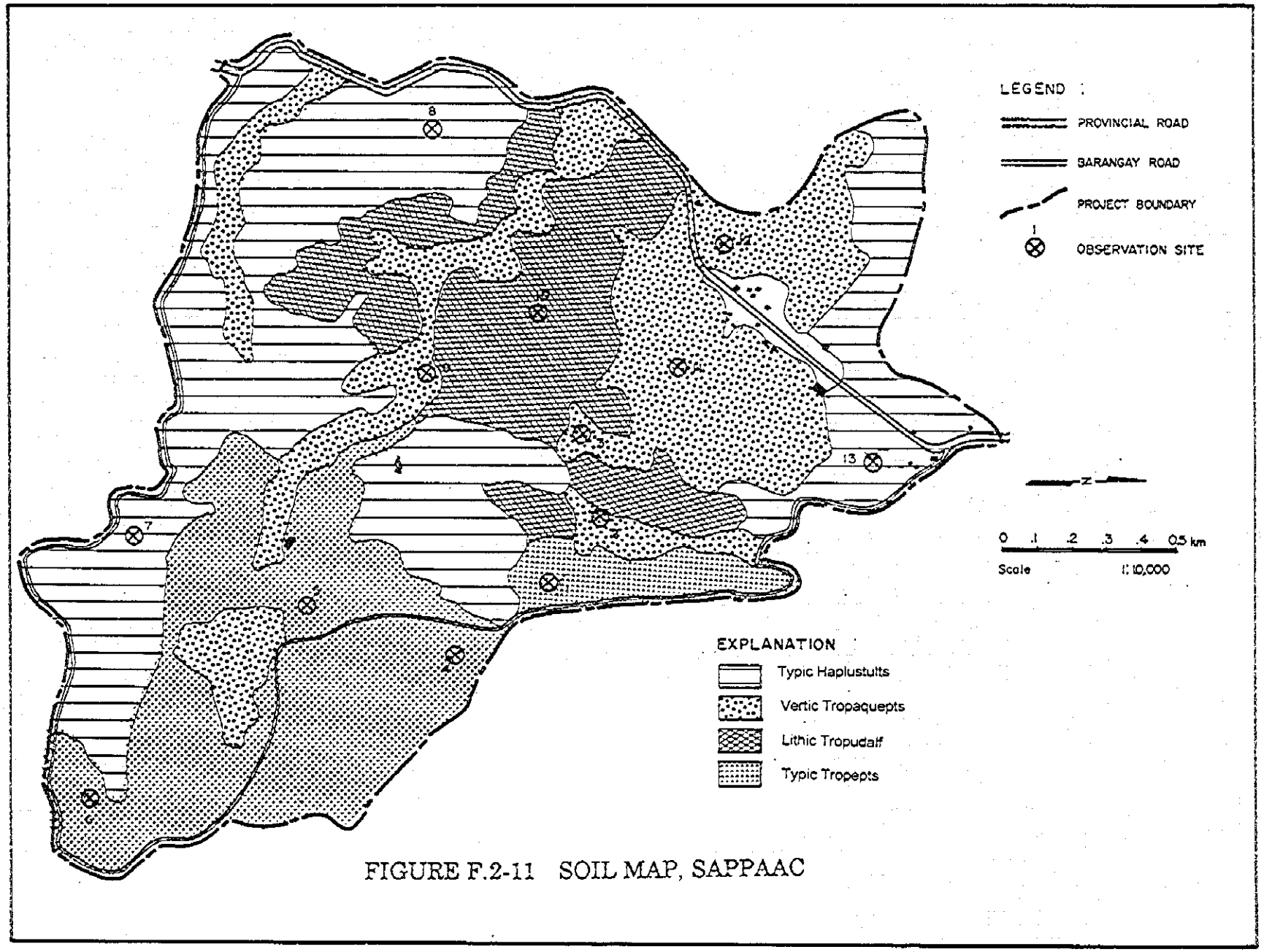


FIGURE F.2-11 SOIL MAP, SAPPAAC

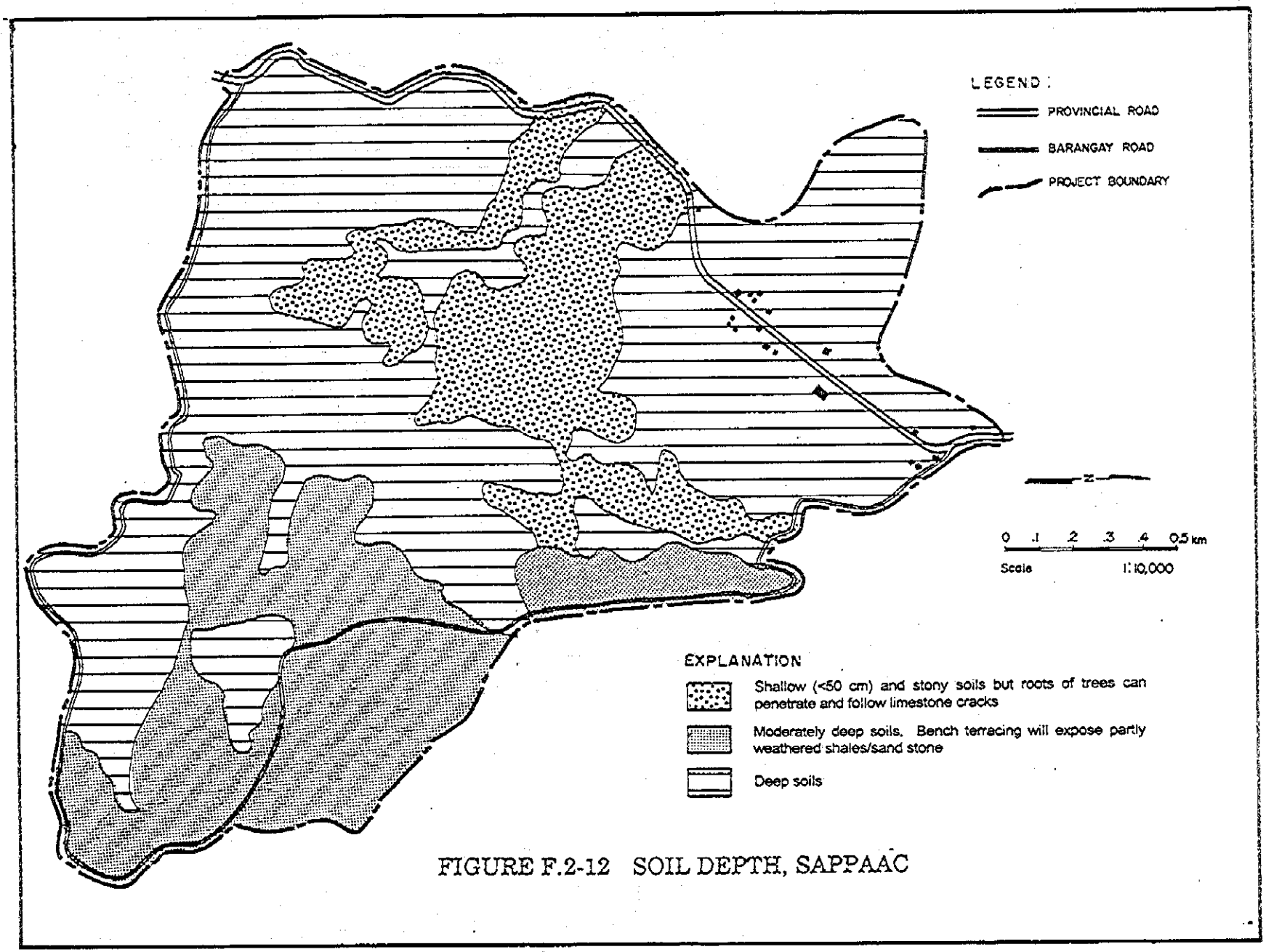


FIGURE F.2-12 SOIL DEPTH, SAPPAAC

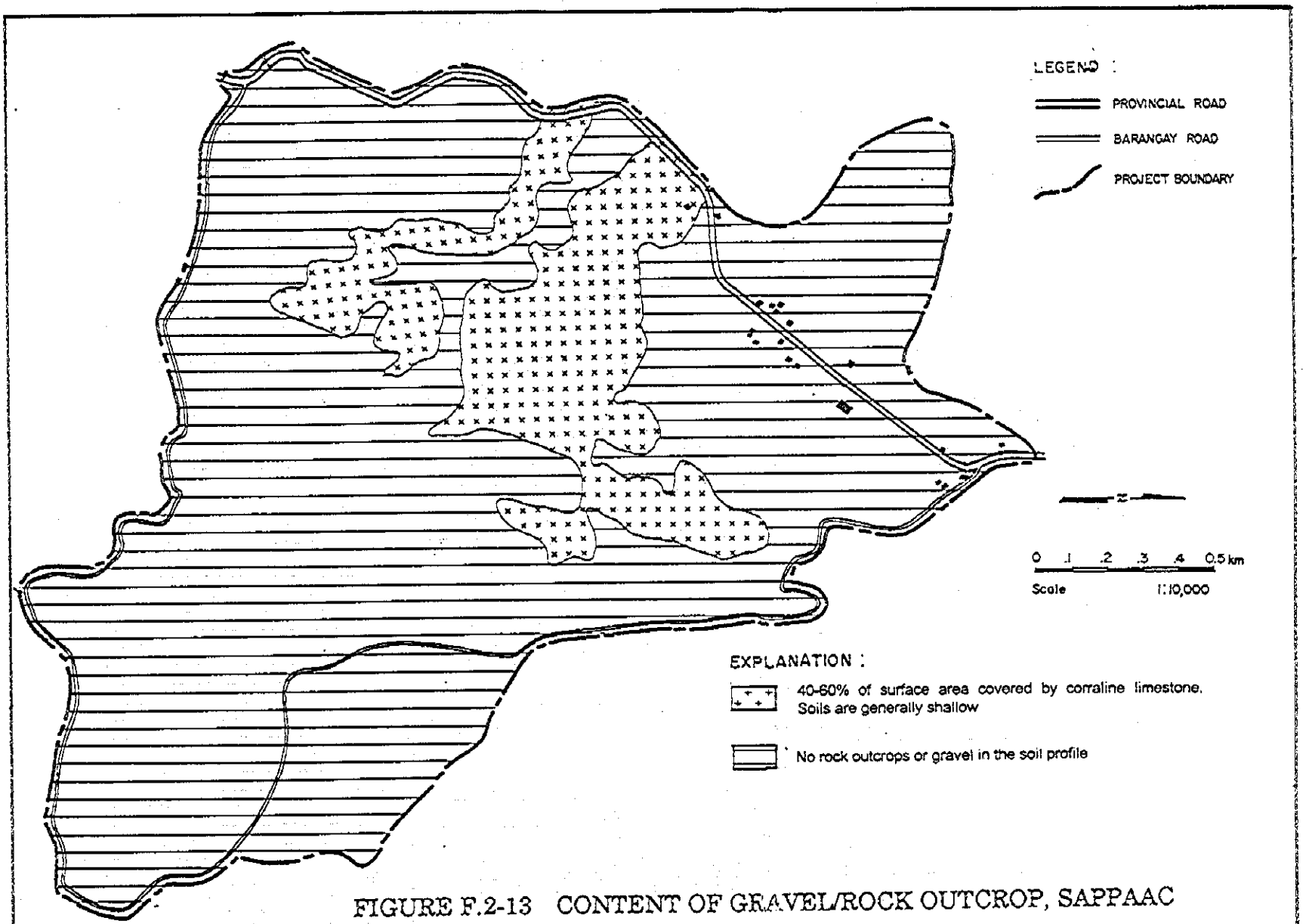


FIGURE F.2-13 CONTENT OF GRAVEL/ROCK OUTCROP, SAPPAAC

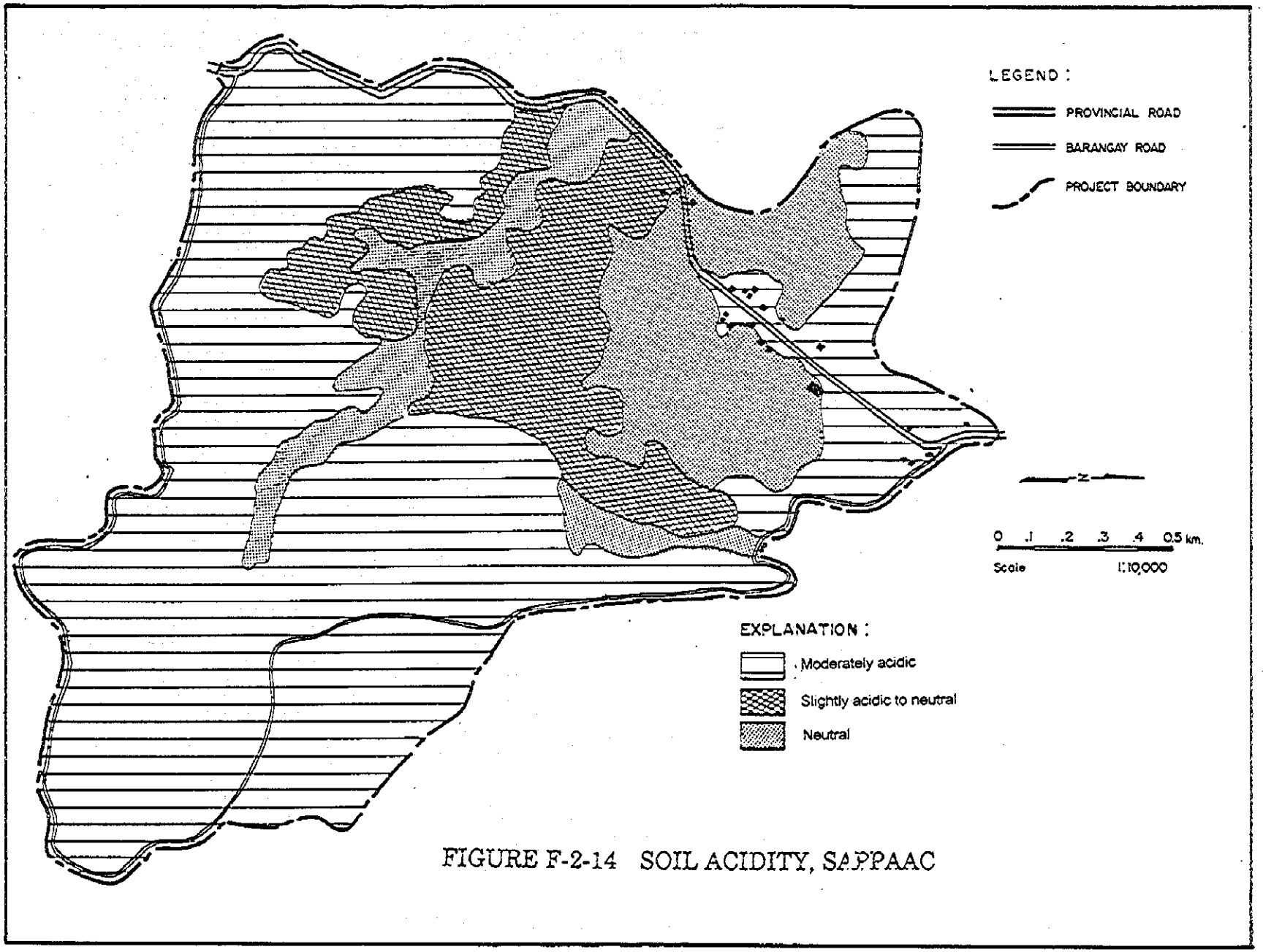


FIGURE F-2-14 SOIL ACIDITY, SAPPAAC

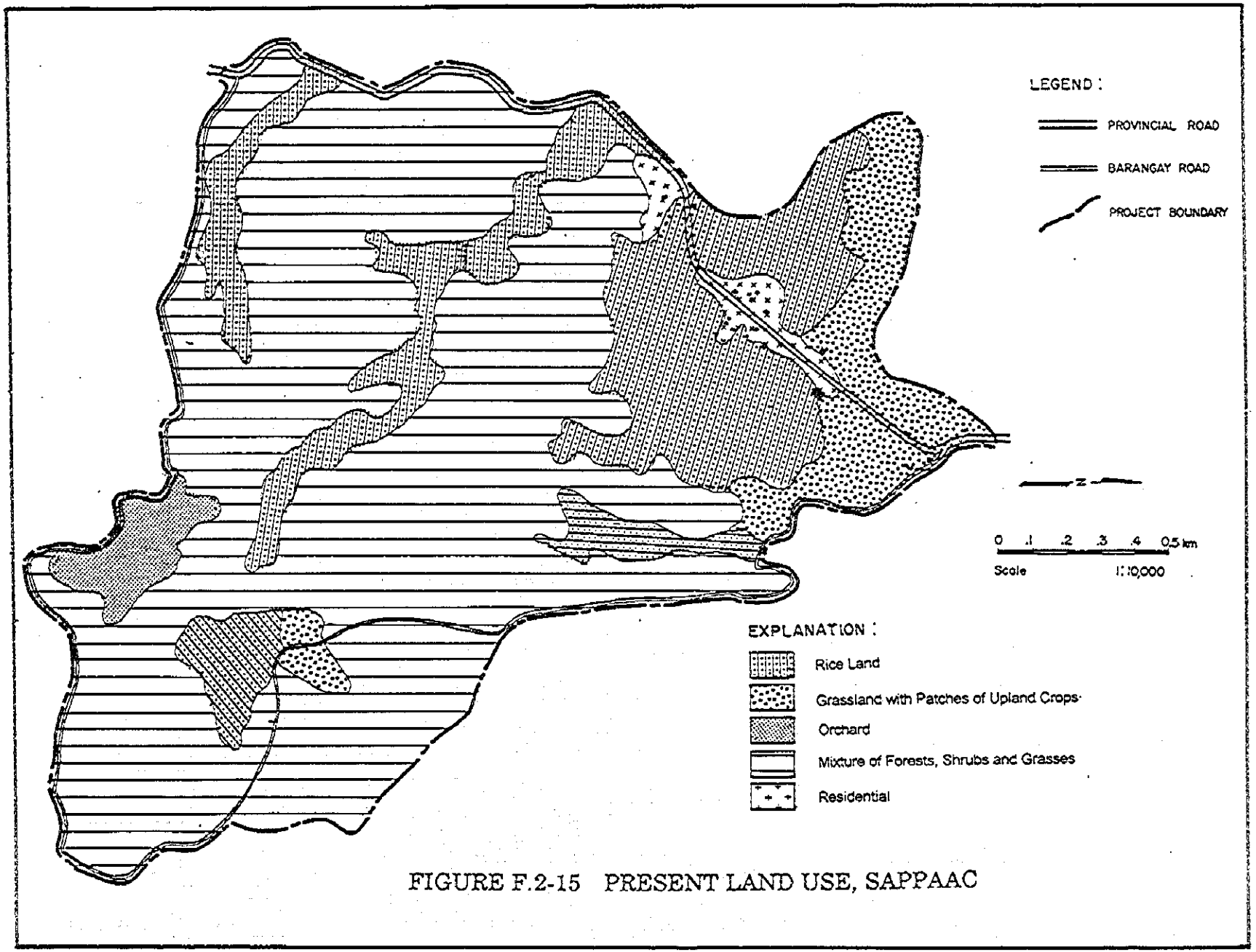


FIGURE F.2-15 PRESENT LAND USE, SAPPAAC

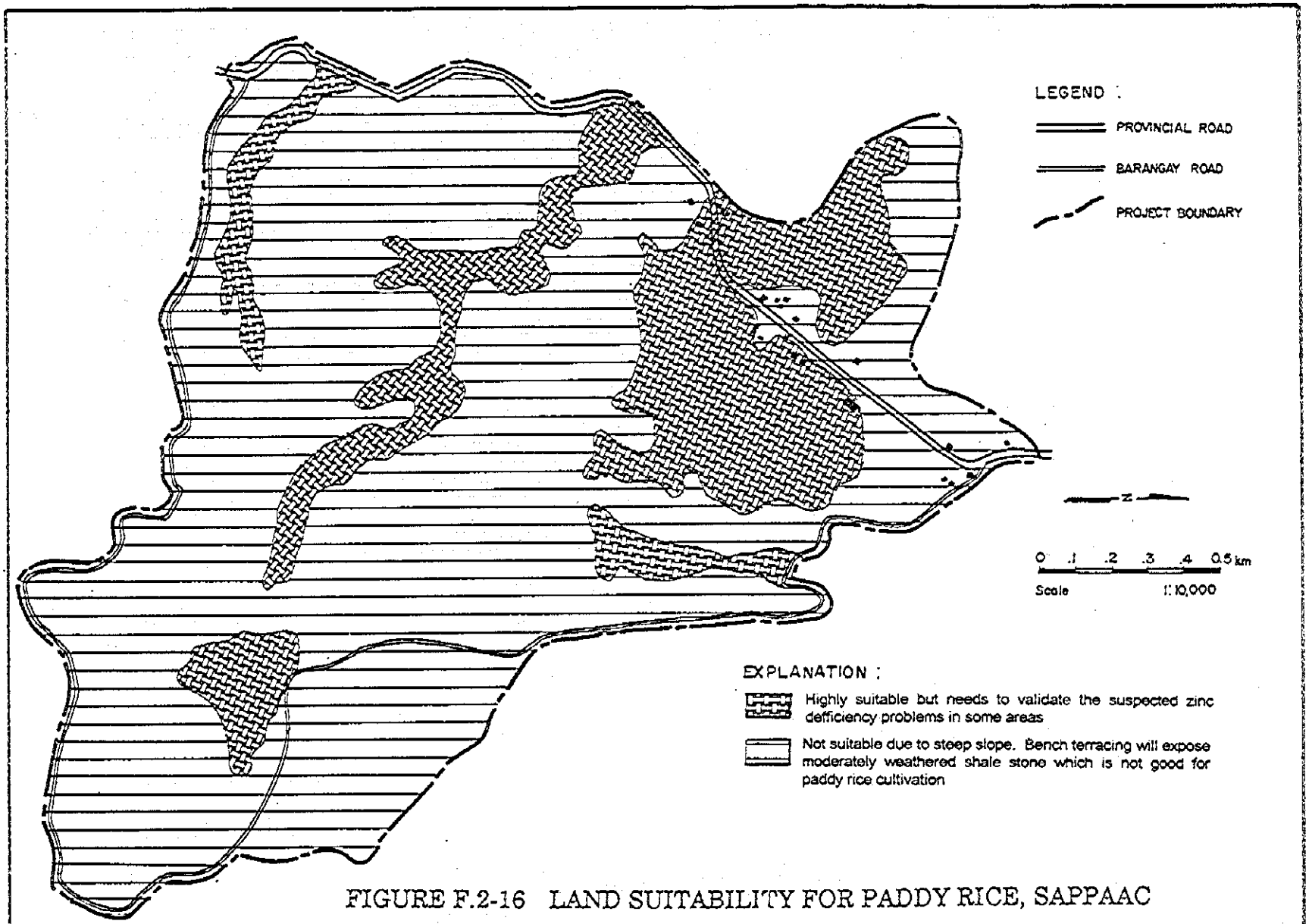


FIGURE F.2-16 LAND SUITABILITY FOR PADDY RICE, SAPPAAC

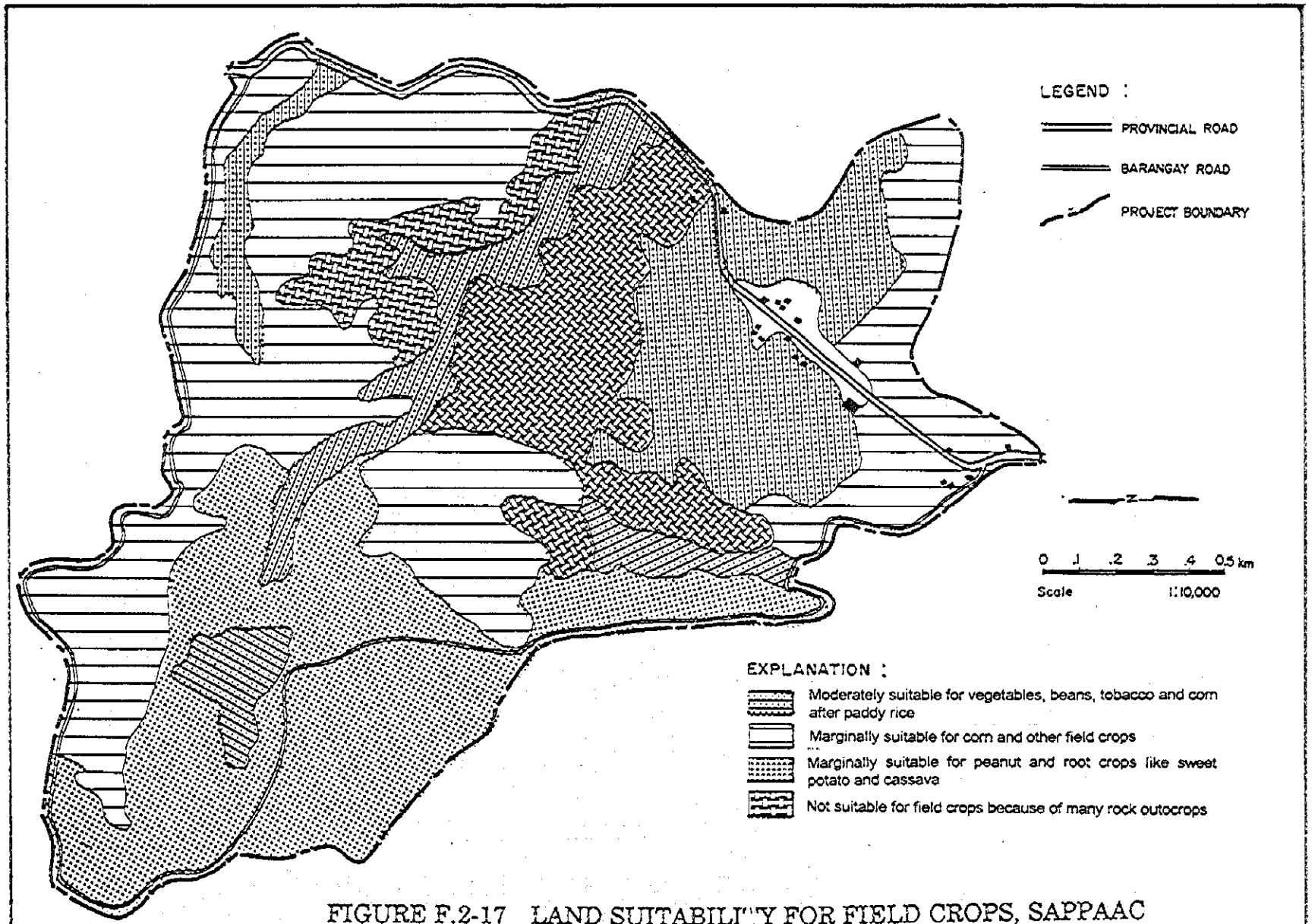


FIGURE F.2-17 LAND SUITABILITY FOR FIELD CROPS, SAPPAAC

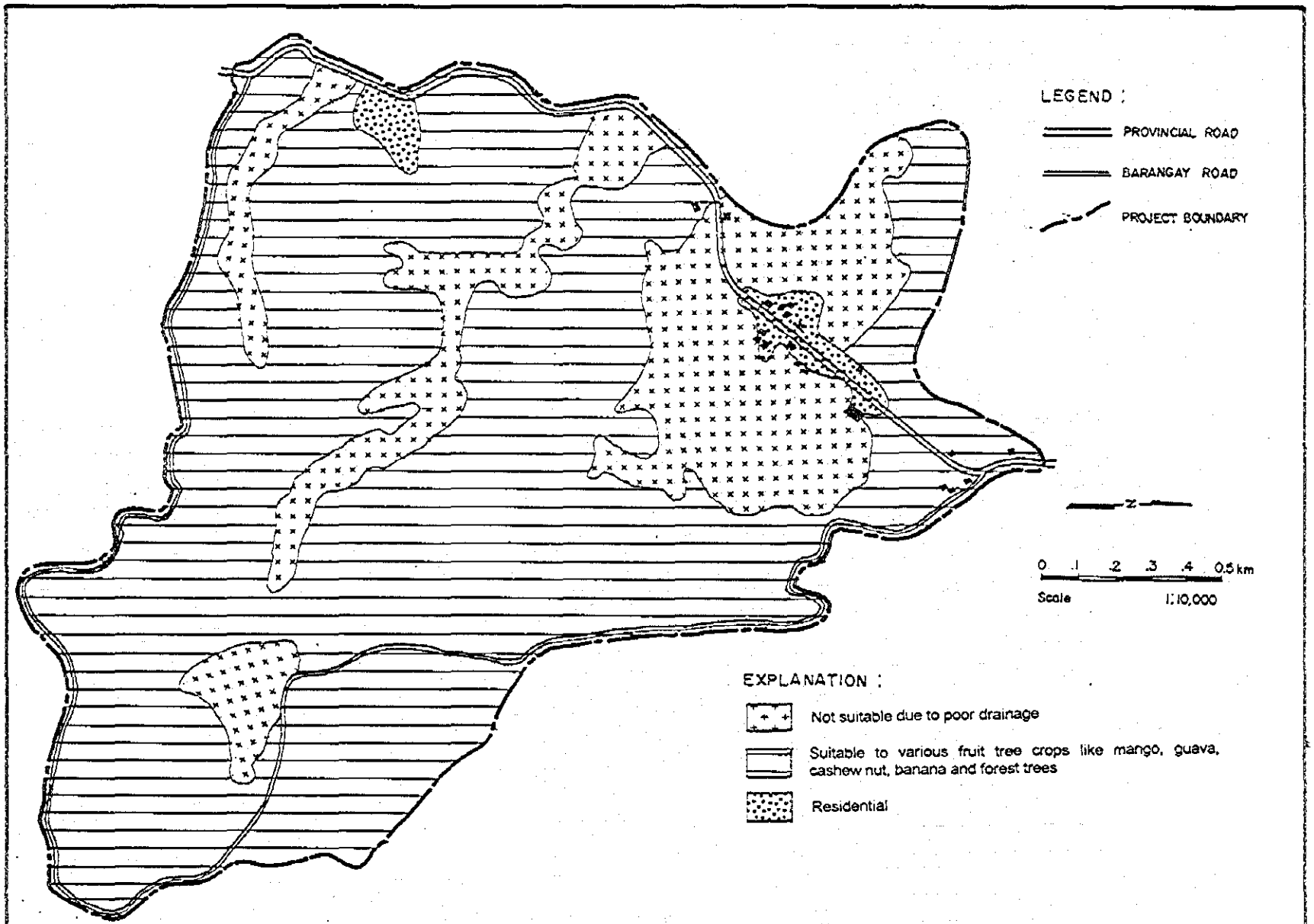


FIGURE F.2-18 LAND SUITABILITY FOR TREES CROPS, SAPPAAC

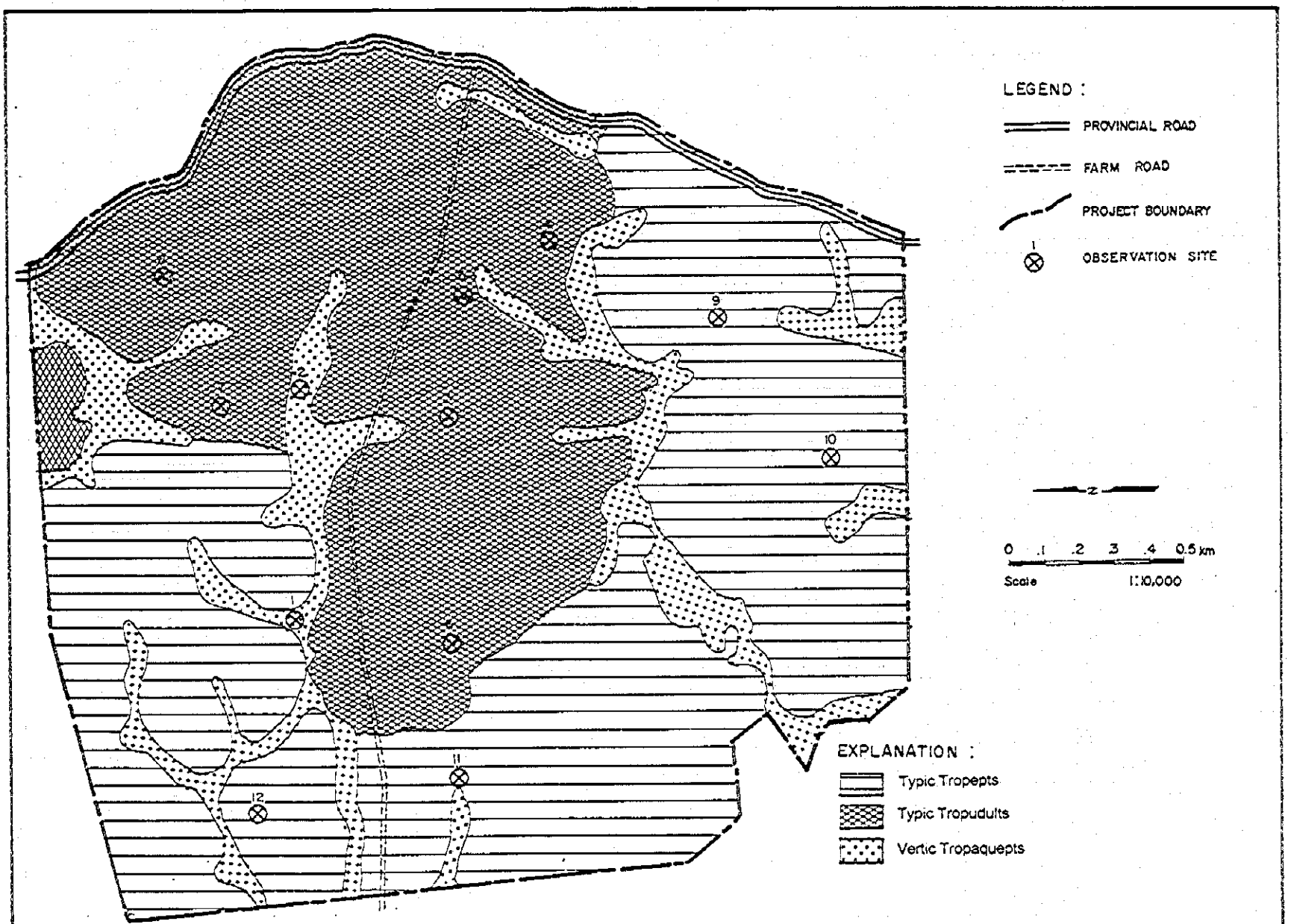


FIGURE F.2-19 SOIL MAP, COFCAVILLE

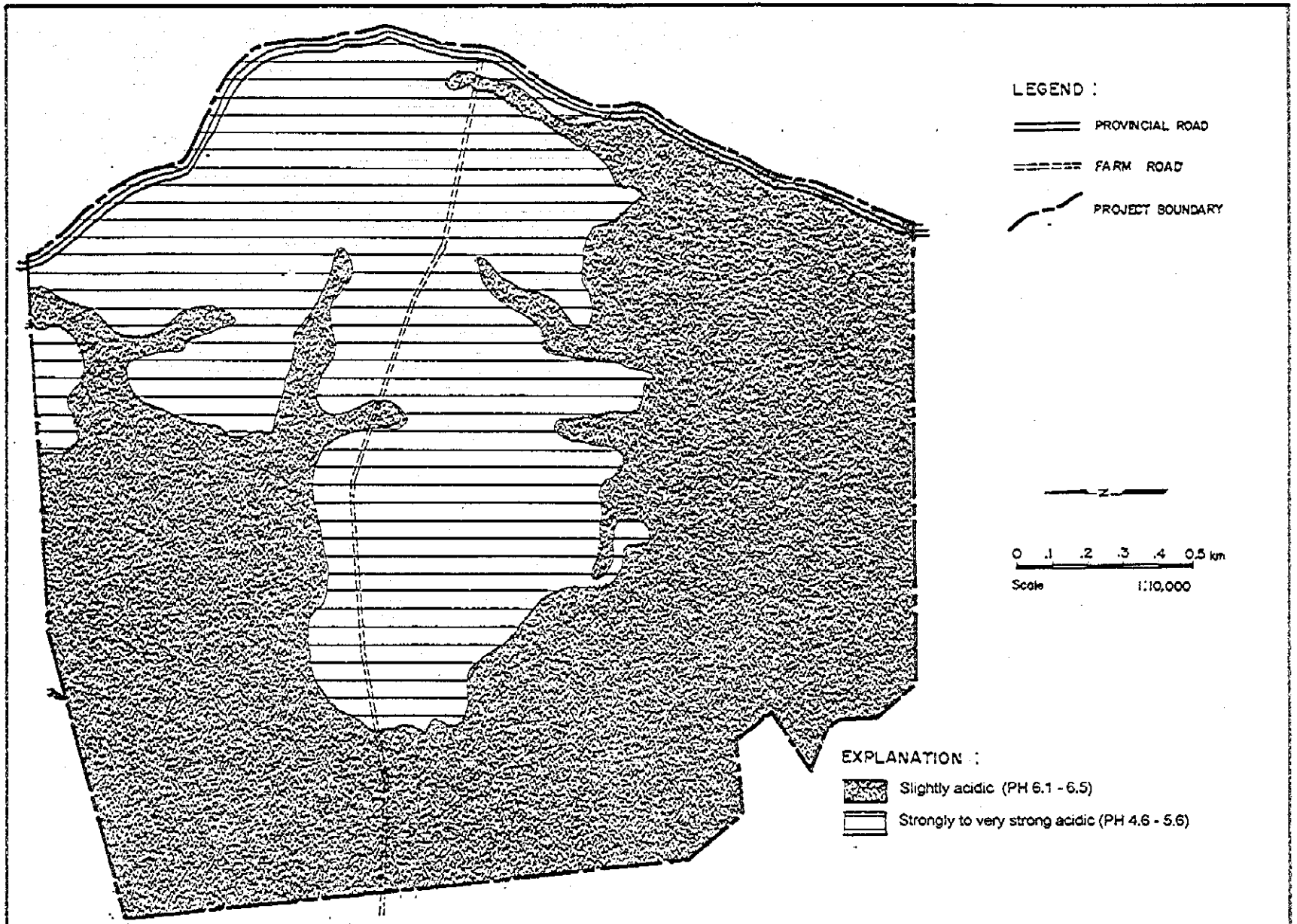


FIGURE F.2-20 SOIL ACIDITY, COFCAVILLE

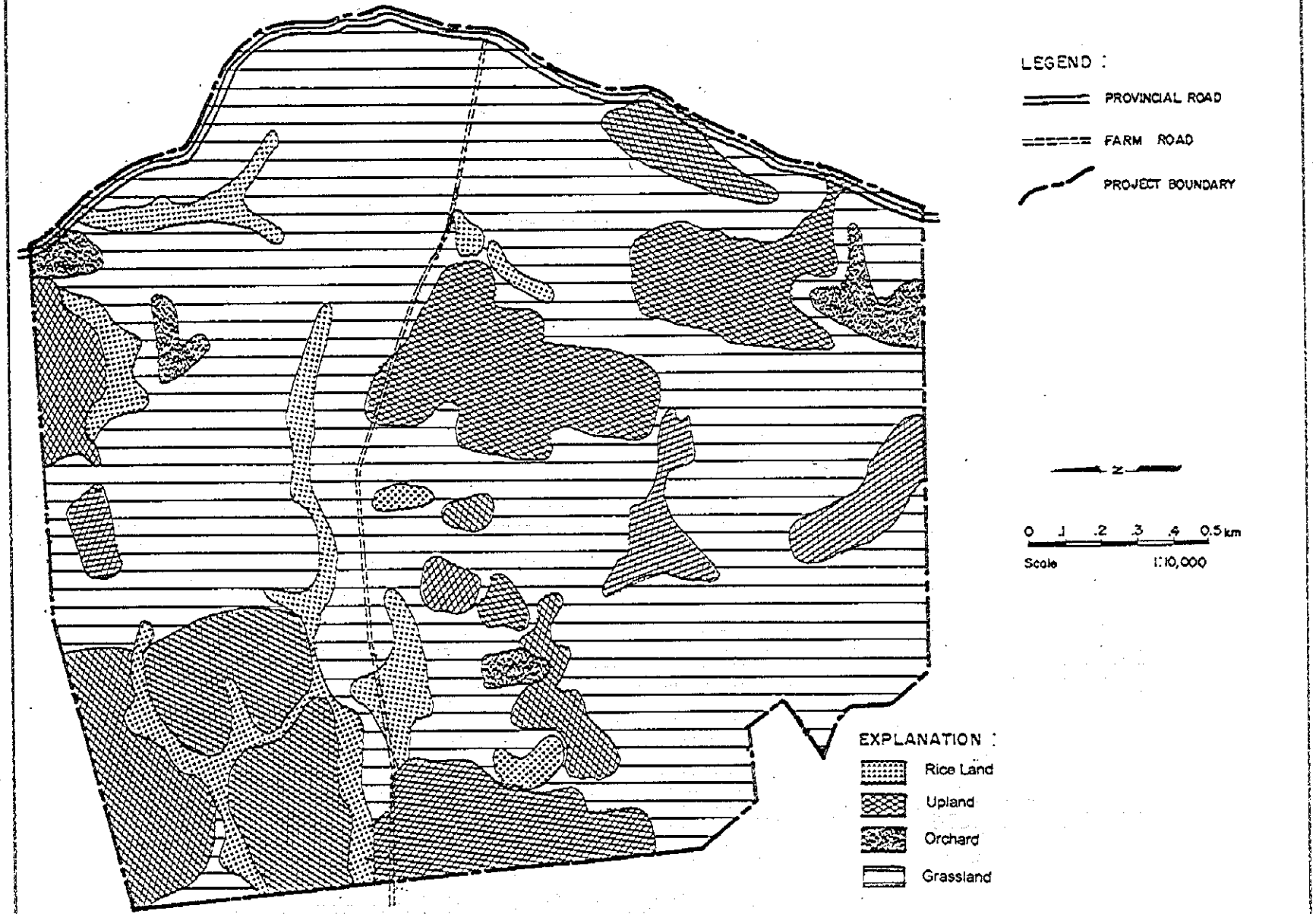


FIGURE F.2-21 PRESENT LAND USE, COFCAVILLE

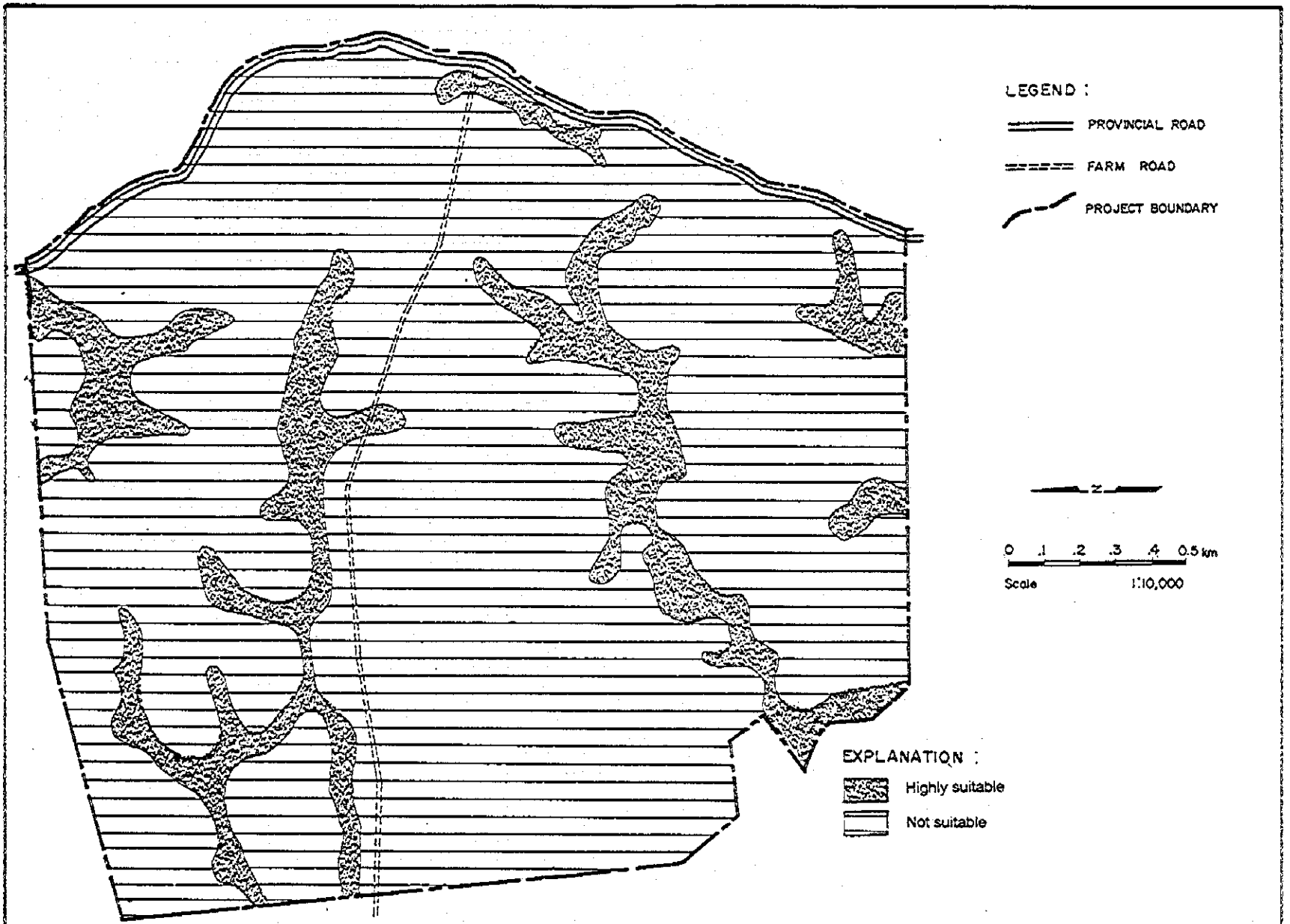


FIGURE F.2-22 LAND SUITABILITY FOR PADDY RICE, COFCAVILLE

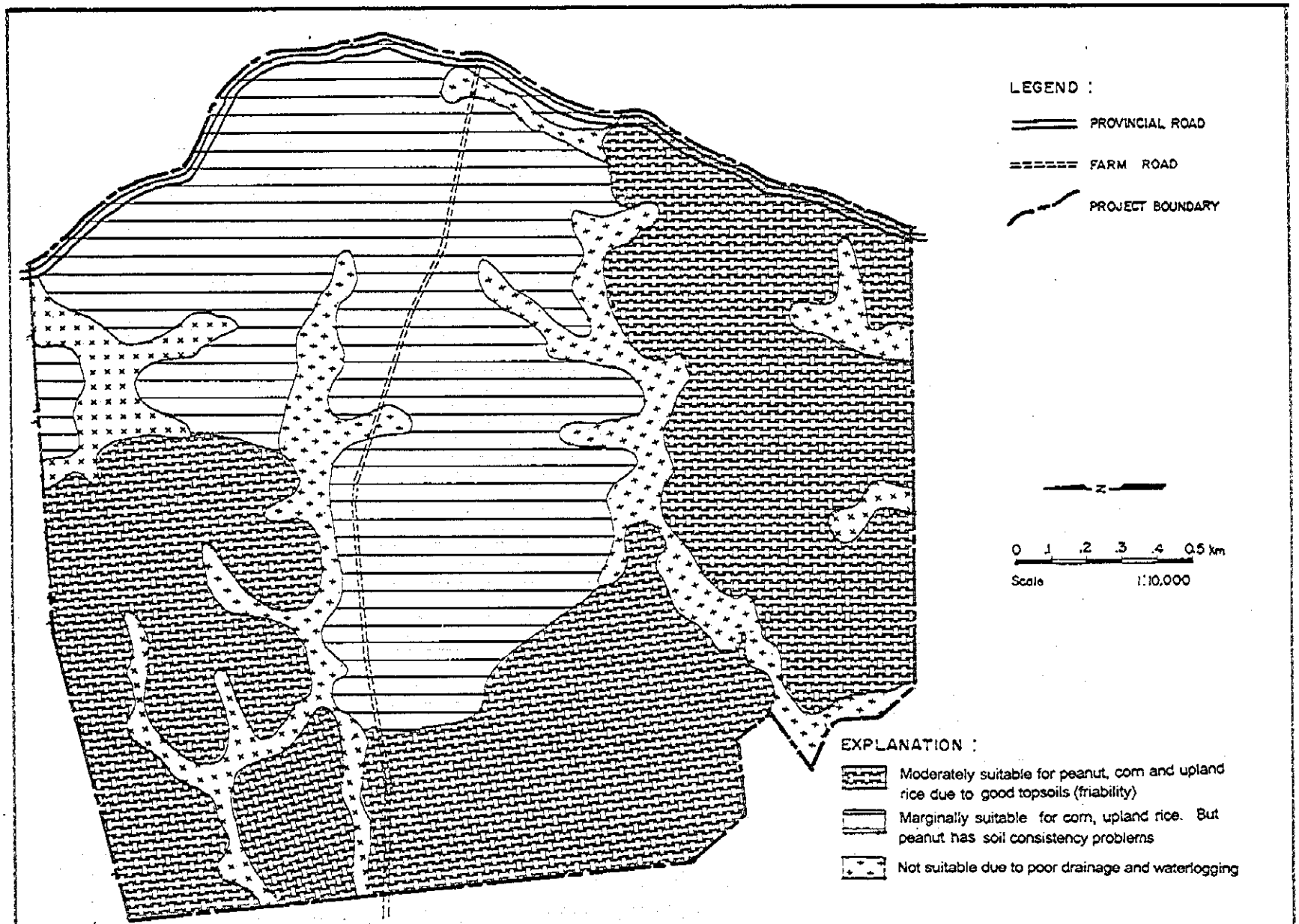


FIGURE F.2-23 LAND SUITABILITY FOR FIELD CROPS, COFCAVILLE

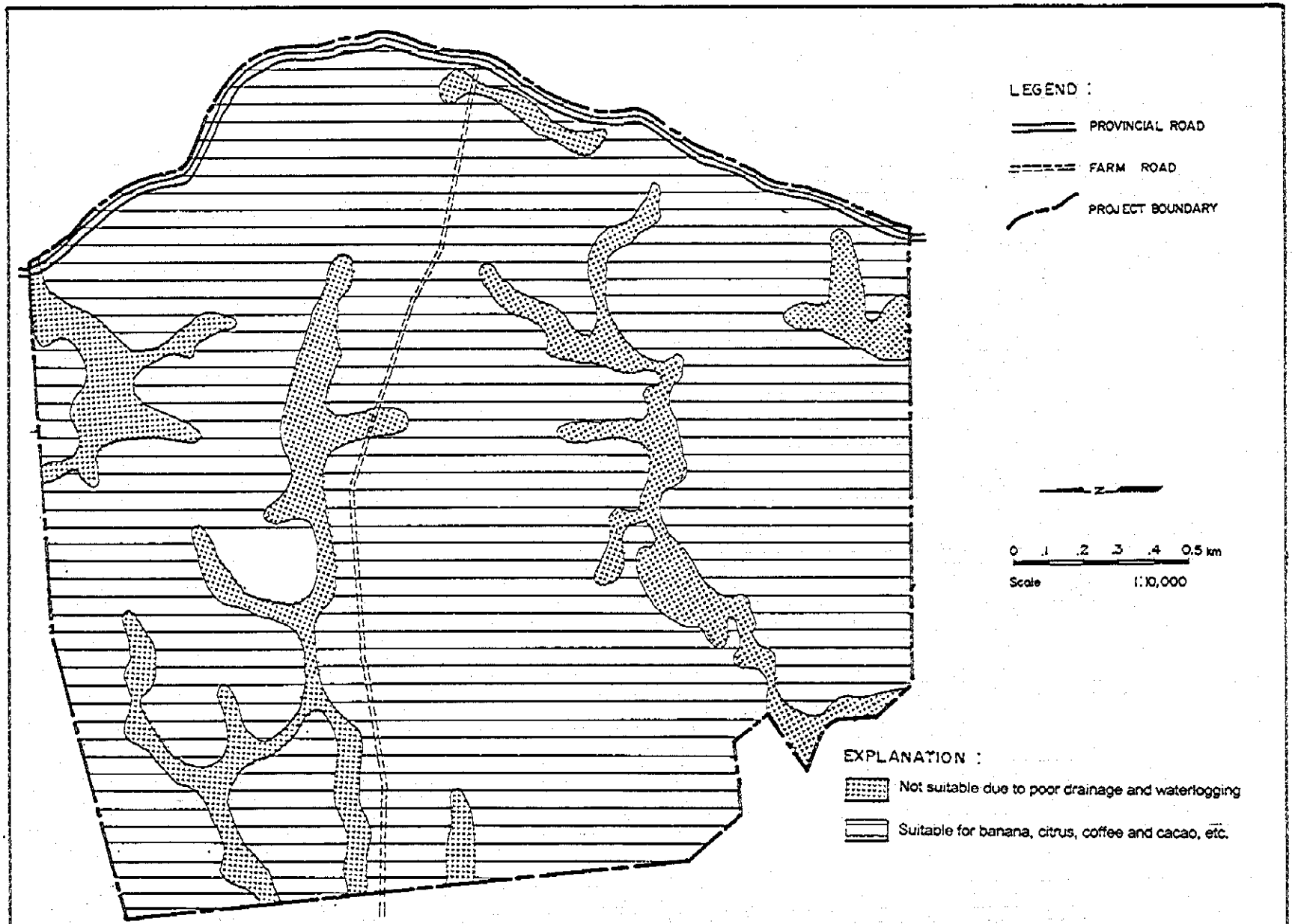


FIGURE F.2-24 LAND SUITABILITY FOR TREE CROPS, COCAVILLE

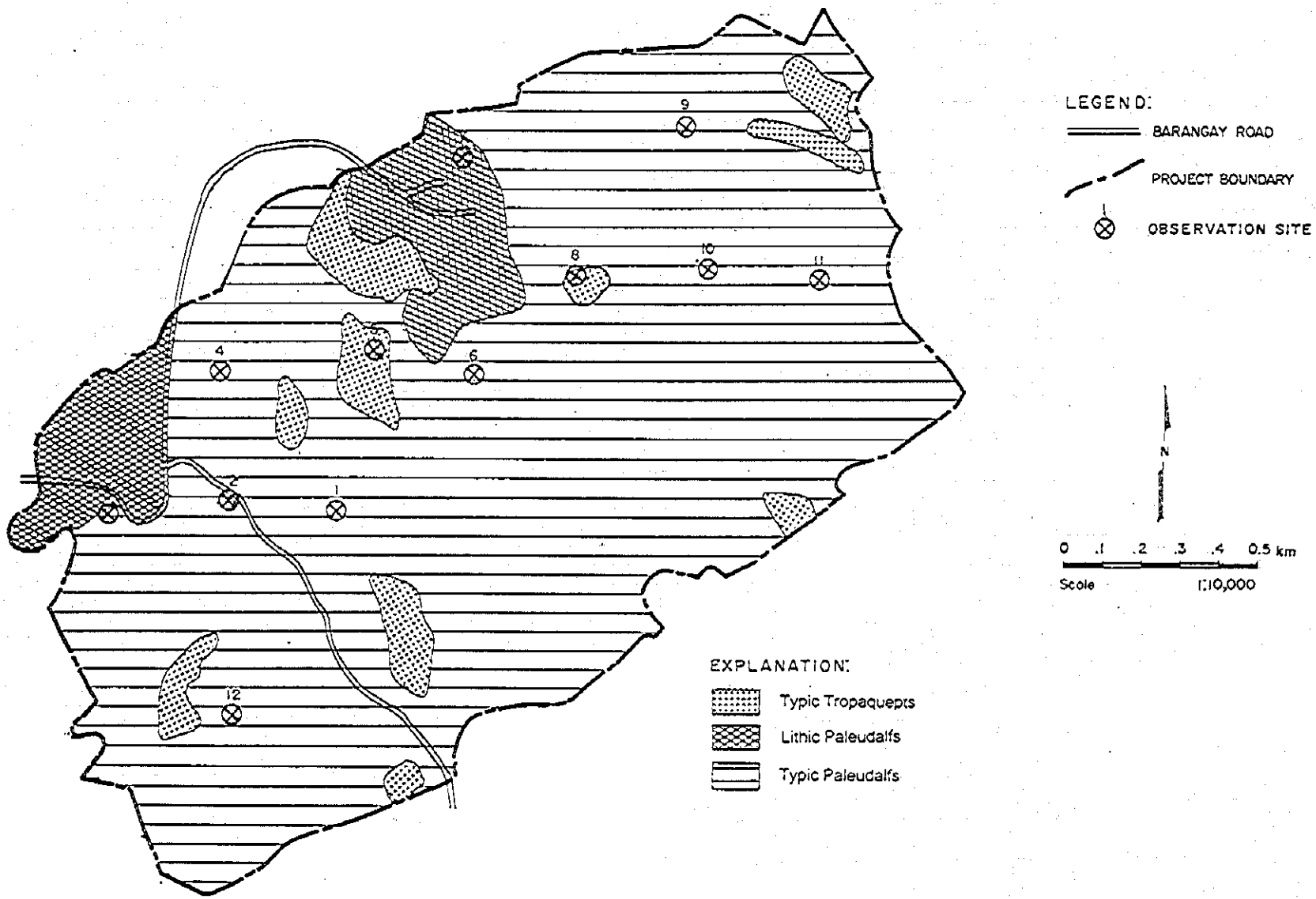


FIGURE F.2-25 SOIL MAP, MARANGOG

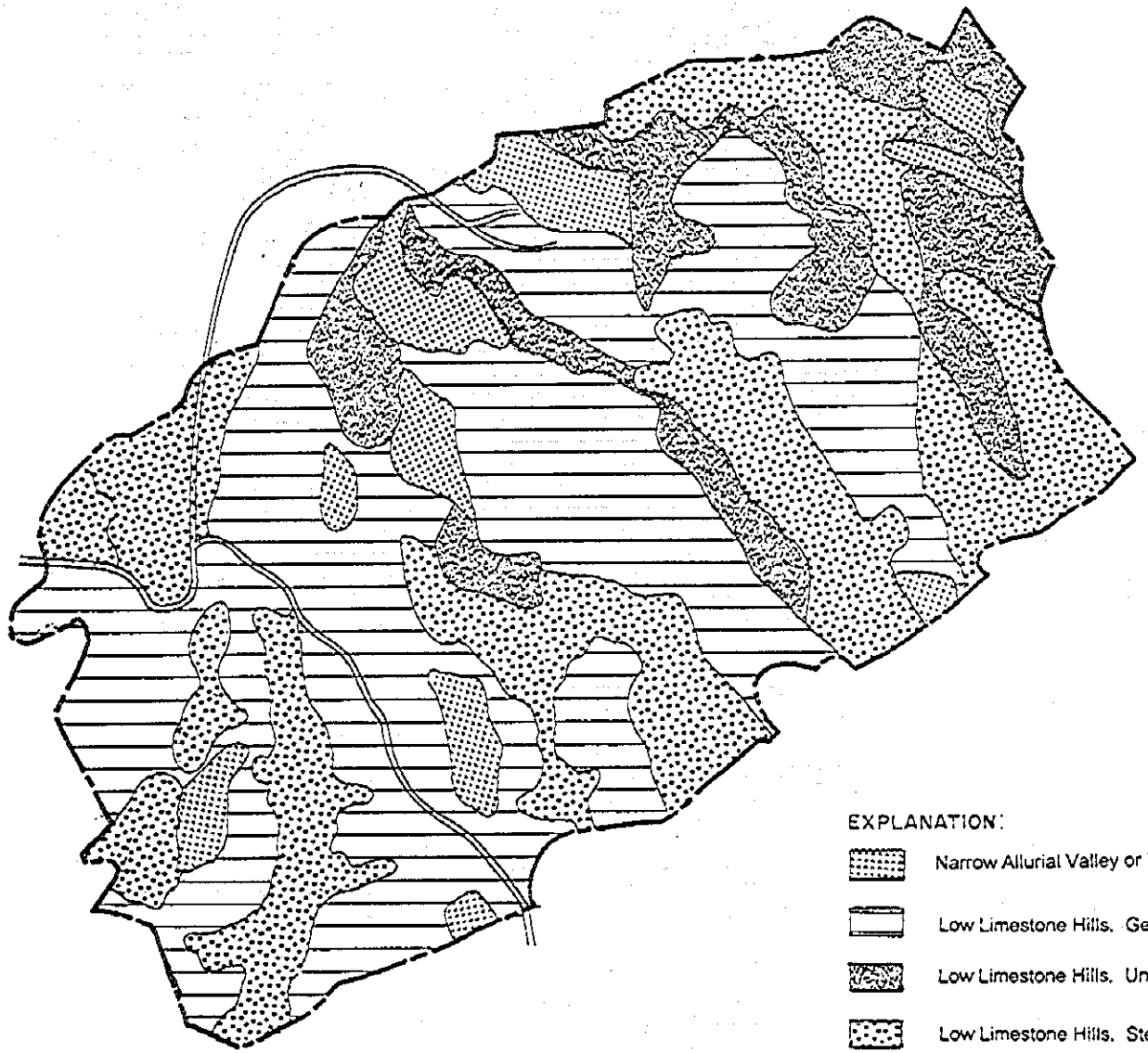


FIGURE F.2-26 LAND FORM, MARANGOG

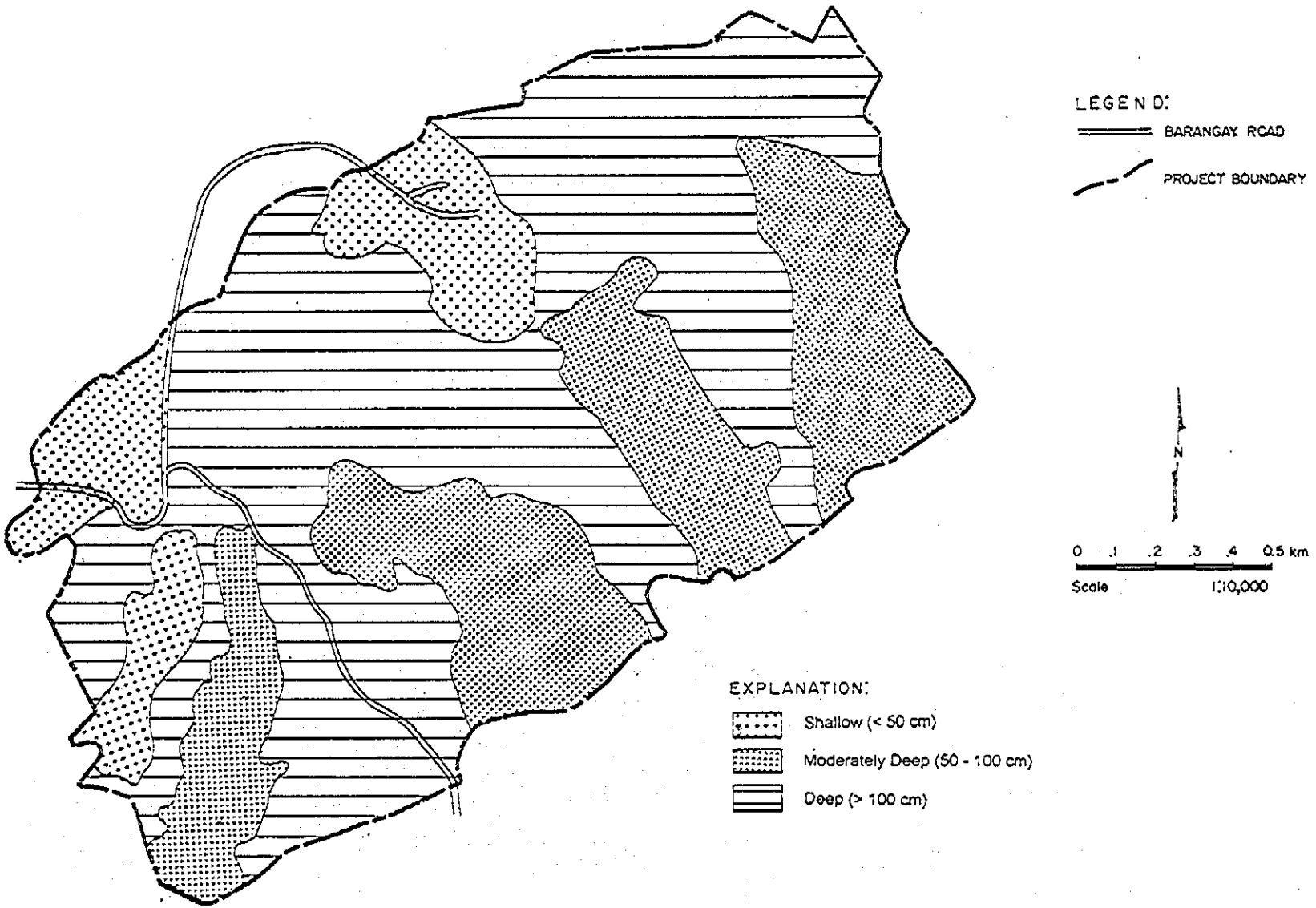


FIGURE F.2 -27 SOIL DEPTH, MARANGOG

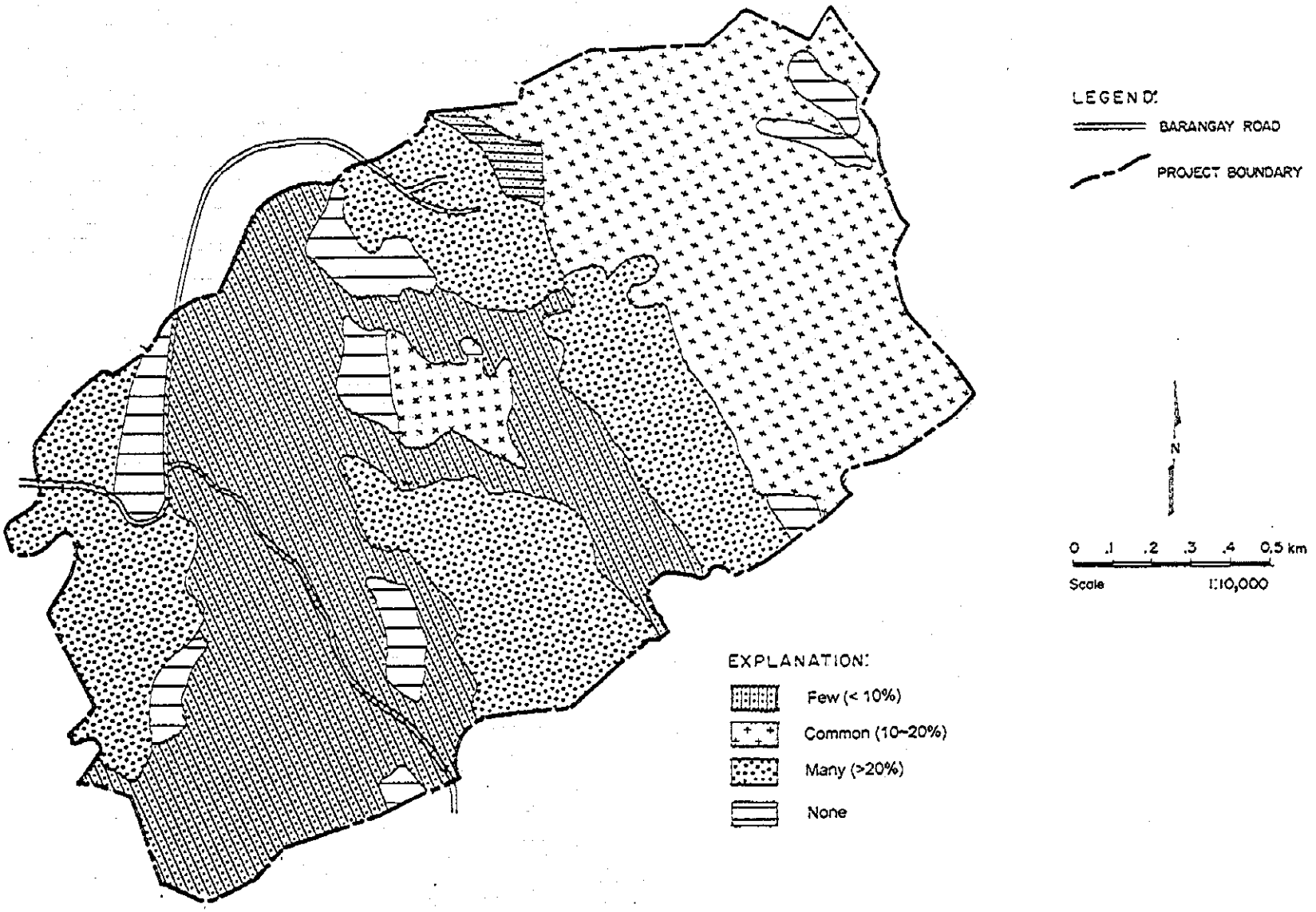


FIGURE F.2-28 CONTENT OF GRAVEL/ROCK OUTCROPS, MARANGOG

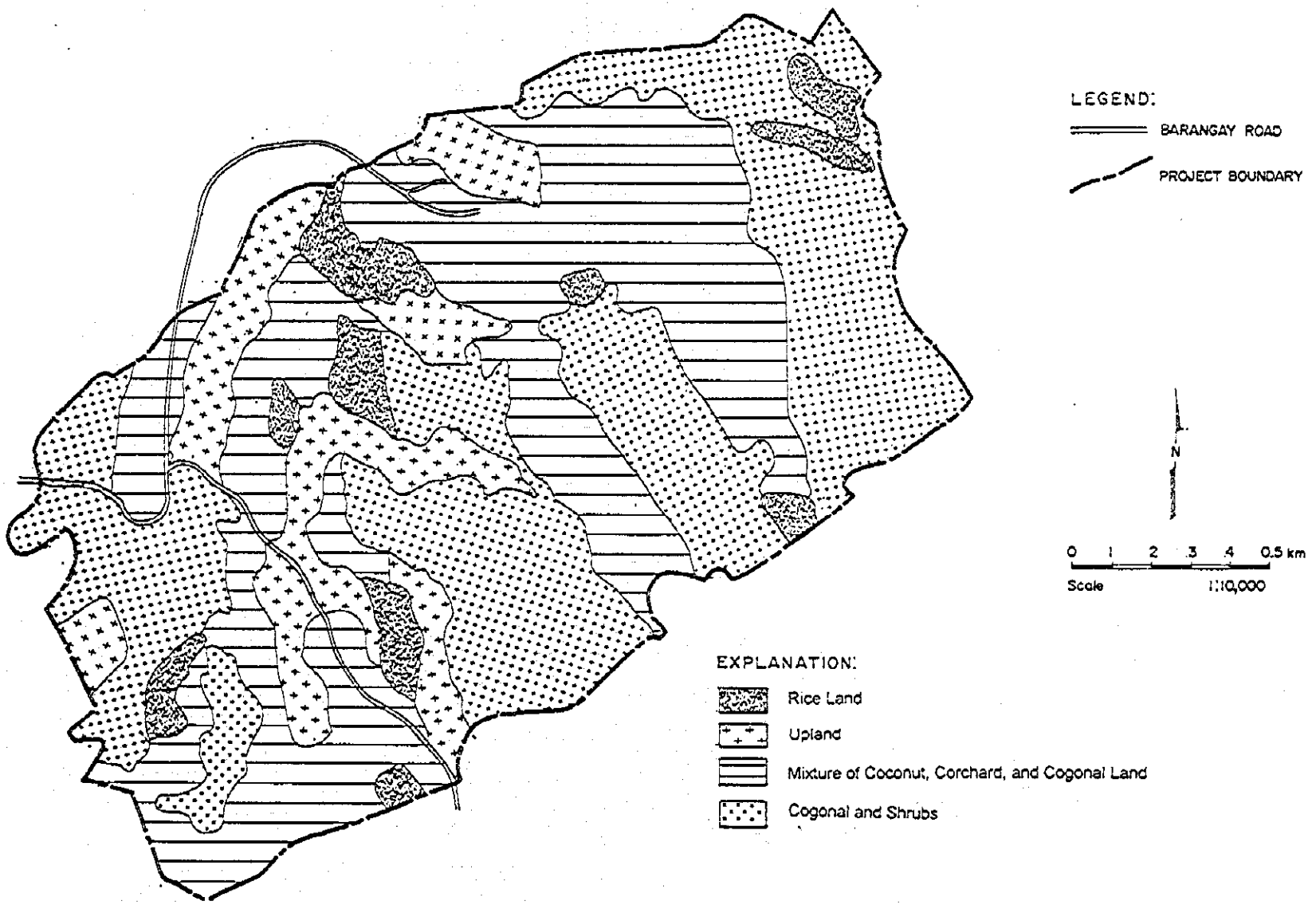


FIGURE F.2-29 PRESENT LAND USE, MARANGOG

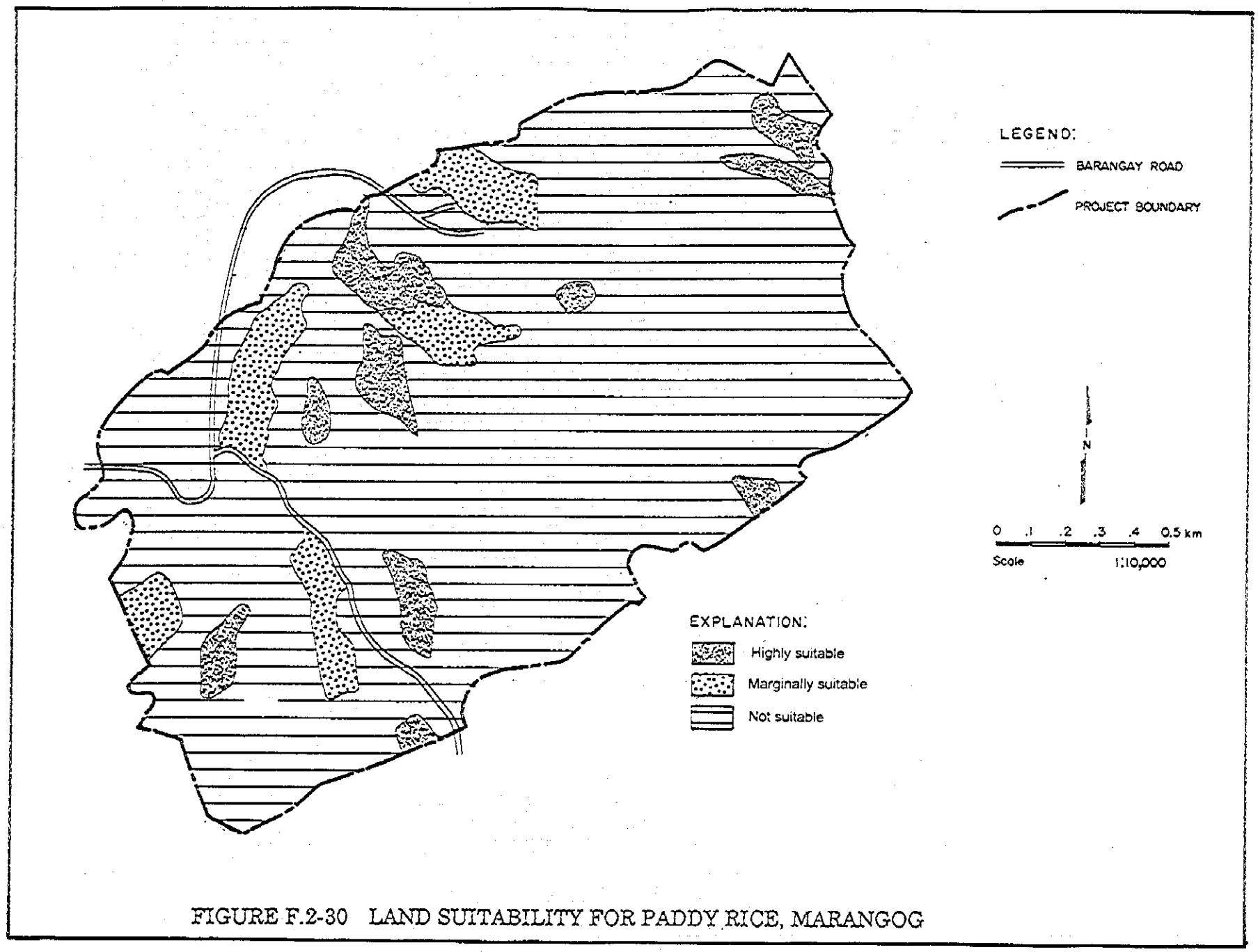


FIGURE F.2-30 LAND SUITABILITY FOR PADDY RICE, MARANGOG

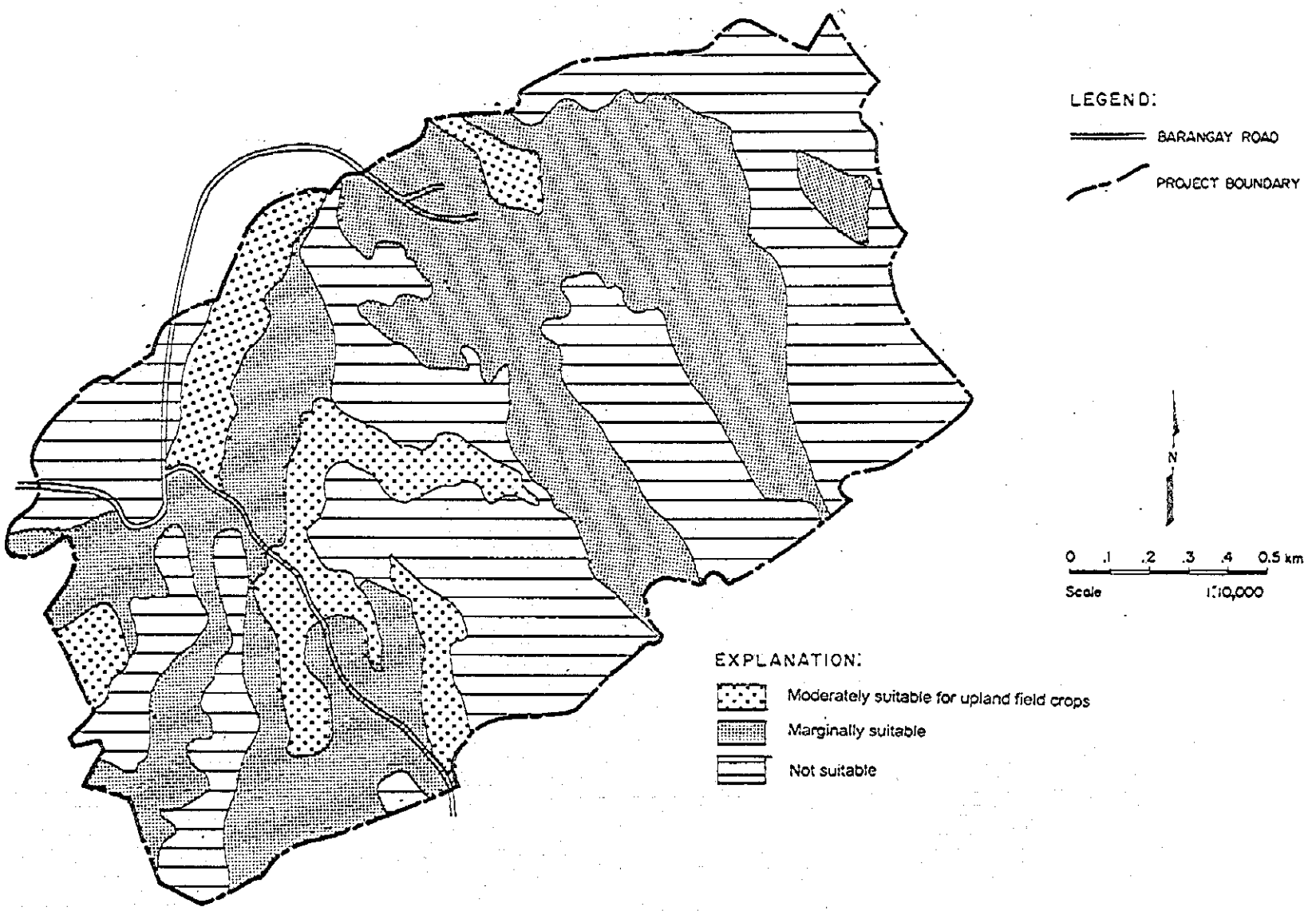


FIGURE F.2-31 LAND SUITABILITY FOR UPLAND CROPS, MARANGOG

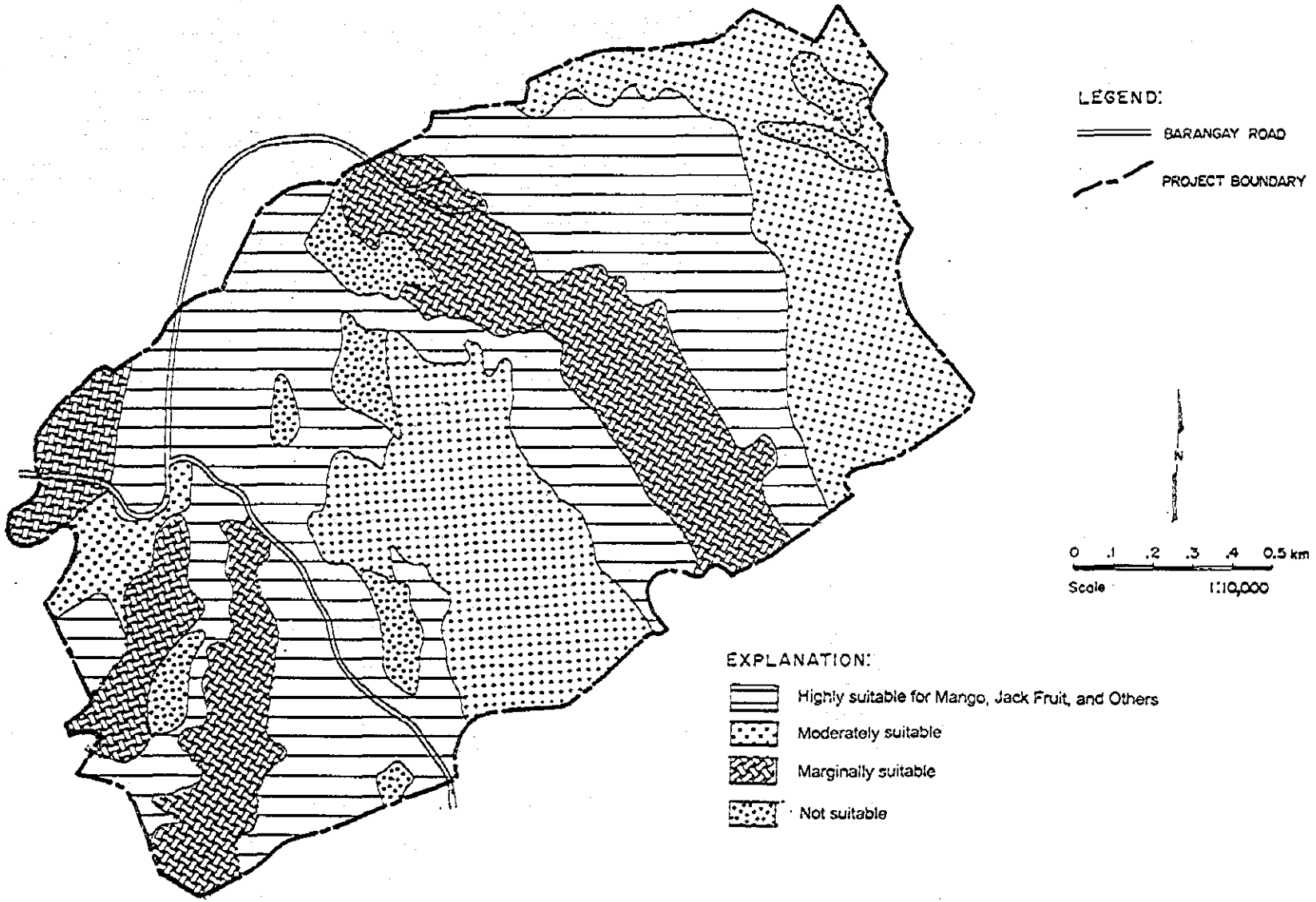


FIGURE F.2-32 LAND SUITABILITY FOR TREE CROPS, MARANGOG

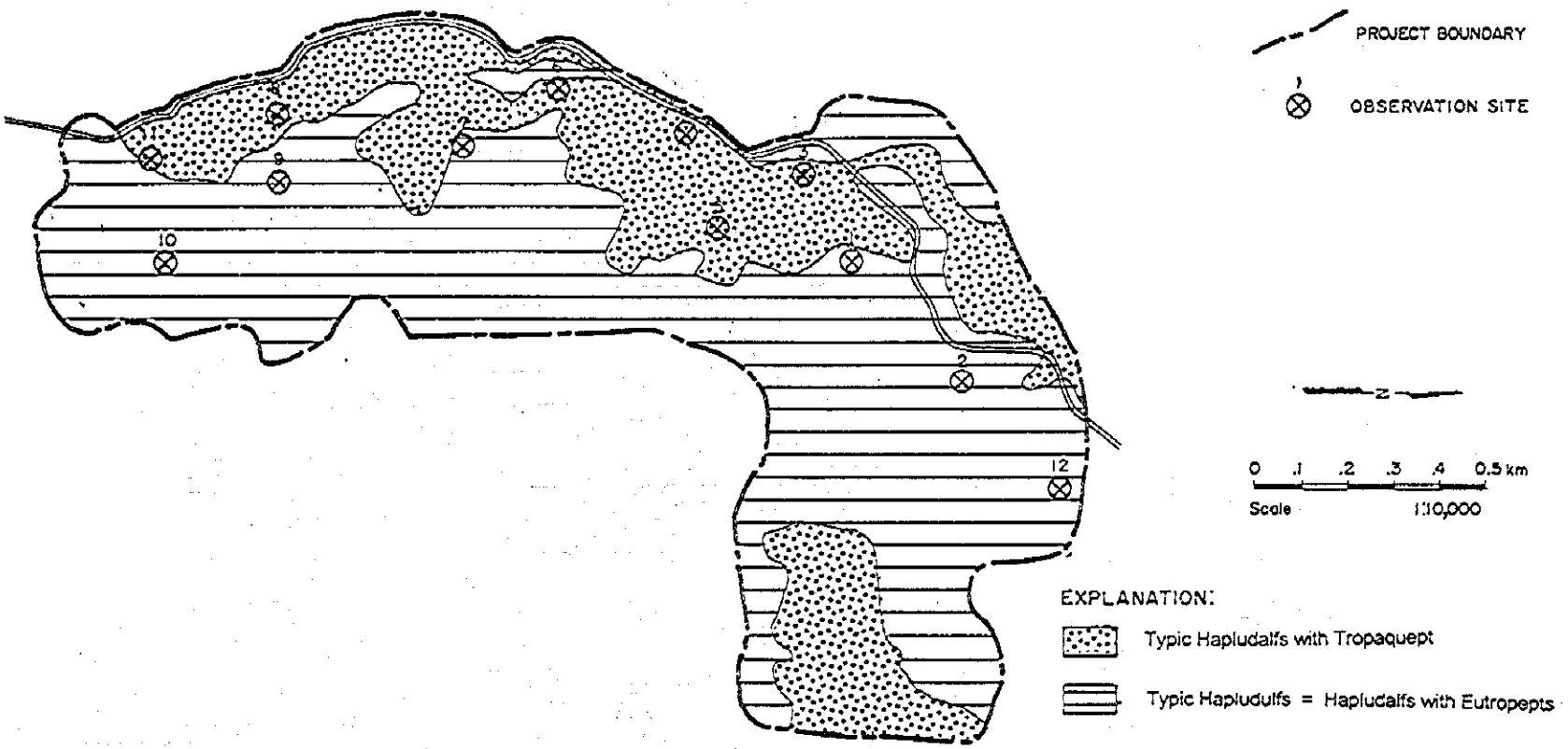


FIGURE F.2-33 SOIL MAP, SILAE

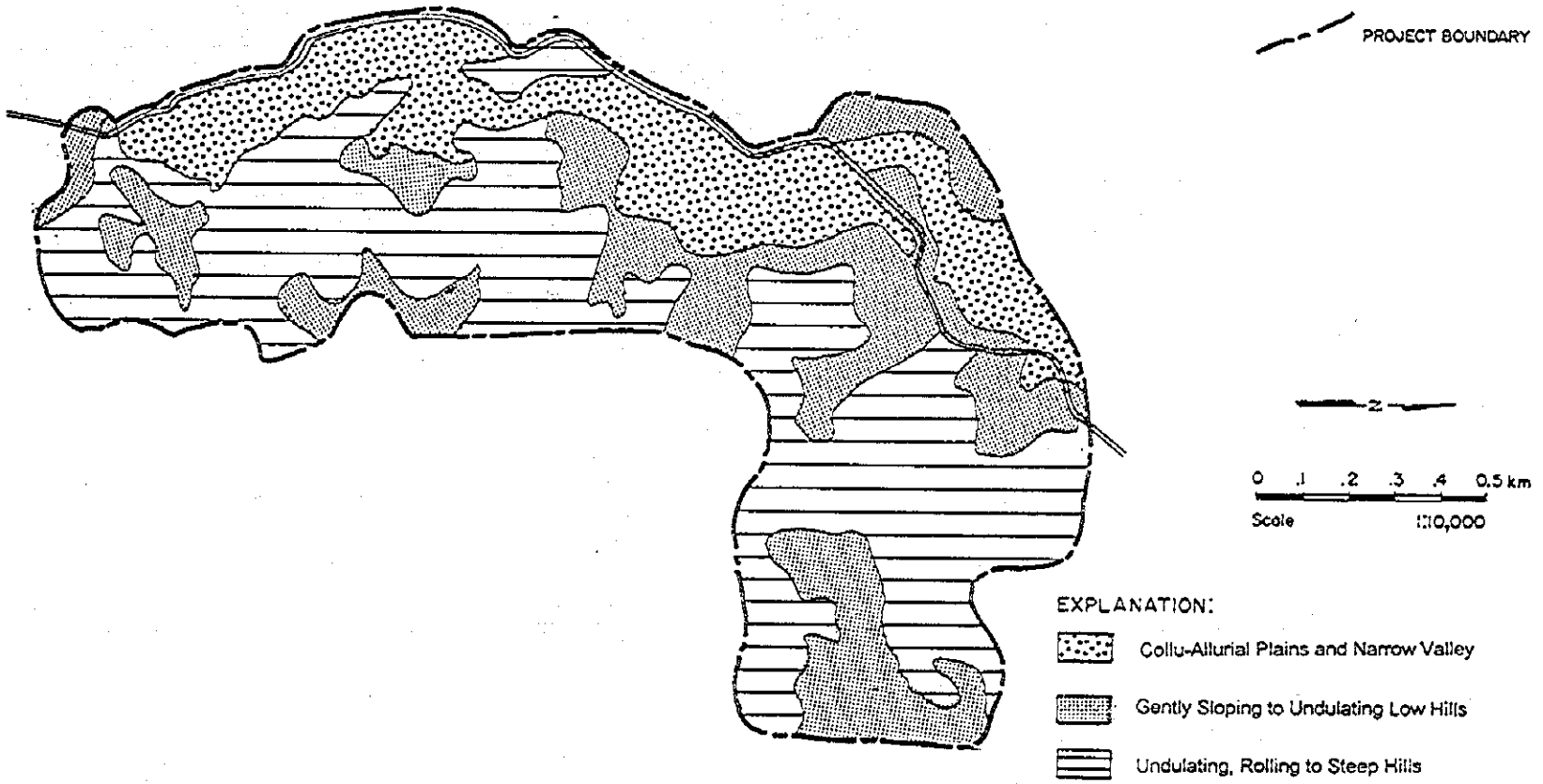


FIGURE F.2-34 LAND FORM, SILAE

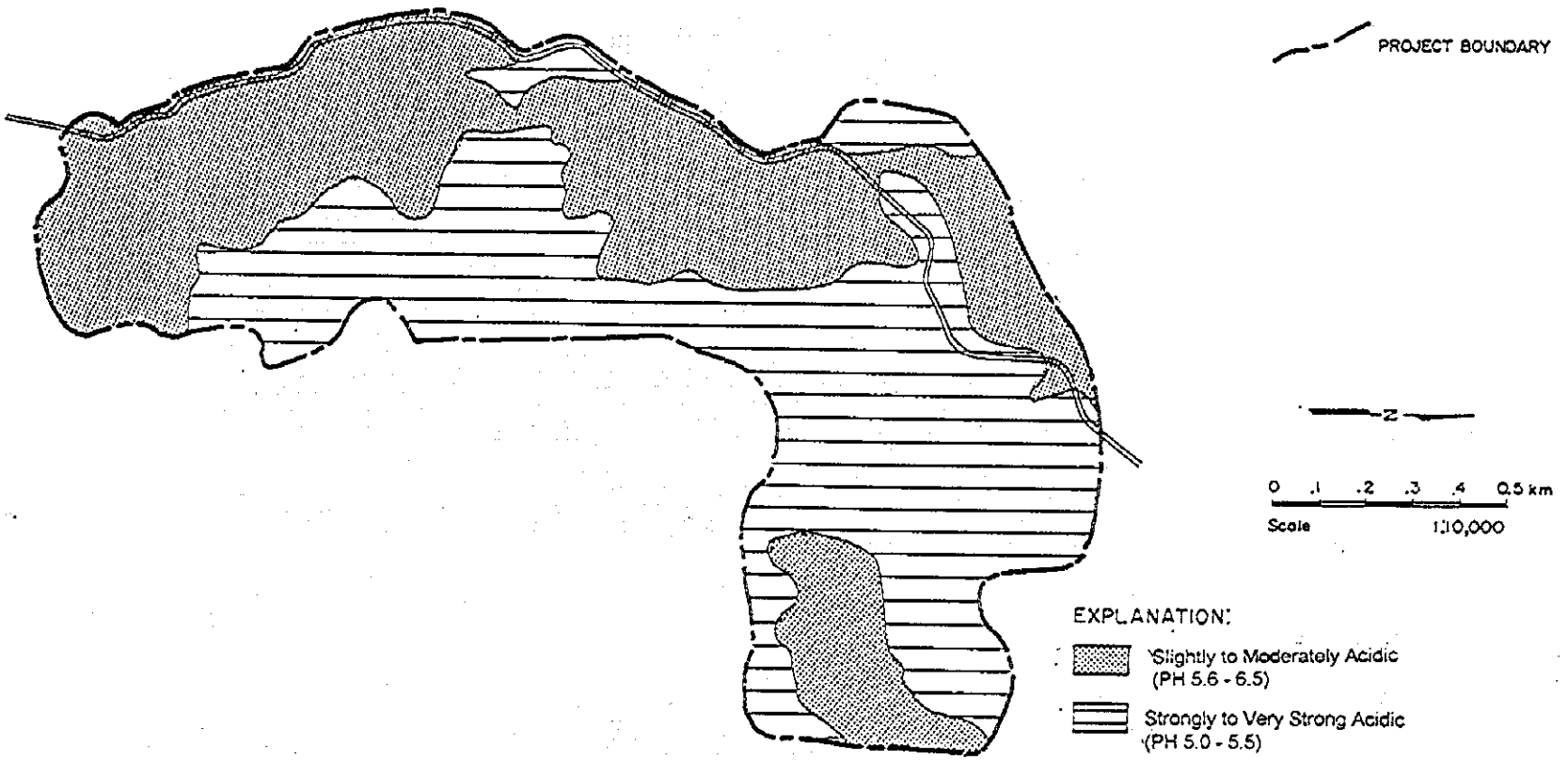


FIGURE F.2-35 SOIL ACIDITY, SILAE

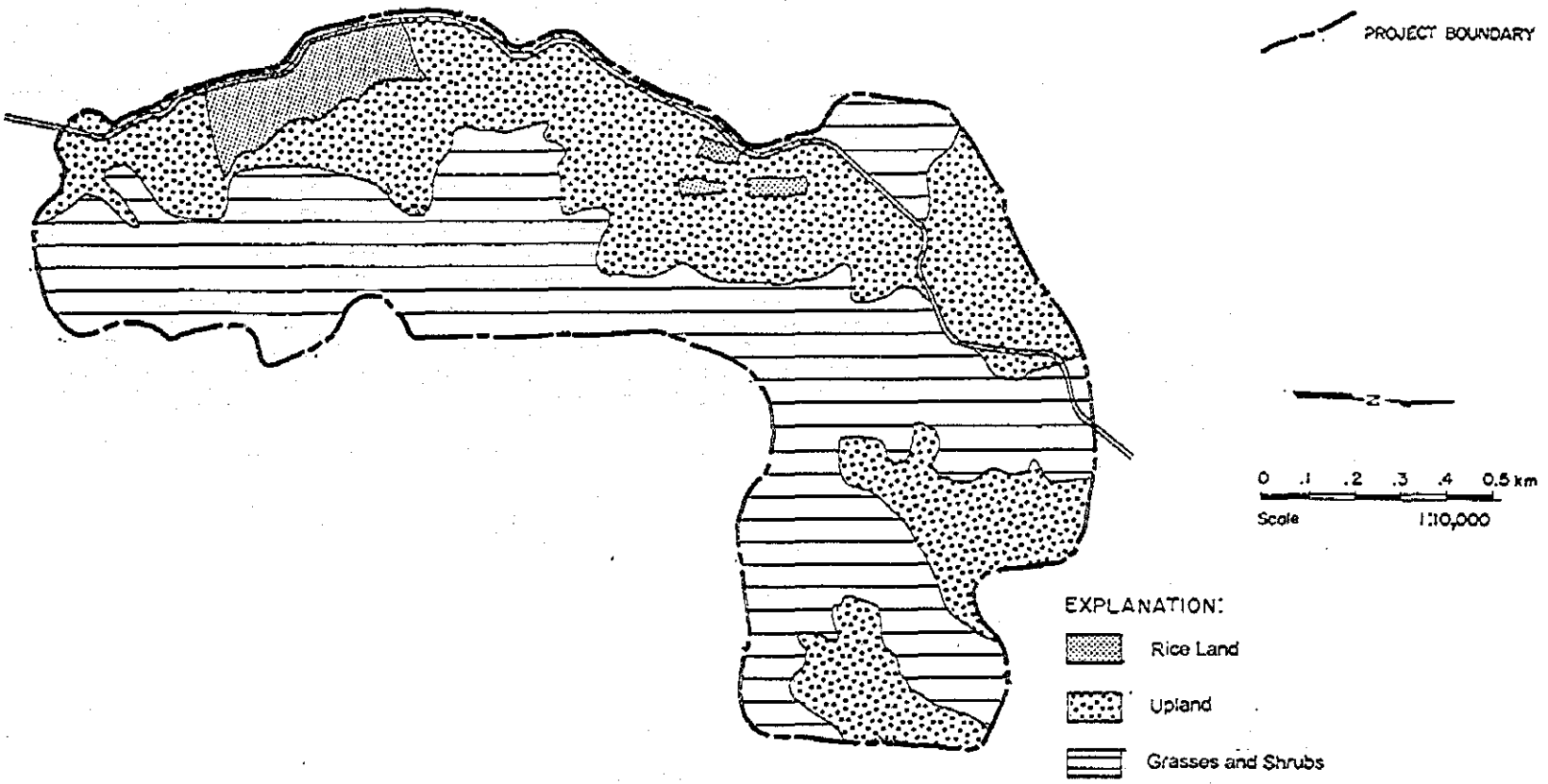


FIGURE F.2-36 PRESENT LAND USE, SILAE

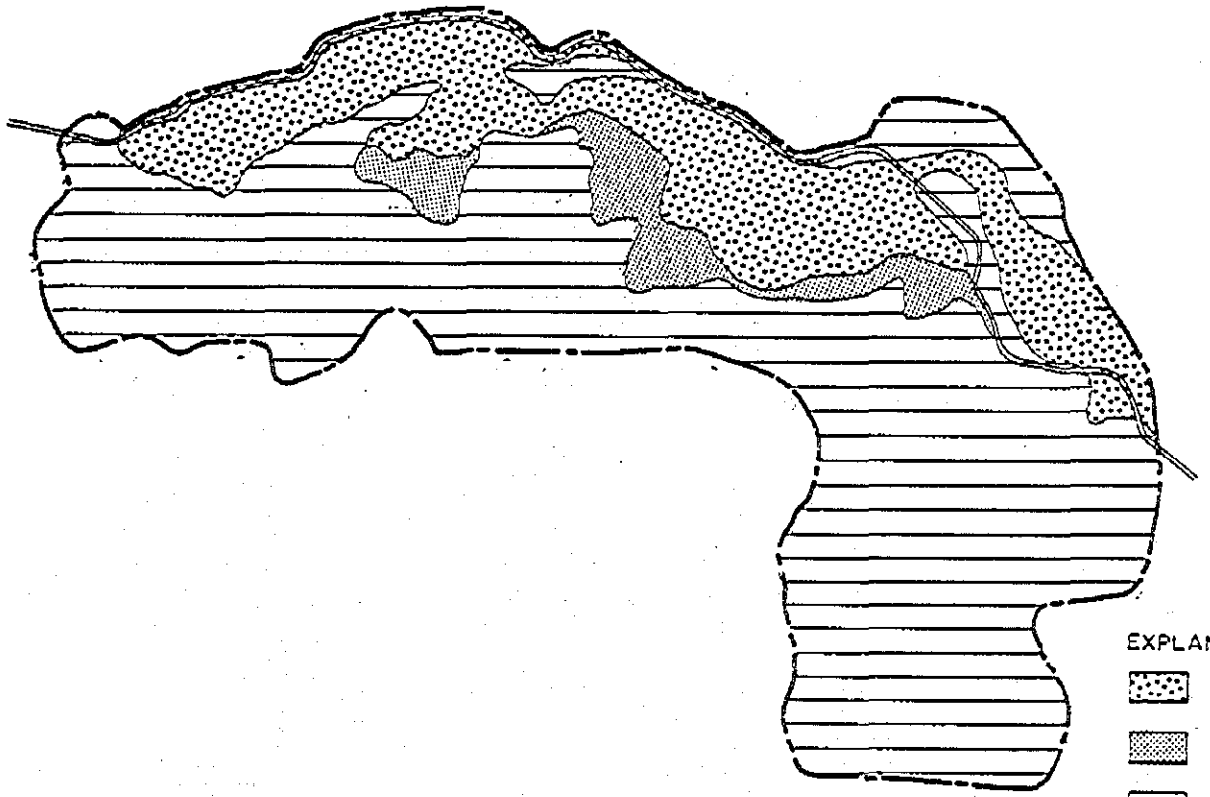


FIGURE F.2-37 LAND SUITABILITY FOR PADDY RICE, SILAE

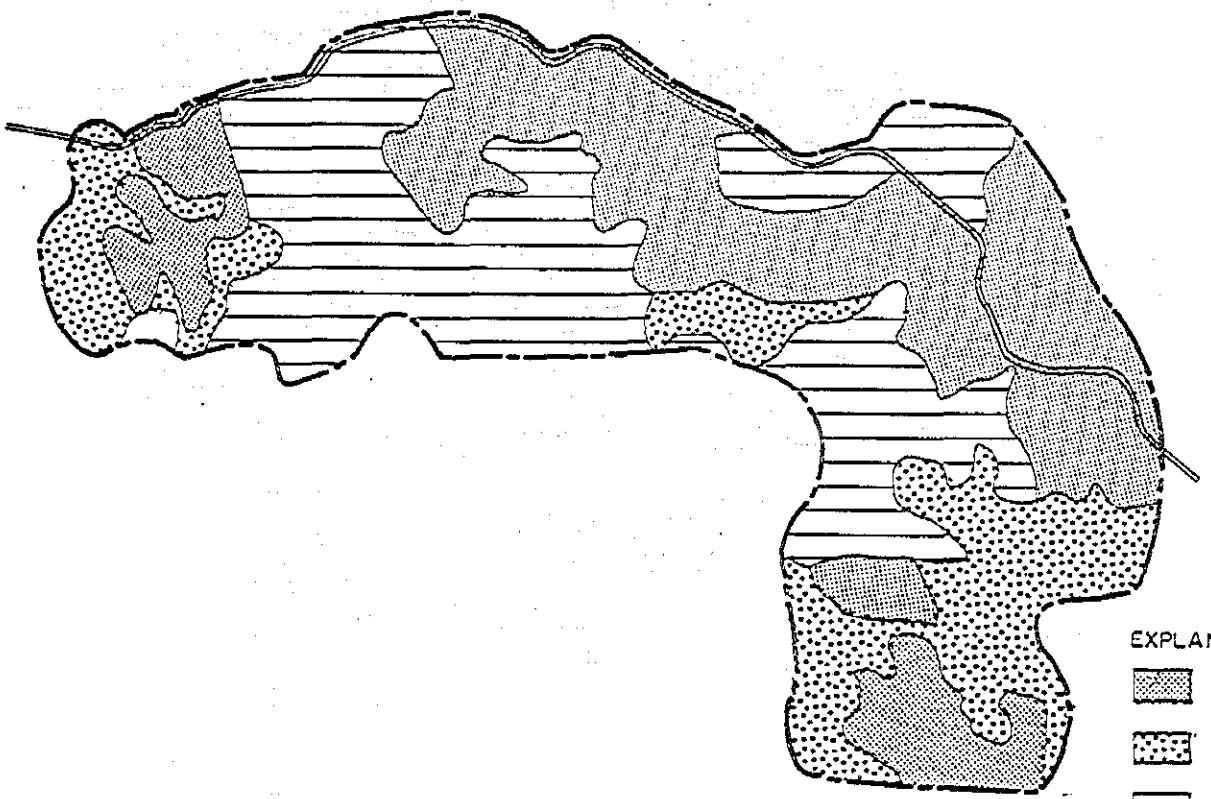


FIGURE F.2-38 LAND SUITABILITY FOR FIELD CROPS

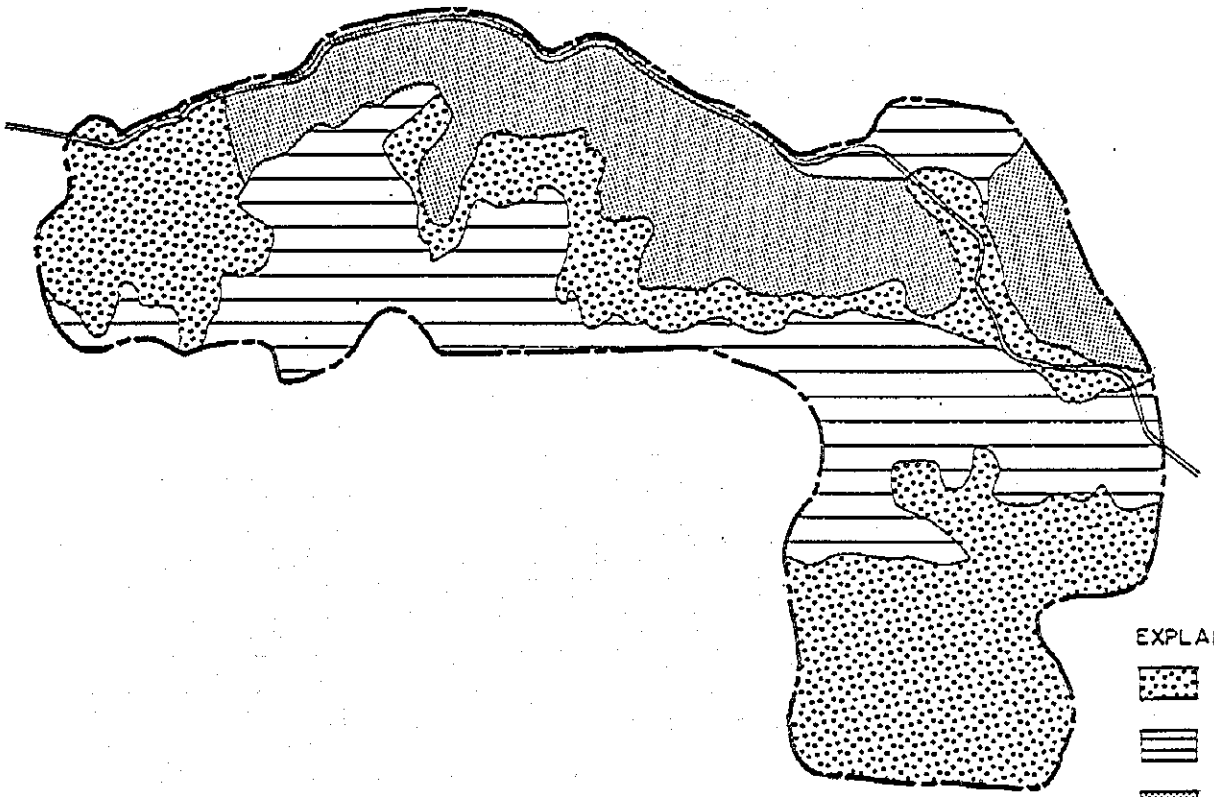


FIGURE F.2-39 LAND SUITABILITY FOR THREE CROPS

FIGURE F.2-40 PROPOSED CROPPING PATTERN (IRRIGATED AREA)

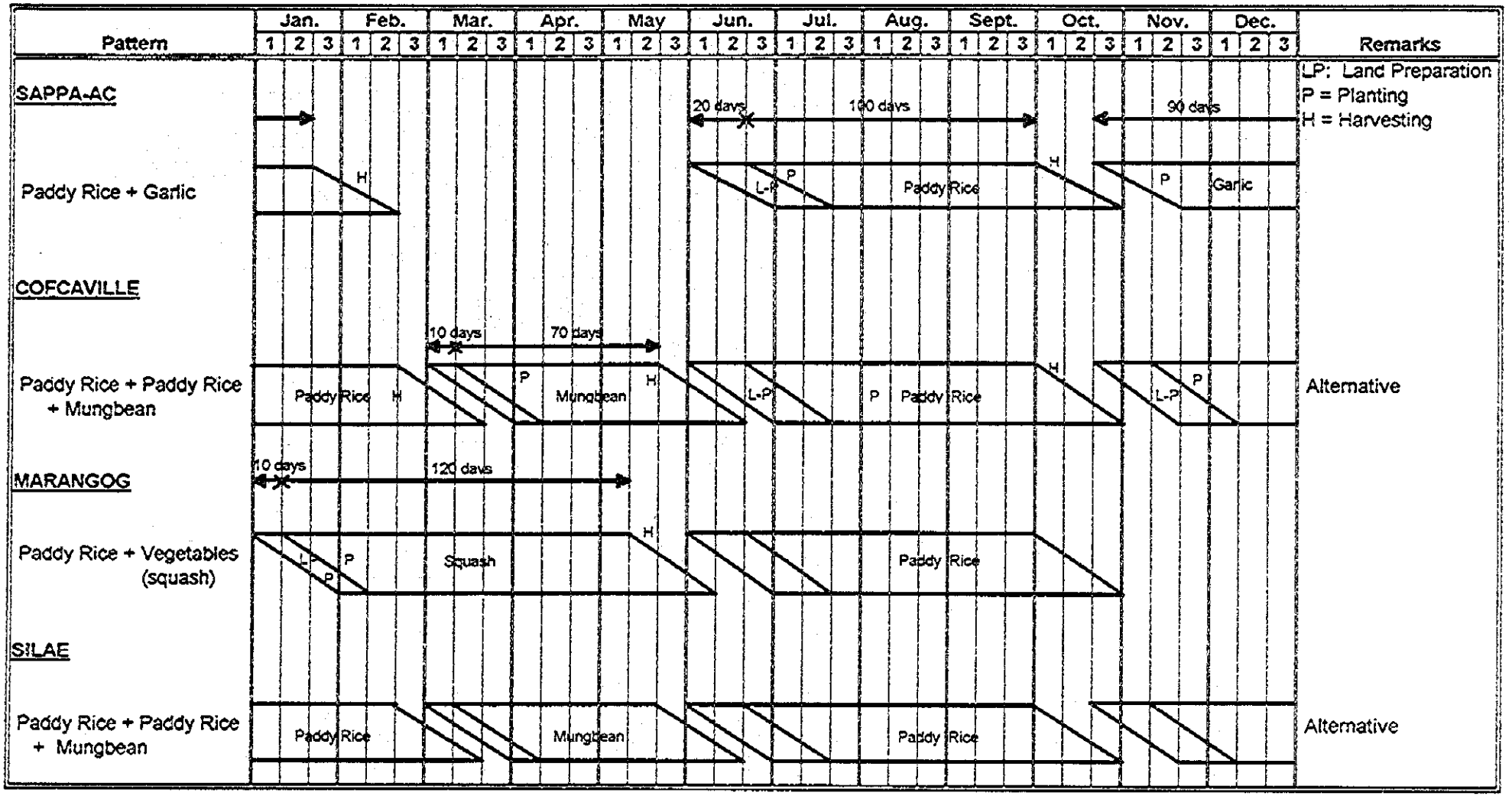
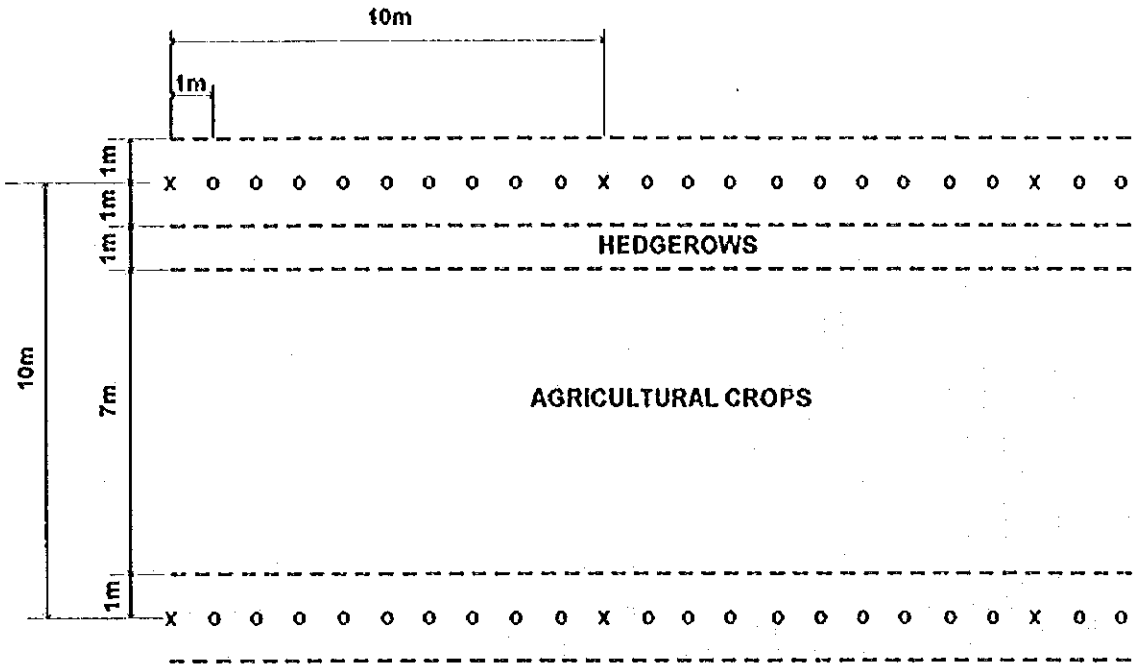


FIGURE F.2-41 PLANTING DESIGN OF FRUIT-TREE-BASED CONTOUR FARMING, (8~18% SLOPE AREA), SAPPAAC



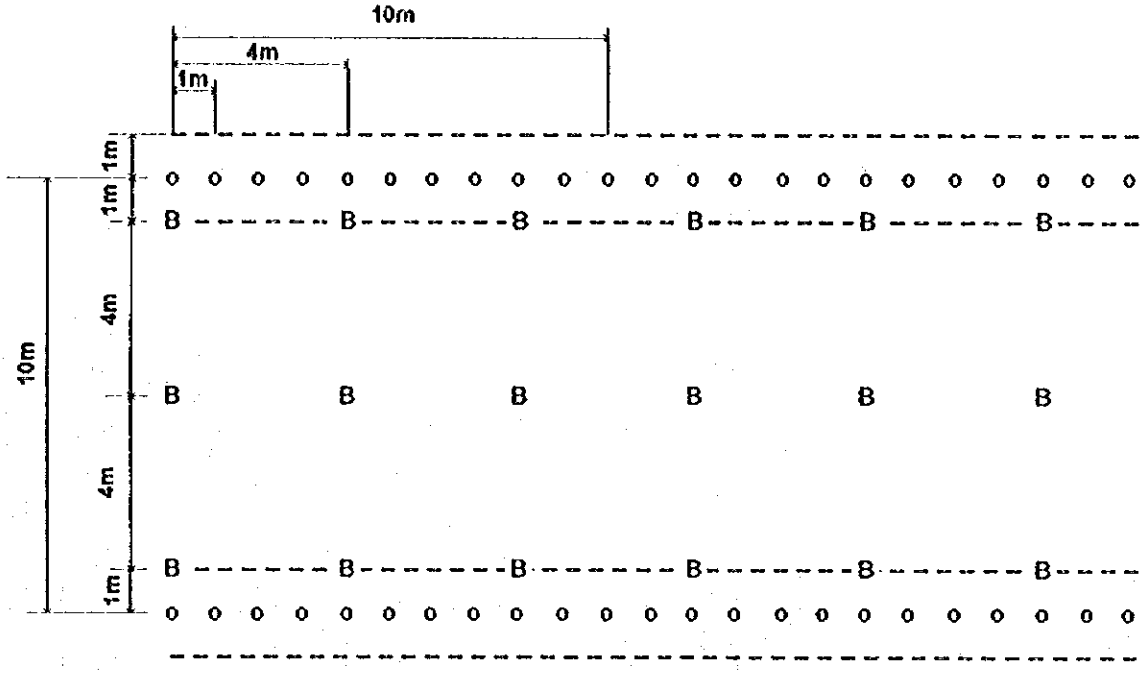
LEGEND:

	SPECIES	SPACING	REQUIRED SEEDLINGS/HA.
X	Fruit tree (Mango)	10m x 10m	100
o	Nurse tree (Kakawate)	1m x 10m	900
	Total		1,000

Where, area coverage of crops are as follows:

- Fruit tree — 1st Year 100 trees x 1m² = 100m²; Last Year 100 tress 10,000m²
- Nurse tree — 1st Year 900 trees x 1m² = 900m²
- Hedgerows plants — 1st Year 1,200m²
- Agricultural crops — 10,000 - (100m² + 900m² + 1,200m²); 1st Year = 7,700m²

FIGURE F.2-42 PLANTING DESIGN OF BANANA CONTOUR FARMING, (8~18% SLOPE AREA), SAPPAAC



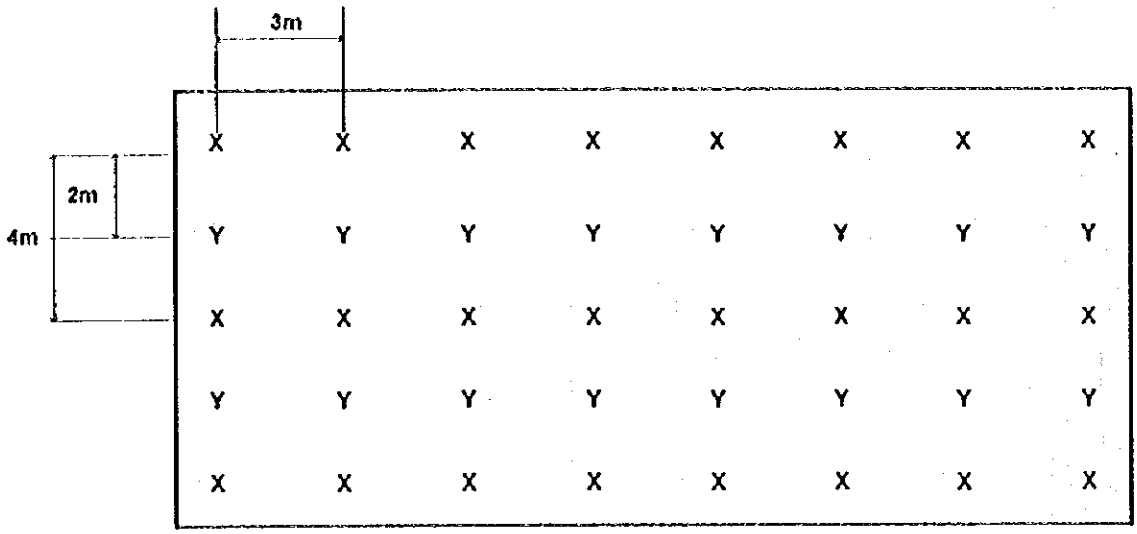
LEGEND:

	SPECIES	SPACING	REQUIRED SEEDLINGS/HA.
B	Banana	4m x 4m	750
o	Nurse tree (Kakawate)	1m x 10m	1,000
	Total		1,750

Where, area coverage of crops are as follows:

- Nurse tree — 1st Year 900 trees x 1m² = 1,000m²
- Banana — 10,000 - (10,000m²) 1st Year = 9,000m²

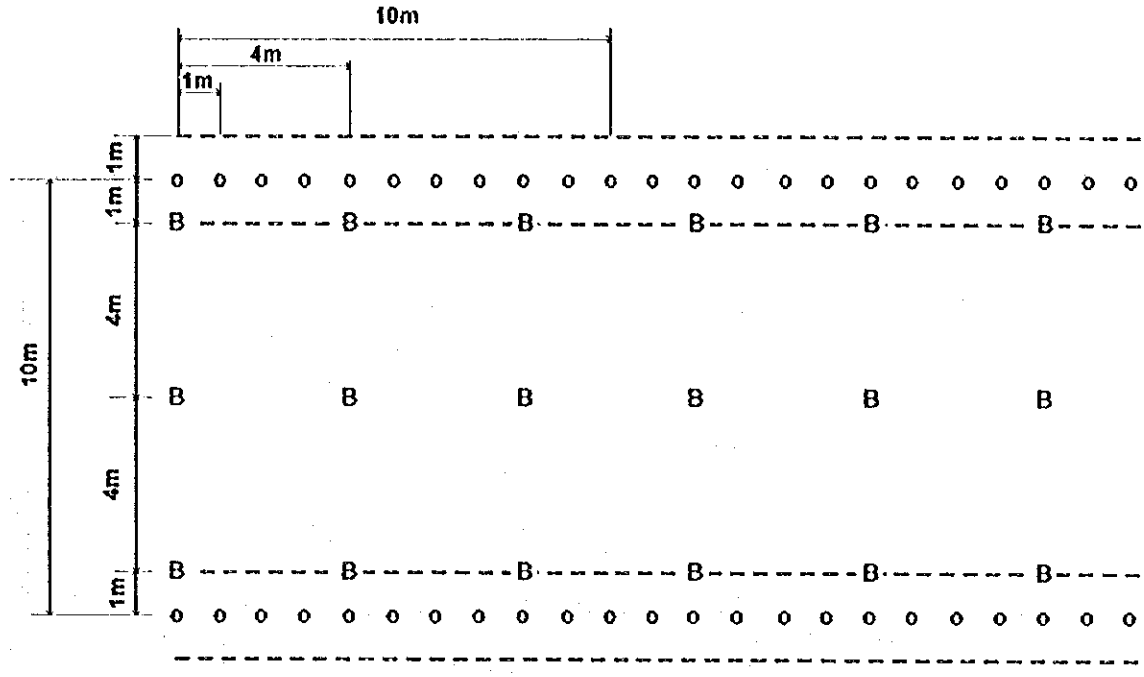
FIGURE F.2-43 PLANTING DESIGN OF PRODUCTION FOREST (18-30% SLOPE AREA), SAPPAAC



LEGEND	SPECIES	SPACING	REQUIRED SEEDLINGS/HA.
X	Climax trees (Mahogany)	3m x 4m	833
Y	Nurse trees (Bagras)	3m x 4m	833
	Total		1,666

Note: Bagras ..... Eucalyptus deglupta

FIGURE F.2-44 PLANTING DESIGN OF BANANA CONTOUR FARMING, (8~18% SLOPE AREA), COFCAVILLE



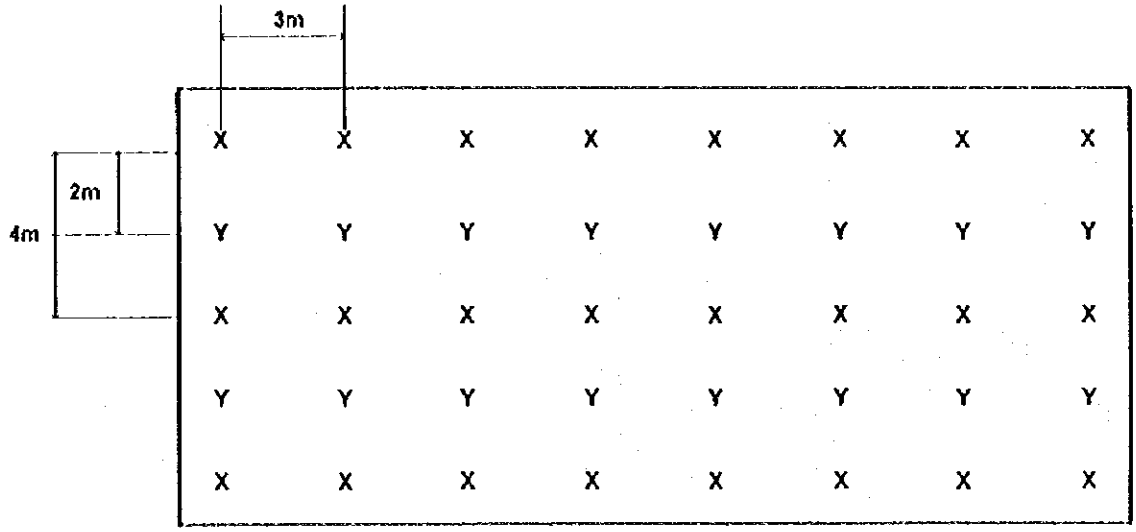
LEGEND:

	SPECIES	SPACING	REQUIRED SEEDLINGS/HA.
B	Banana	4m x 4m	750
o	Nurse tree (Kakawate)	1m x 10m	1,000
	Total		1,750

Where, area coverage of crops are as follows:

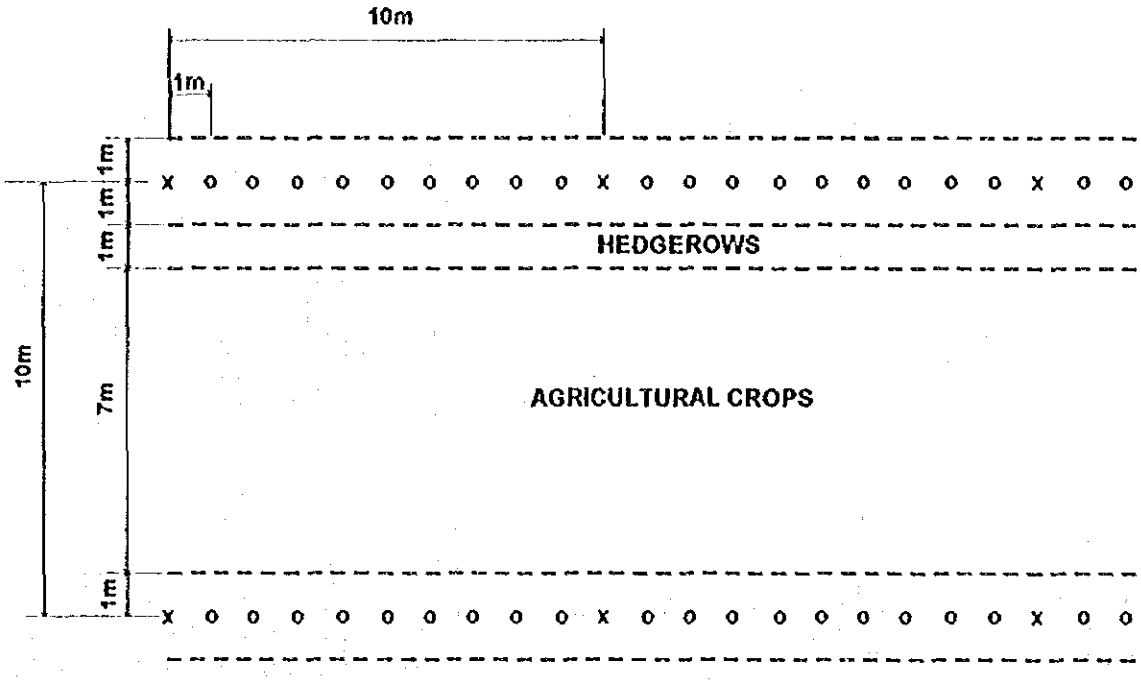
- Nurse tree — 1st Year 900 trees x 1m² = 1,000m²
- Banana — 10,000 - (10,000m²) 1st Year = 9,000m²

FIGURE F.2-45 PLANTING DESIGN OF PRODUCTION FOREST (18-30% SLOPE AREA), COFCAVILLE



LEGEND	SPECIES	SPACING	REQUIRED SEEDLINGS/HA.
X	Climax trees (Mahogany)	3m x 4m	833
Y	Nurse trees (Gemelina)	3m x 4m	833
	Total		1,666

FIGURE F.2-46 PLANTING DESIGN OF FRUIT-TREE-BASED CONTOUR FARMING, (8~18% SLOPE AREA), MARANGOG



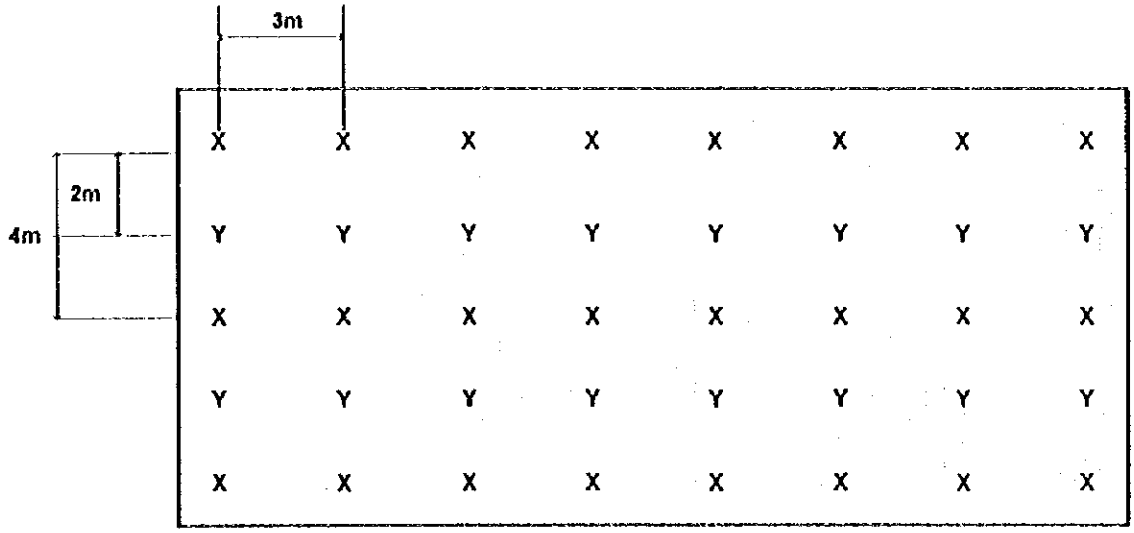
LEGEND:

	SPECIES	SPACING	REQUIRED SEEDLINGS/HA.
X	Fruit tree (Jackfruit)	10m x 10m	100
o	Nurse tree (Falcata)	1m x 10m	900
	Total		1,000

Where, area coverage of crops are as follows:

- Fruit tree — 1st Year 100 trees x 1m² = 100m²; Last Year 100 tress 10,000m²
- Nurse tree — 1st Year 900 trees x 1m² = 900m²
- Hedgerows plants — 1st Year 1,200m²
- Agricultural crops — 10,000 - (100m² + 900m² + 1,200m²); 1st Year = 7,700m²

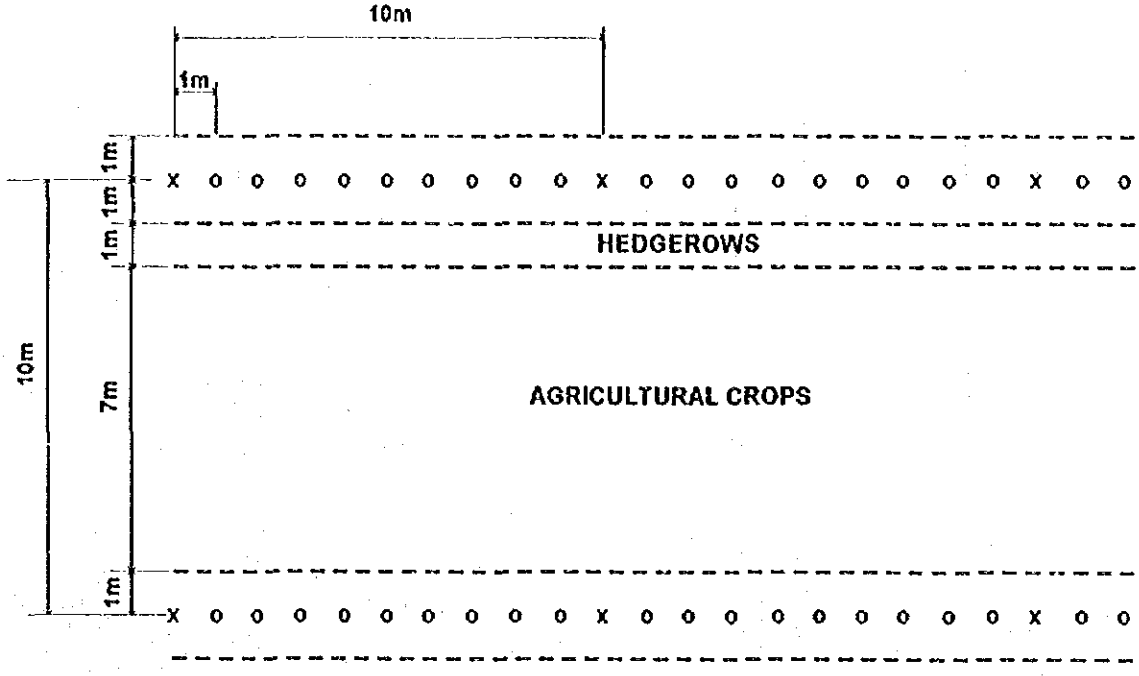
FIGURE F.2-47 PLANTING DESIGN OF PRODUCTION FOREST (18-30% SLOPE AREA), MARANGOG



LEGEND	SPECIES	SPACING	REQUIRED SEEDLINGS/HA.
X	Climax trees (Mahogany)	3m x 4m	833
Y	Nurse trees (Bagalunga)	3m x 4m	833
	Total		1,666

Note: Bagalunga . . . . . Melia dubia

FIGURE F.2-48 PLANTING DESIGN OF FRUIT-TREE-BASED CONTOUR FARMING, (8~18% SLOPE AREA), SILAE



LEGEND:

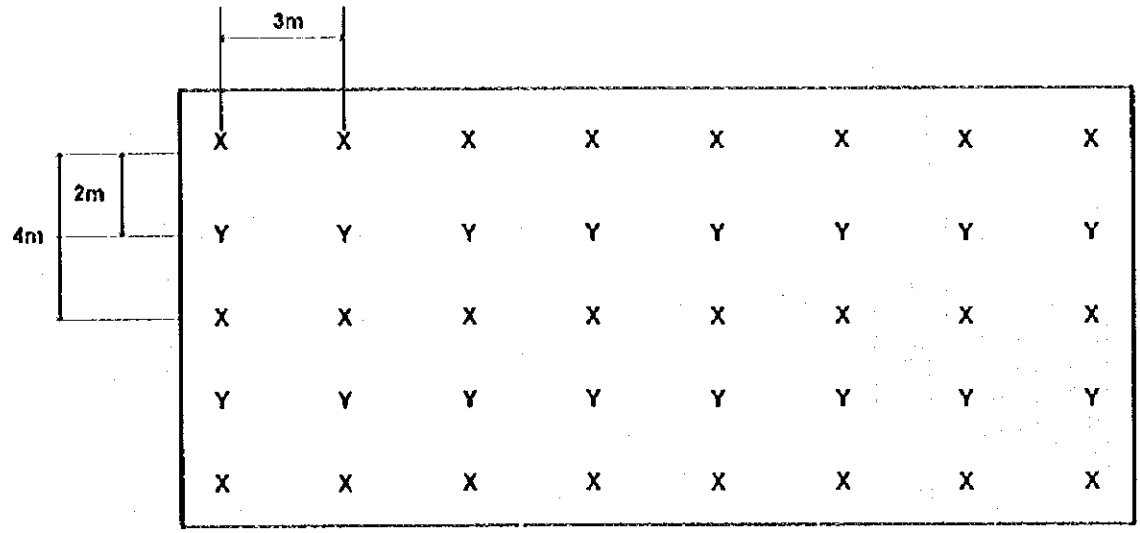
	SPECIES	SPACING	REQUIRED SEEDLINGS/HA.
X	Fruit tree (Durian)	10m x 10m	100
o	Nurse tree (Kakawete)	1m x 10m	900
	Total		1,000

Where, area coverage of crops are as follows:

- Fruit tree — 1st Year 100 trees x 1m² = 100m²; Last Year 100 tress 10,000m²
- Nurse tree — 1st Year 900 trees x 1m² = 900m²
- Hedgerows plants — 1st Year 1,200m²
- Agricultural crops — 10,000 - (100m² + 900m² + 1,200m²); 1st Year = 7,700m²

Note: Falcata . . . . . Paraserianthes falcataria (Linn) Nielsen

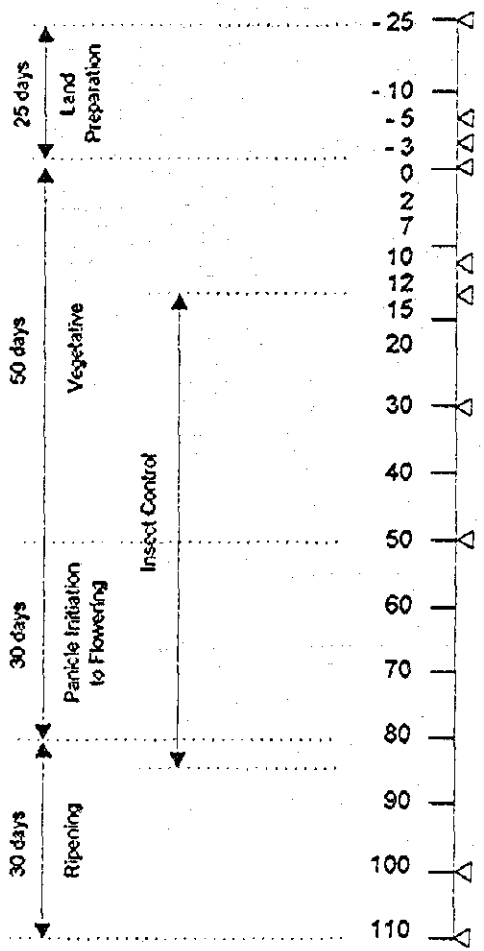
FIGURE F.2-49 PLANTING DESIGN OF PRODUCTION FOREST (MORE THAN 30% SLOPE AREA), SILAE



LEGEND	SPECIES	SPACING	REQUIRED SEEDLINGS/HA.
X	Climax trees (Mahogany)	3m x 4m	833
Y	Nurse trees (Bagras)	3m x 4m	833
	Total		1,666

Note: Bagras . . . . . Eucalyptus deglupta

Figure F.2-50 FARM PRACTICES AND INPUT REQUIREMENT, RICE TRANSPLANTED, (IRRIGATED)



Farm Practices

- Land Preparation
- Application of basal fertilizer
- Final harrowing & leveling
- Transplanting
- Replanting with thickly planted seedling
- Application of protection typed insecticides
- Top dressing
- Drainage
- Havesting

Farm Input per Hectare

Seeds: 50 kg.

Basal fertilizer:
- Urea, 50 kg (Wet), 50 kg (Dry)
- 14 - 14 - 14, 150/kg

Protection types insecticides:
- e.g. Frudan 3G, 34 kg

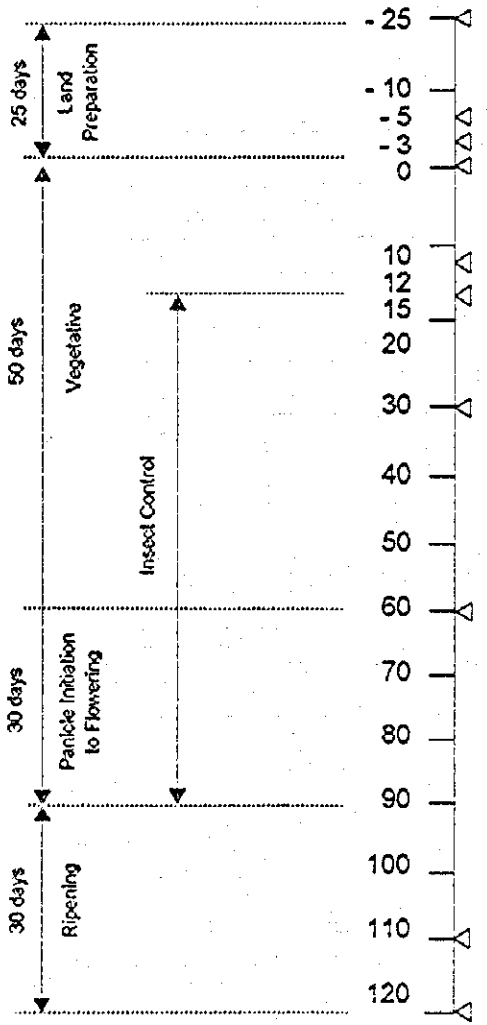
Post-emergence typed herbicides:
- Hedonal 40% EC 1.0 lit.

Insecticides:
- e.g. Basudin 400 EC, L-1.0 lit.

Top dressing fertilizer:
- Urea, 50 kg (Wet), 50 kg (Dry)

Note: (1) Recommended varieties: IR 60, 62 & BPIR: 10
(2) Fertilizer requirement: 82-41-21 (Wet and Dry)

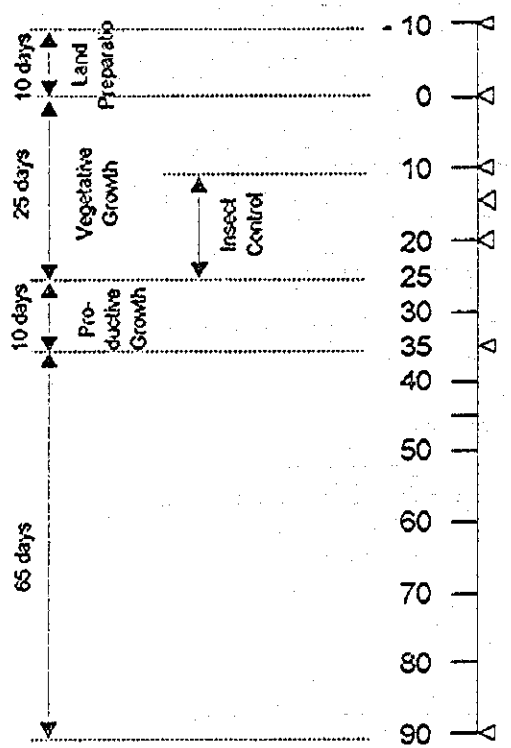
Figure F.2-51 FARM PRACTICES AND INPUT REQUIREMENT, RICE TRANSPLANTED, (RAINFED)



Growth Stage	Farm Practices	Farm Input per Hectare
- 25	Land Preparation	
- 10		Seeds: 50 kg.
- 5	Application of basal fertilizer	
- 3	Final harrowing & leveling	
0	Transplanting	Basal fertilizer: - Urea, 50 kg (Wet), 50 kg (Dry) - 14 - 14 - 14, 150/kg
10	Replanting with thickly planted seedling	Protection types insecticides: - e.g. Frudan 3G, 34 kg
12	Application of protection typed insecticides	Post-emergence typed herbicides:
15		- Hedonal 40% EC 1.0 lit.
20		
30		Insecticides:
40		- e.g. Basudin 400 EC, L-1.0 lit.
50		
60	Top dressing	Top dressing fertilizer: - Urea, 50 kg (Wet), 50 kg (Dry)
70		
80		
90		
100		
110	Drainage	
120	Havesting	

Note: (1) Recommended varieties: Rc 40 and Rc 42
(2) Fertilizer requirement: 66-21-21 (Wet and Dry)

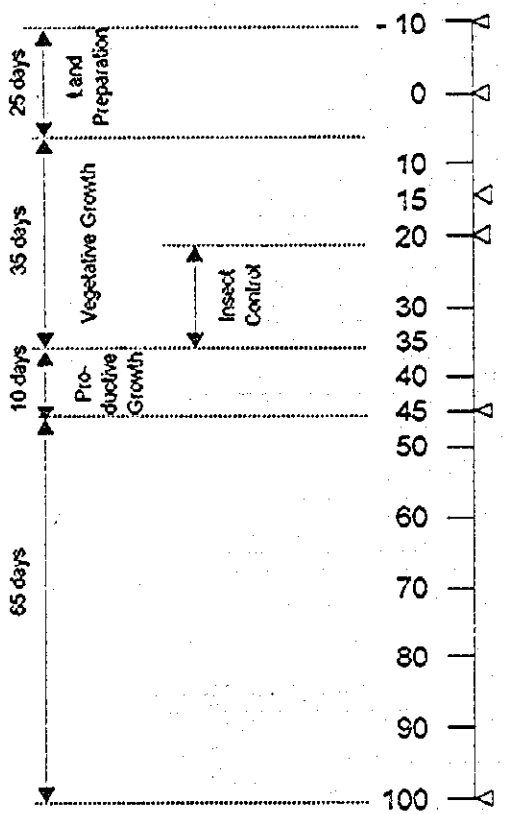
Figure F.2-52 FARM PRACTICE AND INPUT REQUIREMENT, CORN (WHITE)



Growth Stage	Farm Practices	Farm Input per Hectare
- 10	Start of land preparation	Basal fertilizer: { 14-14-14, 120 kg / 16-20-0, 200 kg }
0	Sowing (75 cm x 25 cm, 2 - 3 seeds/hill)	Compost Seeds: 20 kg Insecticides: e.g. Decis 2.5 EC 1.0 lit. Trichogramma 140 cards
10	Thinning	
20	Weeding/inter cultivation	
35	Side-dressing/off-barrying	Side-dressing: 40 - 0 - 0, 100 kg
90	Harvesting	

Note: (1) Recommended varieties: e.g. IES Cn 4, IES Glut I, Improved Tiniguid
(2) Soil requirement: Loam and Clay Loam
(3) Total requirement of chemical fertilizer: 94-57-17 (Marangog area)

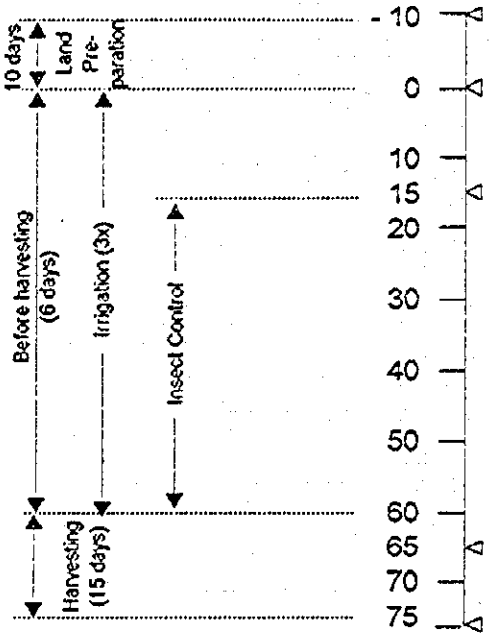
Figure F.2-53 FARM PRACTICE AND INPUT REQUIREMENT, CORN (YELLOW)



Growth Stage	Farm Practices	Farm Input per Hectare
- 10	Start of land preparation	Basal fertilizer: { 14-14-14, 200 kg / 18-46-0, 150 kg }
0	Sowing (75 cm x 25 cm, 2 - 3 seeds/hill)	Compost Seeds: 17 kg
15	Thinning	Insecticides: e.g. Decis 2.5 EC 1.0 lit.
20	Weeding/inter cultivation	Trichogramma 200 cards
45	Side-dressing/off-barrying	Side-dressing: Urea 150 kg.
100	Harvesting	

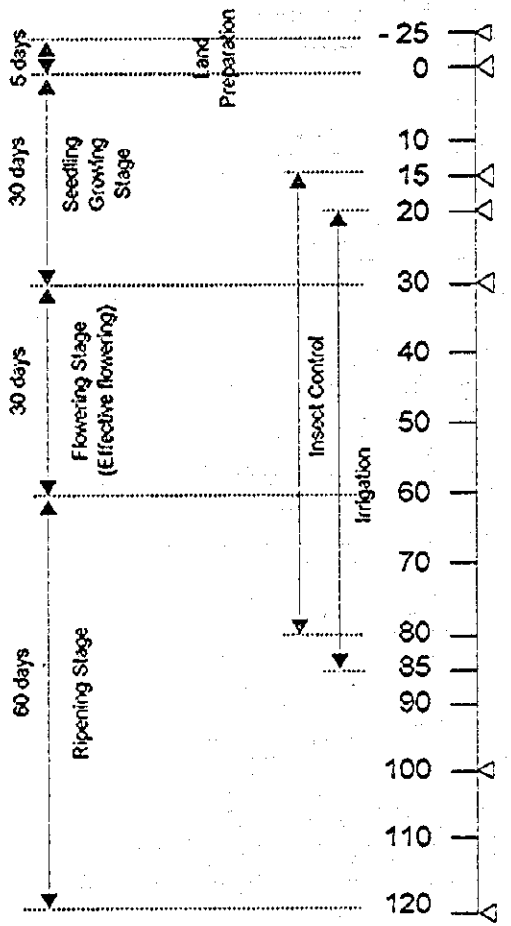
Note: (1) Recommended varieties: e.g. Pioneer 3014/3246, Cargill 3007, Asian 314
(2) Soil requirement: Loam and Clay Loam
(3) Total requirement of chemical fertilizer: 78-97-28 (Silae area)

Figure F.2-54 Farm Practice and Farm Inputs, Mungbean



Note: (1) Recommended varieties: BPI Mg 5, 7, 9
(2) Soil requirement: Clay loam to silty loam (PH 5.8 - 6.5)
(3) Fertilizer requirement: 21-21-21

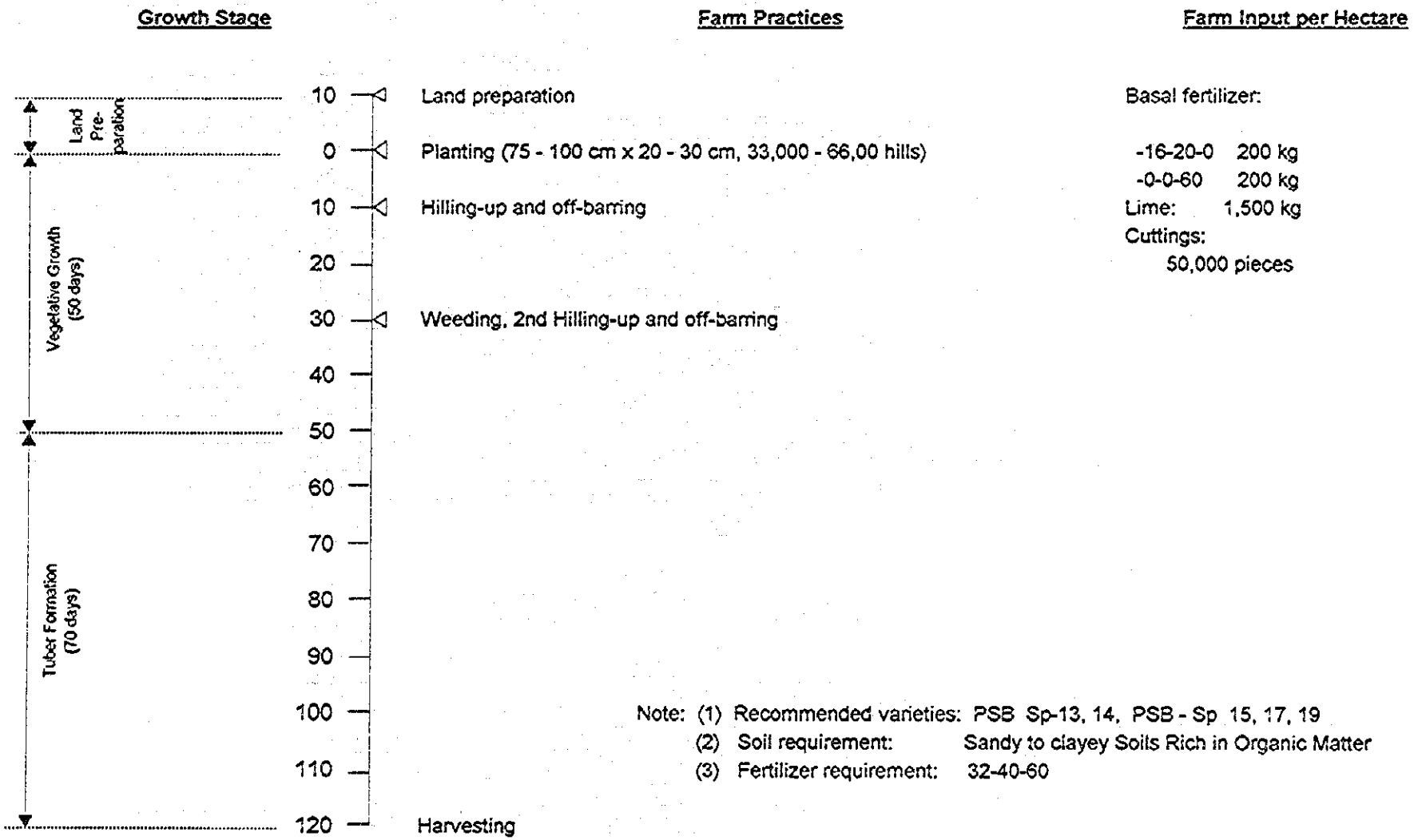
Figure F.2-55 FARM PRACTICES AND INPUT REQUIREMENT, PEANUT



Farm Practices	Farm Input per Hectare
Start of land preparation	Basal fertilizer:
Sowing (1 m width bed, 30 cm x 20 cm, 2 - 3 seeds/hill)	14-14-14 200 kg
	Soil inoculant 200g
Start of weeding/cultivation	Seeds: 120 kg (shelled)
Ridging	
Start of intercultivation	
	Insecticides:
	- e.g. Azodrin 202R 3 lit.
Last irrigation	
Harvesting	

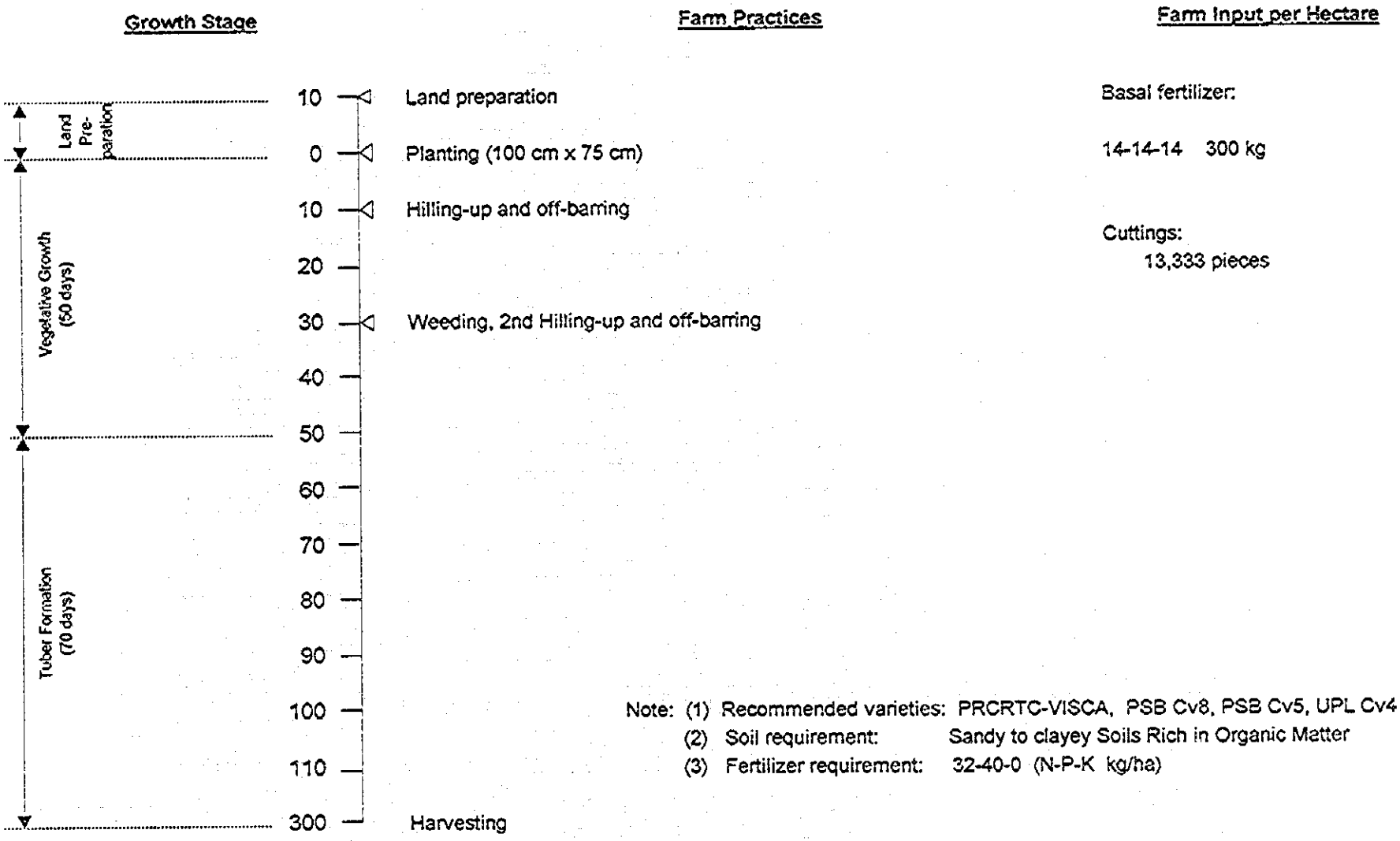
Note: (1) Recommended varieties: Ex. BPI Pn 9, 8, 2
(2) Soil requirement: Sandy Loam to Clay Loam
(3) total of chemical fertilizers: 28-28-28 (N-P-K)

Figure F.2-56 FARM PRACTICES AND INPUT REQUIREMENT, SWEET POTATOES



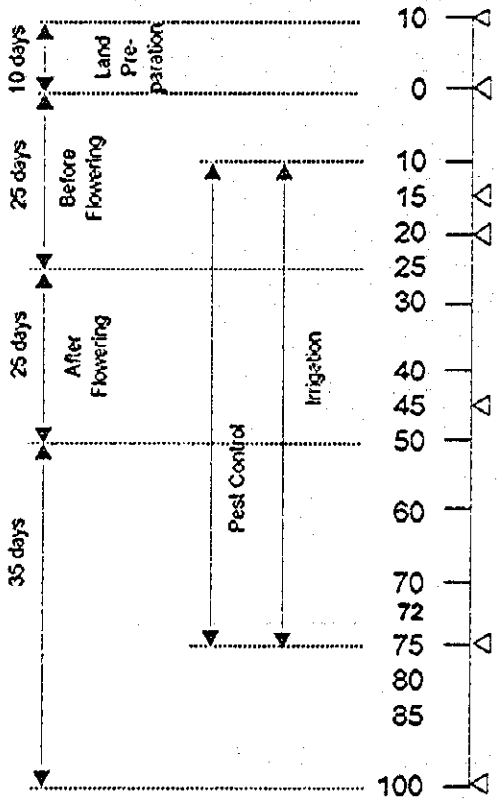
Note: (1) Recommended varieties: PSB Sp-13, 14, PSB - Sp 15, 17, 19
(2) Soil requirement: Sandy to clayey Soils Rich in Organic Matter
(3) Fertilizer requirement: 32-40-60

Figure F.2-57 FARM PRACTICES AND INPUT REQUIREMENT, CASSAVA



Note: (1) Recommended varieties: PRCRTC-VISCA, PSB Cv8, PSB Cv5, UPL Cv4
(2) Soil requirement: Sandy to clayey Soils Rich in Organic Matter
(3) Fertilizer requirement: 32-40-0 (N-P-K kg/ha)

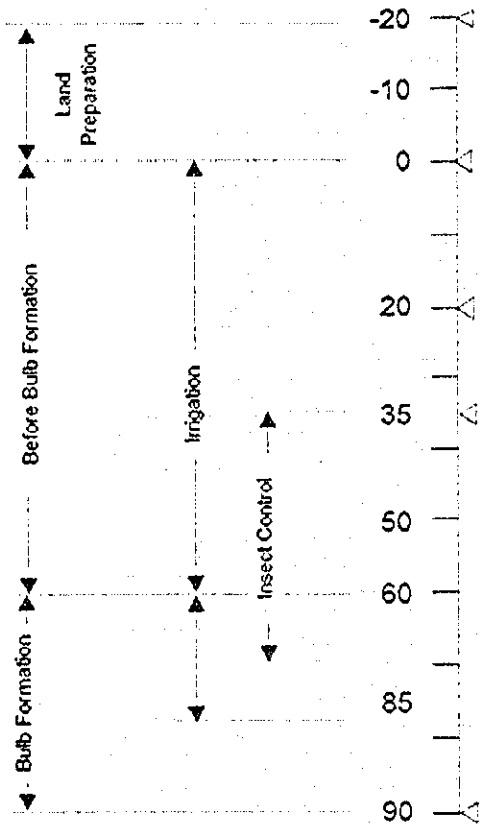
Figure F.2-58 FARM PRACTICES AND INPUT REQUIREMENT, VEGETABLE (SQUASH)



Growth Stage	Farm Practices	Farm Input per Hectare
10	Start of land preparation	Seeds: 2 kg Basal fertilizer: 16-20-0 320 kg 0-0-60 55kg - Animal manure/Compost, 12 ton
0	Sowing (2m x 1m, 5,000 hills/ha 3 seeds/hill)	
10		
15	Start of weeding/hilling-up	
20	Top dressing/off-burying/mulching	Top-dressing fertilizer: - Urea 50 kg Insecticides: - e.g. Malathion 2.0 lit.
25		
30		
40		
45	Last weeding	
50		
60		
70		
72		
75	1st Harvesting	
80		
85		
100	Last Harvesting	

Note: (1) Recommended varieties: e.g. BPI Golden, BPI Aroman
(2) Soil requirement: SiCl - CL
(3) Total of chemical fertilizer requirement: 100-40-40

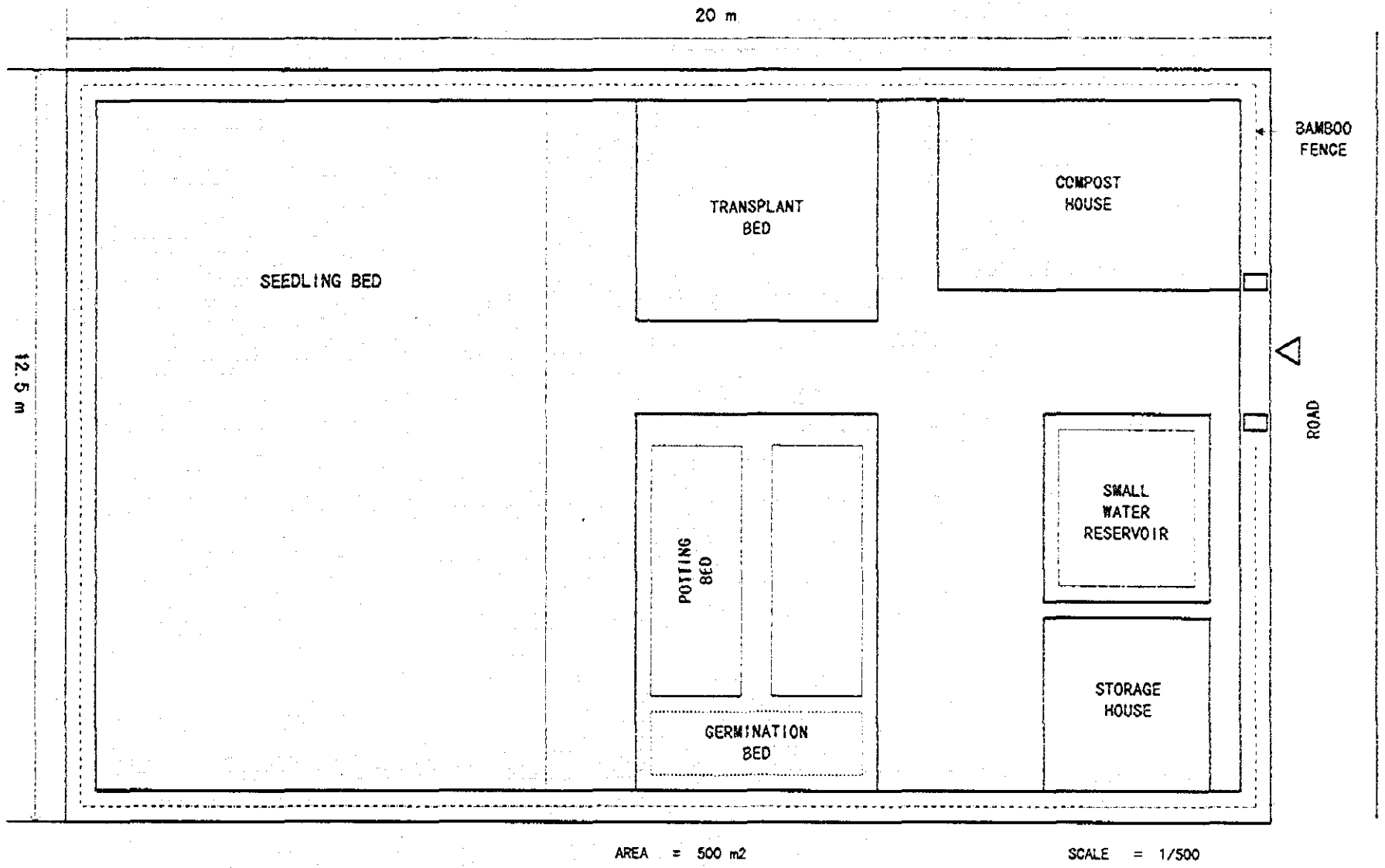
Figure F.2-59 FARM PRACTICES AND FARM INPUTS, GARLIC



Growth Stage	Farm Practices	Farm Input per Hectare
-20	Land preparation/Basal fertilizer application, Mulching	Fertilizer: -46-0-0, 50 kg -0-0-60, 55 kg -16-20-0, 320 kg
0	Seedling at the space of 25cm x 25cm	Seeds; 420 kg (25,000 bulbs)
20	Start of irrigation	Insecticides; e.g. - Lannate EC, 1 qts (1x) - Malathion EC, 2 qts (2x)
35	Weeding	
90	Harvesting	

Note: (1) Recommended varieties: Ilocos White
(2) Soil requirement: Clay loam, to silty loam (PH: 5.5 - 7.0)
(3) Fertilizer requirement 75 - 65 - 35 (N - P - K)

FIGURE F.2-60 LAYOUT OF NURSERY



ANNEX G. ANIMAL HUSBANDRY AND INLAND FISHERIES

G.1 Basic Development Plan

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G.2 Feasibility Study

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Table G.1-1 Livestock and Poultry Production in the Philippines (1980-1995)

Year	Carabao	Cattle	Hog	Goats	Chicken	Duck
1980	2,849,420	1,882,860	7,933,630	1,691,250	52,567,960	4,667,010
1981	2,849,940	1,939,950	7,758,120	1,696,000	57,723,850	4,782,740
1982	2,908,450	1,941,650	7,794,610	1,783,180	59,718,310	4,710,700
1983	2,946,150	1,937,520	7,979,600	1,859,390	62,253,480	5,267,460
1984	3,021,650	1,848,950	7,612,650	2,362,010	59,160,830	5,761,160
1985	2,982,840	1,786,390	7,303,980	2,190,750	52,398,700	5,221,160
1986	2,984,450	1,814,460	7,274,830	2,176,930	53,006,580	5,207,860
1987	2,865,260	1,746,850	7,038,303	2,015,510	53,248,210	5,252,320
1988	2,890,030	1,700,010	7,580,520	2,120,110	60,321,480	5,833,270
1989	2,841,850	1,681,650	7,908,500	2,212,250	65,912,690	6,500,510
1990	2,764,950	1,629,230	7,989,990	2,192,630	69,528,470	7,236,270
1991	2,646,841	1,676,786	8,079,341	2,122,018	78,239,951	8,267,690
1992	2,576,842	1,730,670	8,021,897	2,306,380	81,525,209	8,339,808
1993	2,575,765	1,913,861	7,953,670	2,562,362	87,157,519	8,706,783
1994	2,559,664	1,936,049	8,226,529	2,632,956	93,109,711	8,186,877
1995	2,707,826	2,020,880	8,941,190	2,825,509	96,215,725	9,050,653

Source: Bureau of Agricultural Statistics, Department of Agriculture

Table G.1-2 Livestock and Poultry Population by Region, 1995

Region		Carabao	Cattle	Hog	Goats	Chicken	Duck
CAR		100,090	61,020	251,650	21,237	1,319,477	191,691
I	Ilocos	161,721	231,350	402,060	26,883	5,380,226	515,704
II	Cagayan Valley	264,320	116,770	476,640	73,691	4,938,777	1,098,016
III	Central Luzon	181,893	138,480	1,235,750	163,134	15,430,550	2,045,332
IV	Southern Tagalog	240,827	219,430	1,353,450	201,249	19,228,054	1,034,482
V	Bicol	266,695	122,560	519,050	102,270	3,675,045	299,221
VI	Western Visayas	277,066	176,520	685,870	307,174	10,478,508	1,209,498
VII	Central Visayas	138,134	276,650	772,310	441,625	8,462,666	230,610
VIII	Eastern Visayas	181,064	40,260	697,780	68,731	3,960,081	216,764
IX	Western Mindanao	184,130	108,250	483,170	214,342	5,203,825	308,784
X	Northern Mindanao	159,261	218,860	665,640	241,718	5,893,880	377,796
XI	Southern Mindanao	234,298	171,330	1,032,430	404,110	7,558,636	716,906
XII	Central Mindanao	318,327	139,400	365,390	317,395	3,929,101	805,849
NCR						756,899	

Source: Bureau of Agricultural Statistics, Department of Agriculture

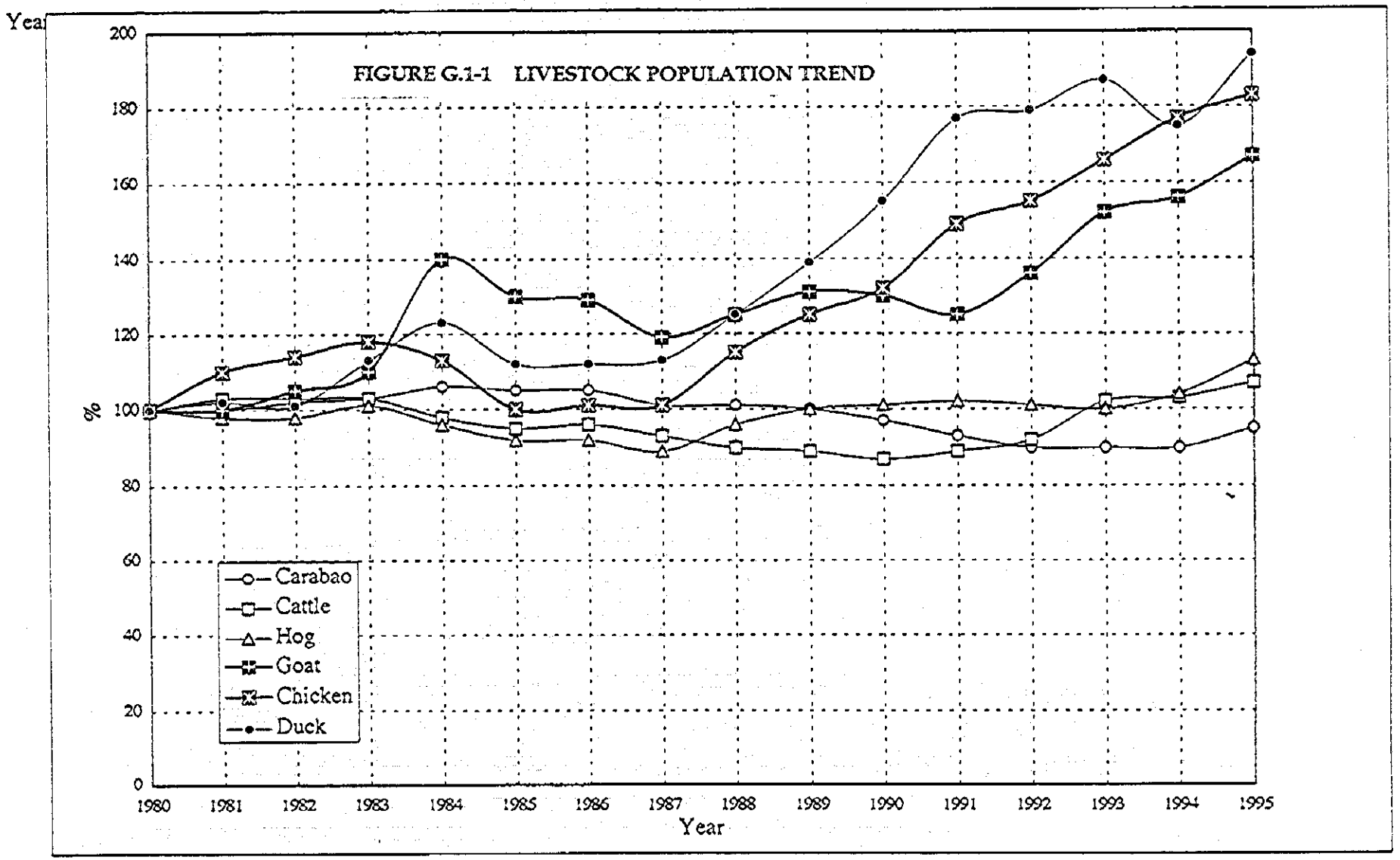


FIGURE G.1-1 LIVESTOCK POPULATION TREND
%
Year
Carabao
Cattle
Hog
Goat
Chicken
Duck
0
20
40
60
80
100
120
140
160
180
200
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995

FIGURE G.1-2 LIVESTOCK PRODUCTION

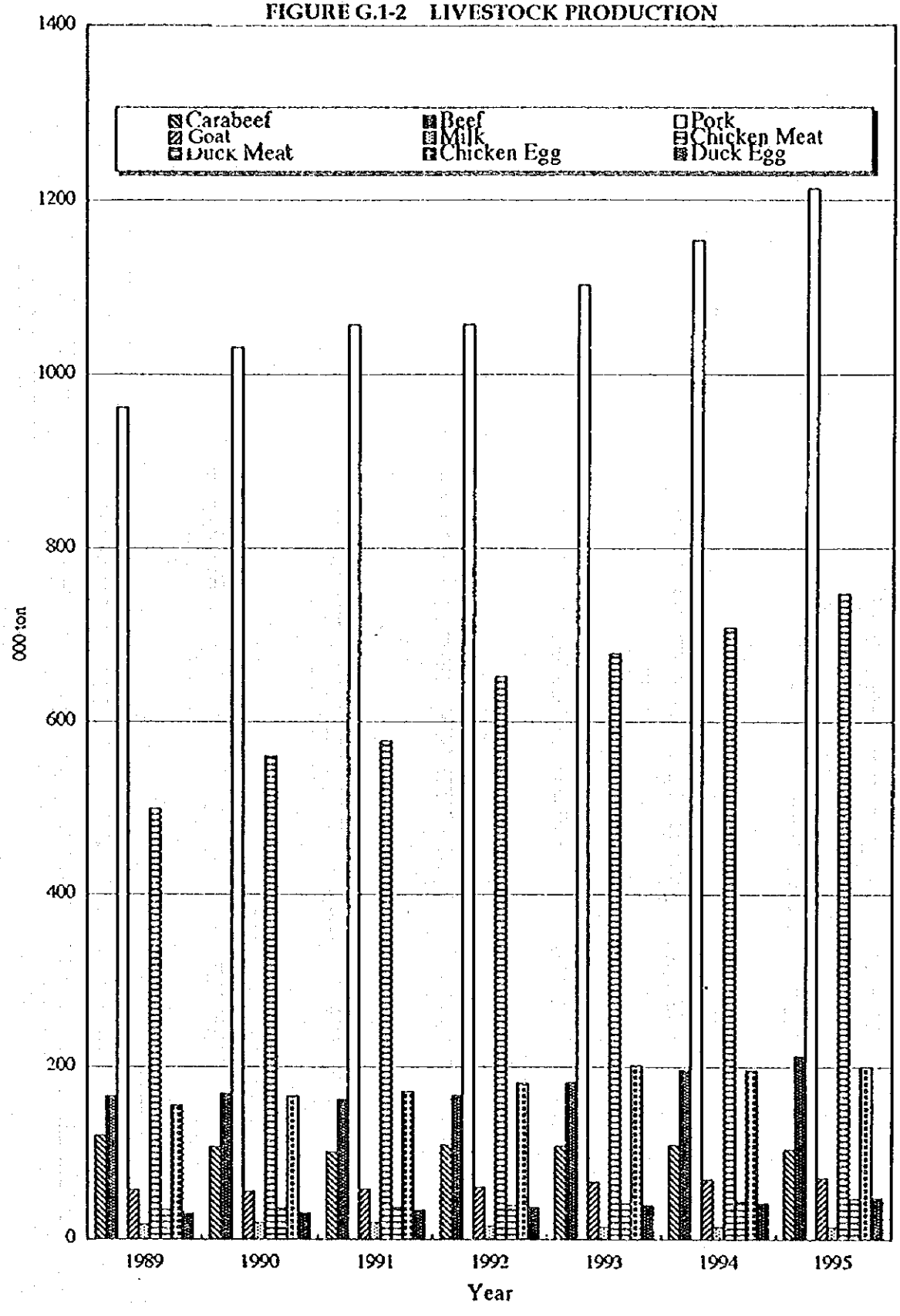


Table G.2-1 Animal Raised in the Study Area

Study Area	Sappaac	Cofcaville	Marangog	Silae
Region	CAR	Region II	Region VIII	Region X
Province	Abra	Quirino	Leyte	Bukidnon
Respondents	n = 12	n = 15	n = 7	n = 10
Vehicular Road to Barangay Hall	Good	Exsistence	None	Good
Carabao	100 %	86 %	85 %	50 %
(Average Number)	(1.9)	(1.6)	(2.1)	(0.6)
Cattle	58 %	20 %	14 %	30 %
(Average Number)	(1.2)	(0.3)	(0.2)	(0.2)
Goats	83 %	13 %	57 %	33 %
(Average Number)	(2.9)	(0.4)	(1.7)	(1.7)
Pigs	75 %	73 %	43 %	60 %
(Average Number)	(1.3)	(1.0)	(1.2)	(1.2)
Poultry	91 %	100 %	100 %	50 %
(Average Number)	(3.8)	(11.2)	(5.0)	(5.0)
Duck	8 %	-	-	-
(Average Number)	(1.0)	-	-	-
Horse	-	-	-	20 %
(Average Number)	-	-	-	(1.0)
Veterinary Support	Yes	Yes	No	No
Livestock Dispersal Program	Yes	Yes	No	No
Main Market	Bangued	Madella	Hilongos	Malaybalay
PCC Station	PCC at MMSU Batac Ilocos Norte	PCC at CSU Piat Cagayan	PCC at VISCA Baybay Leyte	PCC at CMU Musuan Bukidnon
FMD Incidence	Yes	No	No	No

Table G.2-2 Livestock Products Prices
(As of October, 1996)

Region	Metro Manila	CAR	Region II	Region VIII	Region X
Province		Abra	Quirino	Leyte	Bukidnon
Study Area		Sappaac	Cofcaville	Marangog	Silae
Main Market	Paco Market	Bangued	Maddela	Hilongos	Malaybalay
Beef	P 130/kg	P 120/kg	P 85/kg	P 120/kg	P 100/kg
Carabeef	-	-	P 75/kg	P 110/kg	-
Pork	P 100/kg	P 90/kg	P 80/kg	P 90/kg	P 90/kg
Broiler	P 70/kg	-	P 75/kg	P 70/kg	P 65/kg
Egg (Commercial)	P 2.5-3.25/pc.	P 3.00/pc.	P. 2.50/pc.	P 2.50/pc.	P 2.50-2.75/pc.
Egg (Native)	-	P 4.00/pc.	P 3.00/pc.	P 2.50-3.50/pc.	-
Carabao Milk	-	-	P 35.00/liter	-	-

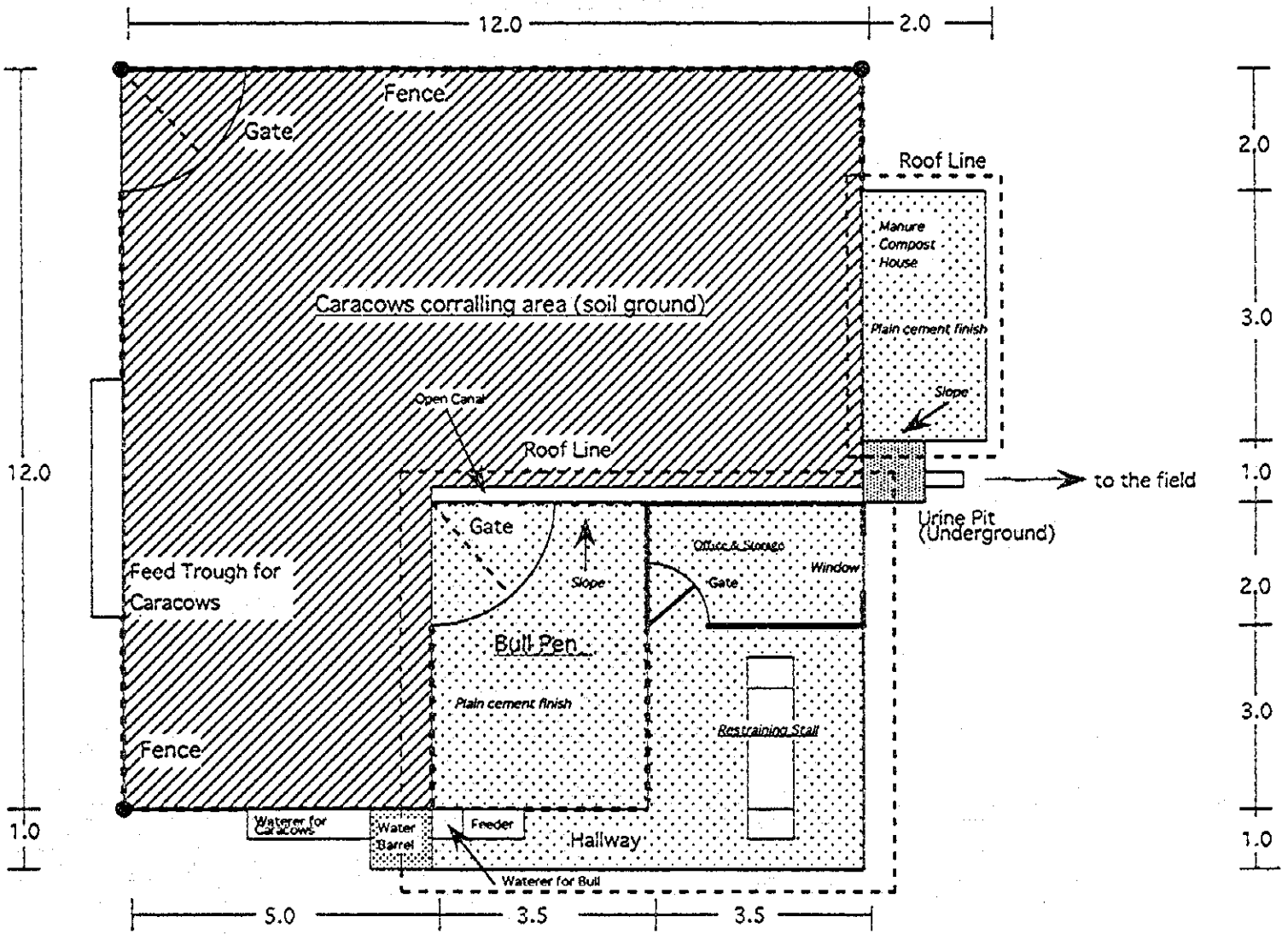
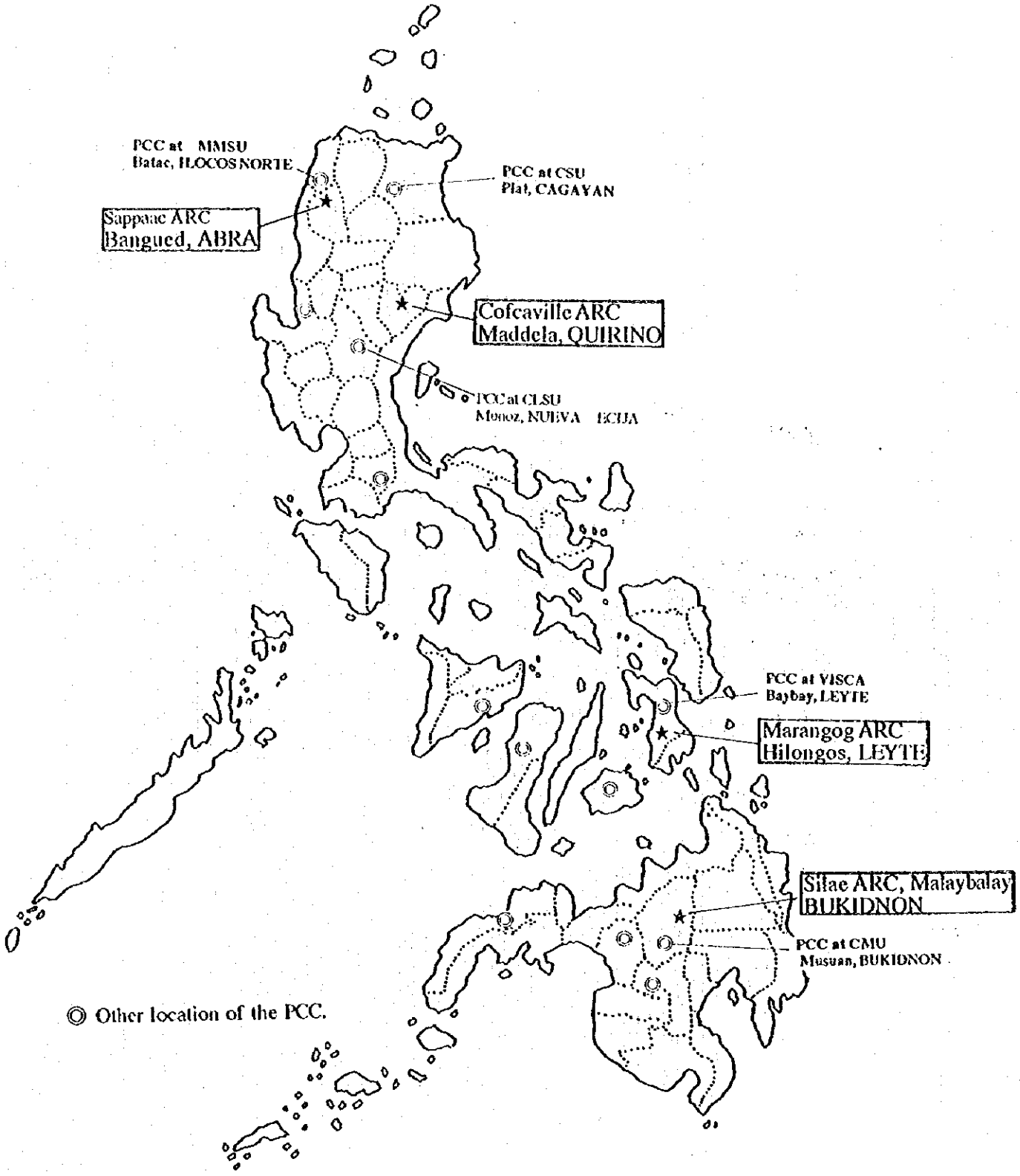


FIGURE G.2-1 LAYOUT OF BREEDING STATION (BULL CAMP)

FIGURE G.2-2 PCC NETWORK AND THE STUDY AREAS



ANNEX H. FARMERS' ORGANIZATION AND SUPPORTING SERVICES

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1. History of Cooperatives
2. Types of Cooperative Organization
3. Organization Structure
4. Success and Failure of Cooperatives
5. Development Plan of the Cooperative

Table H.1-1 Marketing Outlet of Farm Produce by Model Area

(Unit: % = 50 N)

Model Area	NFA	Local Traders	Cooperatives	Merchant/ Peddlers	Direct to Consumers	Export	Home Consumption	Public Market
1. Sappa-ac ARC Bangued, Abra, CAR	0.00	24.00	0.00	0.00	12.00	2.00	0.00	0.00
2. Talugtog ARC San Juan, La Union, Region I	0.00	16.00	0.00	0.00	2.00	0.00	30.00	0.00
3. Cofcaville ARC Maddela, Quirino, Region II	0.00	100.00	0.00	0.00	6.00	0.00	0.00	0.00
4. Montilla Est. ARC, Tuyo Balanga, Bataan, Region III	0.00	72.00	0.00	0.00	40.00	0.00	0.00	8.00
5. Maulawin ARC Calauag, Quezon, Region IV	0.00	42.00	0.00	0.00	10.00	0.00	18.00	0.00
6. Pagasa ARC Tinambac, Camarines Sur Region V	0.00	92.00	4.00	0.00	0.00	0.00	0.00	0.00
7. Abiera Estate Altavas, Aklan, Region VI	0.00	84.00	0.00	2.00	2.00	0.00	0.00	0.00
8. San Vicente ARC Trinidad, Bohol, Region VII	0.00	74.00	26.00	0.00	4.00	0.00	0.00	0.00
9. Marangog ARC Hilongos, Leyte, Region VIII	0.00	84.00	0.00	0.00	0.00	0.00	0.00	0.00
10. Silae ARC Malaybalay, Bukidnon Region X	0.00	92.00	0.00	2.00	0.00	0.00	0.00	2.00
11. Kipalili ARC Asuncion, Davao, Region XI	0.00	96.00	0.00	14.00	2.00	0.00	0.00	0.00
12. Mat-i ARC Surigao City, Surigao del Sur, Region XIII	0.33	94.00	6.00	0.00	4.00	0.00	0.00	0.00
Total	0.33	870.00	36.00	18.00	82.00	2.00	48.00	10.00
Average	0.03	72.50	3.00	1.50	6.83	0.17	4.00	0.83

Source: Farmer's Agro-Socio-Economic Survey, JICA Study Team, 1996

Table H.1-2 Farmers Response as to Whether Getting Reasonable Price for Farm Produce

(Unit: % = 50 N)

Model Area	Yes	No
1. Sappa-ac ARC Bangued, Abra, CAR	16	24
2. Talugtog ARC San Juan, La Union, Region I	22	10
3. Cofcaville ARC Maddela, Quirino, Region II	12	86
4. Montilla Est. ARC Balanga, Bataan, Region III	12	64
5. Maulawin ARC Calauag, Quezon, Region IV	28	30
6. Pagasa ARC Tinambac, Camarines Sur Region V	52	44
7. Abiera Estate Altavas, Aklan, Region VI	22	60
8. San Vicente ARC Trinidad, Bohol, Region VII	30	62
9. Marangog ARC Hilongos, Leyte, Region VIII	8	80
10. Silae ARC Malaybalay, Bukidnon Region X	6	88
11. Kipalili ARC Asuncion, Davao, Region XI	18	82
12. Mat-i ARC Surigao City, Surigao del Sur, Region XIII	26	74
Average	21	59

Source: Farmer's Agro-Socio-Economic Survey, JICA Study Team, 1996

Table H.1-3 Reasons Why Not Getting Reasonable Prices by Model Area

(Unit: % = 50 N)

Model Area	Low Price	Price Control	Unstable Price	Transport Problem	Lack of Market Info.	High Freight Cost	Supply Dependent	Competition	No Group Marketing	Inaccessi-bility	High Farm Inputs
1. Sappa-ac ARC Bangued, Abra, CAR	12.00	12.00	0.00	38.00	2.00						
2. Talugtog ARC San Juan, La Union, Region I	2.00	6.00	2.00	14.00							
3. Cofenville ARC Maddela, Quirino, Region II	62.00	4.00	0.00	96.00		4.00					4.00
4. Montilla Est. ARC Balanga, Bataan, Region III	44.00	4.00	4.00	44.00	36.00		2.00				
5. Maulawin ARC Calauag, Quezon, Region IV	24.00		2.00	50.00			2.00	6.00			
6. Pagasa ARC Tinambac, Camarines Sur Region V	20.00		4.00	96.00							
7. Abiera Estate Altavas, Aklan, Region VI	36.00	12.00	4.00	80.00						36.00	4.00
8. San Vicente ARC Trinidad, Bohol, Region VII	54.00	4.00		88.00					16.00		
9. Marangog ARC Hilongos, Leyte, Region VIII	38.00	30.00		86.00							
10. Silae ARC Malaybalay, Bukidnon Region X	80.00			78.00							
11. Kipalili ARC Asuncion, Davao, Region XI	76.00			92.00							4.00
12. Mat-i ARC Surigao City, Surigao del Sur, Region XIII	26.00	8.00	2.00	84.00							
Average	39.50	6.67	1.50	70.50	3.17	0.33	0.33	0.50	1.33	3.00	1.00

Source: Farmer's Agro-Socio-Economic Survey, JICA Study Team, 1996

Table H.1-4 DA National Research Centers

DA Unit	National Centers/Commodity	Location
Staff Bureaus		
1. BAI	1. Alabang Stock Farm	Alabang, Metro Manila
	2. Buswanga Experimental and Breeding Station	Buswanga, Palawan
	3. National Forage and Pasture Development Center	Datiwak, Zamboanga del Sur
	4. Philippine Animal Health Center	BAI Compound, Quezon City
	5. Animal Products and By-Products Training center	Marulas, Valenzuela, Metro Manila
	6. Milagros Livestock Production Center	Milagros, Masbate
	7. Asean Sheep and Goat Dev't. Center	Pagadian, Zamboanga del Sur
	8. Palayan Stock Farm	Palayan City, Nueva Ecija
	9. Tanay Livestock Development Center	Tanay, Rizal
	10. Dumarao Stock Farm	Dumarao, Capiz
2. BFAR	1. National Freshwater Fisheries Technology Research Center	CLSU, Munoz, Nueva Ecija
	2. National Fisheries Biological Station Complex	Butong, Taal, Batangas
	3. National Brackishwater Aquaculture Technology Center	Pagbilao, Quezon
	4. Tanay Freshwater Experimental Station	Tanay, Rizal
	5. National Commercial Fisheries Development Center	Sangley Point, Cavite City, Cavite
3. BPI	1. Economic Garden Research Center	Los Banos, Laguna
	2. Central Research Station	San Andres, Manila
	3. Baguio-Bagulas Research Station	Baguio City
	4. Davao Research Center	Bago Oshiro, Davao City
	5. La Granja Research Center	La Carlota City, Negros Occidental
Attached Agencies		
1. FIDA	1. Mindoro Fiber Seed and Experimental Station	Victoria, Oriental Mindoro
	2. Camarines Sur Fiber Seedbank	Tigaon, Camarines Sur
	3. Sorsogon Fiber Seedbank	Casiguran, Sorsogon
	4. Eastern Visayas Regional Fiber Experiment Station	Sta. Fe, Leyte
	5. Cablangan Fiber Seed Station	Mondragon, Northern Samar
	6. Cagbayang Abaca Seedbank	Calbayog City, Samar
	7. Zamboanga fiber Regional Experiment Station and Seedbank	Labason, Zamboanga del Norte
	8. Manambulan Fiber Research and Trial Station	Manambulan, Davao City
	9. Sto. Tomas Fiber Resarch and Seed Station	Sto. Tomas, Davao del Norte
	10. Mindanao Fiber Experiment Station	Trento, Agusan del Sur
2. NAPHIRE	1. National Postharvest Institute for Research and Extension	Munoz, Nueva Ecija
3. PHILRICE	1. Philippine Rice Institute	Munoz, North Cotobato
	2. Midsayap Experiment Station	Midsayap, North Cotobato
	3. Cagayan Valley Experiment Station	San Mateo, Isabela

Source: Bureau of Agricultural Research, DA

Table H.1-5 Regional Integrated Agricultural Research Centers (RIARCs)

Region	Station	Development Zone	Location
I	Ilocos Integrated Agricultural Research Center (ILIARC)	Lowland Irrigated, Hillyland	DMMSU Compound Bacnotan, La Union
II	Cagayan Valley Integrated Agricultural Research Center (CVIARC) formerly Ilagan Experiment Station	Lowland Irrigated, Hillyland	Ilagan, Isabela
III	Central Luzon Integrated Agricultural Research Center (CLIARC) formerly Maria Sinukuan Stock Farm	Lowland Irrigated, Upland	Magalang, Pampanga
IV	Southern Tagalog Intergated Agricultural Research center (STIARC) formerly Don Manuel L. Roxas Memorial Regional Integrated Agricultural Research Station	Upland	Lipa City, Batangas
V	Bicol Integrated Agricultural Research Center (BIARC) formerly Bicol Experiment Station	Lowland Irrigated, Lowland Rainfed	Pili, Camarines Sur
VI	Western Visayas Integrated Agricultural Research Center (WESVIARC) formerly Visayas Experiment Station	Lowland Irrigated, Lowland Rainfed	Hamungaya, Jaro, Iloilo
VII	Central Visayas Integrated Agricultural Research Center (CENVIARC) formerly Bohol Experiment Station	Lowland Irrigated, Lowland Rainfed, Upland	Ubay, Bohol
VIII	Eastern Visayas Integrated Agricultural Research Center (EVIARC) formerly Abuyog Experiment Station	Lowland Irrigated, Upland, Hillyland	Abuyog, Leyte
IX	Western Mindanao Integrated Agricultural Research Center (WESMIARC) formerly Ipil Experiment Station	Lowland Rainfed, Upland	Ipil, Zamboanga del Sur
X	Northern Mindanao Integrated Agricultural Center (NOMIARC) formerly Dalwangan Experiment Station	Upland, Hillyland	Dalwangan, Malay-balay,Bukindnon
XI	Southern Mindanao Integrated Agricultural Research Center (SMIARC) formerly Davao Experiment Station	Upland	Bago Oshiro, Davao City
XII	Central Mindanao Integrated Agricultural Research Center (CEMIARC) formerly Amas Experiment Station	Upland	Amas, Kidapawan, Noeth Cotabato
CAR	Cordillera Integrated Agricultural Research Center (CIARC) formerly Baguio Dairy Stock Farm	Upland, Hillyland	Baguio City, Benguet
ARMM			Sultan Kudarat
B	(CARAGA)		Tagbina

Source: Bureau of Agricultural Research, DA

Table H.1-6 Research and Outreach Stations (ROSs) (1/3)

Region	Station	Renamed Station	Location	Thrusts/Priorities
I	Burgos Breeding Station	ILIARC-ROS for Highland	Burgos, Ilocos Sur	Highland, Livestock
	Pangasinan Breeding Station	" for Hillyland	Sual, Pangasinan	Highland, livestock
	Batac Experimental Seed Farm	" for Upland	Batac, Ilocos Norte	Upland
	Research, Training & Extension Complex	" for Lowland Rainfed	Sta. Barbara, Pangasinan	Lowland Rainfed, Livestock
	Dingras Experiment Station & Seed Farm	" for Lowland Irrigated	Dingras, Ilocos Norte	Lowland Irrigated
	Marine Finfish Breeding center	" for Marine/Brackish water	Alaminos, Pangasinan	Marine/Brackish water
II	Tapaya Stock Farm	CVIARC-ROS for Hillyland	Bagabag, Nueva Viscaya	Hillyland
	Timberland Stock Farm	" for Upland	Aglipay, Quirino	Upland/Hillyland
	Basco Breeding Station	" for Island Agriculture	Basco, Batanes	Rainfed Sloping,Coastal Land and Marine Water
	Agricultural Pilot Center	" for Lowland,Rainfed/Irrigated	Iguig, Cagayan	Lowland Rainfed/Irrigated and Freshwater
	San Mateo Freshwater Fish Farm	" for Freshwater	San Mateo, Isabela	Inland Aquaculture
III	KB Training Center	CLIARC-ROS for Hillyland	Pilar, Bataan	Hillyland
	Sacobia Seed Farm	" for Upland	Bamban, Tarlac	Upland
	Tarlac Breeding Station	" for Lowland/Rainfed/Irrigated	San Miguel, Tarlac	Lowland Rainfed/Irrigated
	Bamban Sea Farming & Bangus Hatchery	" for Marine Water	Masinloc, Zambales	Marine Waters
	Bulacan Brachishwater Demonstration and Training center	" for Blackishwater	Hagonoy, Bulacan	Brackishwater
	Magsaysay Memorial Fish Nursery	" for Freshwater	Castillejos, Zambales	Freshwater
IV	Rizal Research Outreach Station	STIARC-ROS for Hillyland (Semi-Temperate)	Tanay, Rizal	Hillyland Medium Elevation
	Palawan Research Outreach Station	" for Hillyland (Tropic)	Puerto Princesa City, Palawan	Hillyland Low Elevation
	Quezon Research Outreach Station	" for Upland	Tiaong, Quezon	Upland, Coconut-Based
	Oriental Mindoro R O S	" for Lowland	Victoria,Oriental Mindoro	Lowland, Crops
	Brackishwater Fisheries R O S	" for Brackishwater	Naujan,Oriental Mindoro	Brackishwater
	Freshwater Fisheries R O S	" for Freshwater	Los Banos, Laguna	Freshwater
V	Virac Seed farm	BIARC-ROS for Hillyland	Virac, Catanduances	Hillyland, Crop-Livestock Integration, and Fishery
	Sorsogon Dairy Farm	" for Upland Rainfed and Marine Fisheries	Gubat, Sorsogon	Upland Rainfed, Livestock and Marine Waters
	Masbate Artificial Breeding Station	" for Upland Plain and Marine Fisheries	Milagros, Masbate	Upland Plain, Crop-Livestock Integration & Marine Waters
	Albay Experiment Station	" for Upland Plain and Coastal/ Marine Fisheries	Tabaco, Albay	Upland Plain, Crops, and Coastal/Marine Waters
	Daet Seed farm	" for Lowland Rainfed and Brackishwater	Daet, Camarines Norte	Lowland Rainfed, Crops, and Brackishwater
	Buhi Fish Farm and Nursery	" for Freshwater	Buhi, Camarines, Sur	Freshwater

Table H.1-6 Research and Outreach Stations (ROSs) (2/3)

Region	Station	Renamed Station	Location	Thrusts/Priorities
VI	Molibili Soil Conservation Unit	WESVIARC-ROS for Hillyland and Upland Farming System	Roxas City, Capiz	Hillyland and Upland
	Guimaras Experiment Station	" for Upland and Plantation Crop (Fruits)	Jordan, Guimaras	Upland and Plantation Crops
	La Carlota Stock Farm	" for Cattle, Swine, and Pasture and Forage	La Carlota City, Negros Occidental	Livestock, Pasture and Forage, and Upland
	Iloilo Breeding station	" for Small Ruminants, Poultry, and Upland Crops	Calinog, Iloilo	Livestock, Poultry, and Upland
	Malay Breeding Station	" for Plantation Crops and Swine	Malay, Aklan	Plantation Crops & Livestock
	Himamaylan Fish Farm	" for Marine Water/ Brackishwat	Himamaylan, Negros Occidental	Marine Water and Brackishwater
VII	Ubay Stock farm	CENVIARC-ROS for Hillyland	Ubay, Bohol	Hillyland
	Southern Cebu Farming Systems Research and Development Station	" for Upland	Argao, Cebu	Upland
	Mandaue Experiment Station	" for Lowland, Rainfed	Mandaue City, Bohol	Lowland Rainfed
	Bohol Agricultural Promotions Center	" for Lowland, Irrigated	Tagbilaran City, Bohol	Lowland Irrigated
	Calape Fishery Complex	" for Marine Water/ Brackishwat	Calape, Bohol	Marine Waters & Brackishwater
	Carmen-Lake Danao Fishery Complex	" for Freshwater	Carmen, Cebu	Freshwater
VIII	Romualdez Experiment Station	EVIARC-ROS for Upland farming Systems Development	Babatngon, Leyte	Upland and Farming Systems Development
	Salcedo Seed Farm	" for Upland Soils Development	Salcedo, Eastern Samar	Upland and Crop-Livestock Integration
	Iriwahan Agricultural Development Center	" for Lowland Farming Systems Development	Catubig, Northern Samar	Lowland, Aquatic, and Farming Systems Development
	Regional Goat and Sheep Production Training Center	" for Livestock Development	Malitbog, Southern Leyte	Livestock and Upland
	Gandara Seed Farm	" for Postharvest Production Technology Development	San Jorge, Samar	Lowland Rainfed, Crops, and Brackishwater
	Guiuan Fishery Complex	" for Marine Development	Guiuan, Eastern Samar	Marine Water
IX	La Paz Experiment Station	WESMIARC-ROS for Hillyland and Vegetables	La Paz, Zamboanga City	Hillyland and Vegetables
	Betinan Multiple Cropping Center	" for Upland	Betinan, Zamboanga Del Sur	Upland, Lowland Rainfed, and Crops
	Basilan Breeding Station	" for Upland and Livestock	Lamitan, Basilan	Upland and Livestock
	Mindanao Livestock Production Center	" for Upland Crops and Livestock	Kalawit, Zamboanga Del Norte	Upland, Crops, and Livestock
	R.T. Lim Carabao Complex	" for Agro-forestry and Livestock	R.T. Lim, Zamboanga Del Sur	Upland, Agro-forestry, and Livestock
	Ipil Brackishwater Demonstration Fish Farm	" for Marine Water & Brackishwa	Ipil, Zamboanga Del Sur	Marine Waters and Brachishwater

Table H.1-6 Research and Outreach Stations (ROSs) (3/3)

Region	Station	Renamed Station	Location	Thrusts/Priorities
X	Claveria Experiment Station	NOMIARC-ROS for Hillyland and vegetables	Claveria, Misamis Oriental	Hillyland, vegetables, and Crop-Livestock Integration
	Talacogon Service Center	" for Upland/Lowland Irrigation and Cereals	Talacogon, Agusan Sur	Upland, Lowland Irrigated, and Cereals
	Bukidnon Agricultural and Fishery Complex	" for Lowland Rainfed	Kibawe, Bukidnon	Lowland Rainfed and Crops
	Mainit Artificial Breeding Center	" for Livestock	Mainit, Surigao Norte	Livestock
	Kicharao Fish Farm	" for Brackishwater/Freshwater and Fish-Livestock Integration	Kitcharao, Agusan Norte	Brackishwater, Freshwater, and Fish-Livestock Integration
	National Bangus Breeding Project	" for Marine Water/Brackishwate	Baliango, Misamis Oriental	Marine Waters and Brackishwater
XI	Tupi Experiment Station and Seed Farm	SMIARC-ROS for Plantation and Vegetable Crops	Tupi, South Cotabato	Plantation and vegetable Crops
	Mati Artificial Breeding Center	" for Integrated Farming Systems	Mati, Davao Oriental	Crop-Livestock-Fish Integration and Upland
	Tagbina Artificial Breeding Center	" for Crop-Livestock Integration	Tagbina, Surigao Del Sur	Crop-Livestock Integration
	Davao Breeding Station	" for Livestock Breeding	Bago Oshiro, Davao City	Livestock and Upland
	National Bangus Breeding center	" for Marine Waters and Brackishwater	Sta. Cruz, Davao DelSur	Marine Waters and Brackishwater
	Nabunturan Fershwater Development Fish Farm and Nursery	" for Freshwater	Nabunturan, Davao Province	Freshwater
XII	Torong-Torong Breeding Station	CEMIARC-ROS for Livestock	Torong-Torong, Lanao Del Norte	Hillyland and Livestock
	Aroman Seed Farm	" for Hillyland	Carmen, Cotabato	Upland and Crops
	MSU-BFAR Limnological Station	" for Farm Resources	MSU Campus, Marawi City	Farm Resources/Freshwater
	Lala Brackishwater Fisheries Station	" for Brackishwater	Lala, Lanao Del Norte	Brackishwater
	Kidapawan Experiment Station	" for Upland/Plantation Crops	Kidapawan, Cotabato	Upland and Plantation Crops
CAR	Tabuk Breeding Station	CIARC-ROS for Highland/Upland	Tabuk, Ifugao	Highland and Upland
	Kiangan Agricultural Research Station	" for Hillyland/Upland	Kiangan, Ifugao	Highland and Upland
	Mt. Province Research & Outreach Station	" for Hillyland	Sagada, Mt. Province	Highland
	Luna Experiment and Production Station	" for Upland	Luna, Kalinga-Apayao	Upland
	San Isidro Fish Farm	" for Freshwater	San Isidro, Abra	Freshwater and Aquaculture

Table H.1-7 Farmer's Organizations/Association by Model Area

Reg.	Study Area	Name of Associations	Year Estab.	No. of Mem.	Activities	Major Source Of Fund/Income
CAR	Sappa-ac ARC	Sappa-ac Agrarian Reform Beneficiaries Multipurpose Cooperative	1992	42	1)Credit 2)Training 3)Sari-sari Store	n/a
I	Talugtog ARC	Talugtog Multipurpose Coop., Inc.	1994	45	1)Retail of consumer goods 2)Purchase palay from other coops	1)Capital share 2)CBU & loan from Pro'l LGU
II	Cofcaville ARC	Cofcaville Multipurpose Coop., Inc.	1991	64	1)Agricultural loan 2)Training	n/a
III	Montilla ARC	Tuyo Multipurpose Coop.	1991	24	n/a	1)CBU
IV	Maulawin ARC	ADAM, Maulawin	n/a	n/a	1)Credit Assistance 2)Community Strengthening 3)Building	n/a
V	Pagasa ARC	Pag-asa Bayanihan Farmers Multi-purpose Coop., Inc. (PBFMCI)	1993	27	1)Swine/Cattle/Carabao breeding (fattening for low breeders) 2)Fertilizer trading 3)Threshing	1)Member contribution 2)Capital share 3)Stock
VI	Abiera ARC	Cabugao-Dalipdip Cooperative, Cabugao	1992	51	1)Consumer Store(Stopped operation in 1996)	1)Consumer store income 2)CBU 3)Grain miller
VII	San Vicente ARC	San Vicente Farmers Organization	1992	n/a	n/a	n/a
VIII	Marangog ARC	Marangog farmers Multipurpose Coop.	1995	35	1)Multipurpose	1)Contributions of members at P100
X	Silae ARC	1)Silae United Farmers Multipurpose Coop. 2)GRUGAMA Multipurpose Coop. 3)Silae Lumad Farmers	1)1992 2)1992 3)1986	1)49 2)21 3)18	1)Consumer store, Credit finan. 2)Consumer store, Credit finan. 3)Consumer store	1)CBU, Income generating funds 2)CBU, Income generating funds 3)CBU, Income generating funds
XI	Kipalili ARC	1)Kipalili ARB Multipurpose Coop.(KA RBMCO) 2)Federation of Free farmers,Kipalili (FFF),Kipalili	1)1992 2)1990	1)127 2)28	1)Consumer Store, Nursery, Trading 2)Consumer Store, Production Credit	1)CBU, Membership Contribution 2)Membership Contribution
XIII	Mat-i ARC	1)Mat-i MPC, Pob, Surigao 2)Hubasan Mat-i Irrigators Consumers Coop.	1)1995 2)1996	1)28 2)46	1)Mat-i MPC, production loan 2)Hubasan Mat-i Irrigators Cosumers Coop, producton loan	1)n/a 2)n/a

Table H.1-8 Membership of People's Organization by Model Area

Reg.	Study Area	Farmers Cooperative			Irrigation Association			Civil Organization		
		Yes	No	Total	Yes	No	Total	Yes	No	Total
CAR	Sappa-ac ARC	31	15	46	0	22	22	2	22	24
I	Talugtog ARC	24	26	50	0	30	30	3	26	29
II	Cofcaville ARC	25	17	42	0	38	38	18	20	38
III	Montilla ARC	24	15	39	0	19	19	3	7	10
IV	Maulawin ARC	12	34	46	0	37	37	7	32	39
V	Pagasa ARC	14	33	47	0	36	36	9	29	38
VI	Abiera ARC	21	29	50	0	37	37	4	30	34
VII	San Vicente ARC	40	6	46	0	30	30	0	24	24
VIII	Marangog ARC	5	35	40	0	43	43	5	37	42
X	Silae ARC	29	19	48	0	38	38	21	21	42
XI	Kipalili ARC	22	26	48	0	38	38	30	12	42
XIII	Mat-i ARC	25	22	47	14	26	40	25	14	39
Total		272	277	549	14	394	408	127	274	401
%		50%	50%	100%	3%	97%	100%	32%	68%	100%

Source: Farmers Agro-Socio-Economic Survey, JICA Study Team, 1996

Table H.1-8 Activities of Farmer's Cooperatives by Model Area

Reg.	Study Area	Group Marketing Of Farm Products			Group Buying Of Farm Inputs			Availing Of Farm Credit			Availing Of New Seeds/Seedlings			Availing Of Farm Technology			Collective Use Of Farm Machinery		
		Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total
CAR	Sappa-ac ARC	1	10	11	1	10	11	2	10	12	3	2	5	5	7	12	0	10	10
I	Talugtog ARC	0	30	30	0	30	30	12	21	33	4	28	32	11	22	33	0	29	29
II	Cofcaville ARC	5	23	28	3	24	27	17	14	31	22	11	33	20	14	34	2	22	24
III	Montilla ARC	1	20	21	1	19	20	0	20	20	3	18	21	2	19	21	0	20	20
IV	Maulawin ARC	0	24	24	0	24	24	6	18	24	1	21	22	3	20	23	2	21	23
V	Pagasa ARC	4	12	16	3	11	14	8	6	14	12	5	17	11	5	16	10	3	13
VI	Abiera ARC	2	19	21	5	16	21	5	16	21	3	16	19	5	17	22	1	19	20
VII	San Vicente ARC	17	16	33	18	18	36	30	9	39	18	17	35	17	18	35	6	25	31
VIII	Marangog ARC	0	7	7	2	7	9	2	7	9	0	7	7	0	7	7	0	7	7
X	Silae ARC	13	13	26	14	10	24	21	4	25	22	6	28	13	13	26	3	21	24
XI	Kipalili ARC	5	38	43	7	35	42	4	37	41	14	28	42	11	31	42	2	40	42
XIII	Mat-i ARC	7	31	38	10	30	40	8	32	40	16	24	40	20	21	41	10	27	37
Total		55	243	298	64	234	298	115	194	309	118	183	301	118	194	312	36	244	280
%		18%	82%	100%	21%	79%	100%	37%	63%	100%	39%	61%	100%	38%	62%	100%	13%	87%	100%

Source: Farmers Agro-Socio-Economic Survey, JICA Study Team, 1996

Table H.1-9 Irrigation Association by Model Area

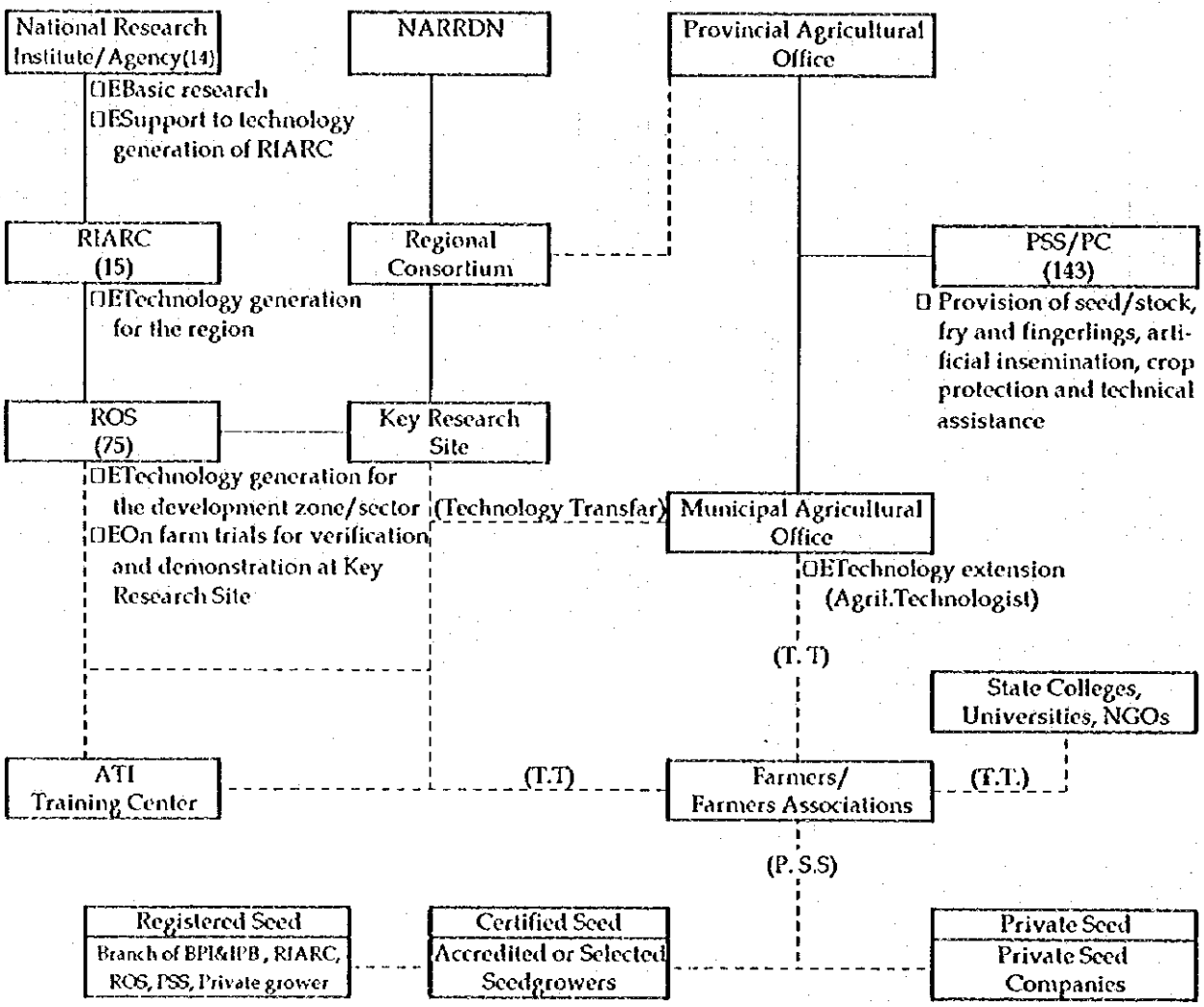
Reg.	Study Area	Name of Association	Year Estab.	No.of Mem.	Activities	Major Source Of Fund/Income
CAR	Sappa-ac ARC	none				
I	Talugtog ARC	none				
II	Cofcaville ARC	none				
III	Montilla ARC	none				
IV	Maulawin ARC	none				
V	Pagasa ARC	none				
VI	Abiera ARC	none				
VII	San Vicente ARC	none				
VIII	Marangog ARC	none				
X	Silae ARC	none				
XI	Kipalili ARC	none				
XIII	Mat-i ARC	1)Putsan-Mat-i Irrigation Association 2)Cagpangi Irrigation Association	1)1992 2)1993	1)25 2)27	1)Farmers Assistance, Seeds & Water Management 2)Farmers Assistance, Seeds & Water Management	1)CBU 2)CBU

Source: Interview of Barangay Officials

Table H.1-10 Other People's Organization / Associations by Model Area

Study Area	Name of Organization/ Association	Year Established	No. of Members	Activities
Sappa-ac ARC	1)Sappa-ac Namin Association	1) 1974	1) 184	1)Providential funds
	2)Timpuyog Ti Inna(Mothers Group)	2) 1996	2) 53(32 active)	2)Cleanliness, Beautification
	3)Parents Teachers Association	3) 1996	3) 181	3)Maintenance for Elementary School
Talugtog ARC	1)Talugtog Sur Youth Club	1) 1975	1) 45	1)Fund raising for pork, Sitio improvement
	2)Talugtog Sur Couples	2) 1995	2) 60	2)Fund raising for pork, Sitio improvement
Cofcaville ARC	1)Rural improvement Club(RIC)	1) 1980	1) 70	1)Short term livelihood loans
	2)Cofcaville Savings & Credit Association	2) 1993	2) 32	2)Banana production/lending
	3)Farmers Organization	3) 1994	3) 40	3) none
	4)Roman Catholic Association	4) no data	4) no data	4)Religious services
	5)Parents Teachers Association	5) no data	5) 1996	5)Maintenance of school
Montilla ARC	1)Home for the Street Children, So. Pag-ibig	1) 1993	1) 80	1)Asistance & health care to Orphanage
Maulawin ARC	none			
Pagasa ARC	1)Pastoral Team	1) 1975	1) 20	1)Services to religious
	2)PTA	2) 1956	2) 70	2)Services to school
Abiera ARC	none			
San Vicente ARC	1)San Vicente Farmers Association	1) no data	1) 46	1)Land acquisition
	2)BAYANIHAN multipurpose Coop.	2) 1992	2) 108	2)Community asst. through credit services
	3)Talibon Trinidad Integrated Farmers Association	3) 1986	3) 236	3)Land acquisition & credit services
	4)Small Coconut Farmers Organization	4) 1992	4) 48	4)Community assistance
	5)BOLEF	5) no data	5) no data	5) no data
	6)RIC	6) no data	6) no data	6) no data
Marangog ARC	1)Cabesilla Association	1) 1990	1) 12	1)Services to Catholic Religious Organization
	2)Parents - Teachers Association	2) 1996	1) 116	2)Maintenance of School/Feeding program, home guides
	3)Youth Action for Population and Development	3) 1994	3) no data	3)Youth organization, sports activities
Silae ARC	1)Women's Association	1) no data	1) 15	1)Women's awareness & enhancement program
Kipalili ARC	1)PCA Small Farmers Association	1) 1994	1) 54	1)Providing seedling and fertilizer
	2)Gagmay-Kristohanon-Katilinggan(GKK)	2) 1980	2) 200	2)Clean and green
Mat-i	1)Mothers Club	1) 1972	1) no data	1) no data
	2)Bisig Bayan	2) 1985	2) no data	2) no data
	3)Catholic Women's League	3) 1958	3) no data	3) no data

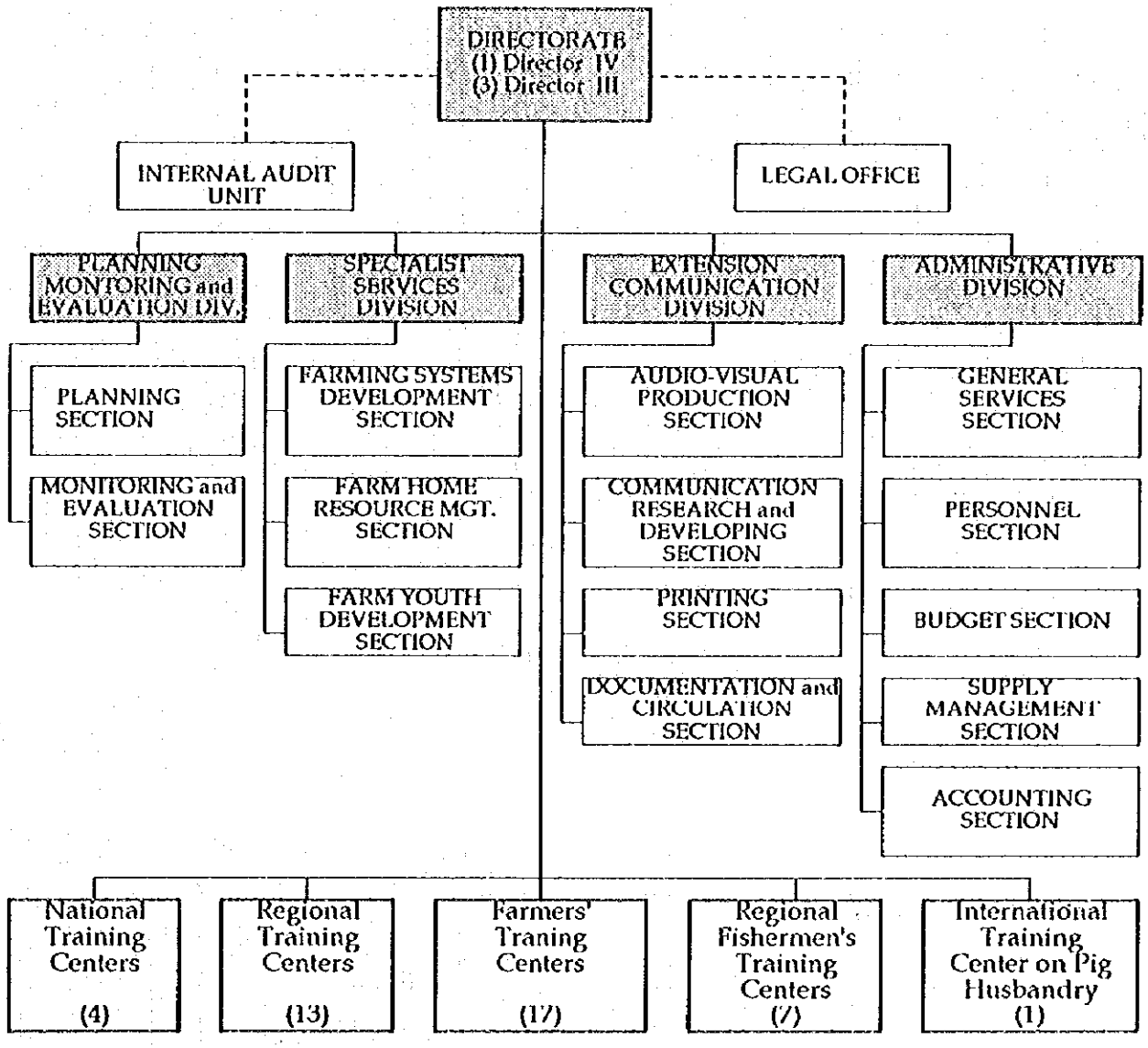
FIGURE II.1-1 ORGANIZATION AND SYSTEMS OF RESEARCH, TECHNOLOGY DEVELOPMENT AND EXTENSION



..... Flow of Technology / Seeds/Seedlings
( ) Number of Institute/Center/Station/Staff

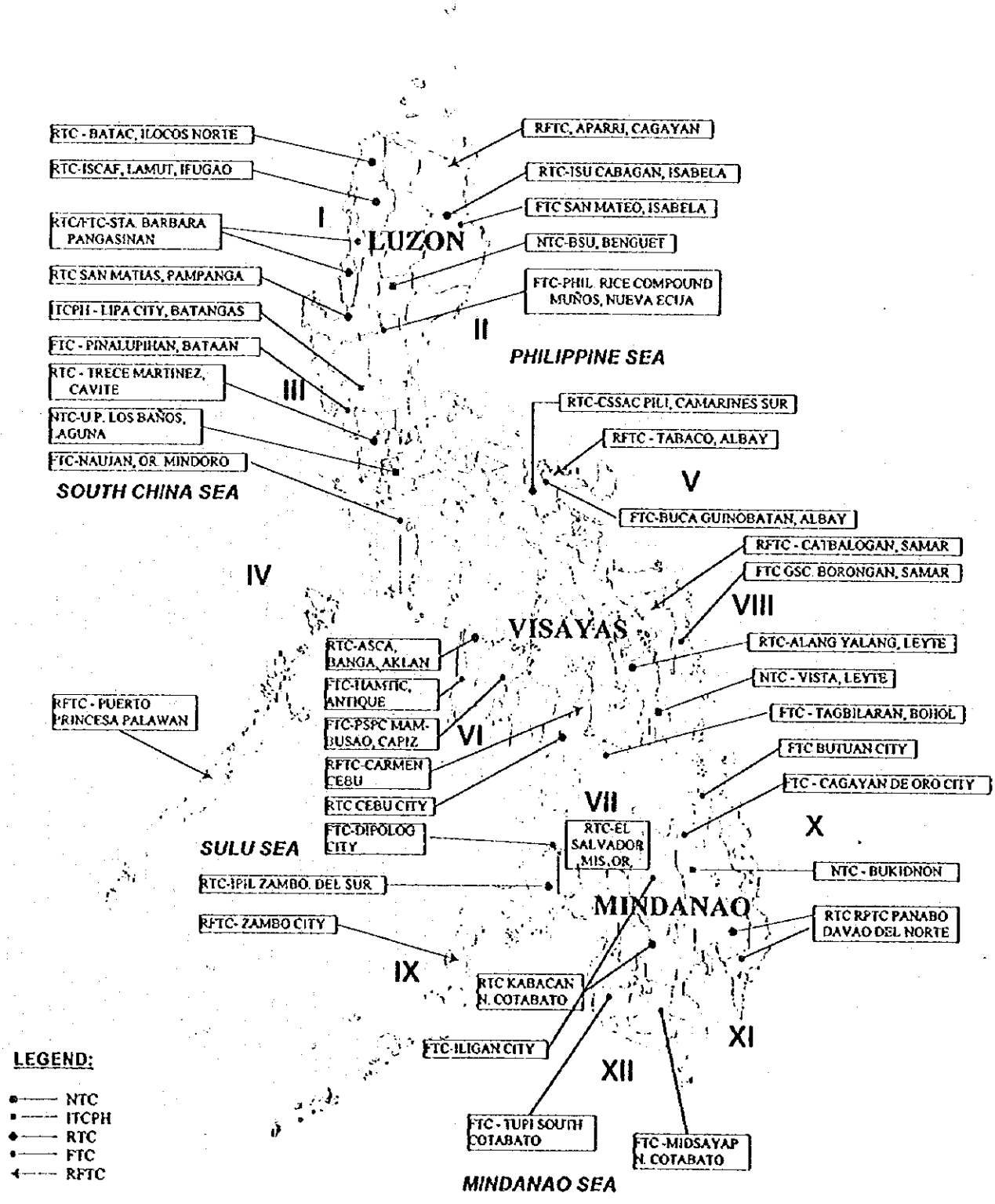
T.T : Technology Transfar
P.S.S : Providing Seeds/Seedlings
BPI: Bureau of Plant Industry
IPB: Institute of Plant Breeding,UPLB
RIARC: Regional Integrated Agricultural Research Center
ROS: Research Outreach Station
ATI: Agricultural Training Institute
NARRDN: National Agricultural Resources Research Development Network
PSS/PC: Provincial Service Station / Production Center

FIGURE II.1-2 ATI ORGANIZATION CHART



Source : ATI, DA

FIGURE H.1-3 LOCATION MAP OF TRAINING CENTERS



Data Source: Bureau of Agricutural Training

Table H.2-1 Research Organizations, Dealed Materials and Activities

Research Organization	Materials dealing with and Activities	
Baguio NCRD	Materials	Crops(Grain, crops, Vegetables, Fruit trees)
	Activities	Research, Production(Seed/Seedlings), Laboratory, Extension & Training
CIARC		No activities presently due to establishment in 1995,
Ifugao ROS	Materials	Crops(Fancy Rice), Livestock(Poultry) Fisheries(Loach)
	Activities	Research, Production, Extension & Training
Mt. Province ROS	Materials	Crops(Semi-temperate vegetables, fruits), Livestock(Swine), Fisheries(Loach & Tilapia)
	Activities:	Research, Production, Extension & Training
Luna ROS	Materials	Crops(Onion, Banana), Livestock(Cattle, Swine), Livestock(Cattle, Swine), Fisheries(Tilapia)
	Activities	Research, Production, Extension & Training
Rizal ROS	Materials	Crops (Coffee, Rice), Livestock(Goat), Fisheries (Telapia)
	Activities	Research, Production, Extension & Training
Tayum ROS	Materials	Crops(Mango, Cashew, Coffee, Cacao)
	Activities	Seedlings propagation, Extension & Training

Table H.2-2 Summary of AMDP Accomplishments by Quarter, 1995

Particulars	Q1	Q2	Q3	Q4	1995Total/ Average
1. No.of Training					
GPEP	4	7	11	14	36
Regular	1	2	2	1	6
Tie-Up	3	3	2	-	8
Special	1	2	-	1	4
FFS-Veg.	-	-	-	23	23
Total/Overall	9	14	15	39	77
2. NOI					
GPEP	135	291	374	483	1,283
Regular	28	55	73	27	181
Tie-Up	74	76	73	-	220
Special	37	76	-	32	150
FFS-Veg.	-	-	-	(no data)	(no data)
Total	247	498	520	542	1,834
2. PMD					
GPEP	472	947	1,363	4,846	7628
Regular	84	140	213	27	464
Tie-Up	269	152	275	-	660
Special	185	115	-	160	460
FFS-Veg.	-	-	-	(no data)	(no data)
Total	1,10	1,354	1,851	5,033	9,212

Source: ATI, Benguet

Table H.2-3 Research Organizations, Dealed Materials and Activities

Research Organization	Materials dealing with and Activities	
CVIARC	Materials	Crops(Rice, Corn, Sorghum, Soybean, Cowpea, Bush sitao, Pole sitao, chickpea, pigeonpea, Winged bean, Citrus, Mango), Livestock & Poultry(Cattle, goat, sheep, Swine, Chicken Ducks),
	Activities	Research development(Cropping system, Crop livestock integration, Utilization of crop by-products, Post-harvest, Farm economics, Crop protection, Soil water management etc.)
Cagayan Valley Hillyland ROS(Bagbag)	Materials	Fruit trees(Mango, Pomelo, Orange, Guayabano, Lanka), Forest trees(Ipil, Acacia aurea, Gmelina, Mahogany), Grasses(Amorseko, Talahib, Napier, Signal) Livestock(Cattle, Carabao)
	Activities	Research & development(Farming system for hillylands, Fruit tree maintenance, Assessment of fruit tree production, Production and maintenance of cattle breeder stocks, Food-forage production system, Backyard cattle production technology, Assessment of cattle production status etc.)
Aglipay ROS(Batanes)	Materials	Crops(Corn, Upland rice, Peanut, Cassava, Sweet potato, Ubi, Coffee, Mango, Calamansi, Pasture grass), Livestock(Carabao)
	Activities	Research, Plant material production(Seedlings of Mango, Coffee, Calamansi), Extension & Training

Table H.2-4 Research Organizations, Dealed Materials and Activities

Research Organization	Materials dealing with and Activities	
EVIARC	Materials	Crops (Rice, Corn, Peanut, Mungbean, Vegetables, Root crops, Coffee, Cacao, Blackpepper, Jackfruit, Durian, Mango, Chico, Guava, Pomelo), Livestock (Guineafowl,Mallard ducks, Sheep Goat, Carabao, Cattle), Fish (Tilapia, Carp)
	Activities	Research, Production, Technical assistance (Extension and training), Special projects
Babatngon ROS	Materials	Crops (Rice, Corn, Root crops, Rambutan, Lanzoness, Mango)
	Activities	Up-land and farming system development, Training and extension
Malitbog ROS	Materials	Corn, Forage and Pasture Crops Livestock (Cattle, Goats)
	Activities	Research (Livestock and up-land development) Breeding, Production
Salcedo ROS	Materials	Livestock (Cattle, Goats, Carabao)
	Activities	Research (Up-land and crop-livestock development)
VISCA(Baybay)	Materials	ABACA, Mushroom, Rainforest trees
	Activities	Research (ABACA cultivation, processing and markeling, Mushroom cultivation using Abaca Wastes, Tropical ecology) Extension & Training

Table H.2-5 Research Organizations, Dealed Materials and Activities

Research Organization	Materials dealing with and Activities	
MOMIARC	Materials	Crops (rice, corn, white potato, tomato, eggplant, pechay, beans, sweet pepper, cut flower-anthurium, mango, guava, gabi, sweet potato)
	Activities	Varietal trials (tomato, white potato, sweet potato, gabi, durian) Fertility trials (strawberry, corn, gladiolus) Rapid multiplication (white potato) Adaptability trial (exotic fruit trees-longan, pear, apple, citrus) Techno-demo Projects (rice, corn) Production & distribution of registered seeds (rice, corn) Key Commercial Crops Development Program (Production & distribution of quality seeds/materials: white potato, tomato, eggplant, pechay, beans, sweet pepper, anthurium, mango, guava, gabi, sweet potato)
Claveria ROS	Materials	Vegetable, Cut flowers, Root crops
	Activities	Research, Extension & Training
Kibawe ROS	Materials	Rice, Corn, Fruit trees (Rambutan, Maran, Dulian, Lanzoness, Cacao)
	Activities	Research, Production seeds/seedlings (Rice, Corn, Fruit seedlings)
Kitcharao ROS	Materials	Fresh water fish (Telapia)
	Activities	Breeding, Production (Telapia fry)
Malitbog ROS	Materials	Crops (Rice, Corn, Pasture & Forage) Livestock (Cattle, Goats, Sheep)
	Activities	Production

Research Organization	Materials dealing with and Activities	
Basco ROS	Materials	Crops(Rice, Sweet potato, Garlic) Marine fish
	Activities	Research, Production, Extension & Training
Iguig ROS(Cagayan)	Materials	Crops(Rice, Legume), Fresh water fish (Telapia, Cat fish)
	Activities	Research, Production, Extension & Training
San Mateo ROS(Isabela)	Materials	Crops, Fresh water fish(Telapia, Mad fish)
	Activities	Research, Propagation, Extension & Trajning

Table H.2-6 Agricultural Materials Planned to be Introduced to Silae ARC Area and the Respective Suppliers

Materials		Supply Agency
Seeds and Seedlings	Cereal crops, Vegetables, Fruit trees Forest trees	PAO, MAO Tayum ROS DENR
Livestock	Carabao Swine Goats	PCC Ifugao ROS Luna ROS, Rizal ROS
Fry and Fingerling	Loach Tilapia	Ifugao ROS Ifugao, Luna, Rizal ROSs
Fertilizer and Chemicals		DAR

Table H.2-7 Techno-Demo Farm to be Established in the Each Project Area

Techno-Demo Farm	Number of Fields	Area Cultivated	Implementing Agency	Period
Advanced Lowland Farming	1	0.2 ha	PAO, MAO	3 years
Advanced Upland Farming with SALT	1	3.0 ha	PAO, MAO	5 years

Table H.2-8 Details of the Farmers' Training

Subject	Time	Venue	Agency
• Cooperative management	Before & during cropping	Barangay	LBP, CDA, DTI
• Advanced rice and corn cultivation	Before & during cropping	Barangay	MAO, PAO
• SALT	Before & during cropping	Barangay	MAO, PAO, DENR
• HVC & mango cultivation	Before & during cropping	Barangay	MAO, PAO

Table H.2-9 Agricultural Materials Planned to be Introduced to Cofcaville ARC Area and the Respective Suppliers

Materials		Supply Agency
Seeds and Seedlings	Cereal crops,	PAO, MAO, CVIARC
	Vegetables,	Tapaya RO
	Forage crops	Aglipay ROS, Tapaya ROS
	Fruit trees	DENR, Aglipay,
	Forest trees	TapayaROSs
Livestock	Carabao	PCC
	Cattle	CVIARC, Tapaya ROS
	Swine, Goats, Sheep	CVIARC
	Chicken, Ducks	CVIARC
Fry and Fingerling	Catfish	Iguig ROS
	Tilapia	Iguig ROS, San Mateo ROS
	Mudfish	San Mateo ROS
Fertilizer and Chemicals		DAR

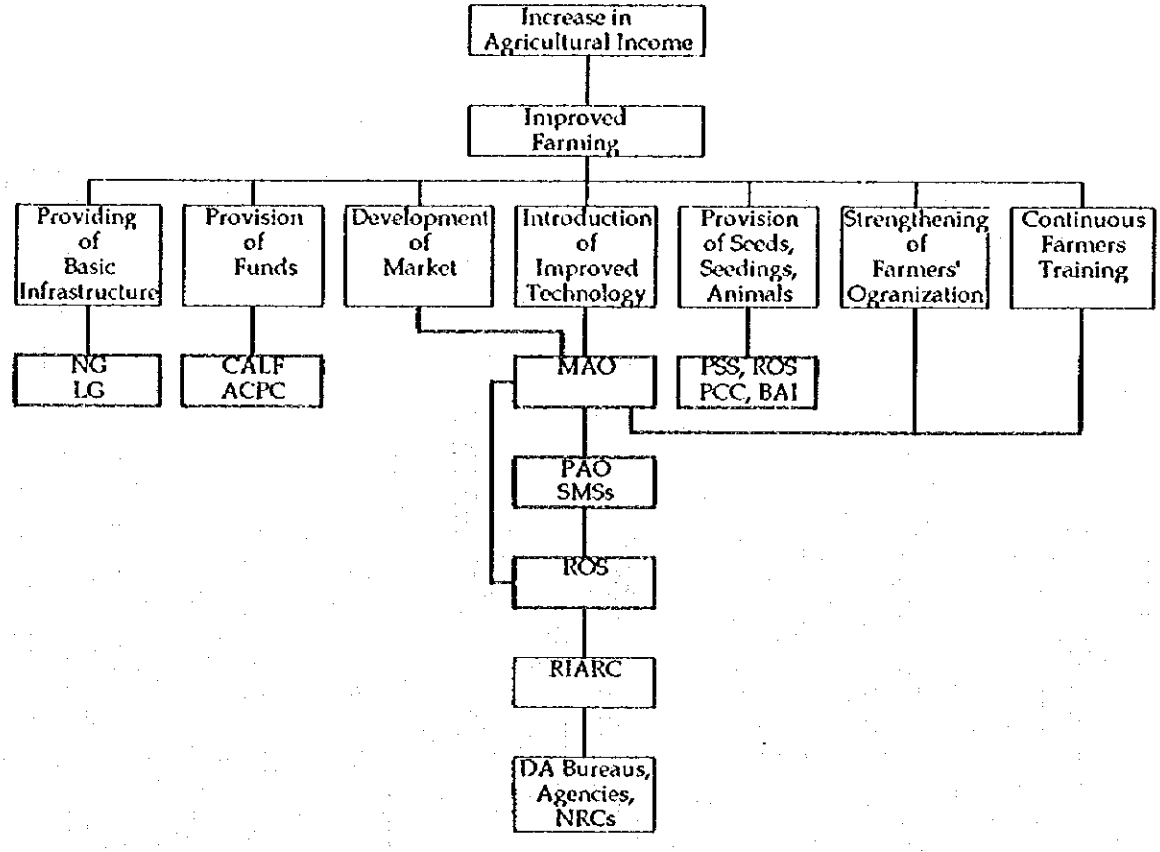
Table H.2-10 Agricultural Materials Planned to be Introduced to Marangog ARC Area and the Respective Suppliers

Materials		Support Agency
Seeds and Seedlings	Cereal crops, Vegetables,	PAO, MAO, EVIARC
	Forage crops	Malitbog ROS
	Fruit trees	EVIARC,Babatngon ROS
	Abaca corm/sucker	NARC, Private farmers
	Forest trees	DENR
Livestock	Carabao	PCC
	Cattle	EVIARC,Malitbog ROS
		Salcedo ROS
	Goals	EVIARC, Malitbog ROS,
		Salcedo ROS
	Ducks	EVIARC
Fry and Fingerling	Tilapia, Carp	EVIARC
Fertilizer and Chemicals		DAR

Table H.2-11 Agricultural Materials Planned to be Introduced to Silae ARC Area and the Respective Suppliers

Materials		Support Agency
Seeds and Seedlings	Cereal crops and Vegetables	PAO, MAO, NOMIARC, Claveria ,Kibawe ROSs, Malitbog ROS
	Forage crops	Malitbog ROS
	Fruit trees	Kibawe ROS
	Forest trees	DENR
Livestock	Carabao	PCC
	Cattle, Goats, Sheep	Malitbog ROS
Fry and Fingerling	Tilapia	Kitcharao ROS
Fertilizer and Chemicals		DAR

FIGURE II.2-1 PLAN OF ORGANIZATIONAL SUPPORT SERVICE SYSTEM FOR DEVELOPMENT OF MARGINAL AREAS



Direct Support Organization and Flow of Support Services

NG : National Government
LG : Local Government
DA : Department of Agriculture
PAO : Provincial Agricultural Office
MAO : Municipal Agricultural Office
CALF : Consolidated Agricultural Loan Fund
ACPC : Agricultural Credit Policy Council
PSS : Provincial Service Station
ROS : Research Outreach Station
RIARC : Regional Integrated Agricultural Research Center
NRCs : National Research Centers
PCC : Philippine Carabao Center
BAI : Bureau of Animal Industry

COOPERATIVES : PHILIPPINE EXPERIENCE

1. History of Cooperatives

Since the 1900s, cooperatives has always been a part of the Philippine experience. In 1900, the Government has launched credit schemes for the rural poor using the agricultural cooperatives as conduit. This strategy has always been used even up to the 1980's. However, the subsidized credit scheme is unsustainable so that the cooperatives formed under the program eventually collapsed when funds for credit were no longer available. During the past years, cooperative efforts were mainly the function of the Government. From the ACCFA organized in 1952 to the Samahang Nayon organized during the Marcos' Era, the farmers/population usually joined cooperatives because it was the only way they could avail of cheap credit. As a result, many cooperatives failed and collapsed once credit schemes are availed of.

In 1986, the Cooperative Development Authority (CDA) was organized. The newly formed CDA's existence was based more in providing a supportive rather than direct role in cooperative formation. The new cooperative code placed primary responsibility of cooperative development in the hands of the cooperative sector itself as wells as the involvement of private volunteer organizations such as the NGOs. The cooperative system has thus attained a substantial improvement from the past and many successful cooperatives have been recognized and are now operational.

2. Types of Cooperative Organizations

Cooperatives as to purpose are either single-purpose or multi-purpose cooperatives. Though most of cooperatives in the country are single-purpose, many cooperatives register as multi-purpose cooperatives in anticipation of diversification and expansion in the future. The common types of single-purpose cooperatives are credit, consumer, marketing, producer, services, etc. The types of cooperatives by purpose and service are presented below:

Type	Purpose & Service	Capital Generation	Who Can Be Members	Customers
1. Credit	Encourage savings & provide credit (loans) at low interest.	Deposits, share capital, fixed savings	General public	Members only

2. Consumer	Procures and distributes commodities for members and its clients	Share capital	General Public	General public
3. Services	Provide services which persons could not afford individually, e.g., housing, transport, restaurant, etc.	Share capital	General public, user of services, providers of services	General public
4. Producers	Undertake joint production whether agricultural or industrial	Share capital	Producers, ex, farmers, fishermen, craftsman	Members only
5. Workers	Produce goods through the work of members	Share capital	Skilled persons	General Public
6. Marketing/ Trading	Engaged in the supply of production inputs and others to members and markets their products	Share capital	Producers (Different products)	General Public
7. Multi-Purpose Cooperative	Combines two or more of the above-mentioned business activities	Share capital	General public/others	General public

Many of the cooperatives in the country are engaged solely or predominantly in the provision of credit and the operation of consumer stores. Based on NATCCO survey of cooperatives, the Credit Cooperative and the multi-purpose cooperatives whose primary business activity is credit constituted 59% of the sample. Consumer cooperatives whose primary activity is operating consumers stores constitute 18% of the sample.

3. Organization Structure

The typical cooperative in the Philippine situation specifically in areas like the marginal areas are simple organizations with the following set-up:

A General Assembly (GA) which consist of all members of the

cooperatives in good standing with supreme and final authority in the administration and management of the affairs of the community.

A Board of Directors (BOD) elected by the GA who determines and formulates operating policies which govern the operations of the cooperative. Membership of the BOD is from five onwards. The BOD consist of a chairman, vice-chairman, treasurer, secretary, and board members.

The organization also includes the appointment and/or selection of a Manager who is tasked to manage the day-to-day operation of the cooperative activity. The Manager maybe a member of the BOD or any member of the cooperative or hired employee (for big scale cooperatives). The management group is composed of the following (but not necessarily all):

For credit cooperatives:	Manager Bookkeeper clerk
For consumer cooperative:	Manager Purchaser or bookkeeper Storekeeper Warehouse person

The cooperatives usually organized committees to undertake particular or specific activity of the organization, the most common of which are the Education, Credit and the Supervisory Committees with the following functions:

- The Education Committee conducts educational programs which includes among others the pre-membership training seminars, cooperative management principles, bookkeeping, etc.; provides the members with information concerning the operations of the cooperative; familiarize the community with general aim, purpose and philosophy of the cooperative . The Education Committee does not necessarily conduct the training itself but arrange/coordinate the education aspect of the organization.

Credit Committee is in-charge of the processing of loan application of members, exercises supervision on withdrawal and deposits of members, submits a monthly report to the BOD and annually to the members of the General Assembly, etc.

- Supervisory Committee is in-charge of the conduct of periodic and

regular examination of the operations of the cooperative, which may take the form of financial or management audit.

- The other committees usually organized depending on the activity or project of the organization are the production, marketing, consumer goods, post harvest committees, etc.

4. Success and Failures of Cooperatives

Though there are various pilot projects in government agencies and financial institutions which focuses on the basics of cooperative development and formation (promoting savings mobilization, self-reliance and other tried and tested principles of cooperatives) these projects are limited in scope and coverage. The majority therefore of cooperatives are still beset by many problems, mainly financial losses due to weak organizations.

A survey of 826 private cooperatives was undertaken by the National Confederation of Cooperatives (NATCCO) in 1992. The general finding was: (1) about 60 percent of cooperatives have government loans thus with large loan exposure; (2) 65 percent have debt to equity ratio of above three; (3) only five percent have savings or capital build-up of at least 25 percent of total assets; (4) about half have poor repayment records among members; (5) only three out of every 40 cooperatives have above average repayment records; (6) 85 percent have below average management capability. The constraints faced by these cooperatives and other cooperatives in the country in general are:

- Lack of technical skills to determine feasibility of projects, projecting cash flows, lack of properly installed accounting and monitoring system and the rudiments of business development to provide a wider range of services. Members and officials do not have the necessary skills and training due to lack time, lack of extension workers to provide necessary skills training and education, have none or limited access to acquire training and skills;

- Many cooperatives cannot provide the service needs of its members due to limited or lack of capital and non-access to credit facilities/schemes;

- Delinquency in loan repayments due to wrong values as some member-borrowers and thought that projects were dole-outs and thus deliberately defaulted on their loan payments. Other borrowers diverted their loans to non-productive purposes (food, clothing, education of children, medical expense, etc.). In some cases, lack of

proper skills and training causes failures in projects resulting to non-payment of loans. Calamities (typhoons, drought, etc.) also disable the member' capacity to meet their financial obligations;

- The members are delinquent in attending meetings and other cooperative activities as they are not aware of their responsibilities as co-owners of the cooperative;

- Many cooperatives failed to initiate programs and activities that focused on the needs of the majority of its members, such as, need for training on agricultural and livelihood activities, on business management, etc.

The fundamental cause of failure of cooperative enterprise is the lack of proper understanding of the principles and true aim of the cooperative associations and the non-adherence to them in actual operation of cooperative enterprise.

The cooperatives in the Project Areas are no different from the other cooperatives existing in the Philippines affected with the same problems and conditions. However, the conditions in the Project Area have the advantage in the sense that it is fully supported by the DAR in terms of providing full time Development Facilitators (DF) assigned specifically to assist the community and the peoples organizations. The plan to fully support the existing peoples' organization in the Project Area and to other similar marginal areas in terms of social preparation, it is expected that the cooperative organizations will become relatively organized and fully operational by the end of the plan period.

5. Development Plan of the Cooperative

The five-year development plan of the cooperative for the marginal areas can be achieved first through the social preparation activity that will be undertaken in the community by the DAR through the use of NGO and the assistance and support of other concerned agencies and institutions. However, the following activities based on past experiences should also be taken into consideration to achieve relative success and sustainability:

a) On Education and Training

- Pre-membership training (PMT) should be provided to all prospective members within the community by DAR. The PMT should be devised in such a way that the community will understand the purpose and

meaning of cooperatives. Regular meetings/seminars should also be conducted for non-members so that they can see the advantages of joining a cooperative.

- A thorough re-orientation and intensive membership expansion campaign must be undertaken for inactive and new members to encourage then to actively participate in the activities of the cooperative. By nature, people are reluctant to invest in a cooperative because of lack of information regarding cooperatives. Stir up public interest through information materials, using mass media like the radio.

- A continuous and intensive education program/sessions should be conducted to improve the management and entrepreneurial skills and capability of the members/officers. Program and conduct training activities based on the needs and resources of the community. Members must be taught specific skills needed in projects and activities they want to pursue. Make the members recognize their capabilities as individuals and members of the group. Regular education sessions also facilitates group cohesion. Training and education must be supplemented by field visits. Income generating projects must be started only when the group is adequately organized and educated.

- Education and training programs should take into consideration the availability of farmer-members, hence proper scheduling and timing is necessary to get good attendance.

- Since women play impotent roles in the family and community as a whole, the women should be equipped with the skills necessary for their various roles in the family, the cooperative and the community. The women should be provided training on (but not limited to) consumer education, savings and thrift, household planning, family budgeting, livelihood skills development, business planning, introduce gender-issues to motivate them to initiate women specific projects.

b) On Economics (Financial and Management)

- Management style should be participative. Members and officers should be encouraged to participate in the planning, problem solving and decision making of the organization; in the exchange of views and concerns pertinent to the operation of the cooperative and grievances, suggestions and opinions should be openly discussed. Encourage the members to attend regular meetings and to be involved in collective endeavor/activities.

- Projects and activities should be responsive to the needs of the members to gain complete support. As needs and problems are voiced out, special activities and projects should be identified and organized.

- Financial reports should be prepared consistently, if not monthly, at least quarterly with complete audit and inventory and should be made available to the members of the cooperative for their information. This action will minimize distrust among members of the group.

- Accounting and bookkeeping systems should be simplified. The regular auditing of book of accounts should be strictly implemented to prevent irregularity and to show to the members that their investment are safe and secured.

- Increase capital build-up by pursuing savings mobilization schemes to develop self-reliance and independence. The proposed ways and means of capital build-up are intensive collection of unpaid capital share, collection of maturing and overdue loans by providing adequate control measures, increase in capital share, contribute time and talent, contribute a percentage of loan amount to the cooperative, conduct fund raising activities, etc.

- There should be planning and budgeting every year by specialized groups within the organization.

- Specified meetings should be regularly held to stir up membership interest. BOD and general staff meeting every month (separately), and general assembly at least twice a year. The meetings should be such that it becomes a forum for business and social encounter.

- Organize the group into smaller groups by functions and/or by geographical location. Members of the small group will perform specific functions as treasurer, recorded, group representative, etc. The grouping functions assigned to the members will help them become self-confident, motivate them to become responsible, enhance the capability to work as a group and also initiate group cohesiveness. Functions and responsibilities must be rotated among members of the small group so as to familiarize them with all the aspect of group activity and/or responsibility.

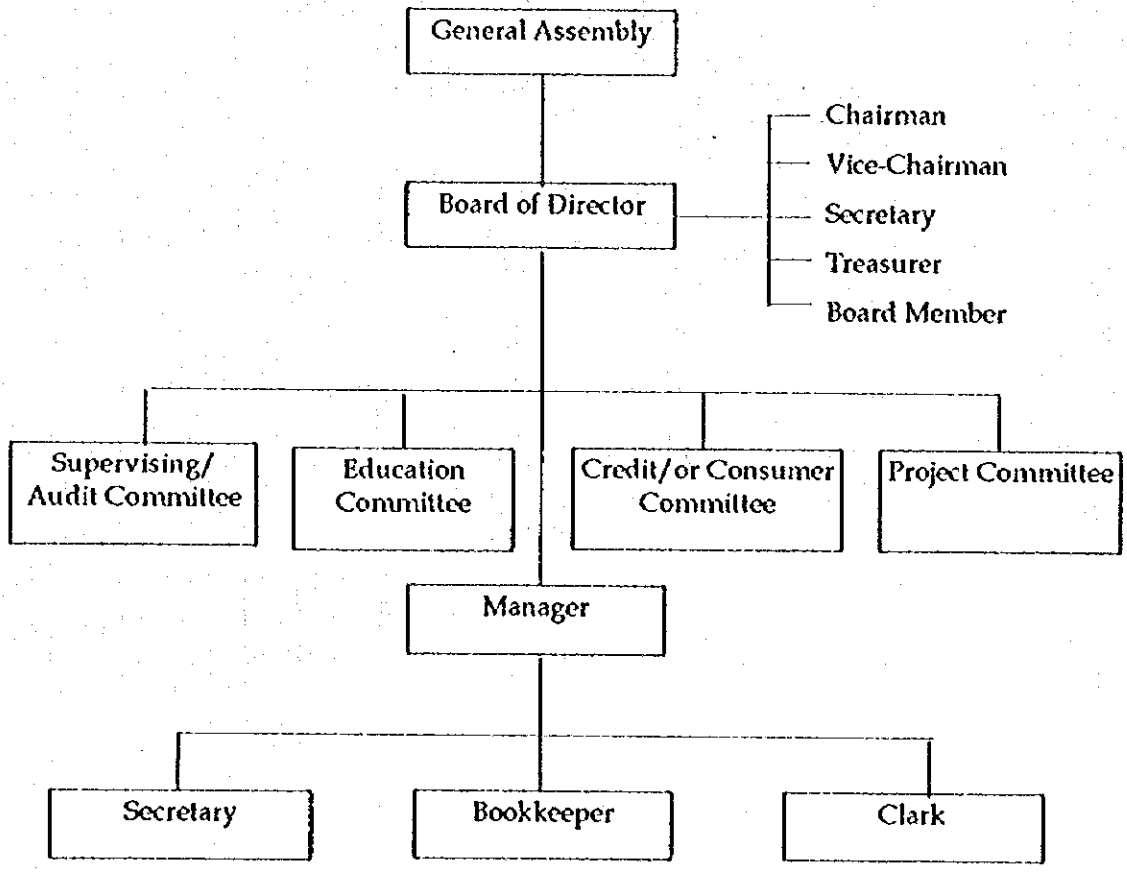
- Continuous and regular monitoring and evaluation even after the turn-over of the project facilities should be undertaken by DAR to ascertain

that projects are implemented as planned, objectives and targets are achieved, encountered problems and issues are resolved and corrected.

c) Linkages

- Linkages initially(through the assistance of DAR, LGU and NGO assigned in the Project Area) should be developed with government agencies and institutions, non-government institutions, other cooperative groups within outside the Project Area and business group. There must be strong linkage between the farmer-members, the suppliers and the final users of their products to effect continuous activity and promote income opportunities.

The expected organization structure of the cooperatives in the Project Area by the end of the plan period after the cooperatives have become self-reliant is shown below:



As the cooperative expand its activity, it is expected that the number of committees are increased. Also managers and/or officer-in-charge with support staff are appointed or employed by the cooperative. With the expansion of the organization, additional training and seminar to enhance skills to improve specific functions will have to be undertaken.

General Duties and Functions of Officers and Committees:

a) General Assembly

- Elect and remove for cause directors, officers and committee members
- Determine amendments to the Articles of Incorporations and By-Laws
- Exercise final authority on all matters vitally affecting the cooperative
- Exercise all the rights and privileges appurtenant to membership
- Arbitrate in disputes and disagreements by and between members of the Board, Committees, Officers and Members
- Others

b) Board of Directors

- Formulates policy which will govern the operation of the cooperative
- Plans for the growth and development of the cooperative
- Appoints the Manager and determine his/her compensation
- Acts on the application for membership, resignation and in some cases the expulsion of members.
- Others

Chairman:

i) Presides over Board meetings and General Assemblies
ii) Signs all documents requiring his signature and sees to it that the books of accounts and other records are kept up-to-date
iii) Countersign all checks, draft and notes drawn by the cooperative
iv) Responsible for the production of the books of account and records at the time of audit

Vice-Chairman

i) Performs duties of Chairman in his absence
ii) Acts as chairman of other committees

Treasurer

i) Acts as custodian of funds, books of accounts and other documents of the cooperative
ii) Maintains the records of accounts (this function is turned-over to the accountant at a stage when the cooperative can afford to hire this person)
iii) Receives deposit of members
iv) Signs all checks, drafts, notes and other negotiable papers drawn by the cooperative

Secretary

i) Keeps a complete lists of cooperative members
ii) Keeps a complete records of all meetings of the Board and the GA
iii) Furnishes the CDA of a copy of the minutes of the GA and others as maybe required by the same agency
iv) Gives notice of all meetings

Other Board Members

i) Performs duties of Chairman in the absence of the Chairman and Vice Chairman
ii) Act as committee chairman for newly identified activities/projects
iii) Perform other duties as maybe assigned by the Chairman

c) Education Committee

- Plans and programs the educational needs and requirements of the cooperative
- Familiarize the community with the aim, purpose and philosophy of the cooperative
- Provides the members with information concerning the operations of the cooperative through leaflets, publications, etc.
- Prepares and conducts (if already capable) the educational programs of the cooperatives which may include among others, the pre-membership seminar, training of members, officers, employed staff of the cooperatives, etc.

d) Credit Committee

- Plans and programs the credit needs and requirements of the group
- Process loan application of members
- Submits monthly report to the BOD and annually to the GA

e) Supervisory Committee

- Conducts periodic and regular examination of operations of the cooperative
- Prepares and submit periodic report to the BOD and GA

f) Projects Committee

- Plans and programs the projects and activities needed by the cooperative
- Upon approval of projects and activities to be undertaken, assign or designate offices and members to be involved in the project or activity
- Prepares and submit periodic report to the BOD and GA

g) Appointed or Employed Staff

Managers

- In-charge of the day-to-day operations of the activity (ex. if manager of consumer store, plans for the purchase and sale of consumer goods, keeps an inventory of the store)
- Prepares and submit periodic report to the BOD and GA

Bookkeeper

- Prepare a record of all daily transactions of the cooperative activity
- Prepares and submit periodic report to the Manager
- Prepare documents needed for the audit of the project activity involved

Clerk

- Keep records of members
- Assist members in their transaction with the concerned activity
- Does typing and administrative work
- Assist the bookkeeper