLAND SANDY SOILS	Very sandy, 90-95% slope, gravel to stones, slightly eroded	16	0.64
18	565	22.60	UPLAND SANDY SOILS	Very sandy, 95-100% slope, gravel to stones, slightly eroded	565	22.60
19	45	1.80	UPLAND SANDY SOILS	Very sandy, 100% slope, gravel to stones, slightly eroded	45	1.80
TOTAL AREA		2,500			2,500	100.00

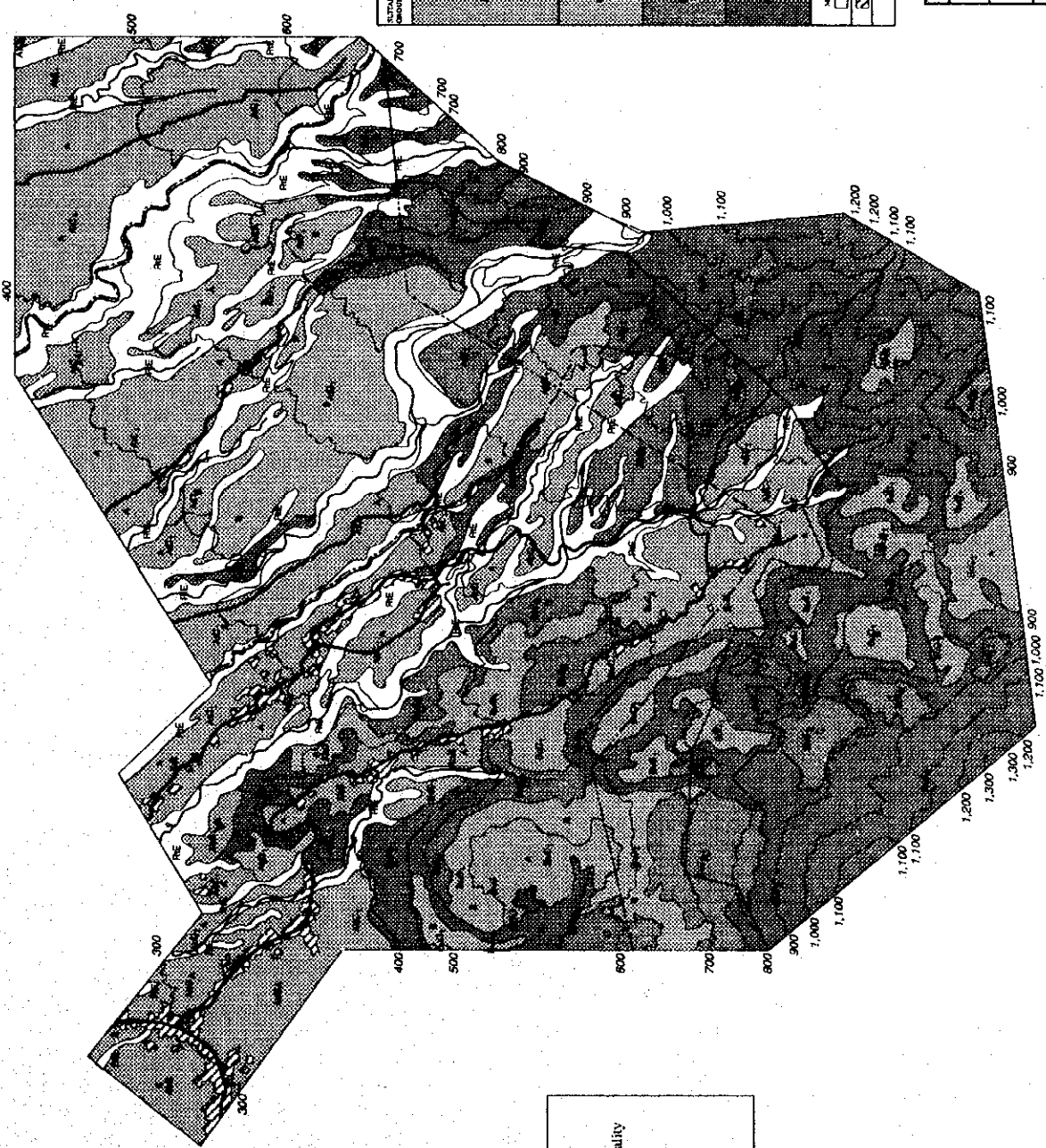
THE REPUBLIC OF THE PHILIPPINES
 THE UPLAND IRRIGATION AND RURAL DEVELOPMENT PROJECT
 IN SOUTHERN LUZON
 SOIL MAP
 DRAWING NO. _____ SHEET 1 OF 1
 PAGE _____
 JAPAN INTERNATIONAL COOPERATION AGENCY

Legend	
—	Boundary of Municipality
—	Contour in Meter
—	River
—	Road
•	Barragay Site
□	Pit Site
△	Fertility Site



Fig. 3.7.2 Soil Map

A



Legend

- Boundary of Municipality
- Contour in Meter
- ~ River
- Road

SUITABILITY CATEGORY	SURFACE COVER (%)		AREA (ha)	PERCENT
	AREA	PERCENT		
A	SA	52.0	135	4.5
	SA1	52.0	135	4.5
	SA2	52.0	135	4.5
B	SB	52.0	135	4.5
	SB1	52.0	135	4.5
	SB2	52.0	135	4.5
C	SC	52.0	135	4.5
	SC1	52.0	135	4.5
	SC2	52.0	135	4.5
D	SD	52.0	135	4.5
	SD1	52.0	135	4.5
	SD2	52.0	135	4.5
E	SE	52.0	135	4.5
	SE1	52.0	135	4.5
	SE2	52.0	135	4.5
F	SF	52.0	135	4.5
	SF1	52.0	135	4.5
	SF2	52.0	135	4.5
G	SG	52.0	135	4.5
	SG1	52.0	135	4.5
	SG2	52.0	135	4.5
H	SH	52.0	135	4.5
	SH1	52.0	135	4.5
	SH2	52.0	135	4.5
I	SI	52.0	135	4.5
	SI1	52.0	135	4.5
	SI2	52.0	135	4.5
J	SJ	52.0	135	4.5
	SJ1	52.0	135	4.5
	SJ2	52.0	135	4.5
K	SK	52.0	135	4.5
	SK1	52.0	135	4.5
	SK2	52.0	135	4.5
L	SL	52.0	135	4.5
	SL1	52.0	135	4.5
	SL2	52.0	135	4.5
M	SM	52.0	135	4.5
	SM1	52.0	135	4.5
	SM2	52.0	135	4.5
N	SN	52.0	135	4.5
	SN1	52.0	135	4.5
	SN2	52.0	135	4.5
O	SO	52.0	135	4.5
	SO1	52.0	135	4.5
	SO2	52.0	135	4.5
P	SP	52.0	135	4.5
	SP1	52.0	135	4.5
	SP2	52.0	135	4.5
Q	SQ	52.0	135	4.5
	SQ1	52.0	135	4.5
	SQ2	52.0	135	4.5
R	SR	52.0	135	4.5
	SR1	52.0	135	4.5
	SR2	52.0	135	4.5
S	SS	52.0	135	4.5
	SS1	52.0	135	4.5
	SS2	52.0	135	4.5
T	ST	52.0	135	4.5
	ST1	52.0	135	4.5
	ST2	52.0	135	4.5
U	SU	52.0	135	4.5
	SU1	52.0	135	4.5
	SU2	52.0	135	4.5
V	SV	52.0	135	4.5
	SV1	52.0	135	4.5
	SV2	52.0	135	4.5
W	SW	52.0	135	4.5
	SW1	52.0	135	4.5
	SW2	52.0	135	4.5
X	SX	52.0	135	4.5
	SX1	52.0	135	4.5
	SX2	52.0	135	4.5
Y	SY	52.0	135	4.5
	SY1	52.0	135	4.5
	SY2	52.0	135	4.5
Z	SZ	52.0	135	4.5
	SZ1	52.0	135	4.5
	SZ2	52.0	135	4.5
TOTAL	SA	52.0	135	4.5
	SB	52.0	135	4.5
	SC	52.0	135	4.5
TOTAL	SA	52.0	135	4.5
	SB	52.0	135	4.5
	SC	52.0	135	4.5

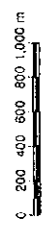
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Fig.3.7.3 Land Suitability Map



Legend	
---	Boundary of Municipality
—	Contour in Meter
~	River
—	Road



LAND SUITABILITY CATEGORY	LAND SUITABILITY CLASSIFICATION	TOTAL AREA (HA)		PERCENTAGE OF TOTAL AREA
		Area	%	
A	AS1a	135	4.96	
	AS1b	109	3.90	
	AS1c	15	0.54	
	AS1d	130	4.73	
	AS1e	46	1.66	
	AS1f	215	7.72	
Sub-Total A		465	16.51	
B	BS1a	40	1.45	
	BS1b	170	6.13	
	BS1c	100	3.61	
	BS1d	100	3.61	
	BS1e	100	3.61	
	BS1f	100	3.61	
Sub-Total B		510	18.32	
C	CS1a	68	2.45	
	CS1b	50	1.81	
	CS1c	50	1.81	
	CS1d	50	1.81	
	CS1e	50	1.81	
	CS1f	50	1.81	
Sub-Total C		318	11.34	
TOTAL AREA		2808	100.00	

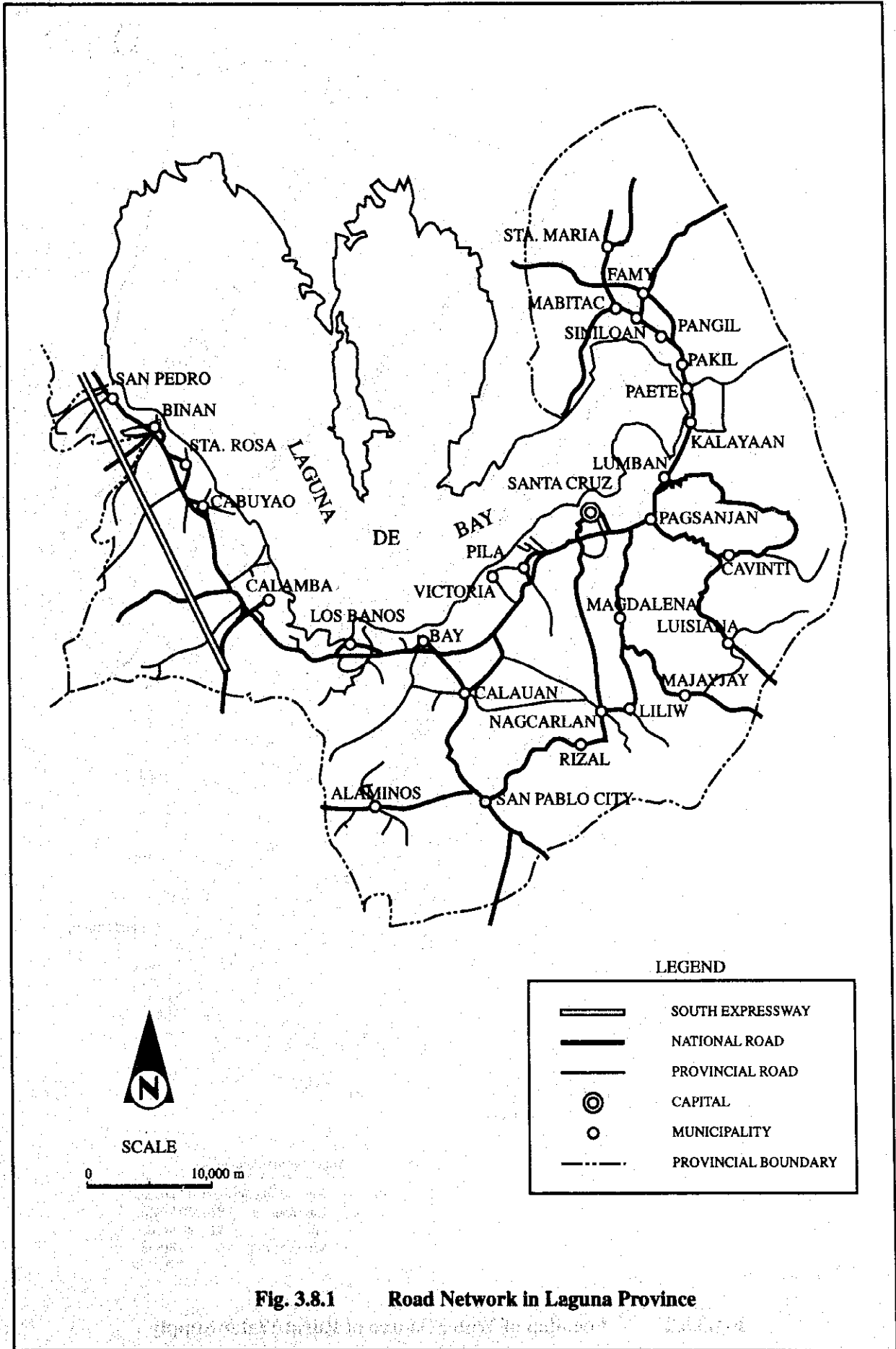
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 THE ISLAND IRRIGATION AND RURAL DEVELOPMENT PROJECT
 IN SOUTHERN LUZON

LAND SUITABILITY MAP

DRAWING NO. _____ SHEET _____ OF _____

JAFRI INTERNATIONAL COOPERATION AGENCY

Fig.3.7.3 Land Suitability Map



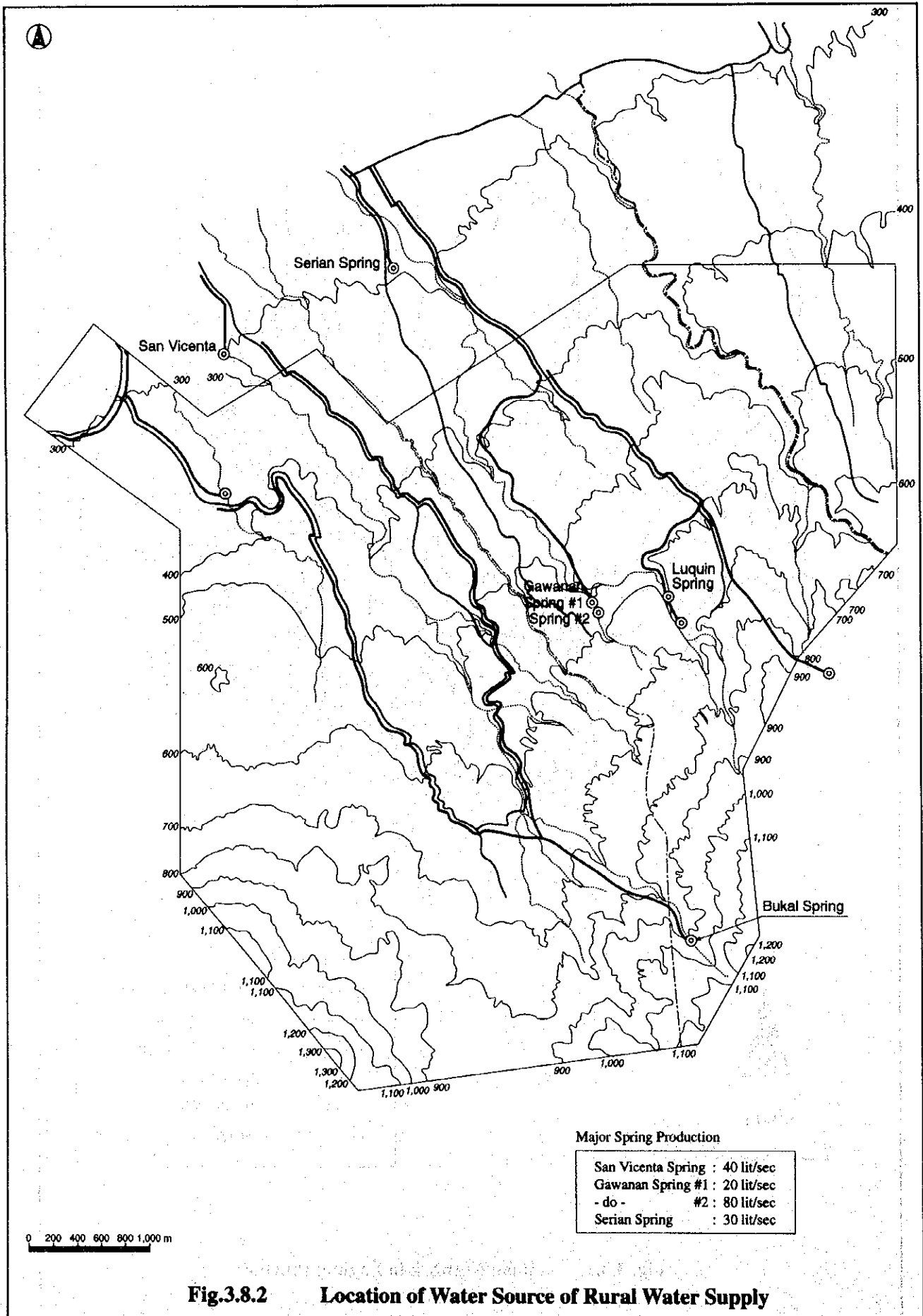
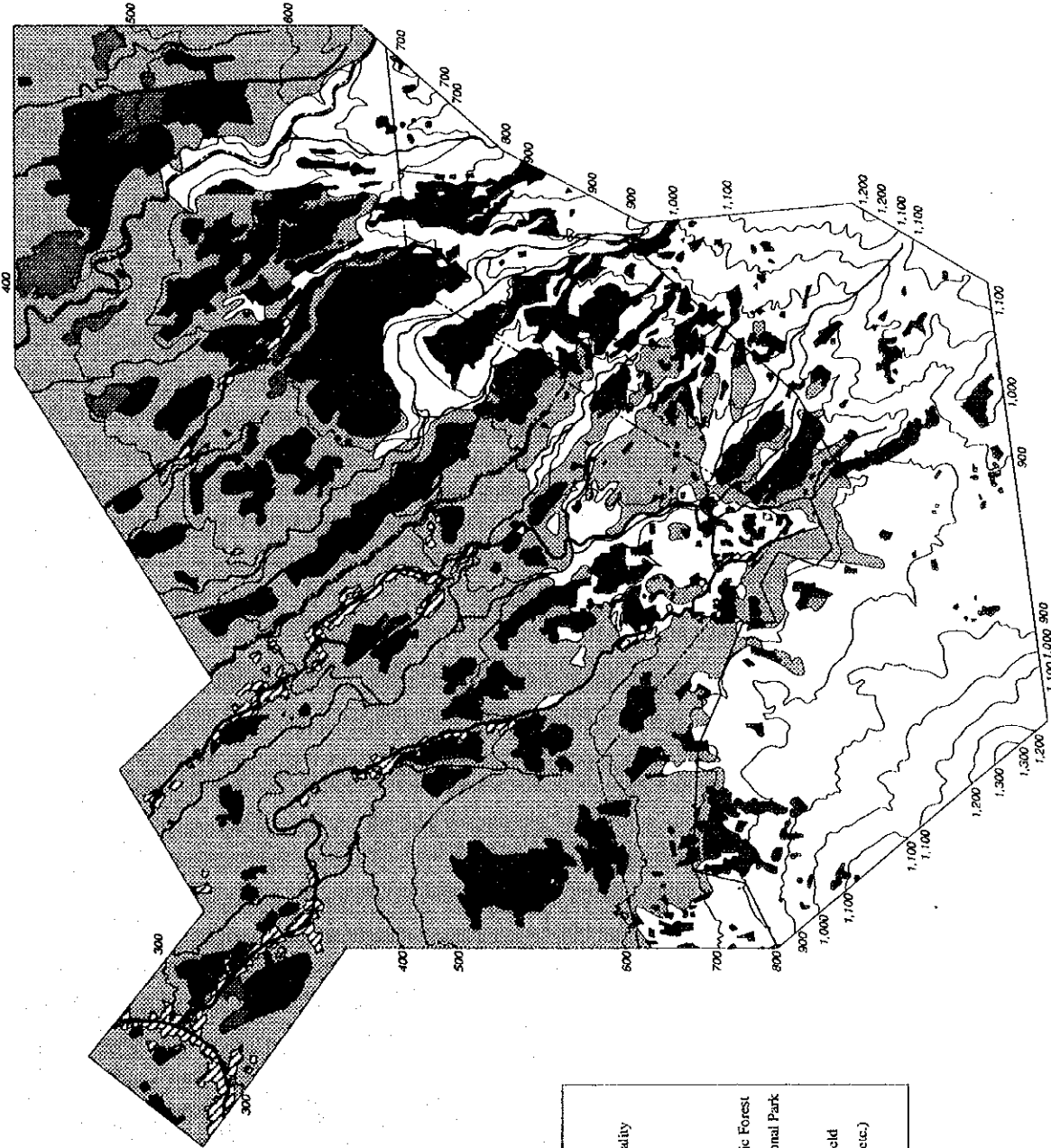


Fig.3.8.2 Location of Water Source of Rural Water Supply



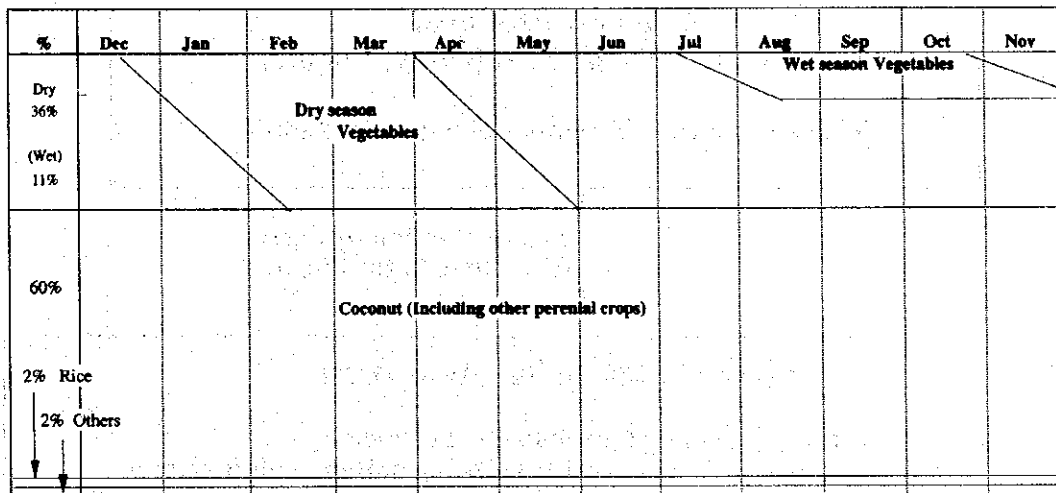
Legend	
	Boundary of Municipality
	Contour in Meter
	River
	Road
	Boundary of the Public Forest
	Boundary of the National Park
	Wet Paddy Field
	Vegetable Cropped Field
	Tree Crops (coconut, etc.)
	Residential area



Fig. 3.9.1 Present Land Use

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PRESENT LAND USE
DRAWING NO.
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1 Whole Agricultural land



2 Vegetable farm (720 ha)

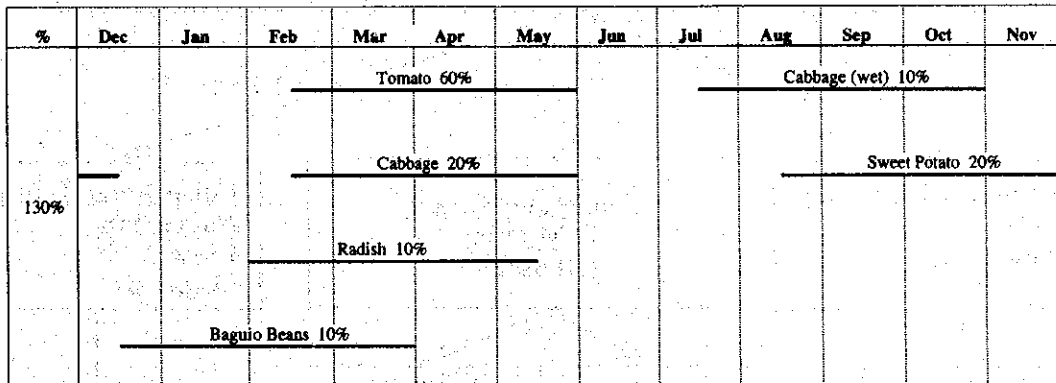


Fig. 3.9.2 Present Cropping Pattern in the Study area

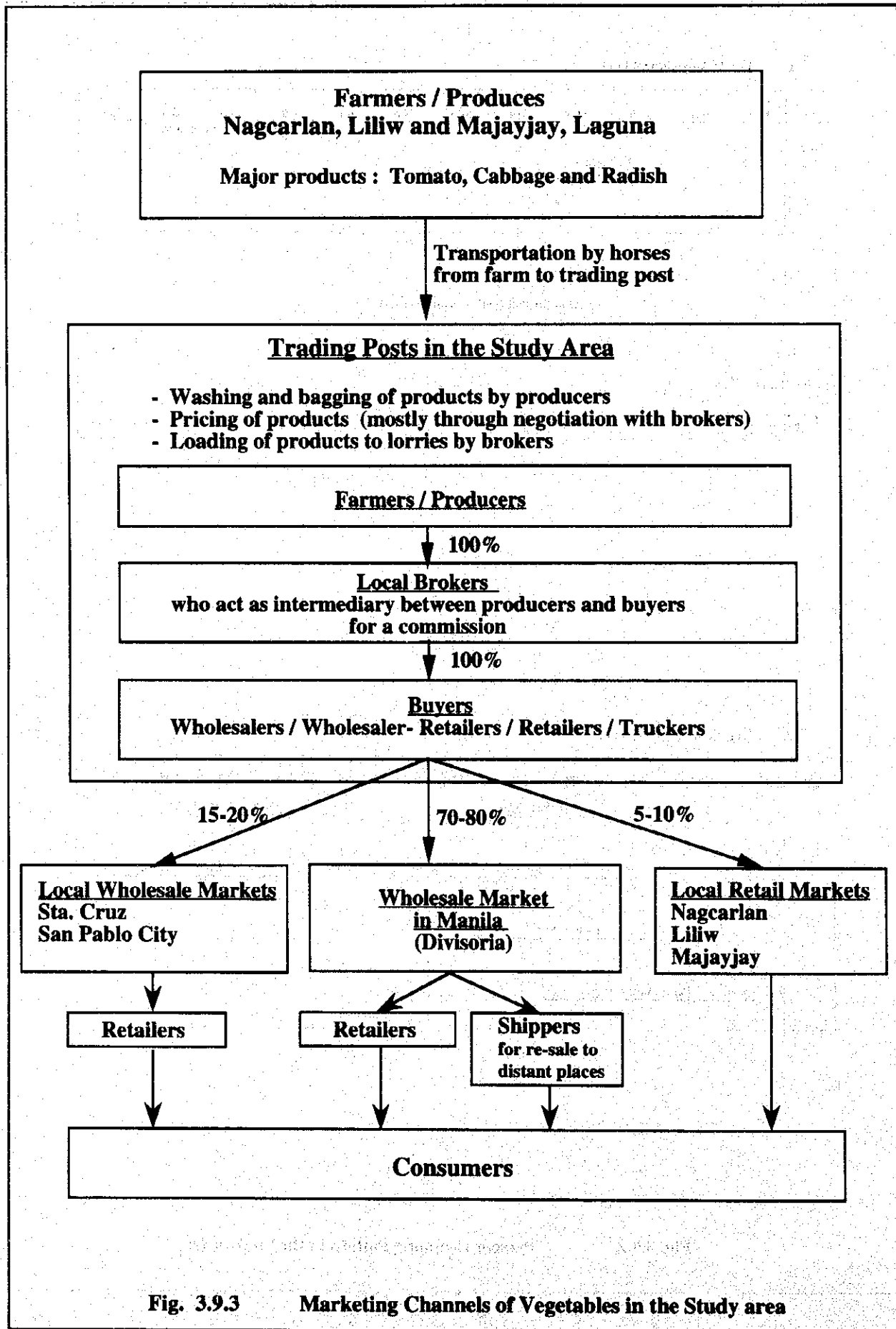
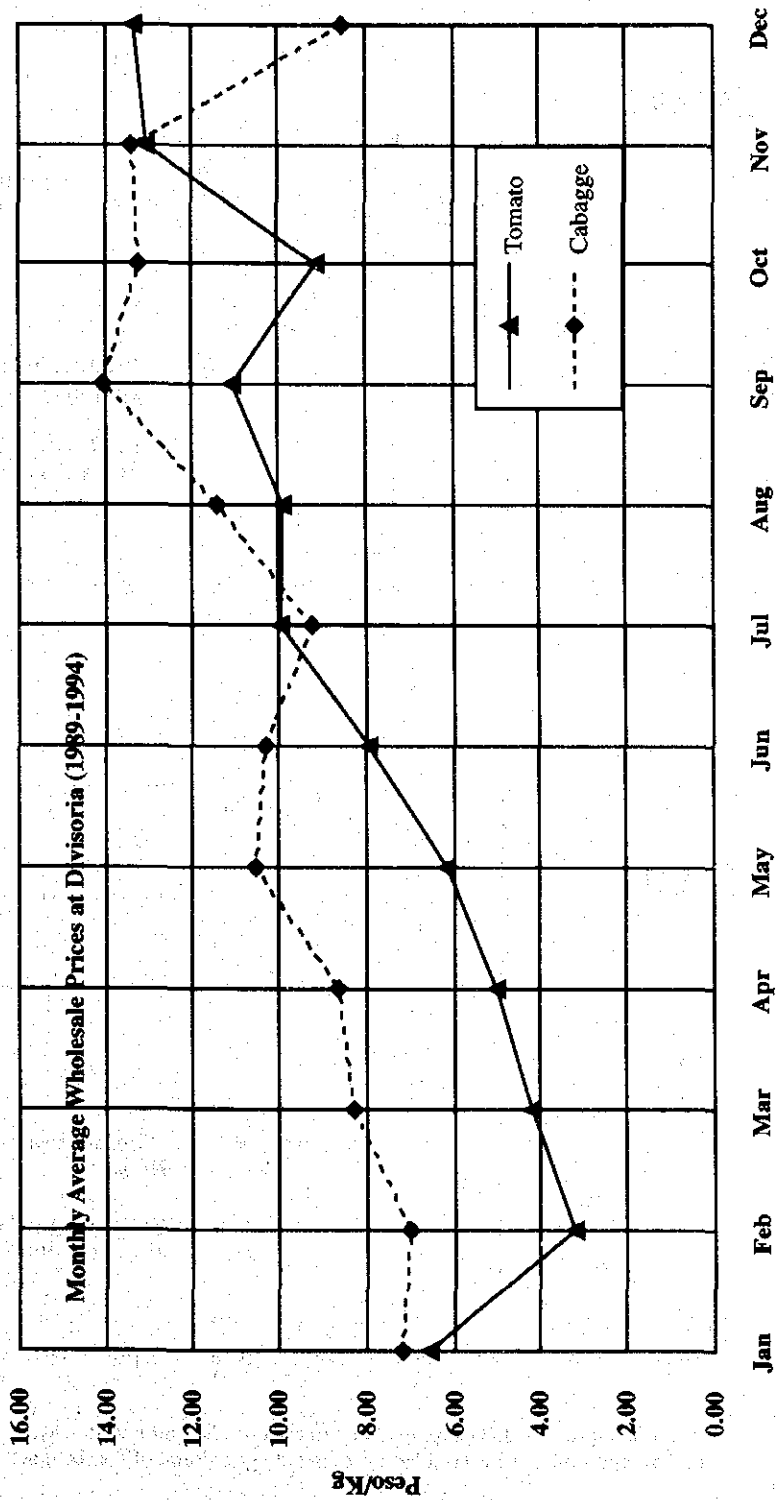
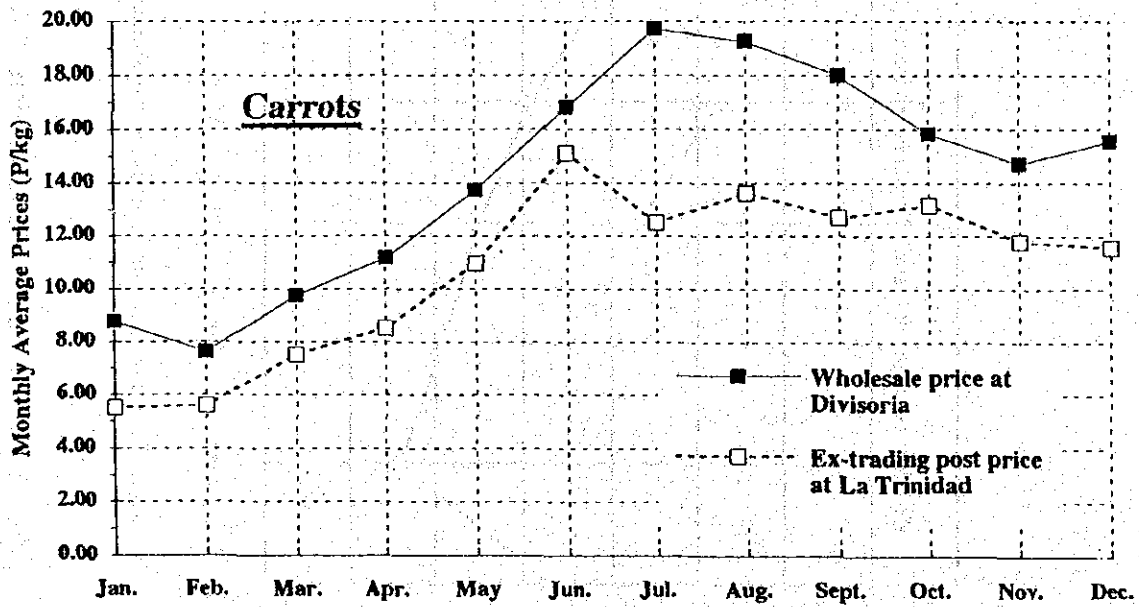
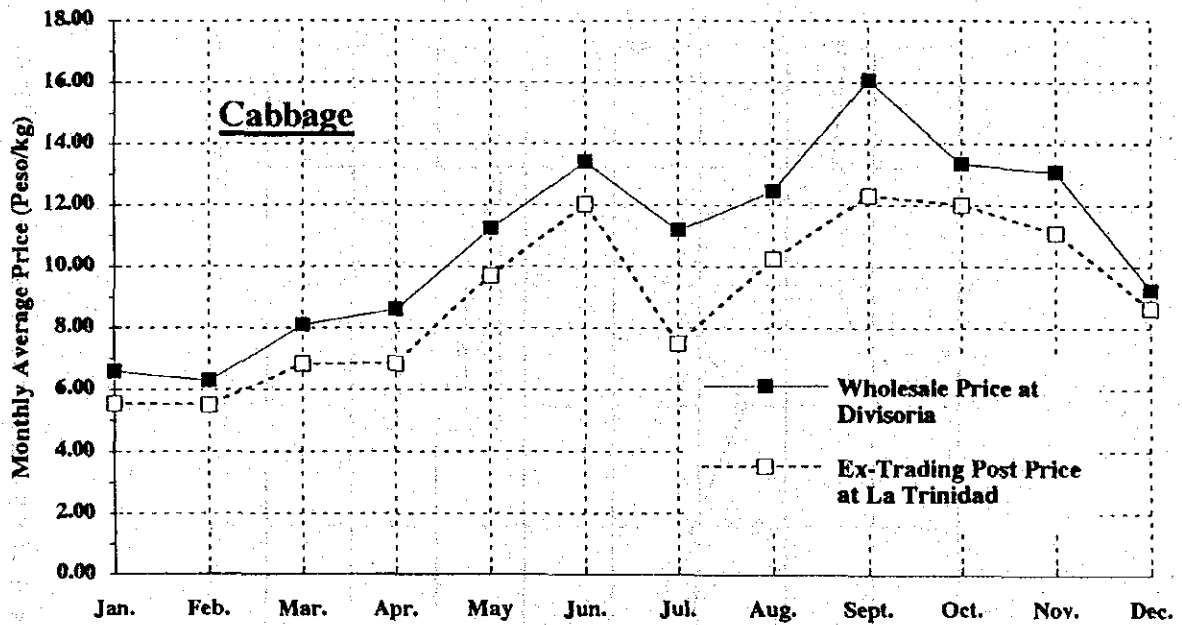


Fig. 3.9.3 Marketing Channels of Vegetables in the Study area



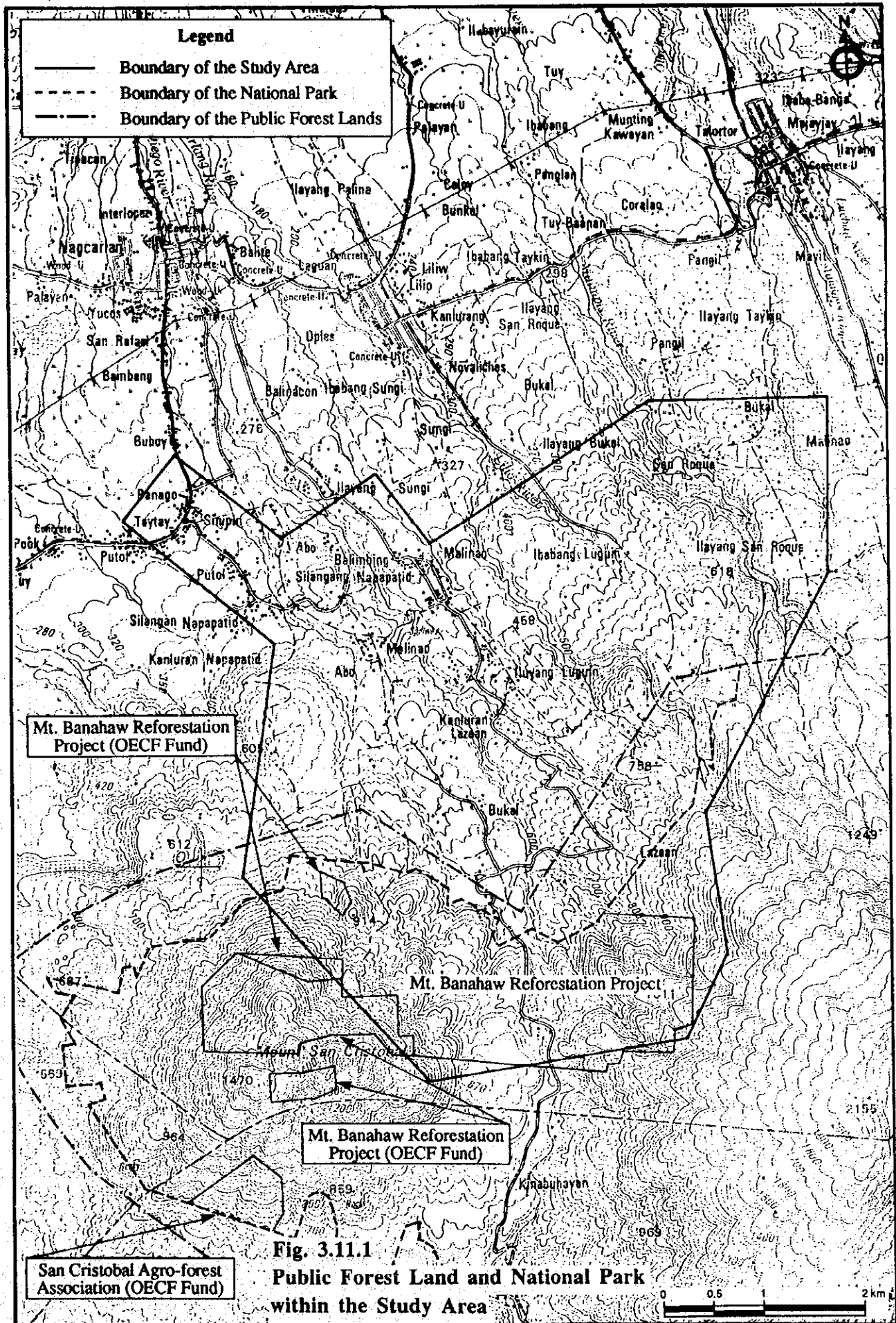
Source: Bureau of Agricultural Statistics, Department of Agriculture

Fig. 3.9.4 Seasonal Fluctuation of Wholesale Prices at Divisoria Market, Manira (1989 - 1994)



Source: Wholesale prices at Divisoria market; Bureau of Agricultural Statistics
 Ex-Trading prices at La Trinidad; Provincial agricultural office, Benguet

Fig. 3.9.5 Comparison between Wholesale Prices at Divisoria Market, Manila and Ex-Trading Prices at La Trinidad, Benguet



(1) Irrigated area

Type	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
1 30%			Sitao			Tomato					Carrot	
2 10%		Celery			Cabbage					Lettuce		
3 20%		Chinese Cabbage				Tomato				Sweet Potato		
4 10%		Baguio Beans				Cabbage				Cauliflower		
5 20%		Sitao				Radish			Cabbage (Wet)			
6 10%		Chinese Cabbage				Cabbage				Sweet Potato		

(2) Rainfed area

Type	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
1 30%	Sweet Potato				Tomato						Sweet Potato	
2 20%					Tomato					Cabbage (Wet)		
3 20%					Cabbage					Sitao		
4 10%					Radish					Sitao		
5 10%					Radish					Lettuce		
6 10%				Baguio Beans						Carrot		

Fig. 5.7.1 Proposed Cropping Pattern

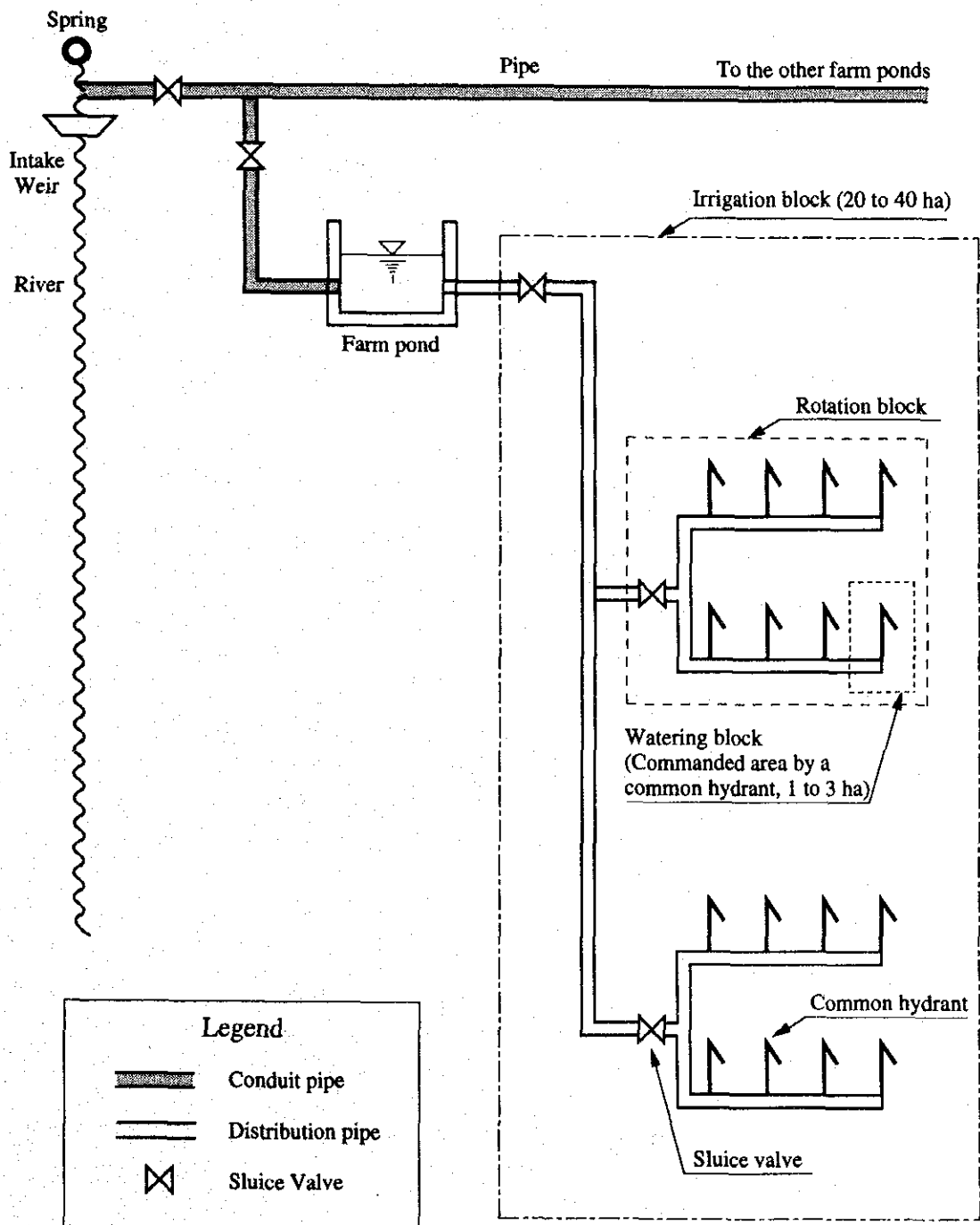
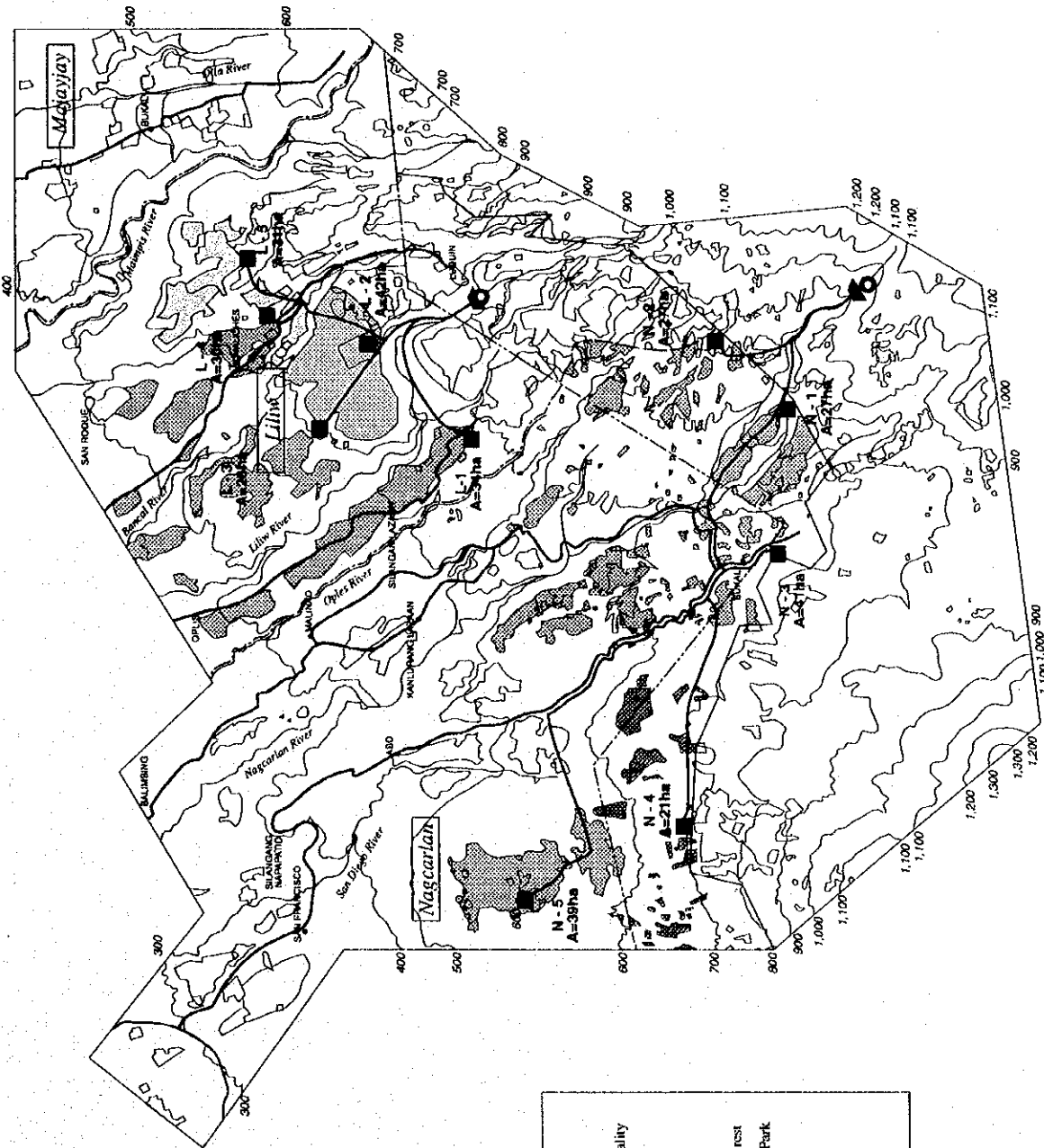


Fig. 6.1.1 Schematic Diagram of Proposed Irrigation System



Legend	
—	Boundary of Municipality
—	Contour in Meter
—	Rivers
—	Road Improvement
—	Boundary of Public Forest
—	Boundary of National Park
○	Water Sources
◻	Intake Weirs
—	Pipe Line
■	Farm Ponds



Fig. 6.1.2 Irrigation Blocks

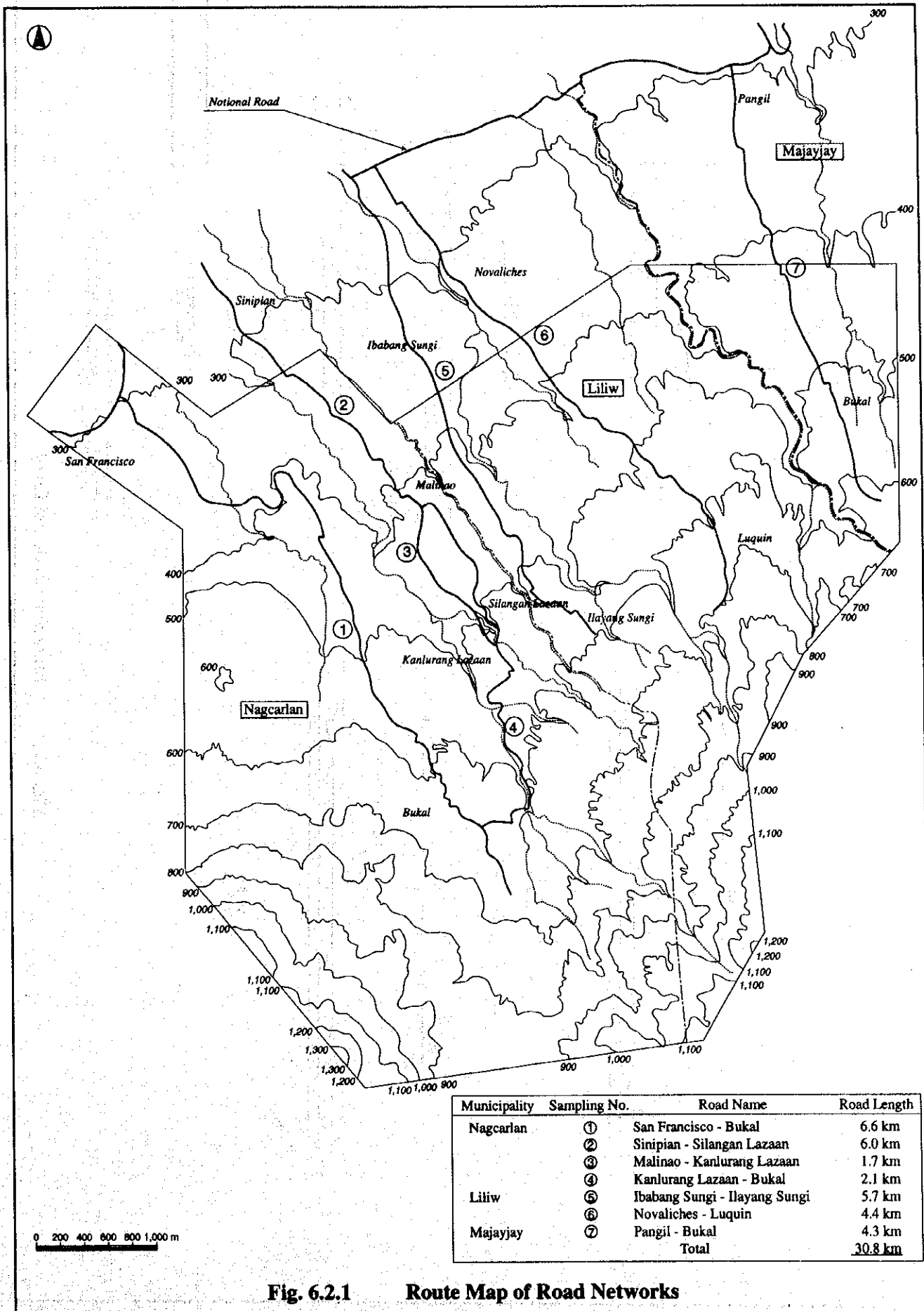
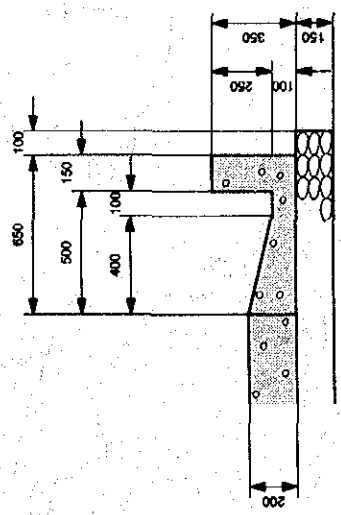
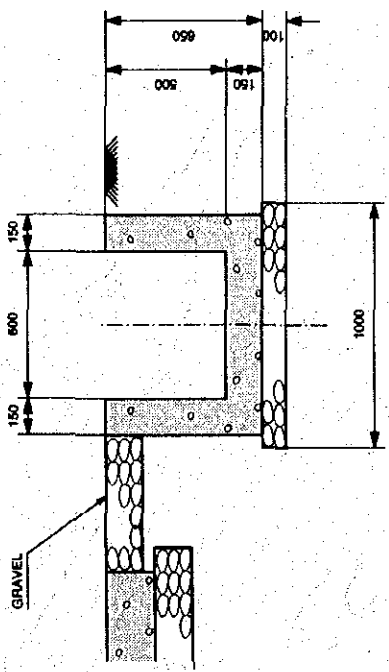


Fig. 6.2.1 Route Map of Road Networks

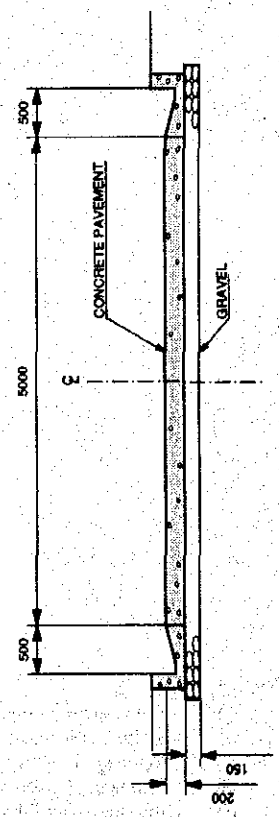


TYPE 1

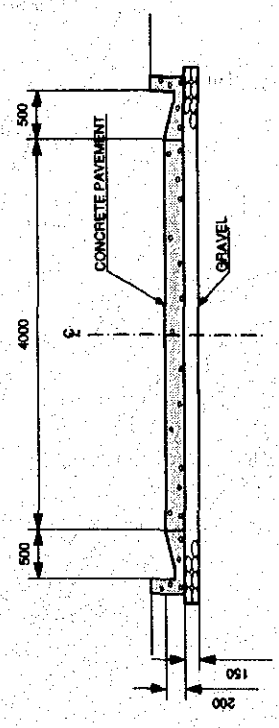


TYPE 2

DETAIL OF DRAINAGE
SCALE 1:20



TYPE 1
SCALE 1:50



TYPE 2
SCALE 1:50

- NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE SPECIFIED.
 2. CONSTRUCTION JOINT SHALL BE PLACED AT THE INTERVAL OF 50 METERS UNLESS OTHERWISE SPECIFIED. CONSTRUCTION JOINT SHALL BE PLACED WITH AN INTERVAL OF LESS THAN 30 METERS.

Fig. 6.2.2 Standard Section of Road

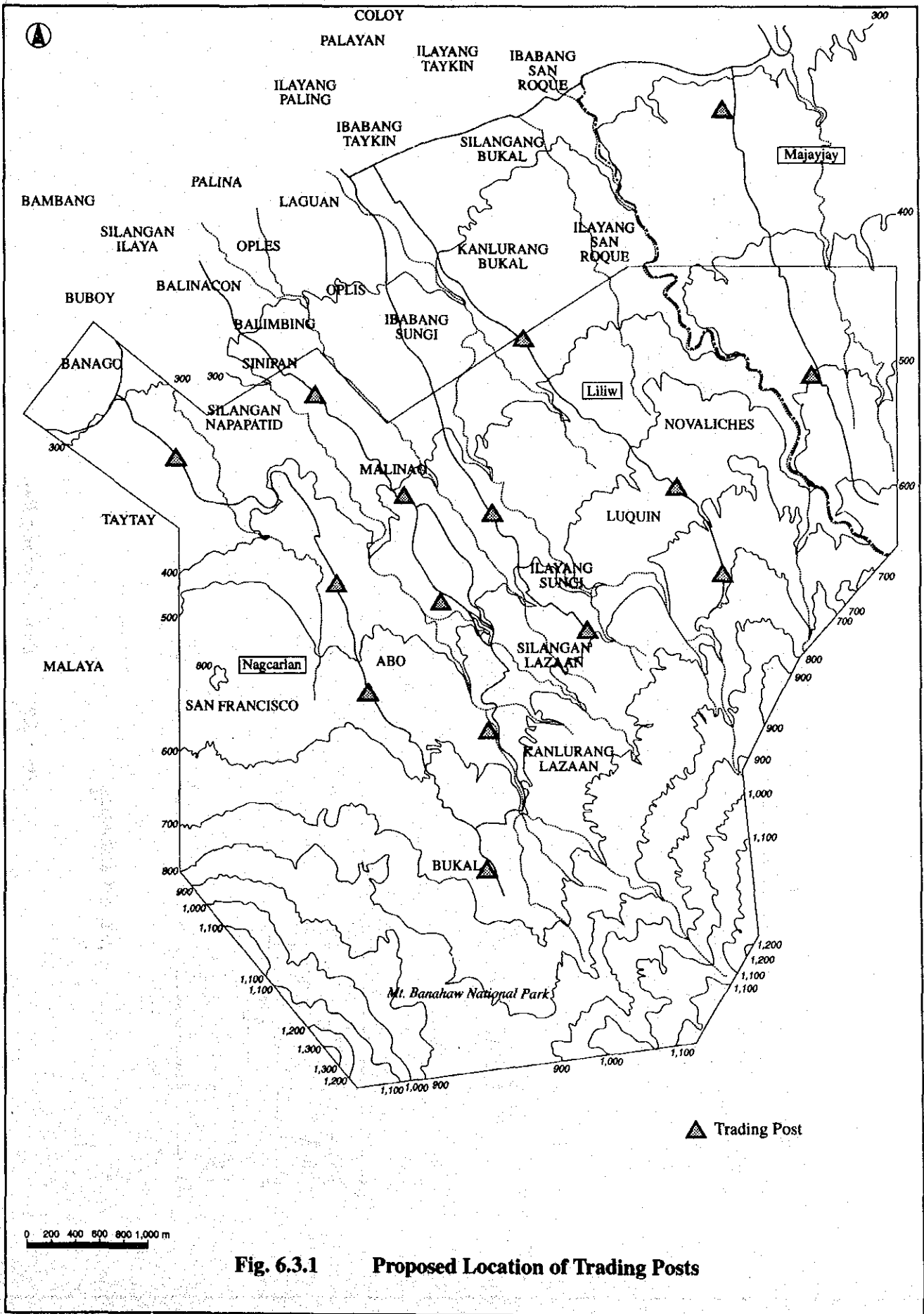


Fig. 6.3.1 Proposed Location of Trading Posts