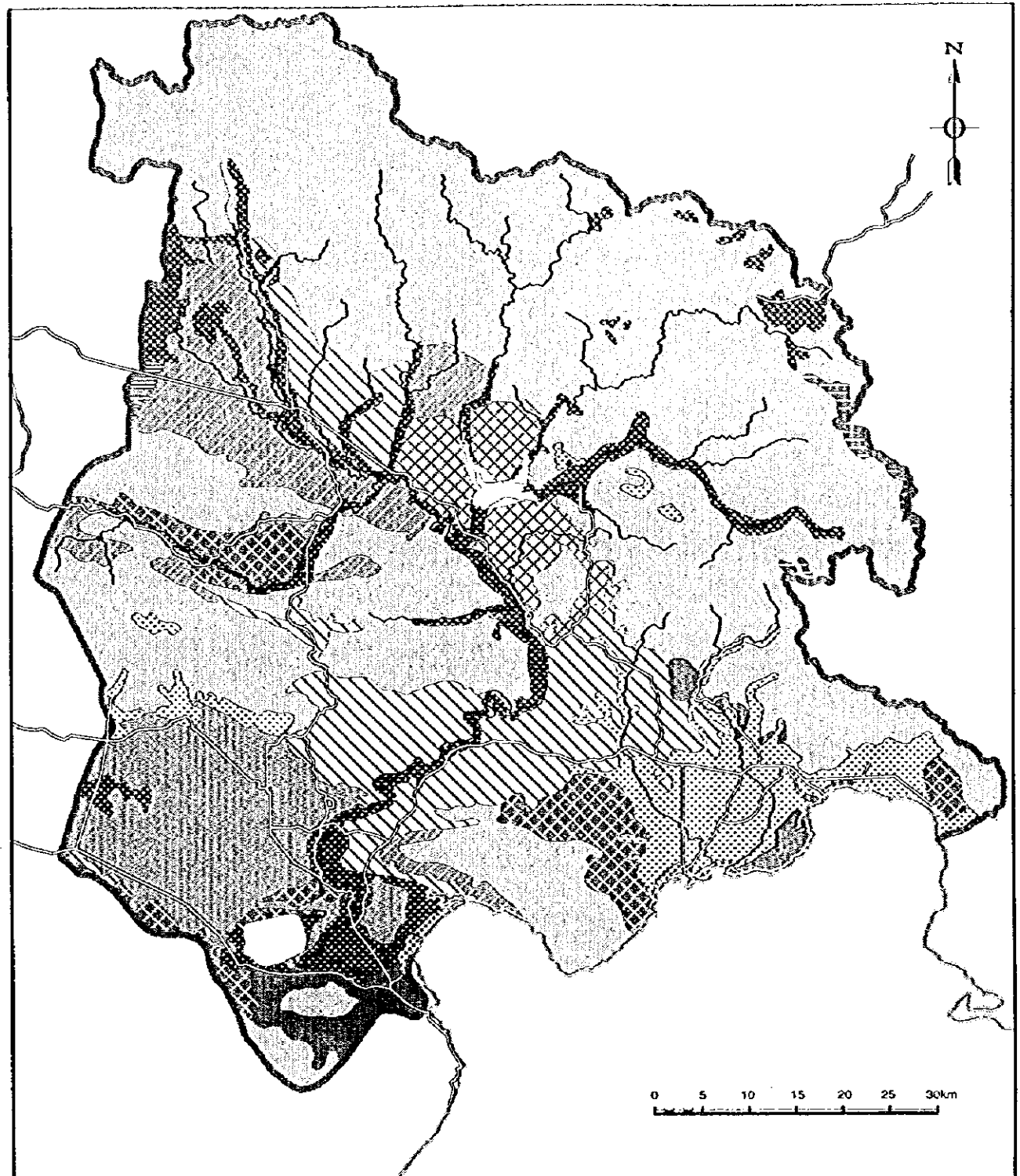


Figures



Fig. 3.2.1 Soil Association Map for Entire Study Area



LEGEND

- | | | |
|--------------|---------------------------------|--------------------------------------|
| Project Area | Asociacion Valle Nuevo | Asociacion Cacheo |
| Road | Asociacion San Juan Habico | Asociacion Guama |
| River | Asociacion Quita Ceraza | Asociacion Guanito Villarpando |
| | Asociacion Azua | Suelos Aluviales Recientes |
| | Asociacion Elias Pina-Las Matas | Cienagas Costera E Interior |
| | Asociacion La Jina-Yuma | Terreno Escabroso No Calizo Y Calizo |
| | Asociacion Los Bucaros | Lagos Y Lagunas |



Fig. 3.2.2 Location of Soil Sampling Sites

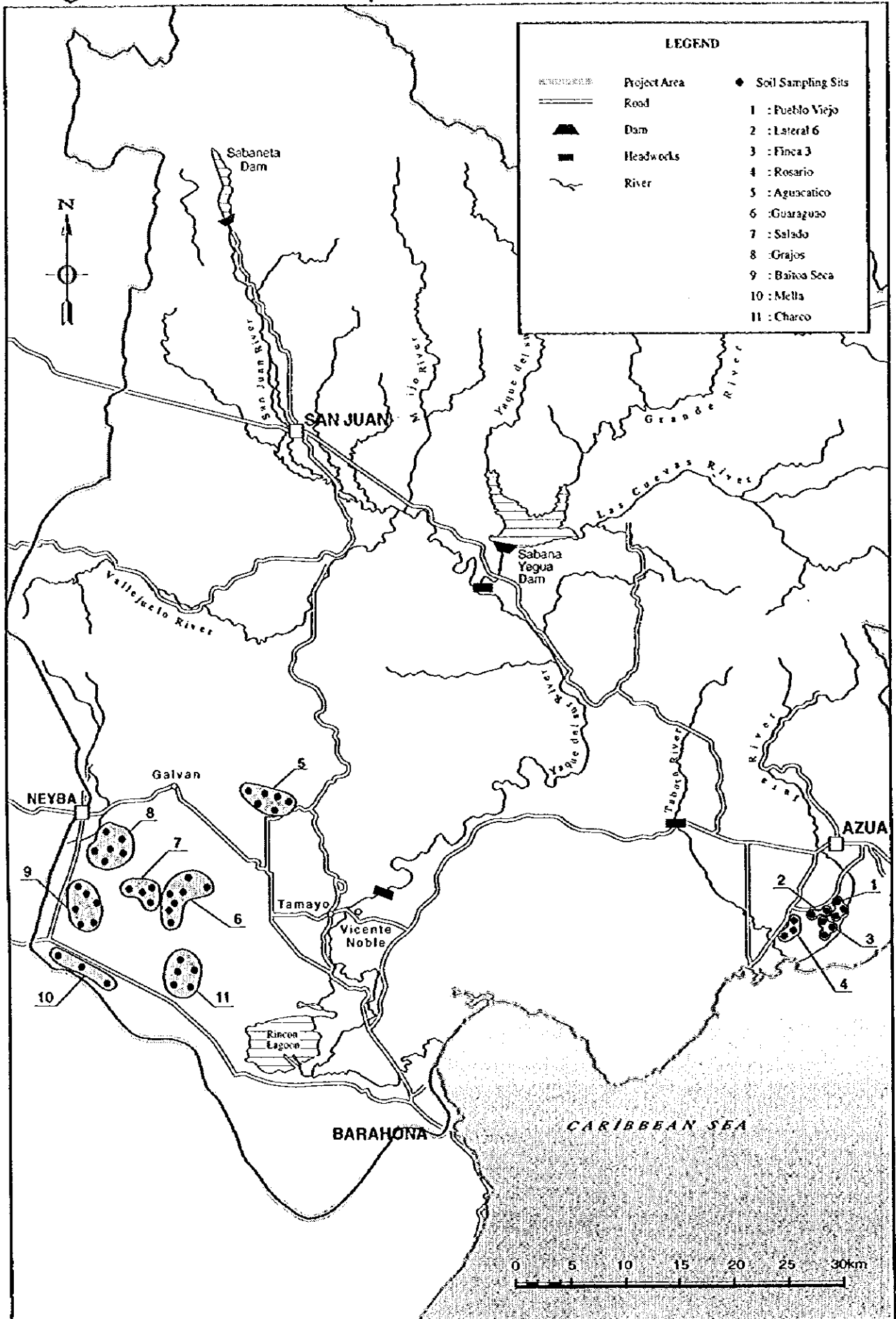
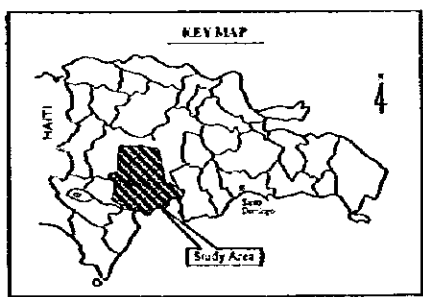
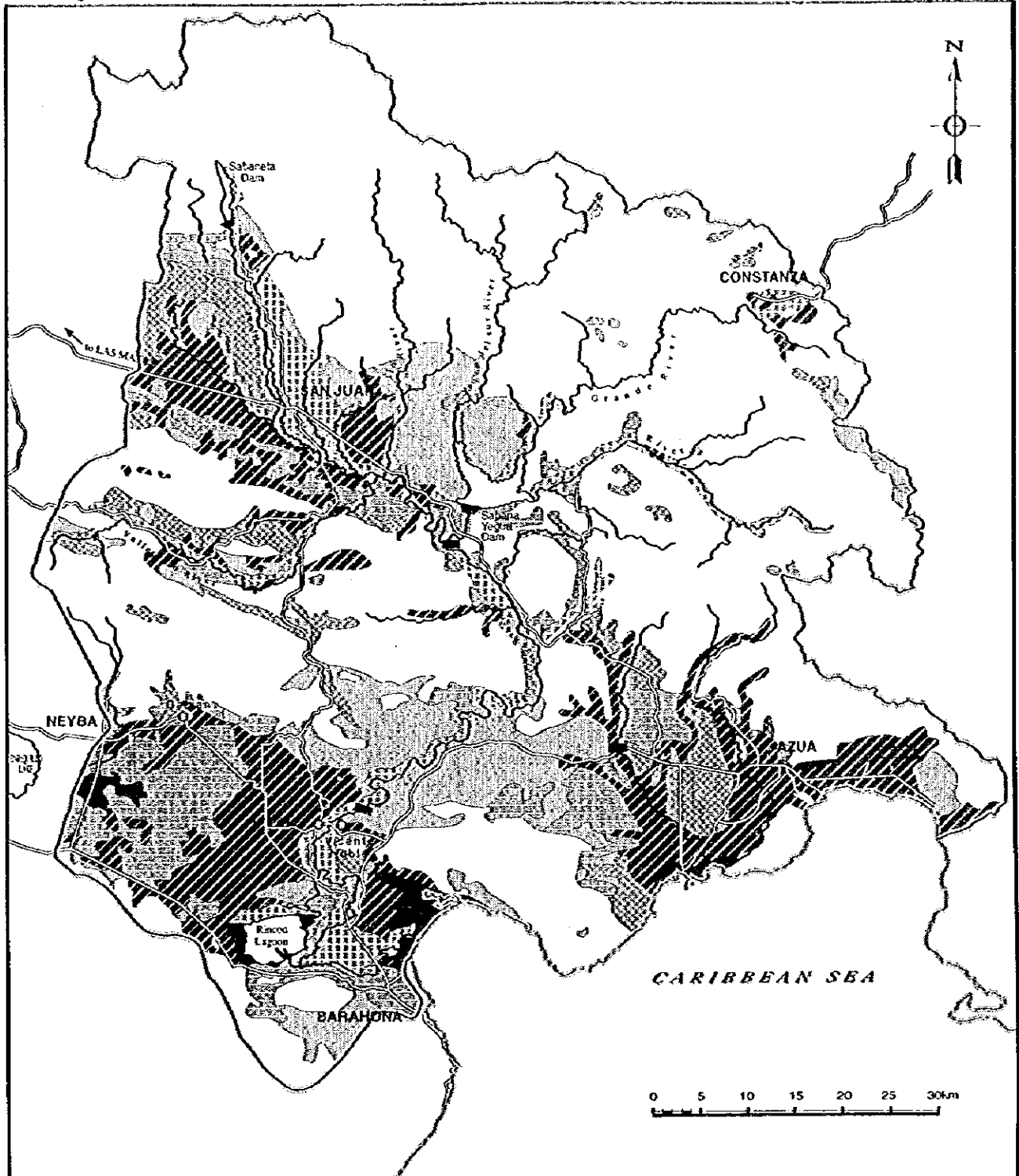




Fig. 3.2.3 Land Capability Map



		LEGEND		
		Land Class	Area (ha)	%
	Project Area	CLASE II	465	6.5
	Road	CLASE III	860	12.1
	Dam	CLASE IV	425	6.0
	Headworks	Sub-Total II to IV	1,750	24.6
	River	CLASE V	565	8.0
		CLASE VI	680	9.6
		CLASE VII	4,035	56.8
		CLASE VIII	70	1.0
		Sub-Total V to VIII	5,350	75.4
		Total	7,100	100

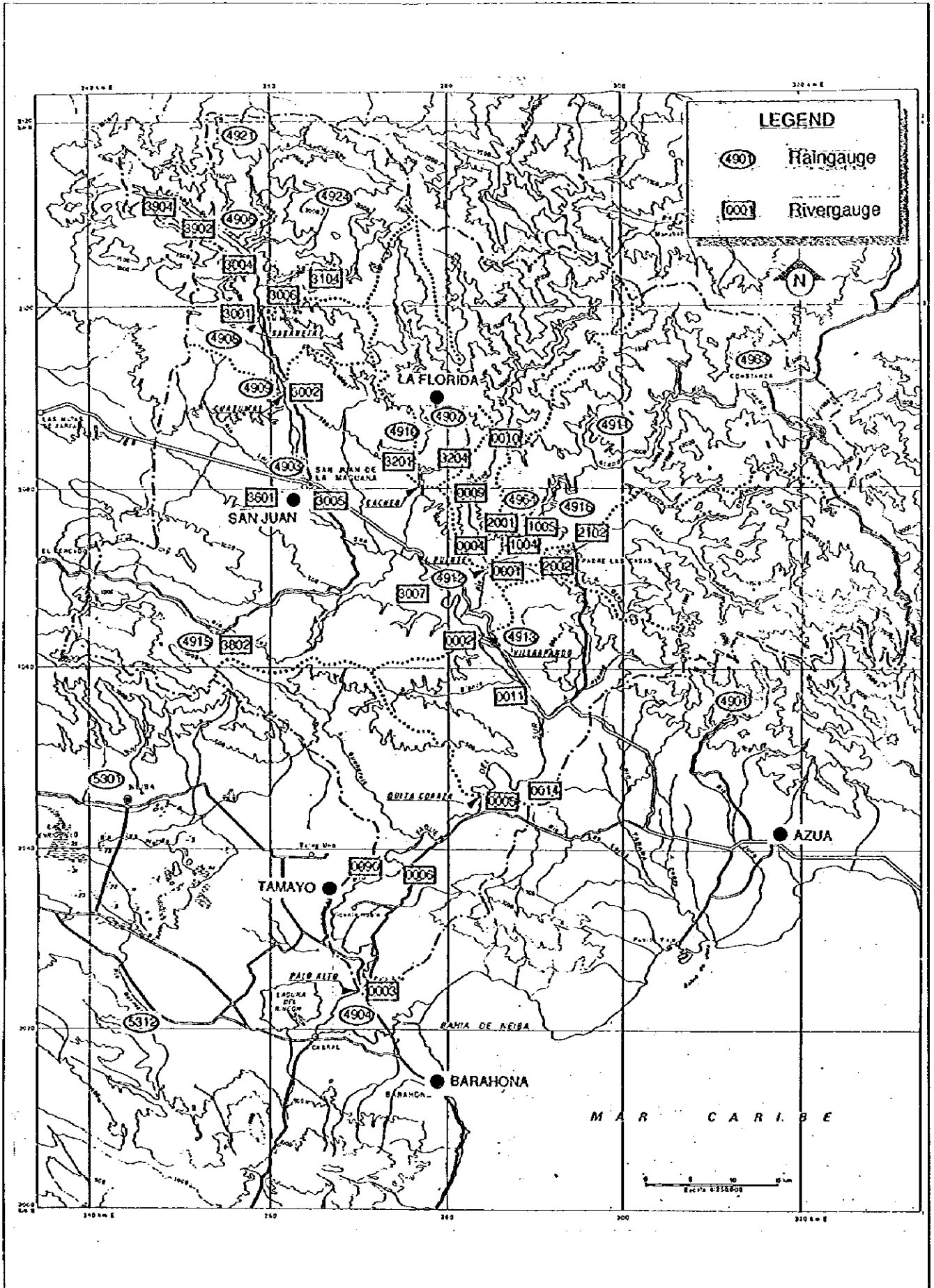


Fig. 3.2.6 Comparison of Runoff

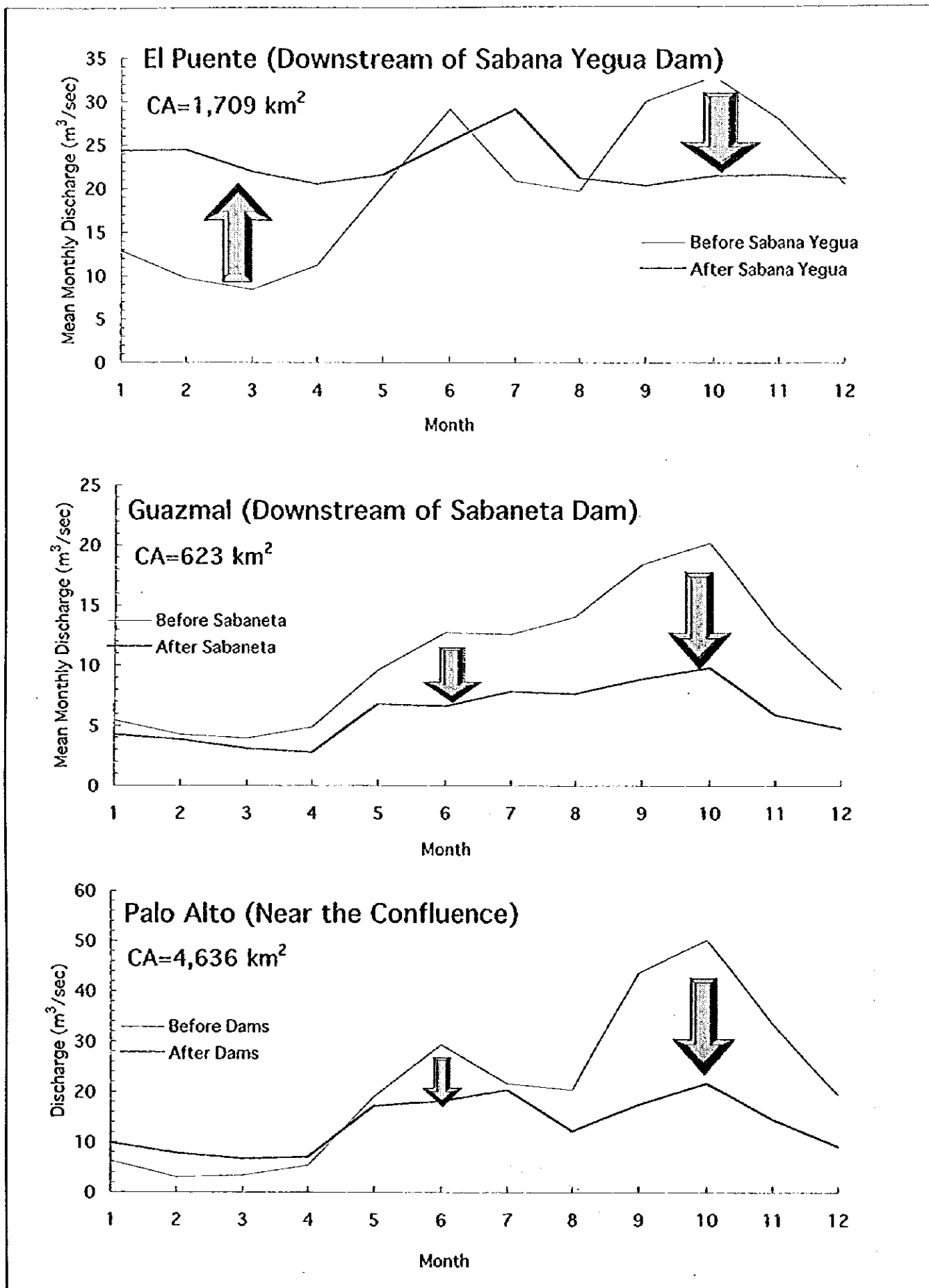


Fig. 3.2.7 Revised Flood Hydrograph of Sabana Yegua Dam

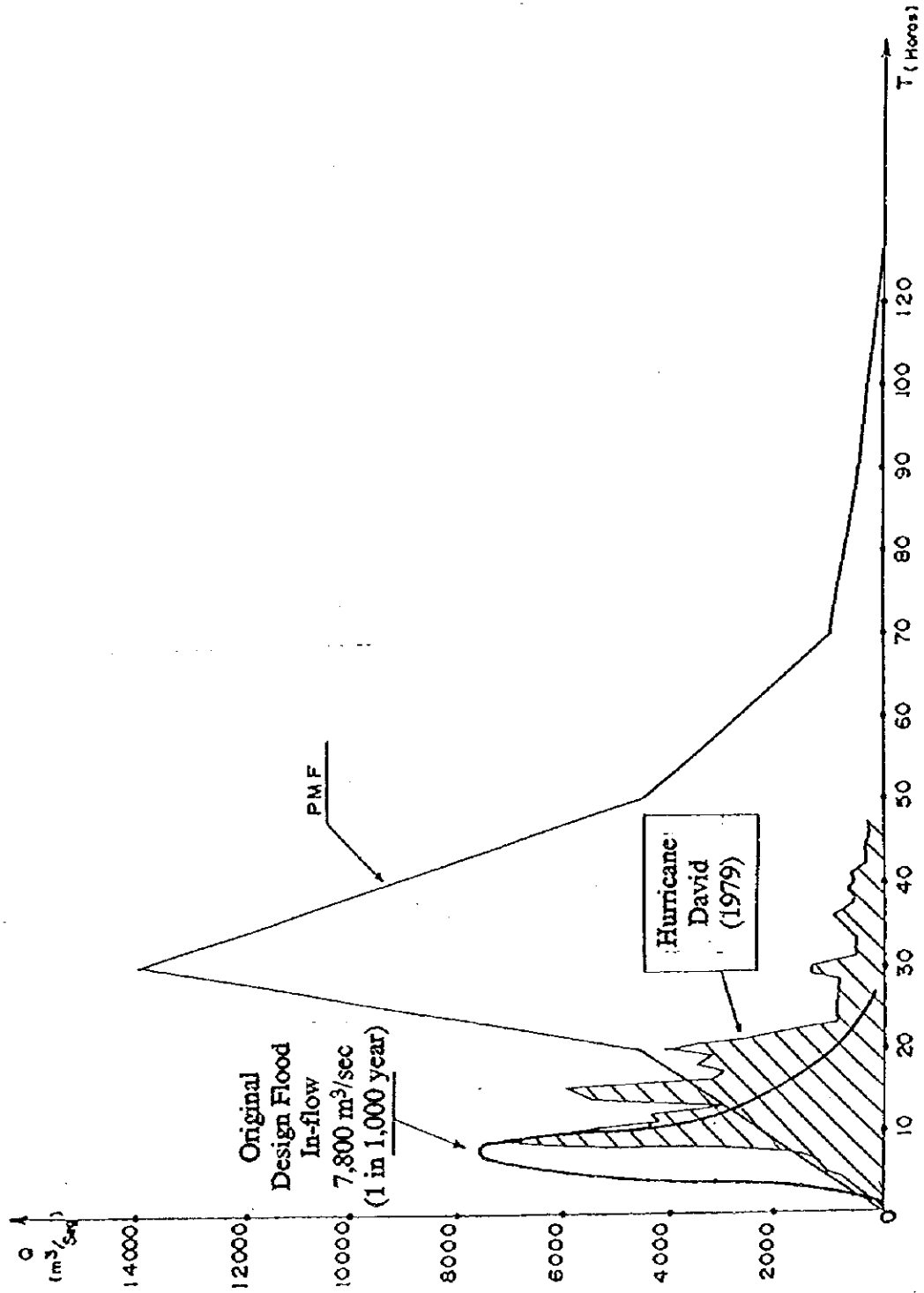


Fig. 3.2.8 Design Flood Discharges

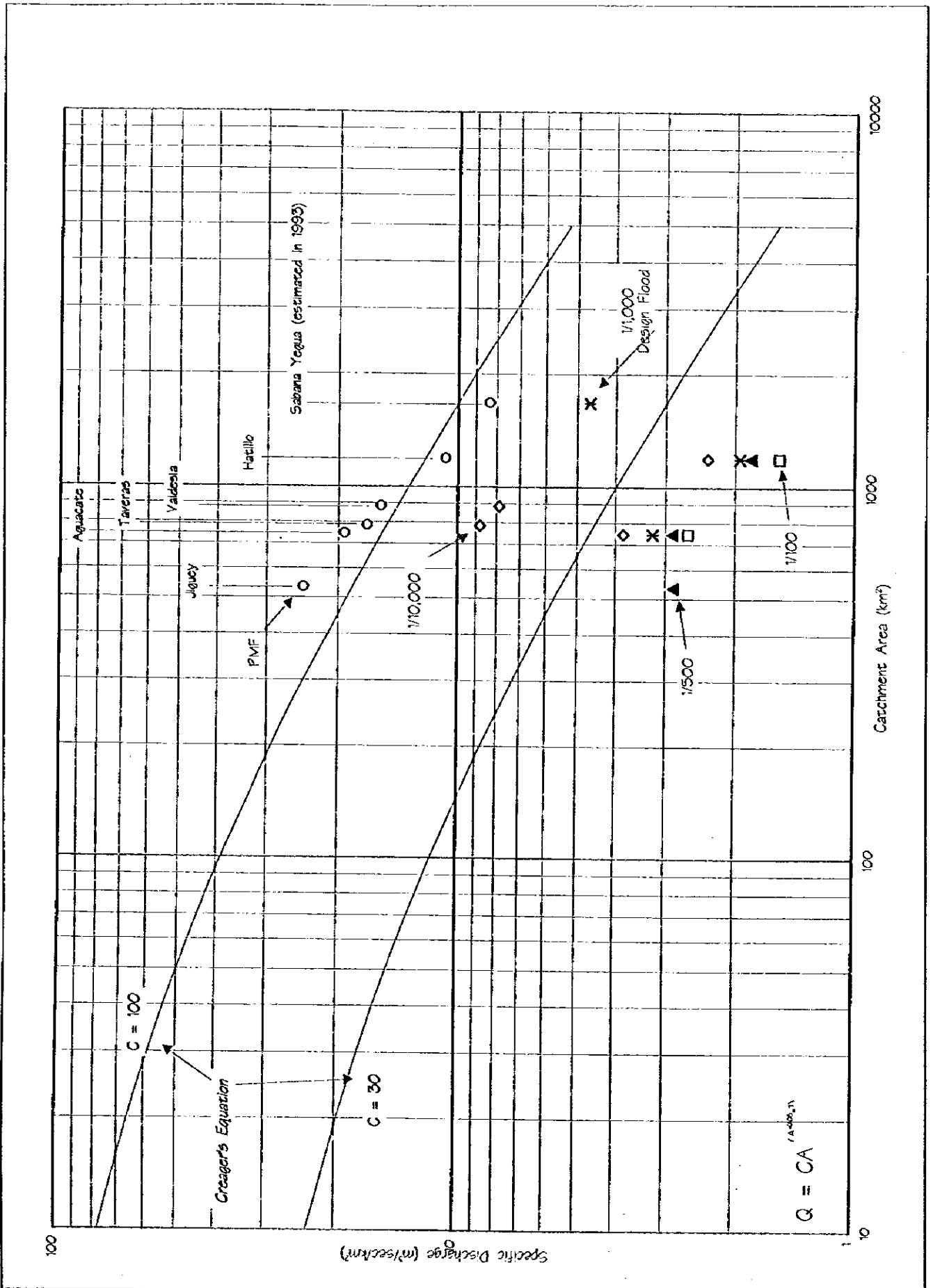


Fig. 3.2.9 Check Points of Water Quality

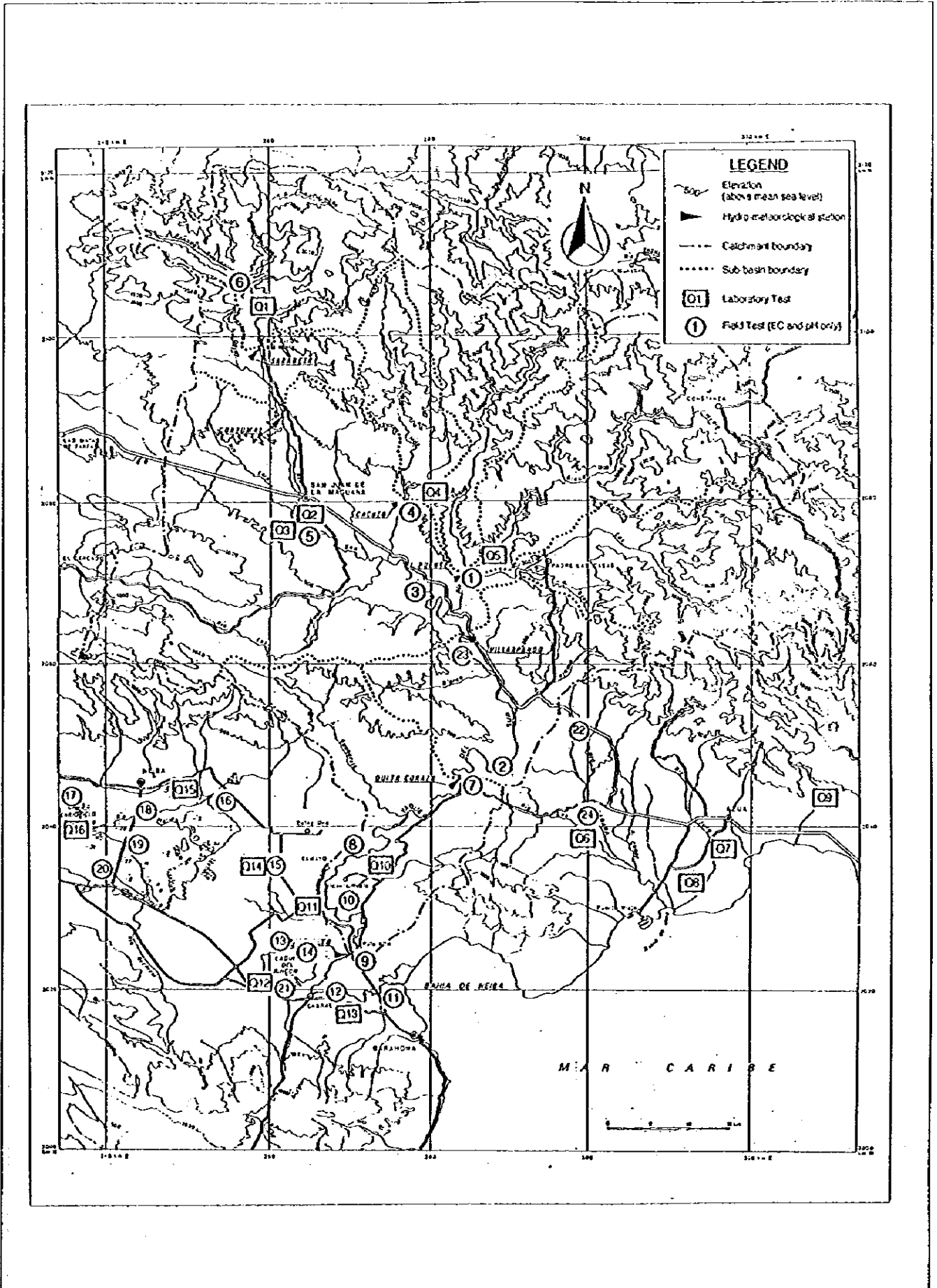
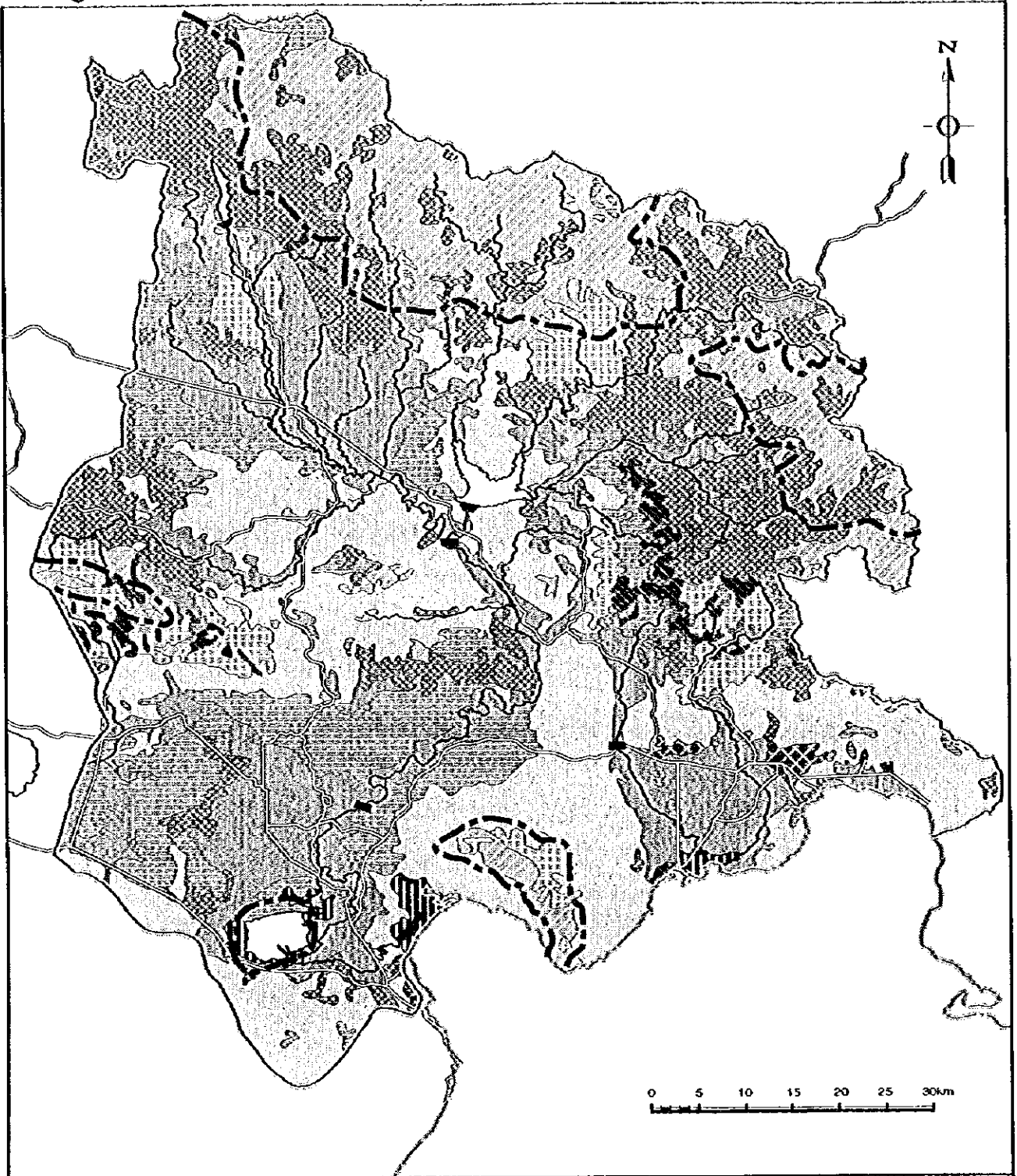


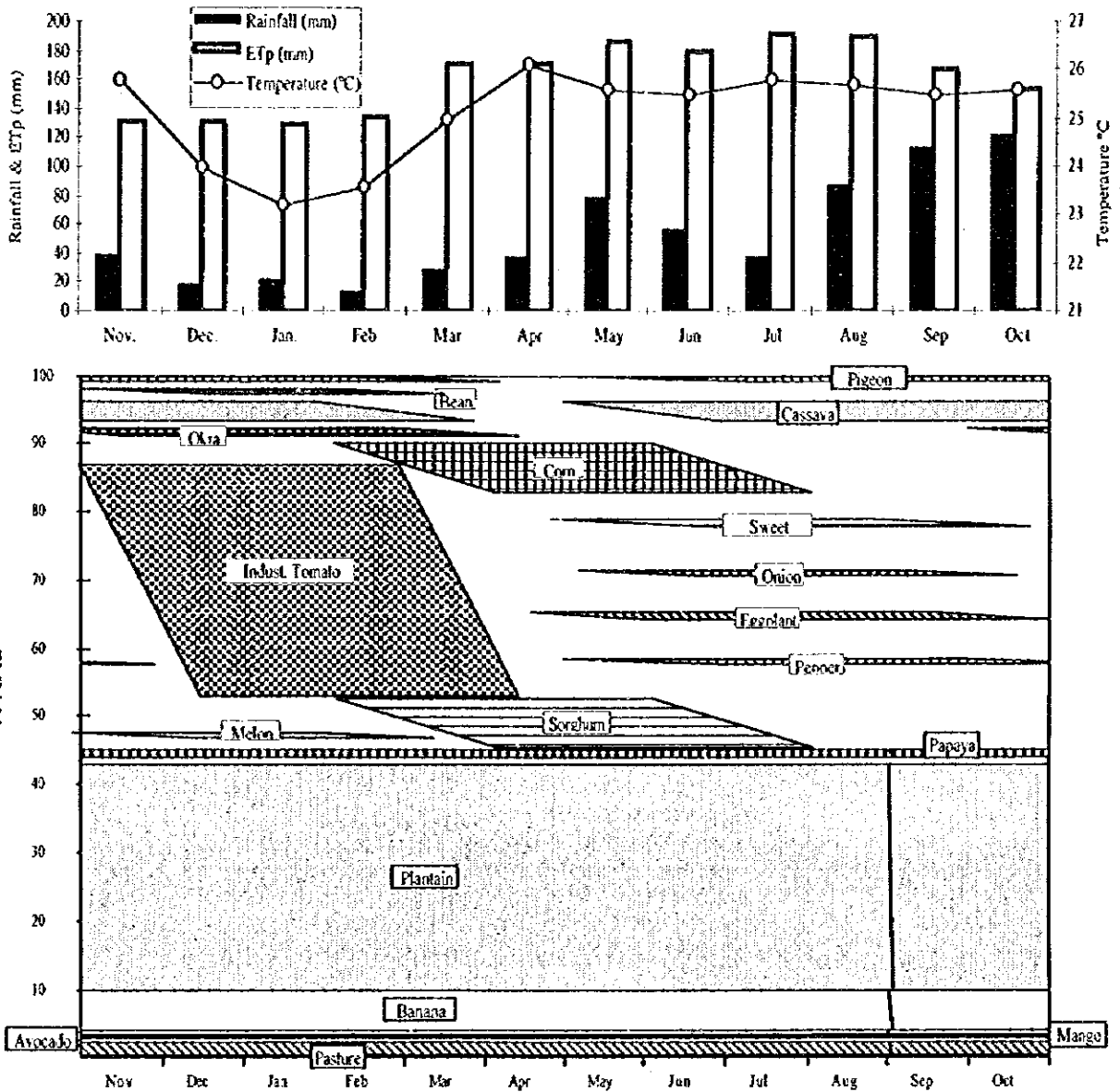


Fig. 3.3.1 Present Land Use Map of Study Area



LEGEND		
Project Area	Irrigated Land	Bush and shrub
National Park	Rainfed Agriculture (Except Shifting Cultivation)	Wet land
Road	Shifting culture and natural pasture	Barren land
Dam	Dry land forest	Coffee
Headworks	Humidland forest	Urban Area
River		

FIG. 3.3.2 Typical Cropping Pattern of Main Irrigation Systems (1 of 3)



Typical Present Cropping Pattern of YSURA Irrigation System (Laterals 1 to 6), Azua Irrigation District



FIG. 3.3.2 Typical Cropping Pattern of Main Irrigation Systems (2 of 3)

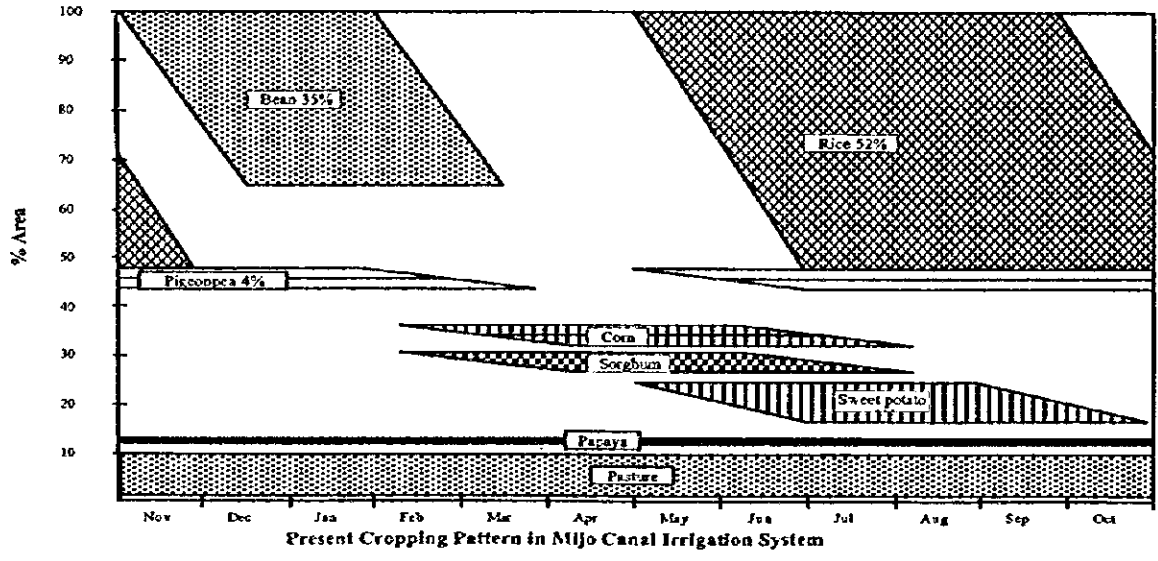
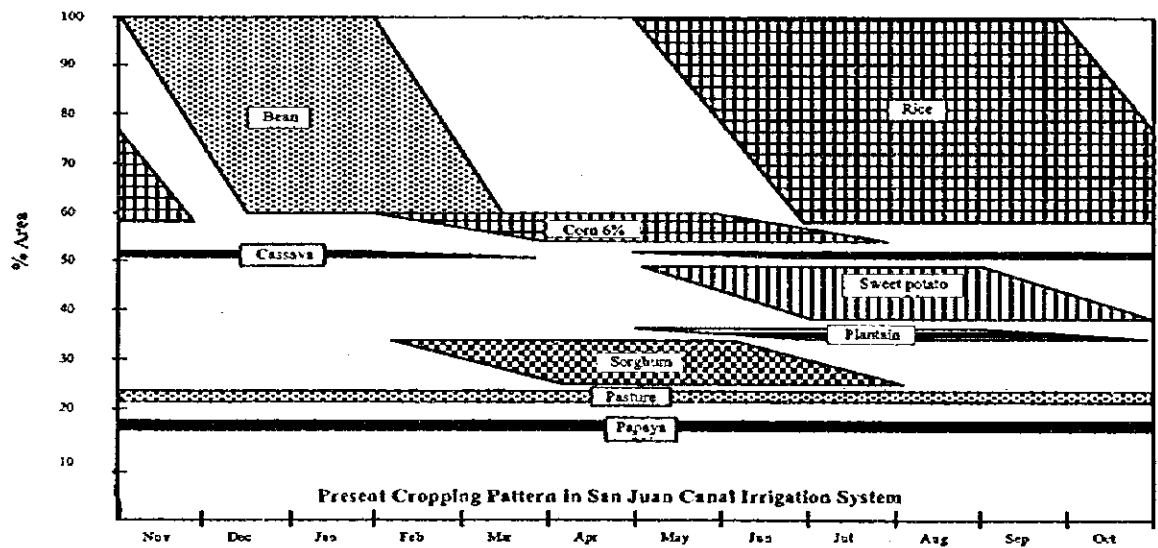
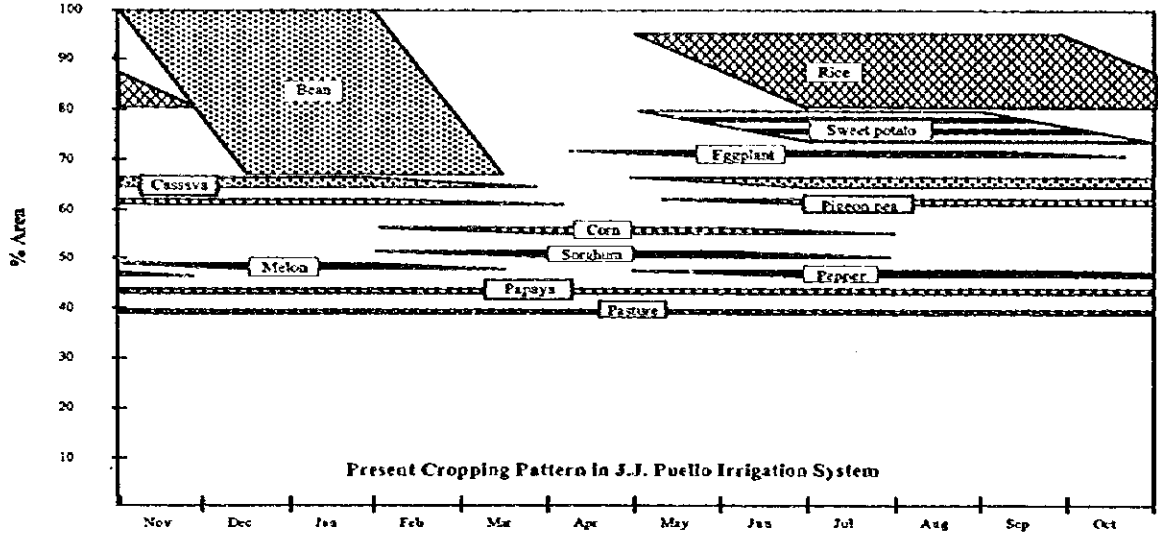
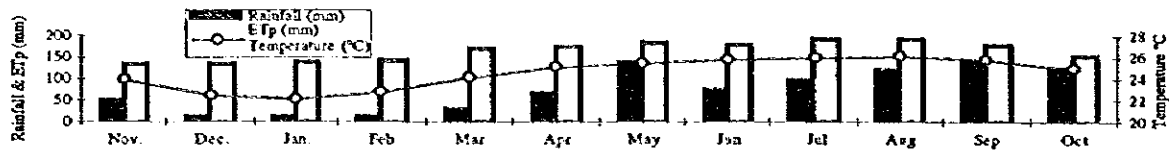
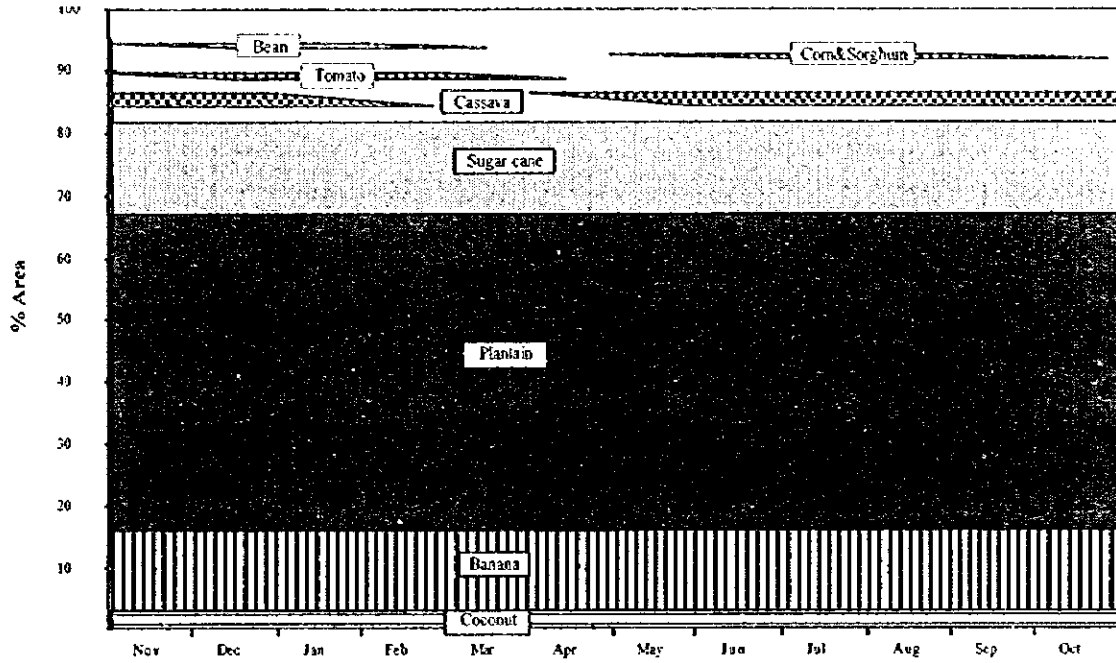
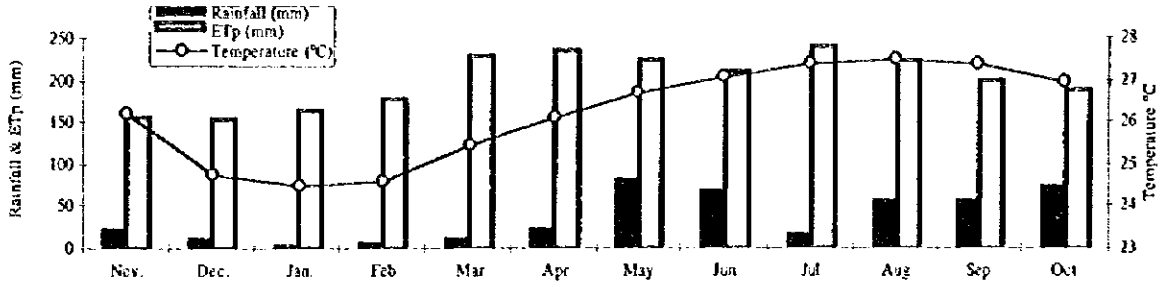
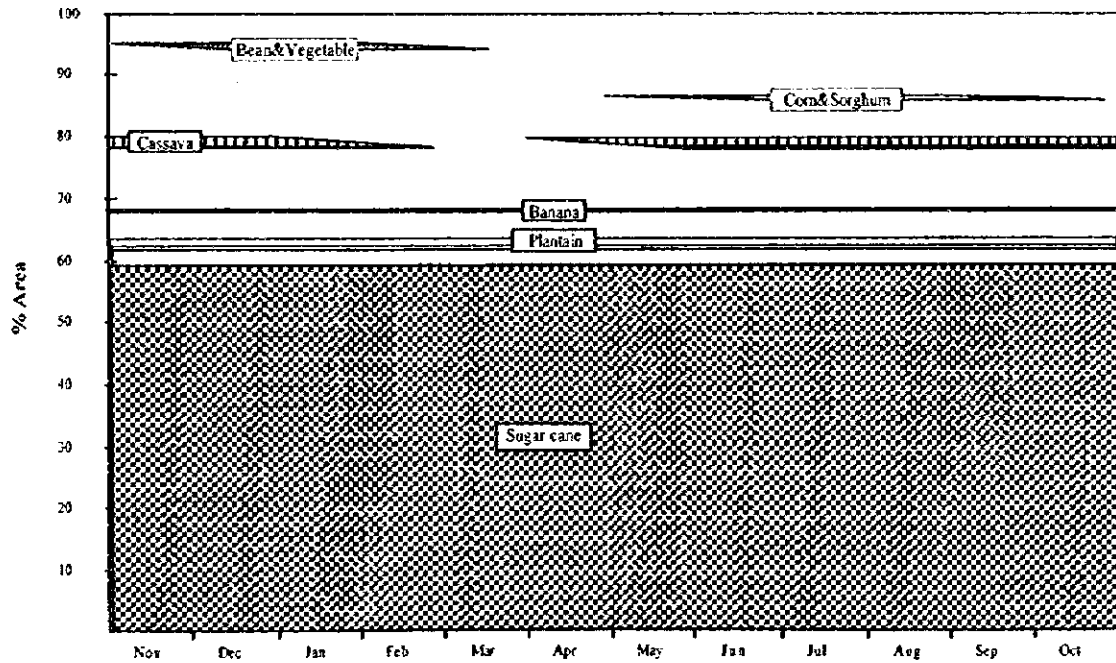




FIG. 3.3.2 Typical Cropping Pattern of Main Irrigation Systems (3 of 3)

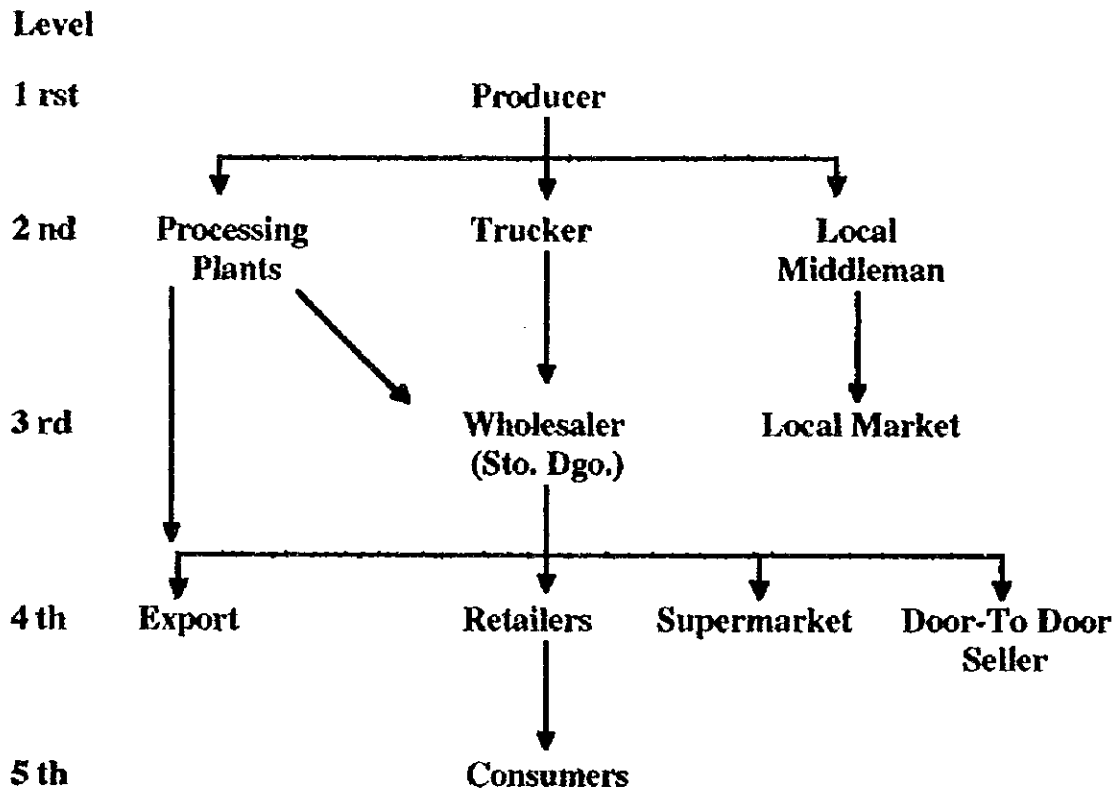


Present Cropping Pattern of Yaque del Sur Irrigation District



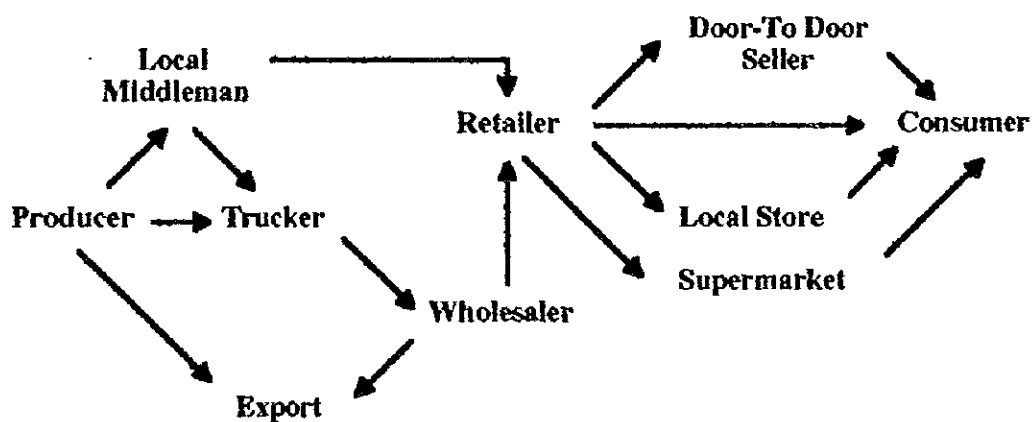
Present Cropping Pattern of Lago Enriquillo Irrigation District (B2 Area)

Fig. 3.4.1 Marketing System in the Study Area



Source : Secretaría de Estado de Agricultura, Subsecretaría Técnica de Planificación Sectorial, 1977 validated by Jica Study Team, 1998.

Fig. 3.4.2 Marketing System for Banana and Plantain in the Study Area



Source : Secretaría de Estado de Agricultura, Subsecretaría Técnica de Planificación Sectorial, 1977 validated by Jica Study Team, 1998.

Fig. 3.4.3 Marketing System for Cassava in the Study Area

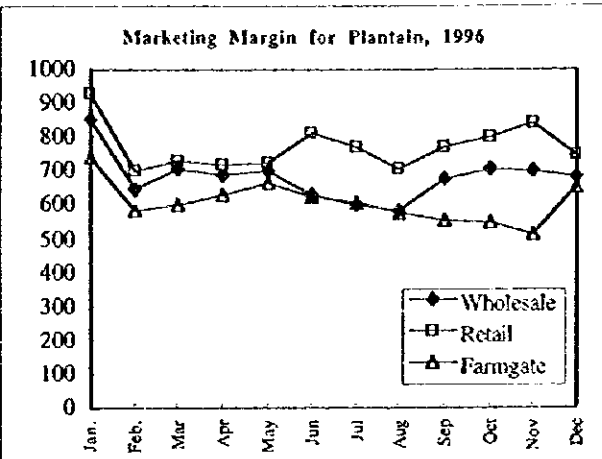


Source : Secretaría de Estado de Agricultura, Subsecretaría Técnica de Planificación Sectorial, 1977 validated by Jica Study Team, 1998.

Fig. 3.4.4 Marketing Margin for Plantain 1996 - 1997

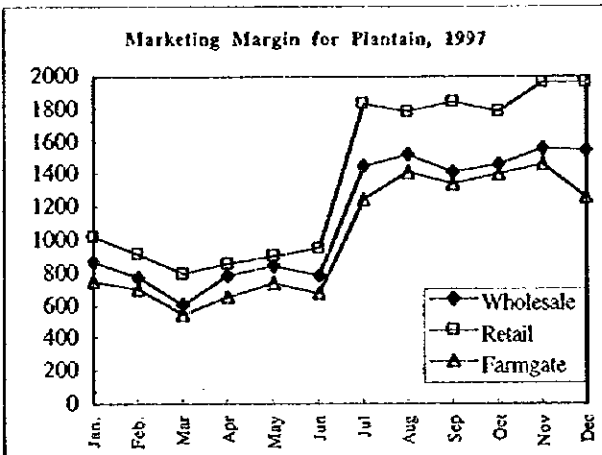
Plantain Margin, 1996

	RD\$/MILLAR		
	Wholesale	Retail	Farmgate
Jan.	857	930	745
Feb.	648	700	584
Mar.	705	730	603
Apr.	687	720	633
May	700	725	667
Jun.	631	810	627
Jul.	602	770	608
Aug.	584	710	579
Sep.	681	770	553
Oct.	708	800	547
Nov.	700	840	515
Dec.	682	750	653



Plantain Margin, 1997

	RD\$/MILLAR		
	Wholesale	Retail	Farmgate
Jan.	864	1020	746
Feb.	779	920	698
Mar.	606	800	549
Apr.	788	860	649
May	841	910	737
Jun.	783	950	678
Jul.	1454	1830	1250
Aug.	1518	1780	1420
Sep.	1417	1850	1351
Oct.	1457	1790	1400
Nov.	1558	1960	1467
Dec.	1553	1967	1264

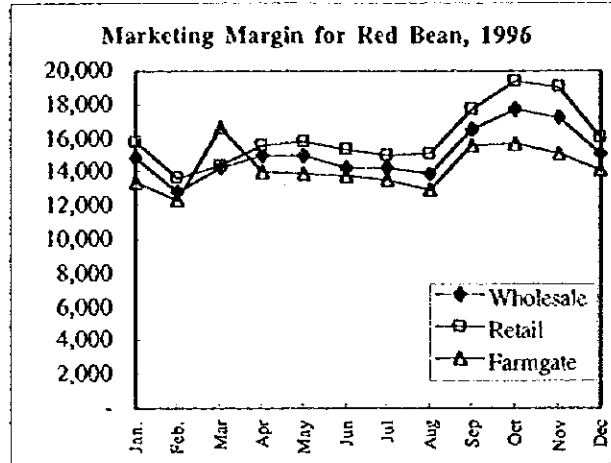


Source: Secretaria de Estado de Agricultura (SEA), Dirección Regional Agropecuaria, Zona Sur (1996 y 1997).

Fig. 3.4.5 Marketing Margin for Red Bean 1996 - 1997

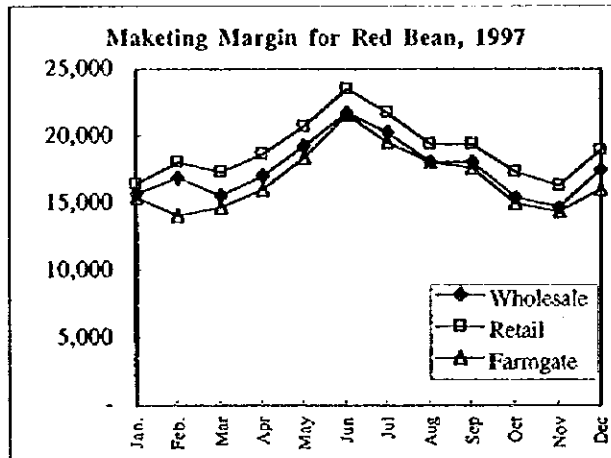
Red Bean Margin, 1996

	RD\$/MT		
	Wholesale	Retail	Farmgate
Jan.	14,850	15,840	13,405
Feb.	12,848	13,728	12,376
Mar.	14,234	14,410	16,709
Apr.	14,982	15,620	14,010
May	14,960	15,840	13,950
Jun.	14,278	15,400	13,860
Jul.	14,300	15,048	13,564
Aug.	13,926	15,114	13,030
Sep.	16,605	17,732	15,621
Oct.	17,695	19,360	15,664
Nov.	17,233	19,030	15,161
Dec.	15,156	16,082	14,168



Red Bean Margin, 1997

	RD\$/MT		
	Wholesale	Retail	Farmgate
Jan.	15,712	16,500	15,481
Feb.	16,940	18,040	14,080
Mar.	15,615	17,314	14,755
Apr.	17,021	18,612	16,102
May	19,215	20,724	18,401
Jun.	21,710	23,474	21,560
Jul.	20,240	21,824	19,580
Aug.	18,150	19,360	18,066
Sep.	18,035	19,382	17,641
Oct.	15,395	17,402	14,960
Nov.	14,689	16,324	14,400
Dec.	17,521	19,008	16,102

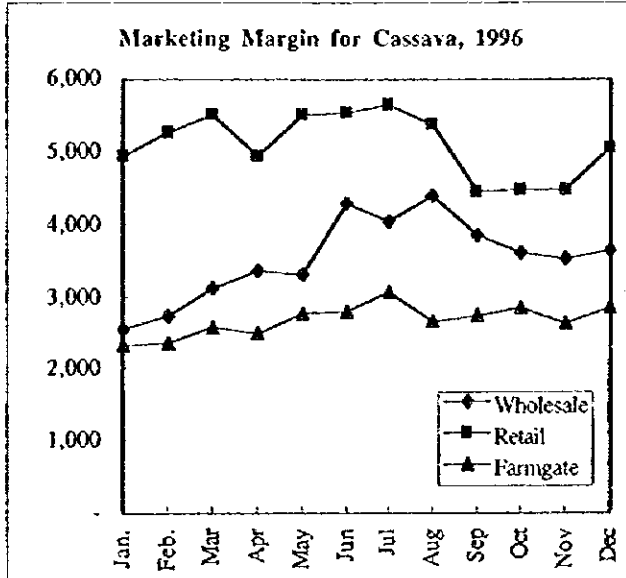


Source: Secretaria de Estado de Agricultura (SEA), Dirección Regional Agropecuaria, Zona Sur (1996 y 1997).

Fig. 3.4.6 Marketing Margin for Cassava 1996 - 1997

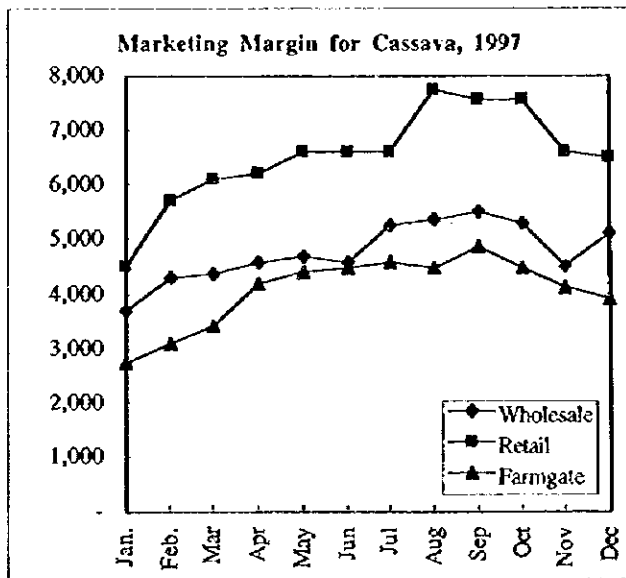
Cassava Margin, 1996

	RDS/MT		
	Wholesale	Retail	Farmgate
Jan.	2,544	4,950	2,343
Feb.	2,750	5,280	2,353
Mar.	3,124	5,500	2,583
Apr.	3,366	4,950	2,508
May.	3,300	5,500	2,772
Jun.	4,288	5,544	2,794
Jul.	4,048	5,654	3,080
Aug.	4,385	5,368	2,668
Sep.	3,850	4,466	2,730
Oct.	3,621	4,488	2,863
Nov.	3,520	4,488	2,625
Dec.	3,627	5,060	2,840



Cassava Margin, 1997

	RDS/MT		
	Wholesale	Retail	Farmgate
Jan.	3,696	4,532	2,750
Feb.	4,301	5,720	3,101
Mar.	4,363	6,116	3,422
Apr.	4,576	6,226	4,200
May.	4,686	6,600	4,415
Jun.	4,576	6,600	4,490
Jul.	5,258	6,600	4,580
Aug.	5,379	7,766	4,469
Sep.	5,500	7,590	4,867
Oct.	5,302	7,590	4,469
Nov.	4,510	6,600	4,127
Dec.	5,104	6,512	3,894



Source: Secretaria de Estado de Agricultura (SEA), Dirección Regional Agropecuaria, Zona Sur (1996 y 1997).

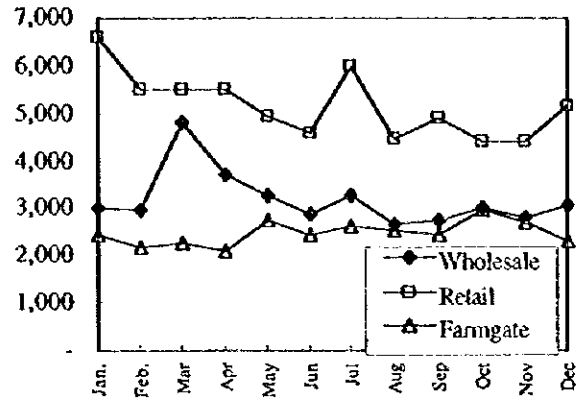


Fig. 3.4.7 Marketing Margin for Sweet Potato 1996 - 1997

Sweet Potato Margin, 1996
RD\$/MT

	Wholesale	Retail	Farmgate
Jan.	3,014	6,600	2,442
Feb.	2,970	5,500	2,191
Mar.	4,818	5,500	2,255
Apr.	3,740	5,500	2,112
May	3,300	4,950	2,778
Jun.	2,904	4,576	2,455
Jul.	3,300	5,984	2,615
Aug.	2,657	4,444	2,530
Sep.	2,772	4,884	2,442
Oct.	3,025	4,400	2,981
Nov.	2,808	4,400	2,718
Dec.	3,080	5,148	2,306

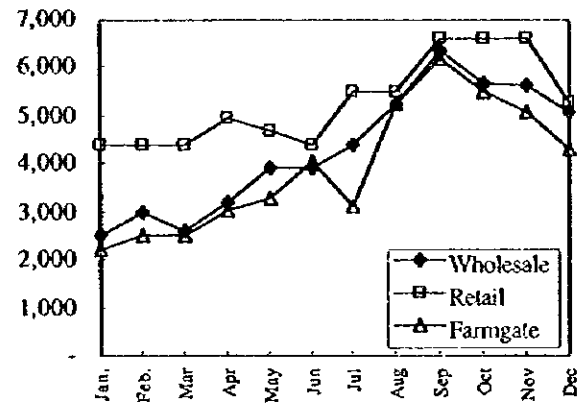
Marketing Margin for Sweet Potato, 1996



Sweet Potato Margin, 1997
RD\$/MT

	Wholesale	Retail	Farmgate
Jan.	2,512	4,400	2,200
Feb.	2,970	4,400	2,530
Mar.	2,618	4,400	2,530
Apr.	3,212	4,950	3,025
May	3,938	4,686	3,280
Jun.	3,933	4,400	4,035
Jul.	4,400	5,500	3,117
Aug.	5,261	5,500	5,234
Sep.	6,348	6,600	6,188
Oct.	5,672	6,600	5,513
Nov.	5,614	6,600	5,094
Dec.	5,078	5,280	4,301

Marketing Margin for Sweet Potato, 1997

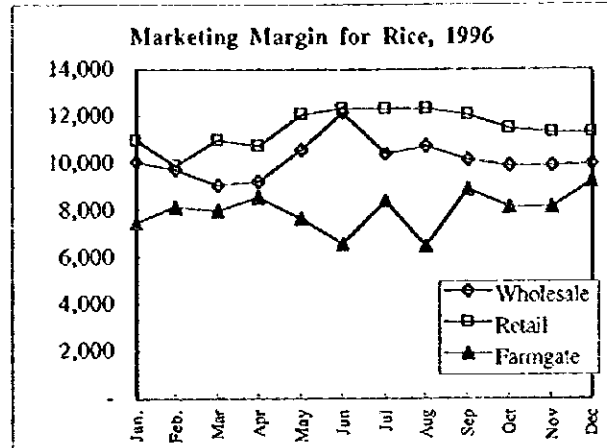


Source: Secretaría de Estado de Agricultura (SEA), Dirección Regional Agropecuaria, Zona Sur (1996 y 1997).

Fig. 3.4.8 Marketing Margin for Rice 1996 - 1997

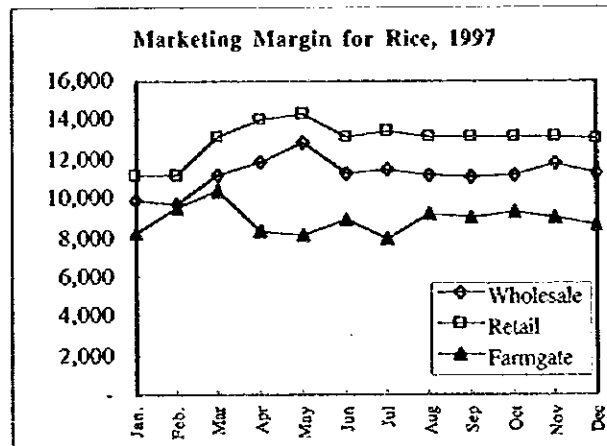
Rice Margin , 1996

	RD\$/MT		
	Wholesale	Retail	Farmgate
Jan.	10,043	11,000	7,522
Feb.	9,713	9,900	8,164
Mar.	9,064	11,000	7,993
Apr.	9,249	10,714	8,624
May	10,542	12,100	7,700
Jun.	12,150	12,320	6,545
Jul.	10,443	12,320	8,450
Aug.	10,742	12,320	6,529
Sep.	10,181	12,100	8,951
Oct.	9,900	11,462	8,149
Nov.	9,907	11,352	8,143
Dec.	9,973	11,308	9,291



Rice Margin , 1997

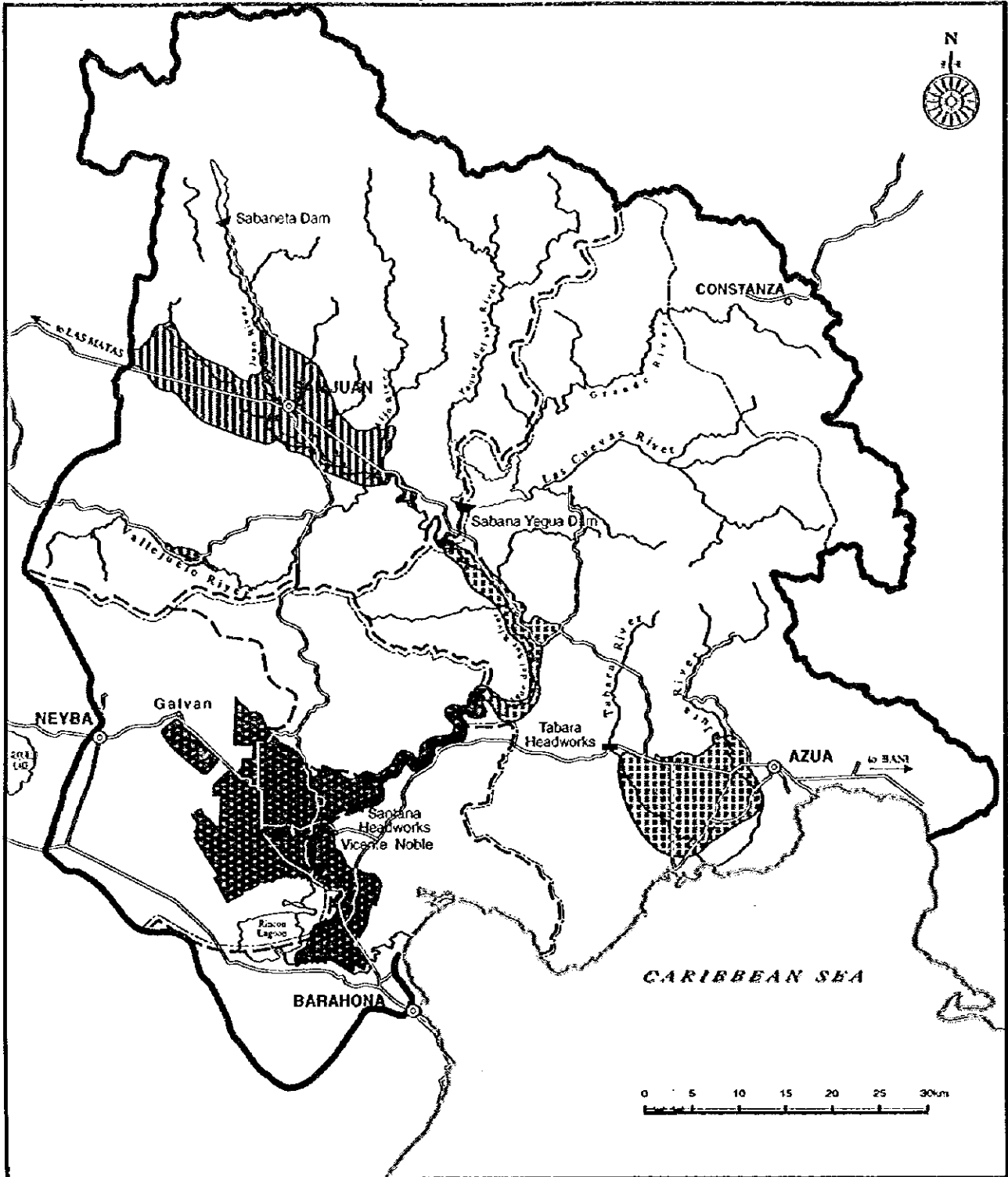
	RD\$/MT		
	Wholesale	Retail	Farmgate
Jan.	9,951	11,176	8,208
Feb.	9,674	11,176	9,507
Mar.	11,220	13,200	10,393
Apr.	11,924	14,014	8,371
May	12,826	14,300	8,177
Jun.	11,308	13,200	8,960
Jul.	11,484	13,486	7,949
Aug.	11,176	13,200	9,203
Sep.	11,132	13,200	9,066
Oct.	11,198	13,200	9,313
Nov.	11,814	13,200	9,059
Dec.	11,246	13,068	8,670



Source: Secretaria de Estado de Agricultura (SEA), Dirección Regional Agropocuario, Zona Sur (1996 y 1997).



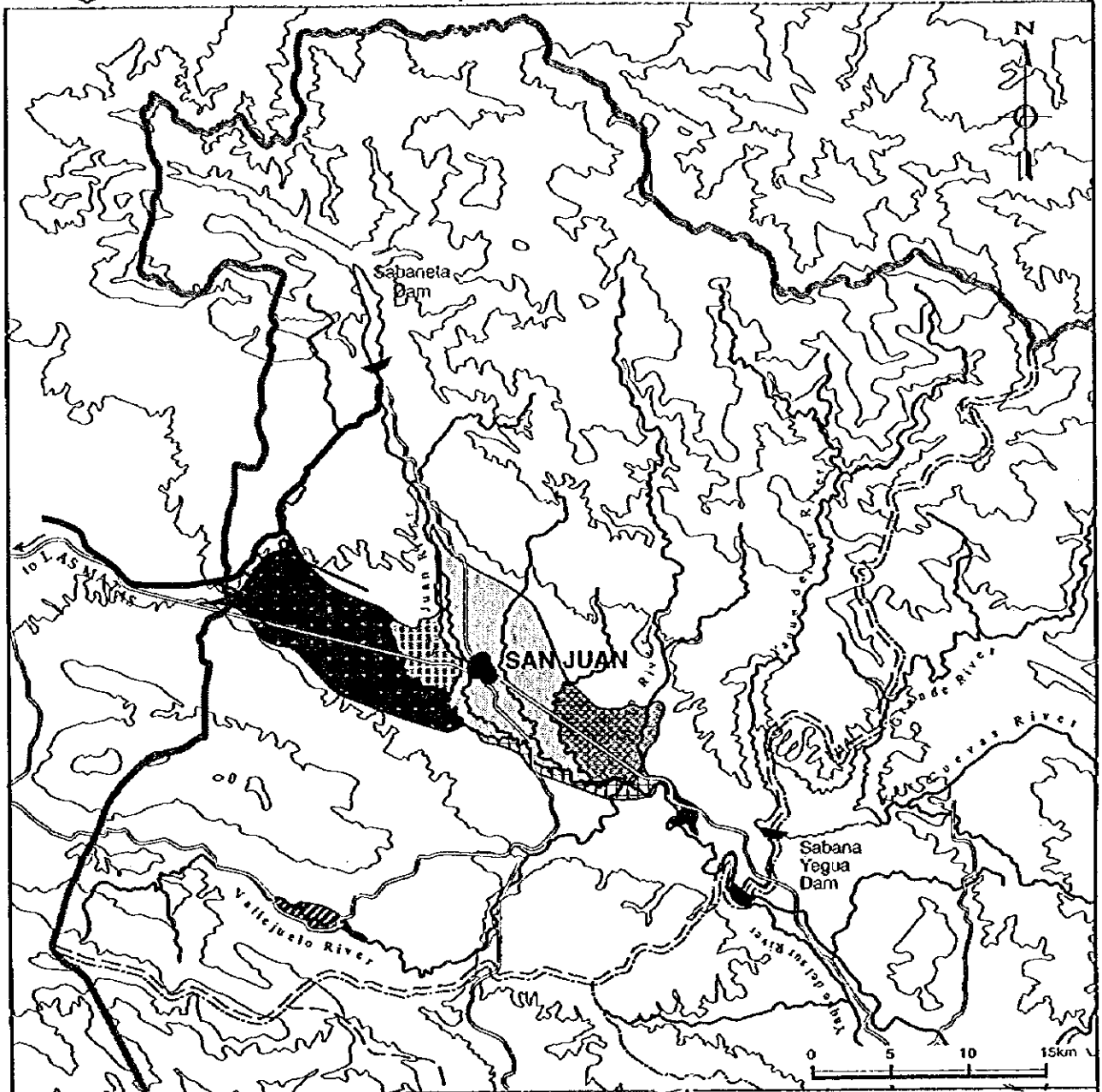
Fig. 3.5.1 Major Irrigation Area In the Study Area



LEGEND			
	Boundary of Project Area		Village
	Irrigation District Boundary		Dam
	Provincial Boundary		Headworks
	Municipality Boundary		River
	Road		Coastline
	San Juan Area		
	Azua Area		
	Yaque del Sur & Lago Enriquillo Area		



Fig. 3.5.2 Irrigation Area in San Juan
Valley Irrigation District



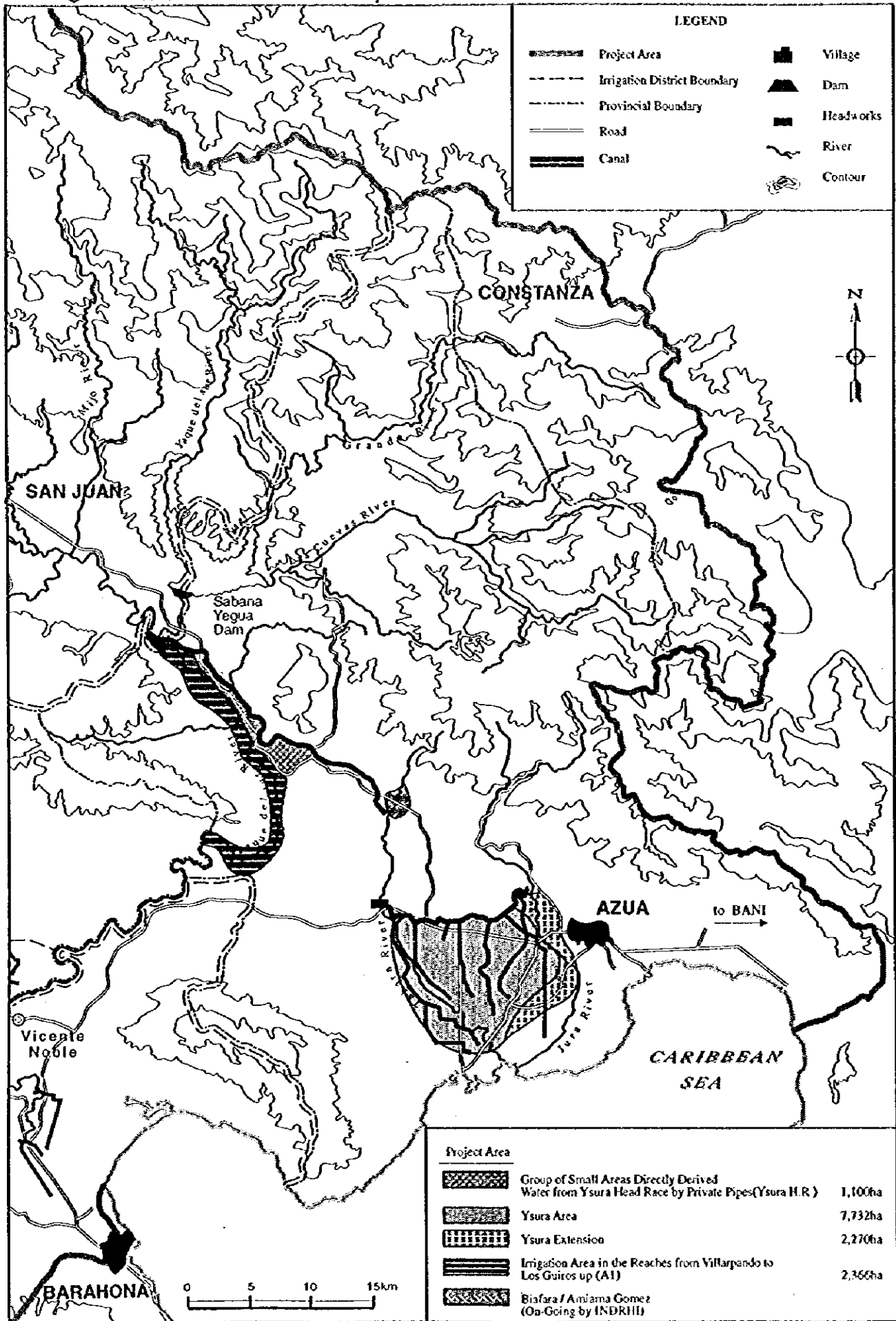
LEGEND	
	Project Area
	Irrigation District Boundary
	Provincial Boundary
	Road
	Canal
	Village
	Dam
	Headworks
	River
	Contour

Project Area	
	J.J. Puello 10,986ha
	San Juan 5,526ha
	Hato del Padre 2,056ha
	Mijo 2,390ha
	Garito San Juan 1,000ha
	Vallejuelo 495ha
	Others 1,848ha



The Study on Integrated Rural Development Project of Yaque del Sur River Basin in the Dominican Republic

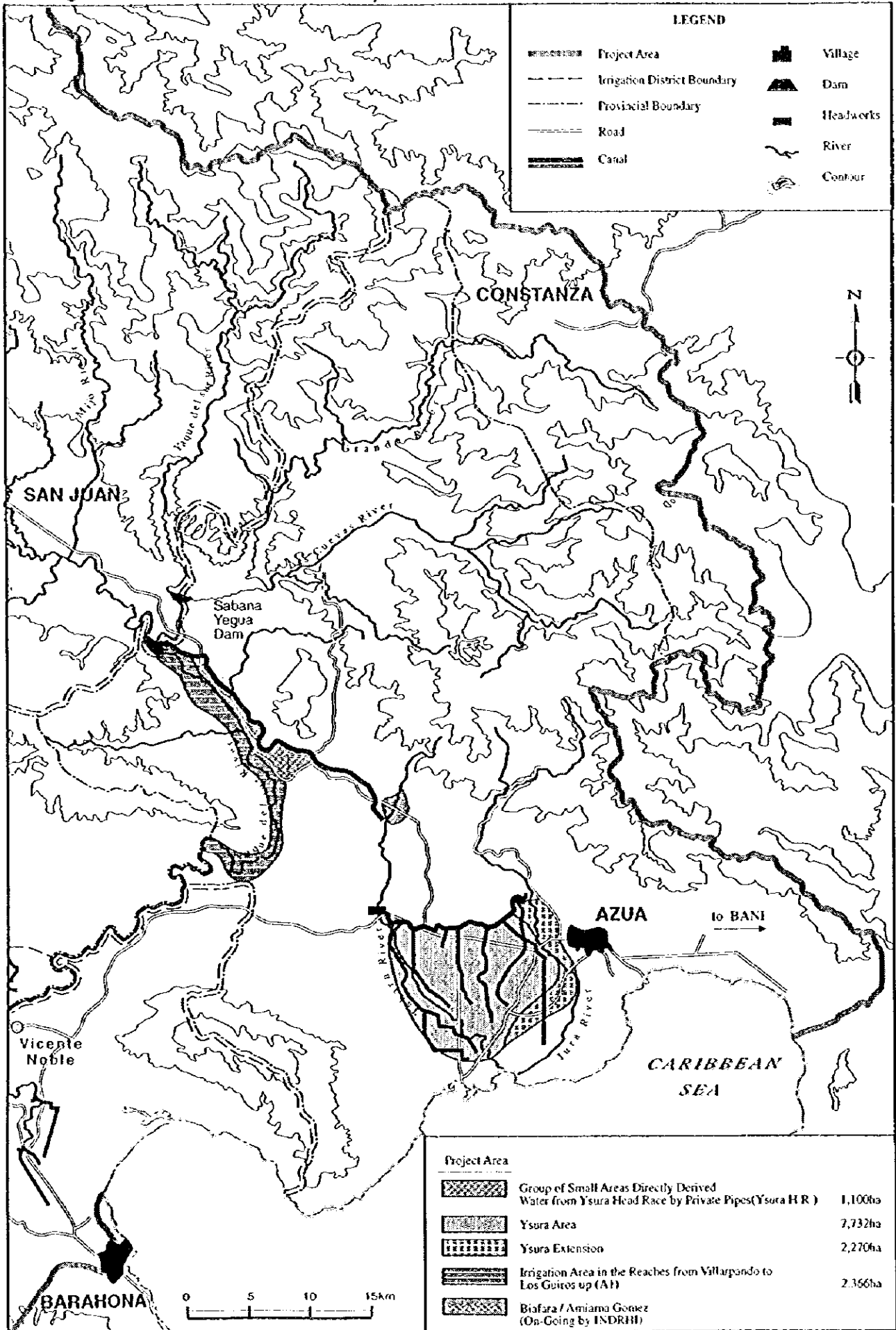
Fig. 3.5.3 Irrigation Area in Azua Valley Irrigation District





The Study on Integrated Rural Development Project of Yaque del Sur River Basin in the Dominican Republic

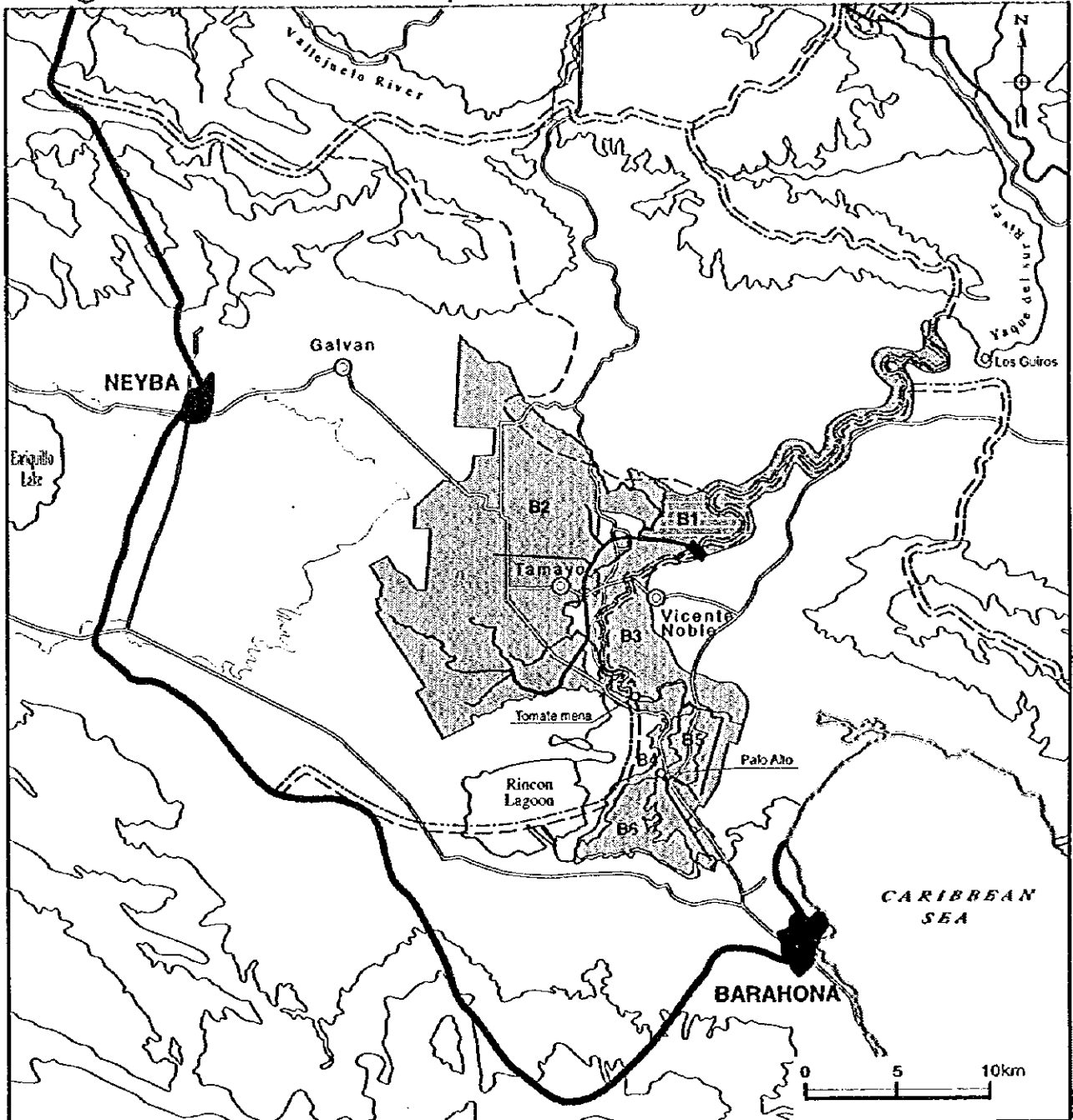
Fig. 3.5.3 Irrigation Area in Azua Valley Irrigation District





The Study on Integrated Rural Development Project of Yaque del Sur River Basin in the Dominican Republic

Fig. 3.5.4 Irrigation Area in Yaque del Sur and Lago Enriquillo Irrigation District



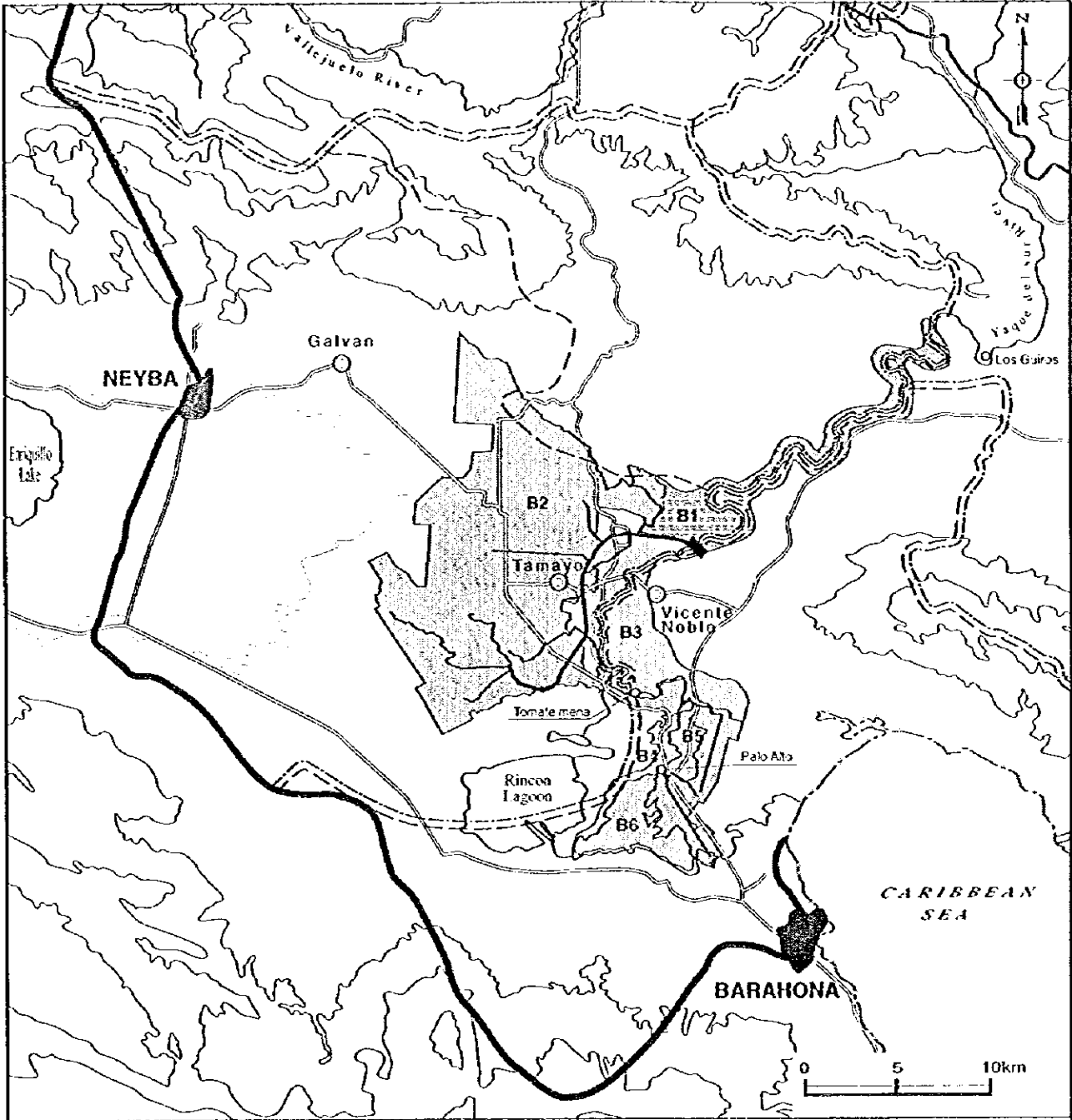
LEGEND	
	Project Area
	Irrigation District Boundary
	Provincial Boundary
	Road
	Canal
	Village
	Dam
	Headworks
	River
	Contour

Project Area	
	Irrigation Area in the Reaches from Los Guiros to Santana Headworks (B1)
	Santana System (B2)
	Left Bank System & Others (B3, B4, B5, B6)
Area B1 (Los Guiros-Santana)	2,791ha
Area B2 (Santana Area)	12,000ha
Area B3 (Santana downstream-Tomate Mena)	2,853ha
Area B4 (Tomate Mena)	371ha
Area B5 (Tomate Mena-Palo Alto Downstream)	1,565ha
Area B6 (Palo Alto downstream)	2,669ha



The Study on Integrated Rural Development Project of Yaqu del Sur River Basin in the Dominican Republic

Fig. 3.5.4 Irrigation Area in Yaqu del Sur and Lago Enriquillo Irrigation District

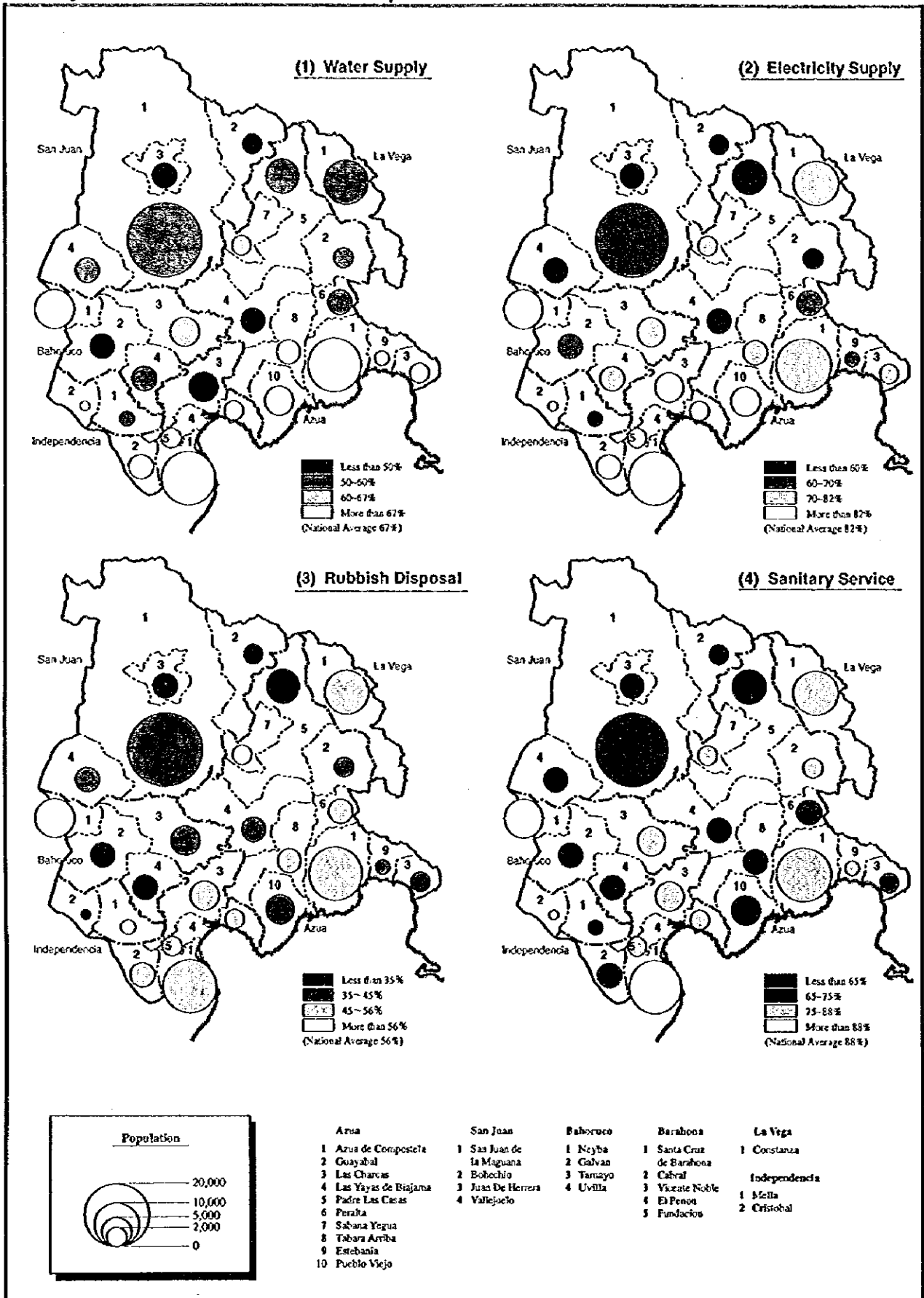


LEGEND	
	Project Area
	Irrigation District Boundary
	Provincial Boundary
	Road
	Canal
	Village
	Dam
	Headworks
	River
	Contour

Project Area	
	Irrigation Area in the Reaches from Los Guiros to Santana Headworks (B1)
	Santana System (B2)
	Left Bank System & Others (B3, B4, B5, B6)

Area B1 (Los Guiros-Santana)	2,791ha
Area B2 (Santana Area)	12,000ha
Area B3 (Santana downstream-Tomate Mena)	2,853ha
Area B4 (Tomate Mena)	374ha
Area B5 (Tomate Mena-Palo Alto Downstream)	1,565ha
Area B6 (Palo Alto downstream)	2,609ha

Fig. 3.6.1 Rural Infrastructure in Census 1993



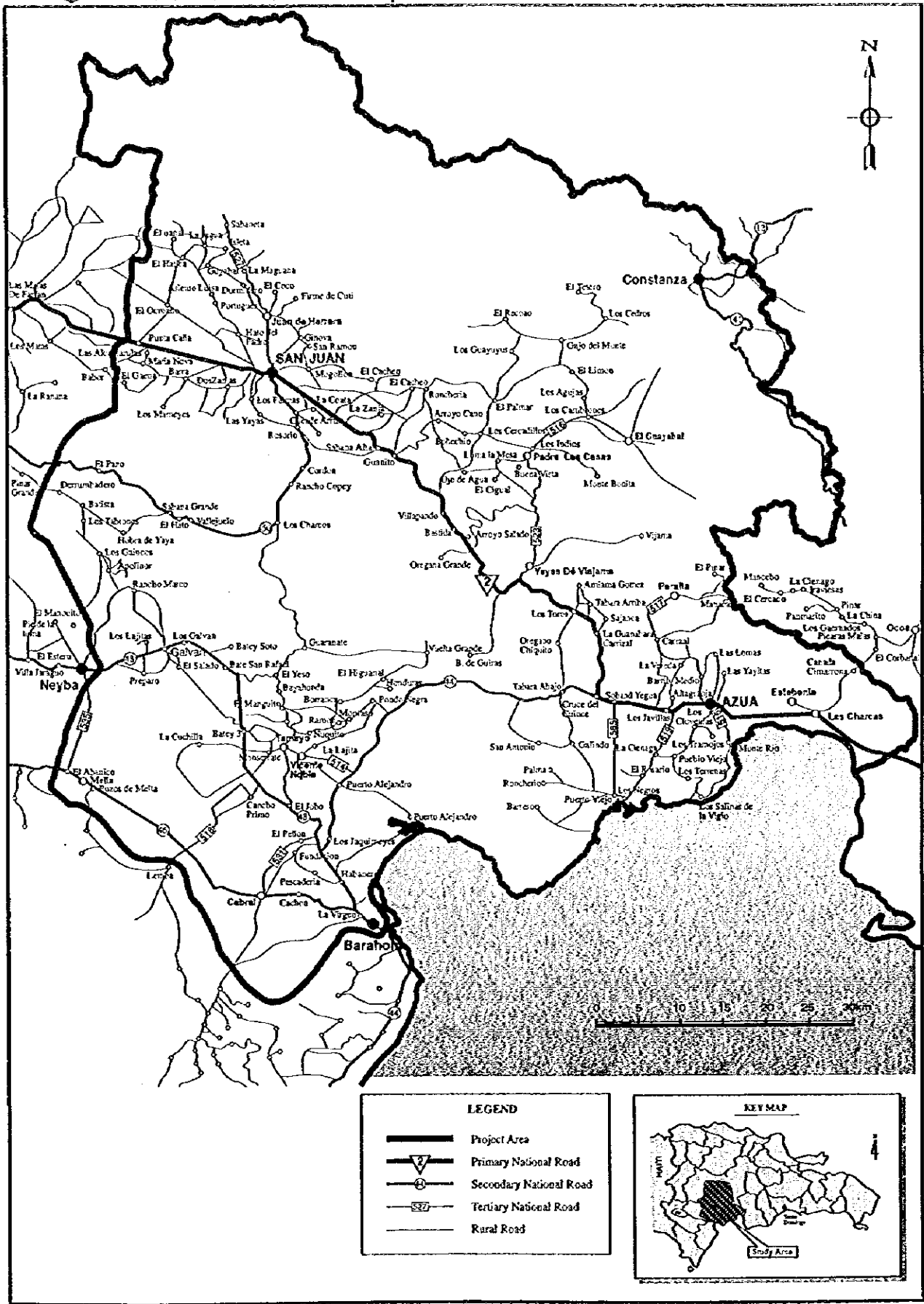




Fig. 3.6.3 Location Map of
INAPA Municipal Water Supply

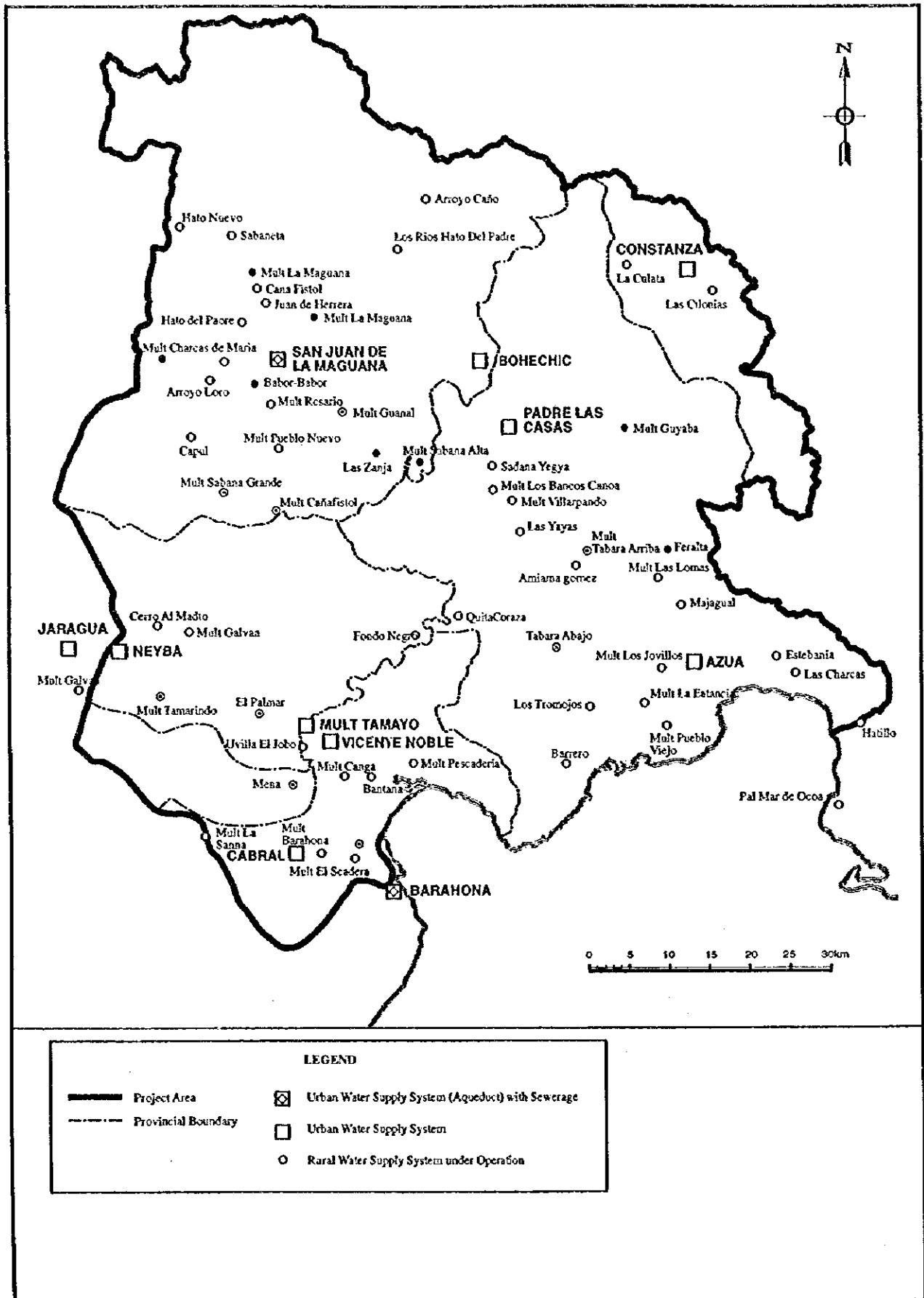
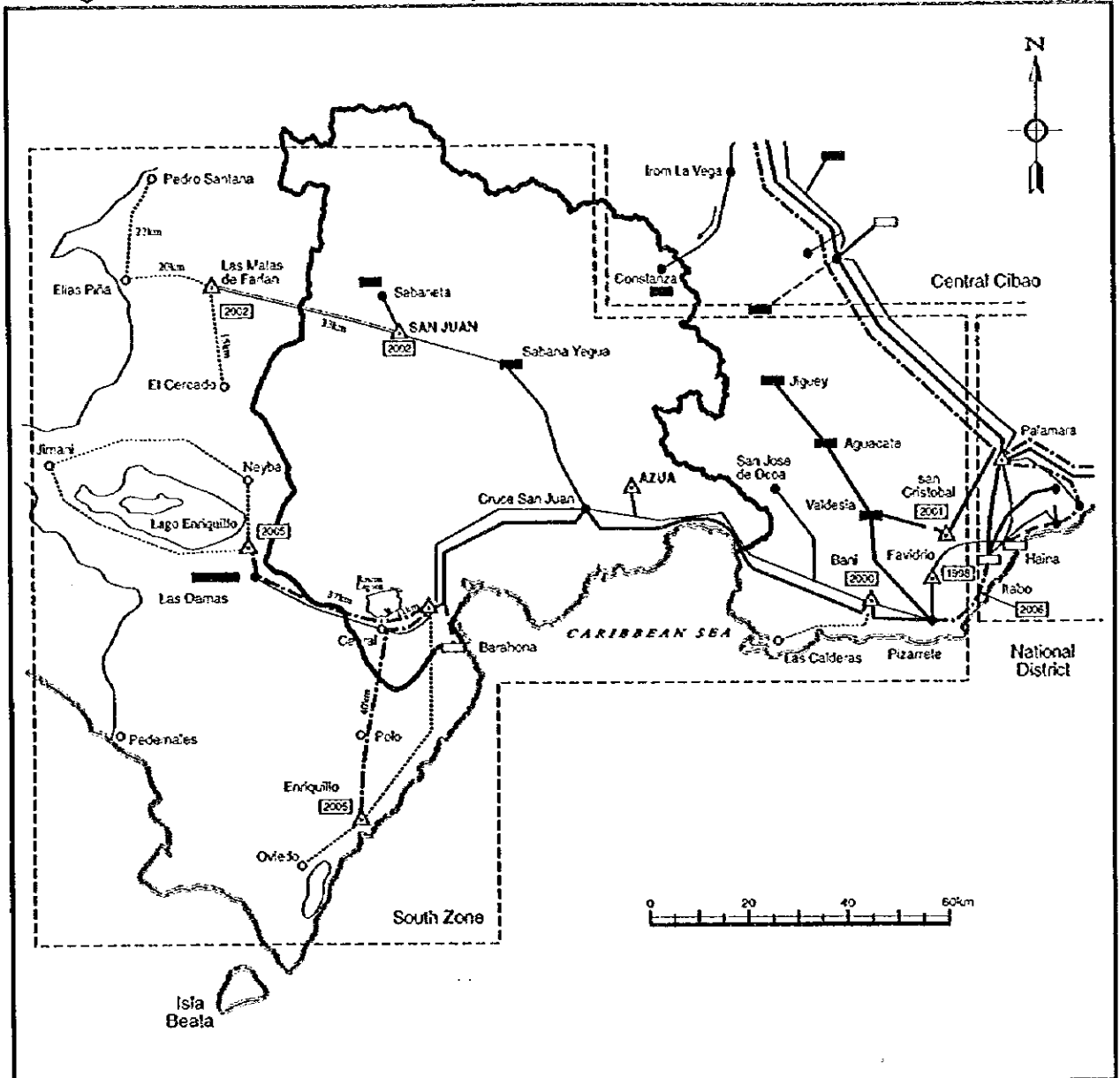




Fig.3.6.4 Location Map of Electricity Supply System

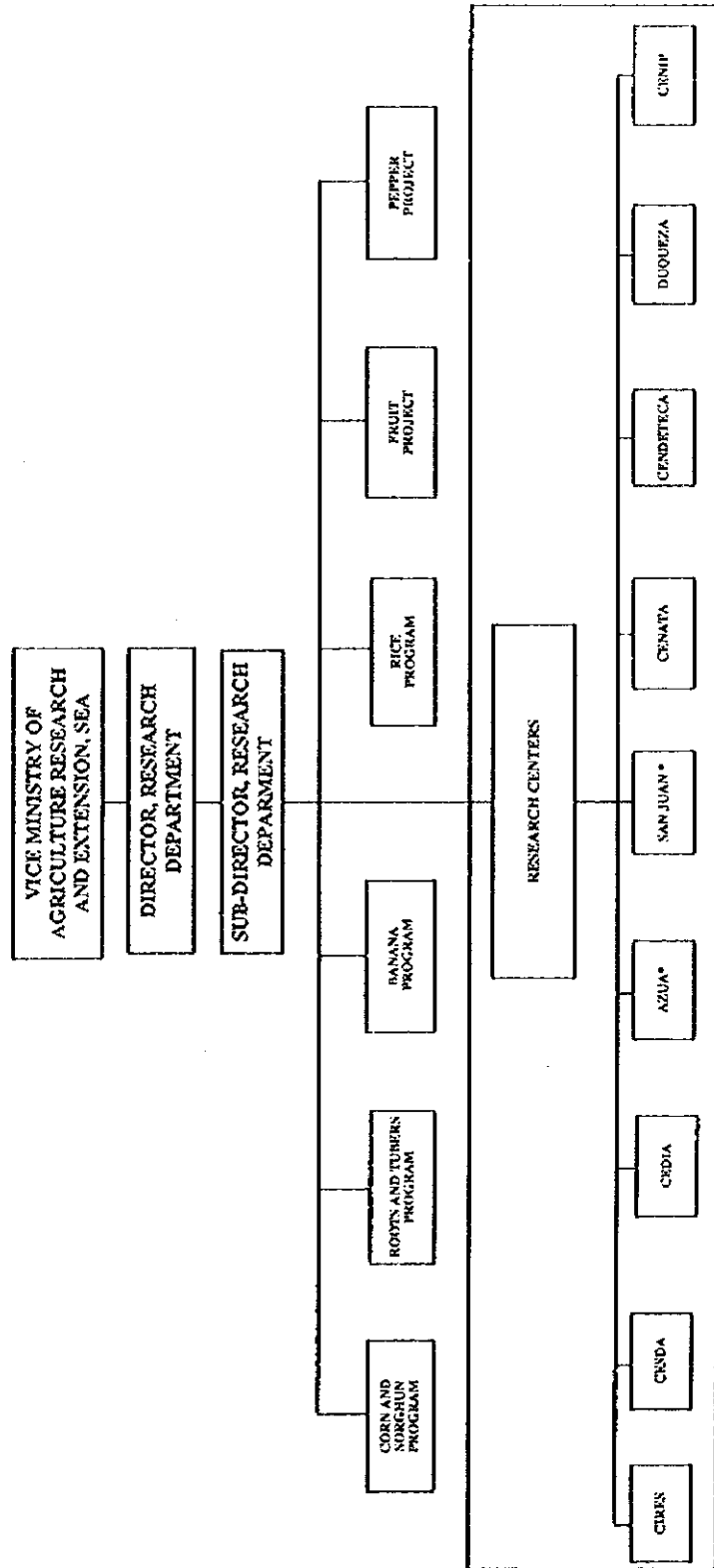


LEGEND

	Study Area			
	Hydropower plant			
	Thermal plant			
	Transformer Sub-Station			
	New sub-station			
	Target Year			
			Existing	under Construction
				Required works
		>138kV		
		69kV		
		34.5kV		

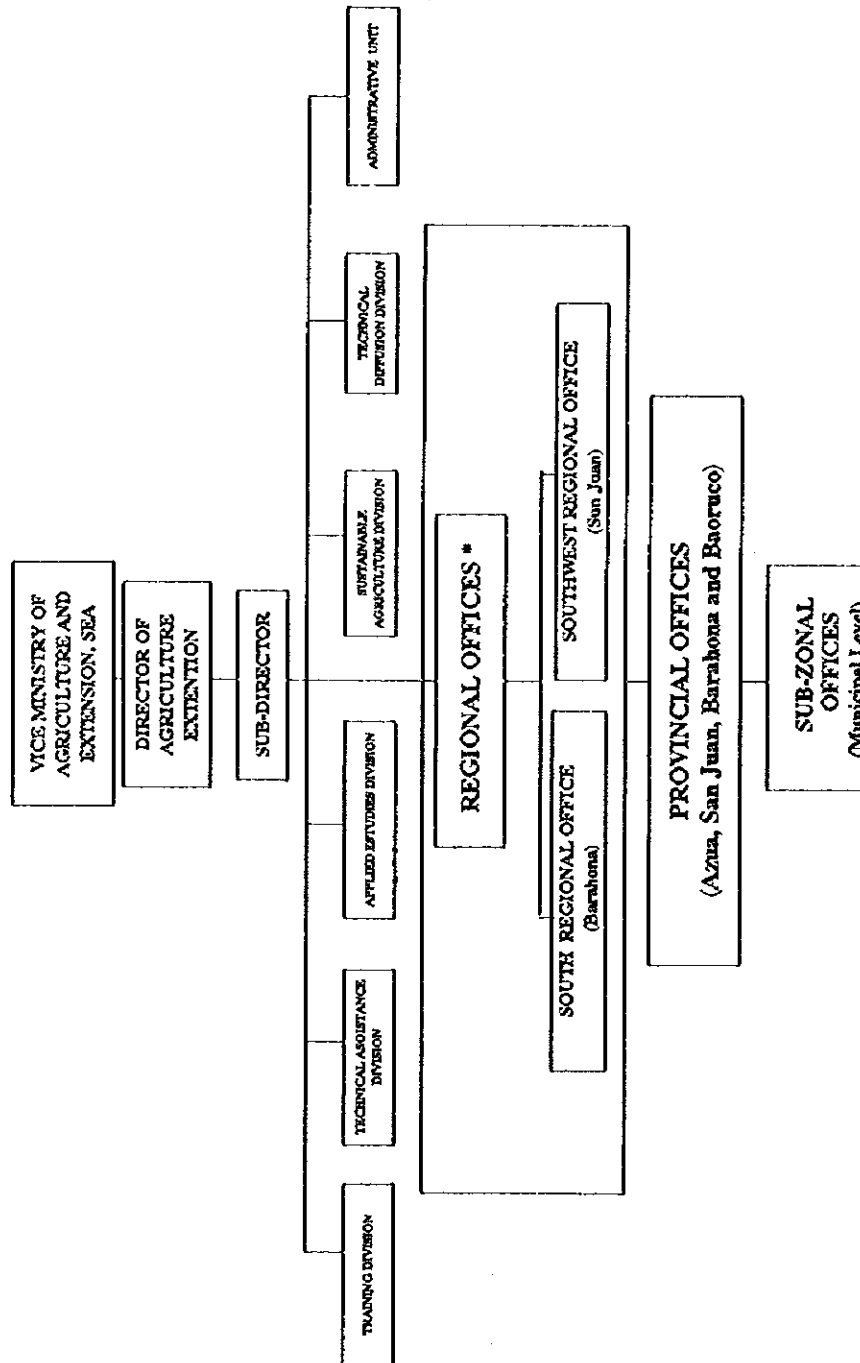
Source : CDB 1998

Fig. 3.7.2 Organization Chart of Research System in the Study Area



* Note: Operates Within The Study Area.
SOURCE: FUNDACION DE DESARROLLO AGROPECUARIO, INC. 1986.

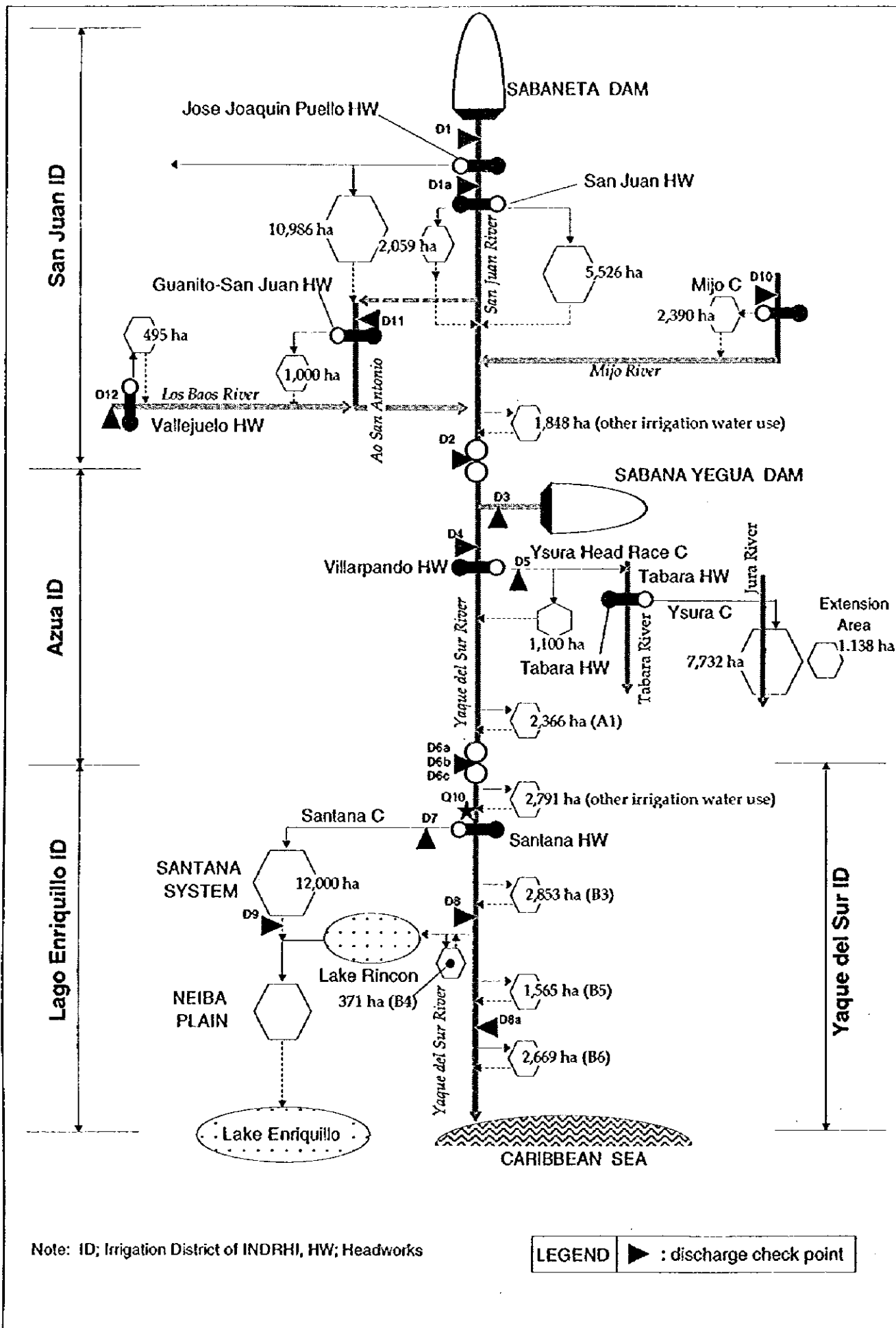
Fig. 3.7.3 Organization Chart of Extension
and Training Department



Source: Secretari de Estado de Agricultura, Sub-secretaria de Extension, investigacion y capacitacion agropecuaria, 1997

* : There are 8 regional offices in the country

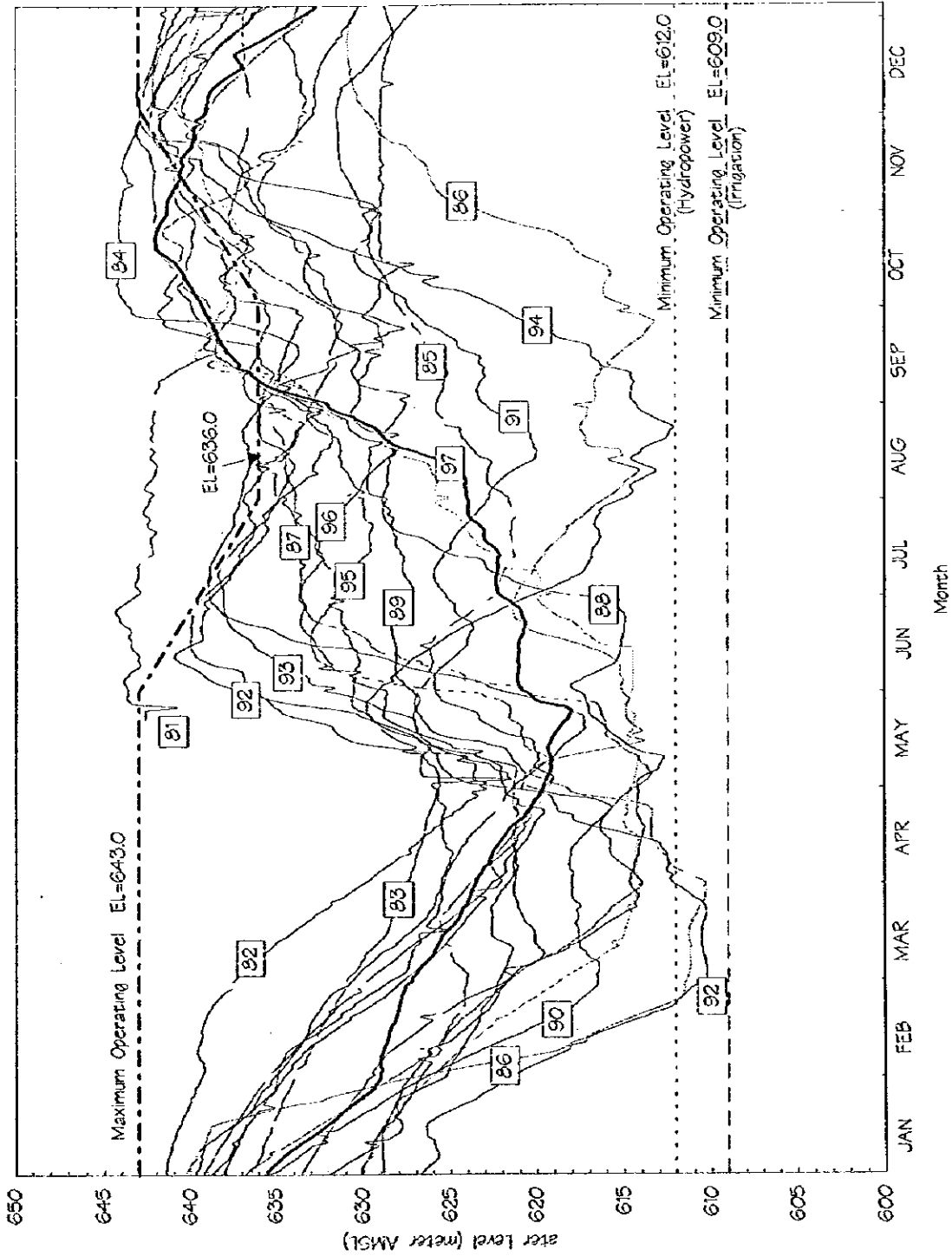
Fig. 3.9.1 Present Water Distribution System in the Yaque del Sur River Basin



Note: ID; Irrigation District of INDRHI, HW; Headworks

LEGEND : discharge check point

Fig. 3.9.2



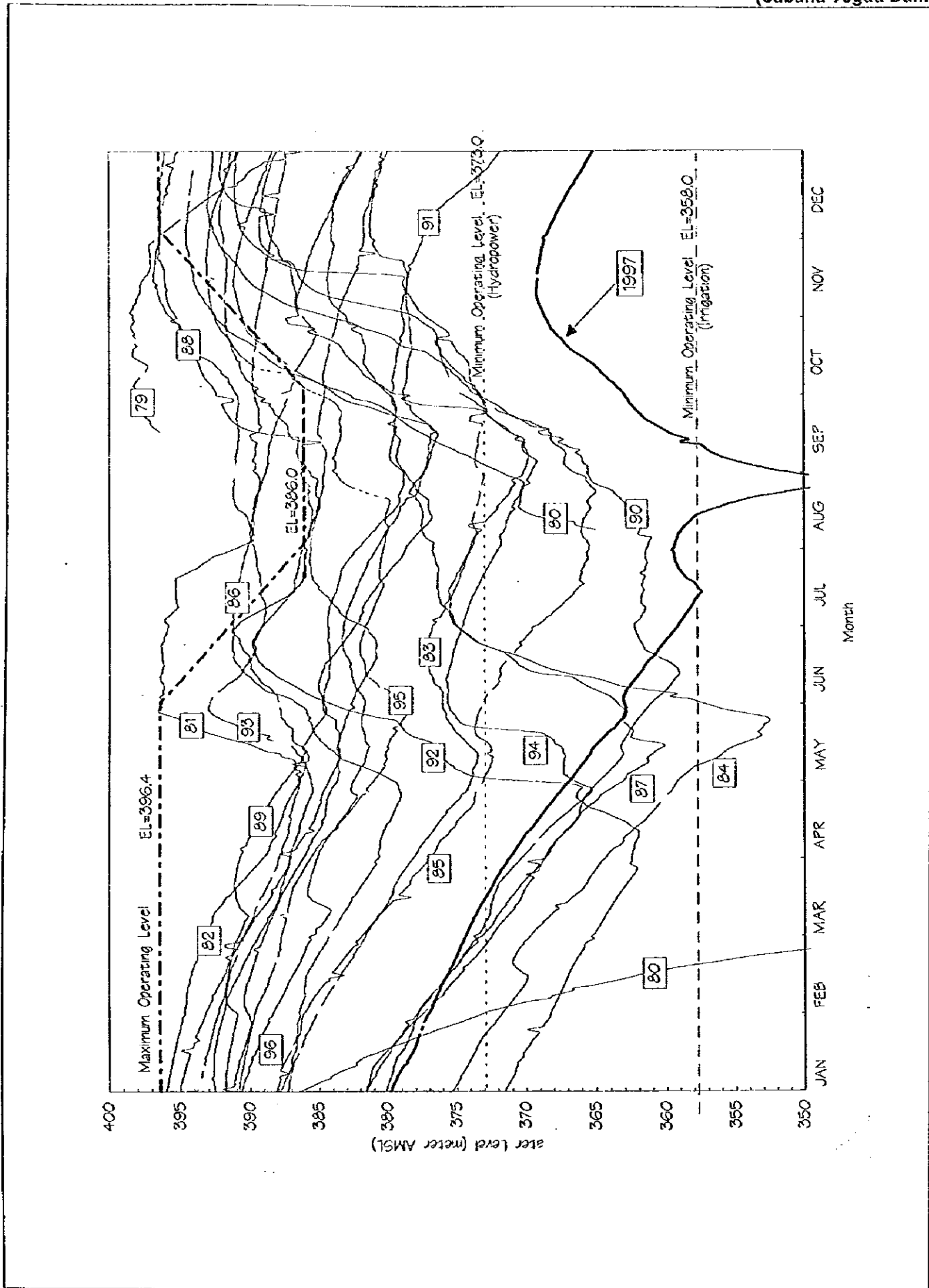
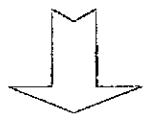


Fig. 3.9.4 Flow of Water Balance Simulation

Setting of Hydrological Blocks



Preparation of Data



- San Juan Block**
- Sabaneta Dam
 - Jose Juaquin Puello
 - San Juan
 - Hato de Padre
 - Guanito-San Juan
 - Mijo
 - Vallejuelo
 - Others

- Azua Block**
- Sabana Yegua Dam
 - Ysura Conveyance Canal
 - Ysura Canal
 - Ysura Canal (Extension)
 - Others

- Barahona/Neiba Block**
- Yaque del Sur (upstream)
 - Santana Canal
 - Yaque del Sur (middle-stream 1)
 - Tomate Drain
 - Yaque del Sur (middle-stream 2)
 - Yaque del Sur (downstream)
 - Neiba

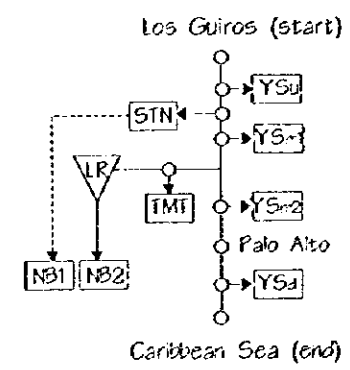
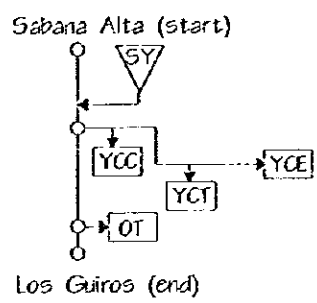
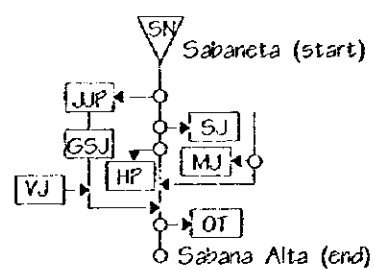
- Data / Records**
- Rainfall
 - River Discharge
 - Canal Discharge
 - Water Level
 - Evaporation
 - Water Requirement
 - Operation Rule

- Type of Data/Records**
- Level 1: Actual Records
 - Level 2: Correlation Equation
 - Level 3: Neighboring Stations
 - Level 4: Interpolation
 - Level 5: Simulation
 - Level 6: Hypothesis

Simulation - 1
San Juan Block

Simulation - 2
Azua Block

Simulation - 3
Barahona Block



- SN: Sabaneta Dam
- JUP: Jose Juaquin Puello
- GSJ: Guanito - San Juan
- VJ: Vallejuelo
- SJ: San Juan
- HP: Hato de Padre
- MJ: Mijo
- OT: Others

- SY: Sabana Yegua Dam
- YCC: Ysura Conveyance Canal
- YCT: Ysura Canal (Tabara)
- YCE: Ysura Canal (Extension)
- OT: Others

- YSu: Yaque del Sur (Los Guiros - Coiquito)
- STN: Santana
- YSm: Yaque del Sur (Coiquito - El Jobo)
- TMT: Tomate Drain
- YSm2: Yaque del Sur (El Jobo - Palo Alto)
- YSa: Yaque del Sur (Palo Alto - Sea)
- LR: Lake Rincon
- NB1: Neiba (Arroyo Drain)
- NB2: Neiba (Cristbal Canal)

Fig. 3.9.5 Estimated Runoff at Each Check Point

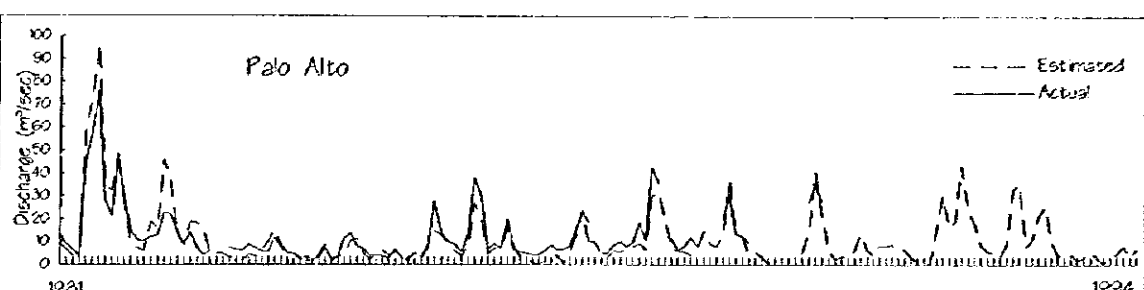
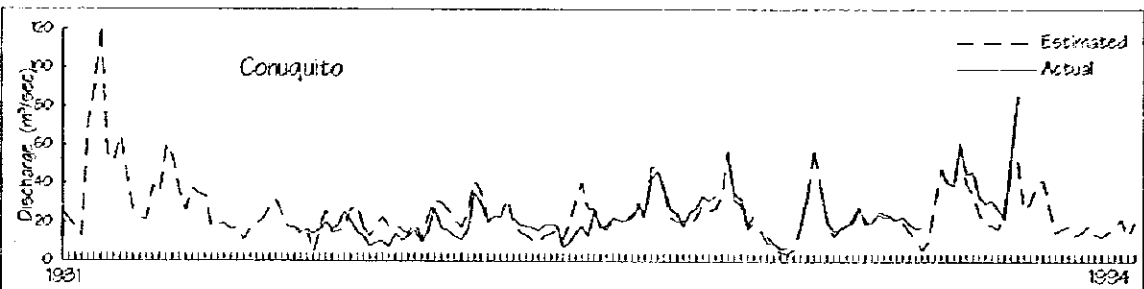
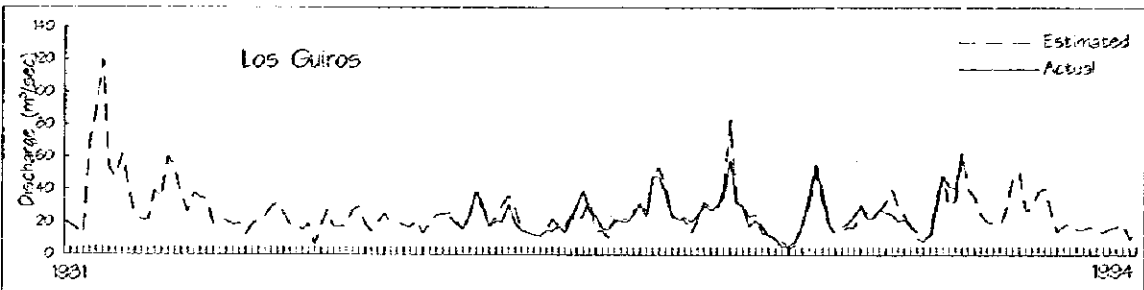
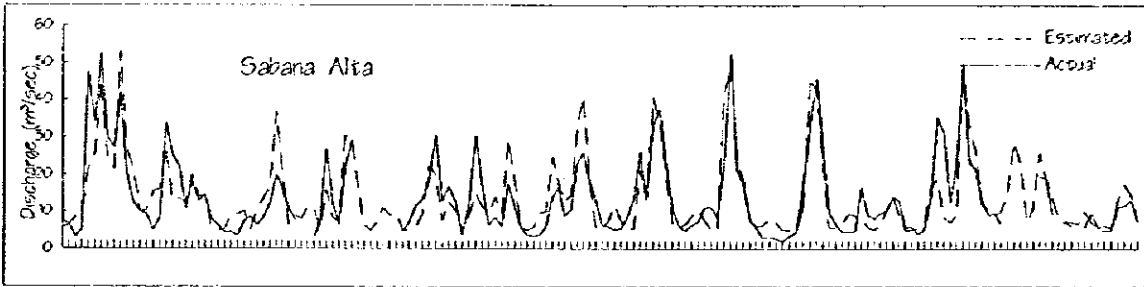
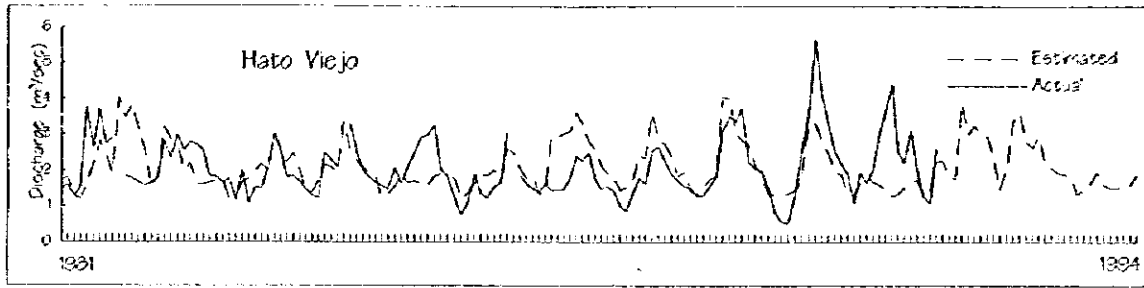
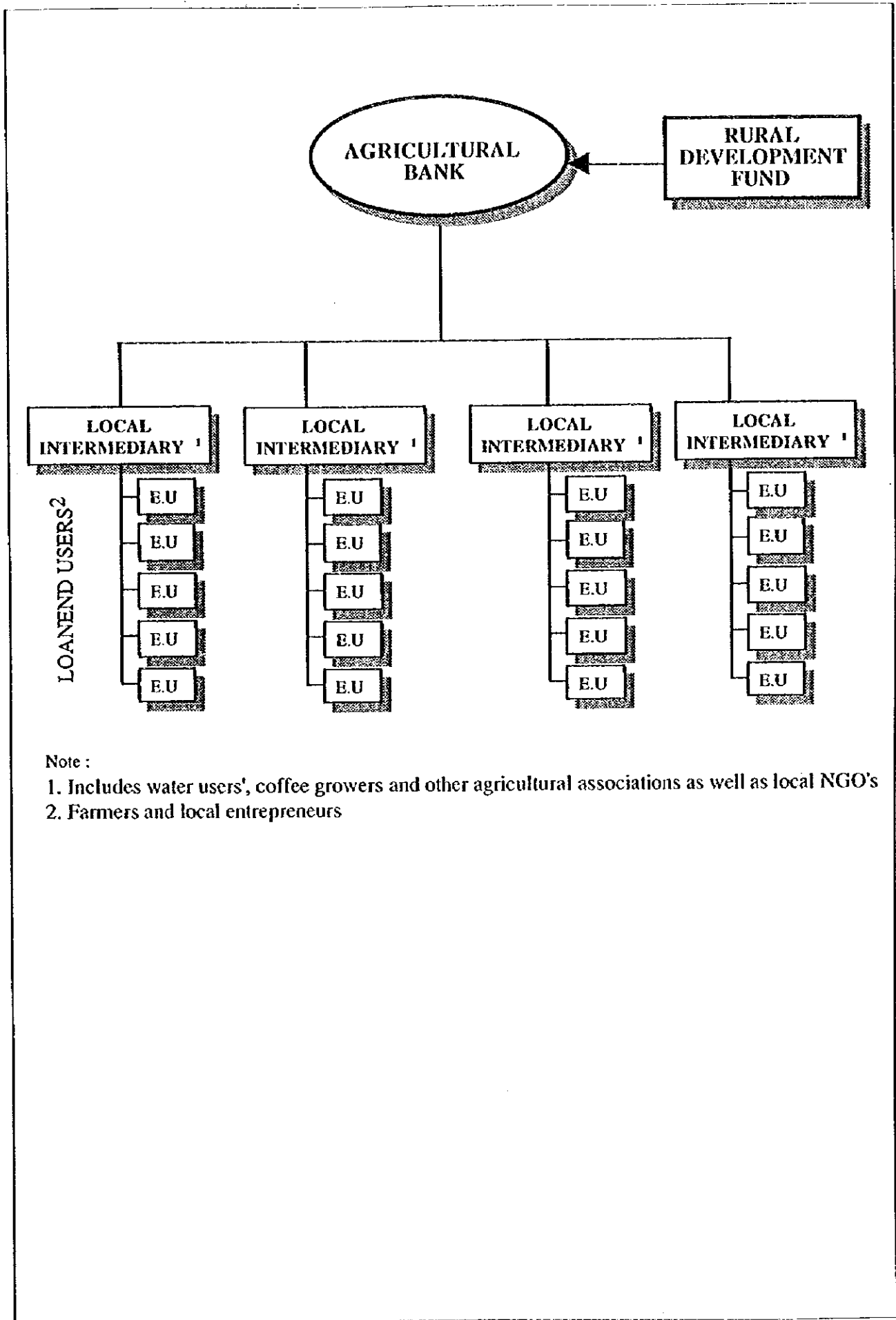


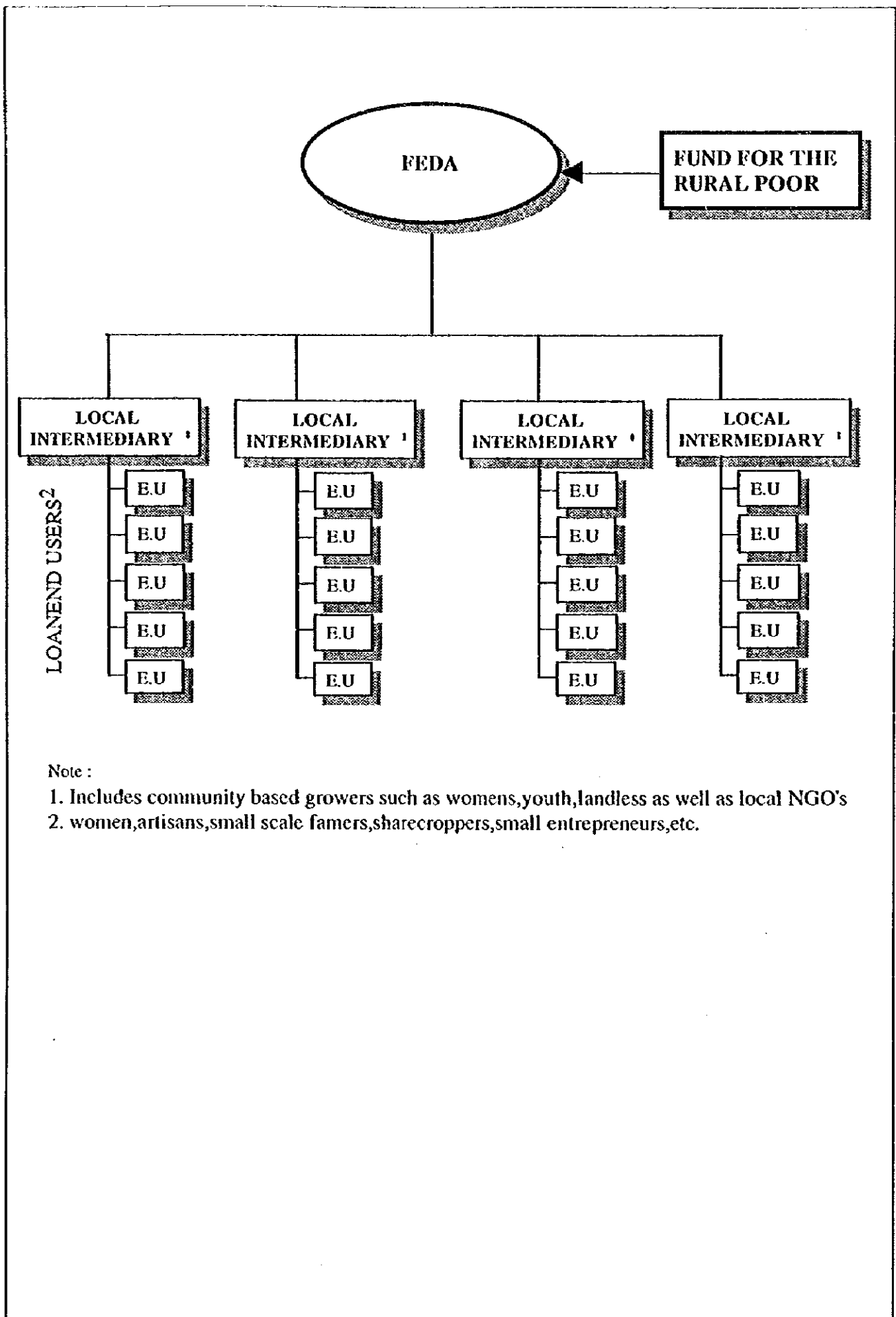
Fig.4.3.1 Proposed Structure for Rural Development Fund



Note :

- 1. Includes water users', coffee growers and other agricultural associations as well as local NGO's
- 2. Farmers and local entrepreneurs

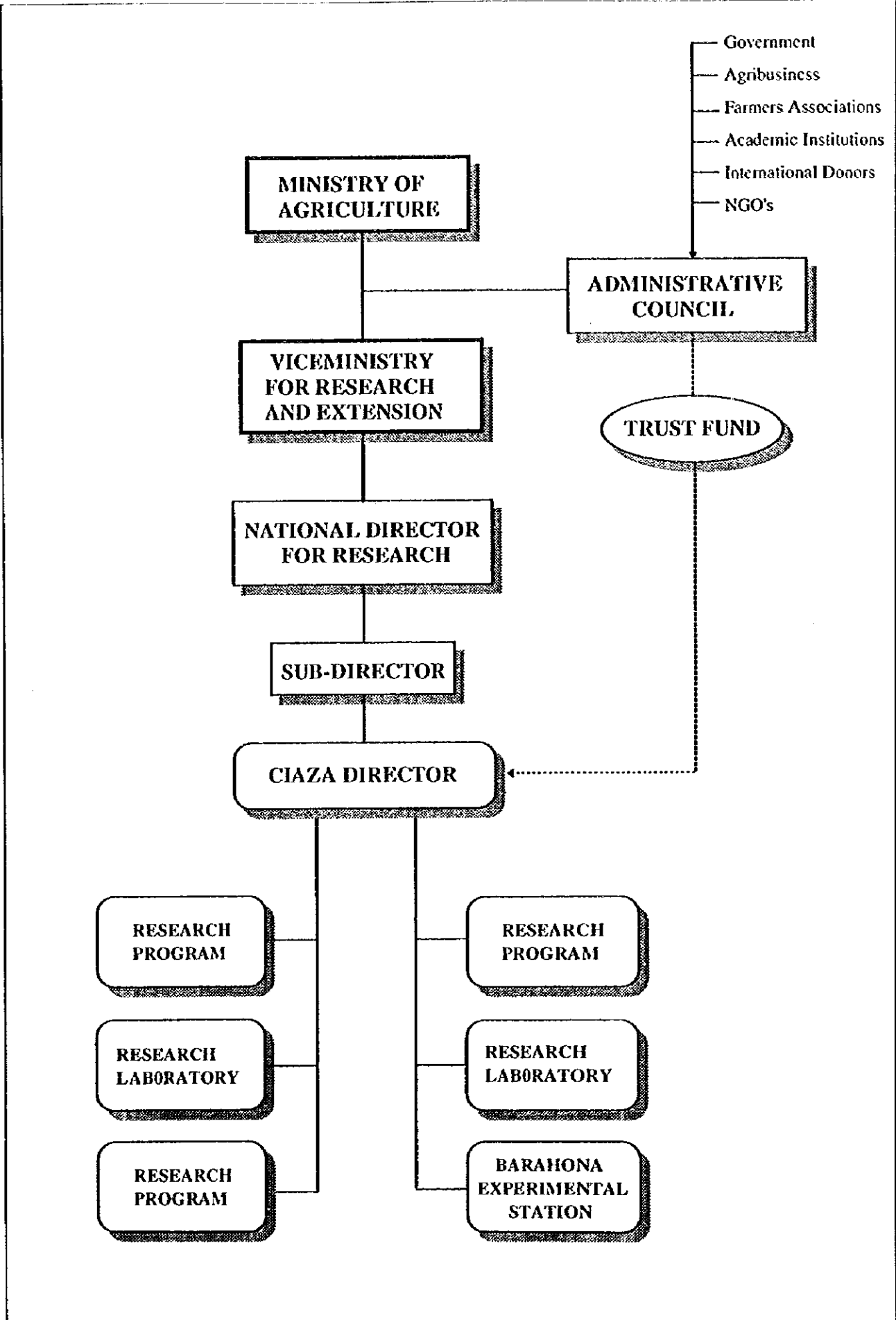
Fig.4.3.2 Proposed Structure for the Fund for the Rural Poor



Note :

- 1. Includes community based growers such as womens,youth,landless as well as local NGO's
- 2. women,artisans,small scale famers,sharecroppers,small entrepreneurs,etc.

Fig.4.3.3 Proposed Structure for CIAZA Research Center.



**Fig.4.3.4 Proposed Structure for Training
Extension Workers**

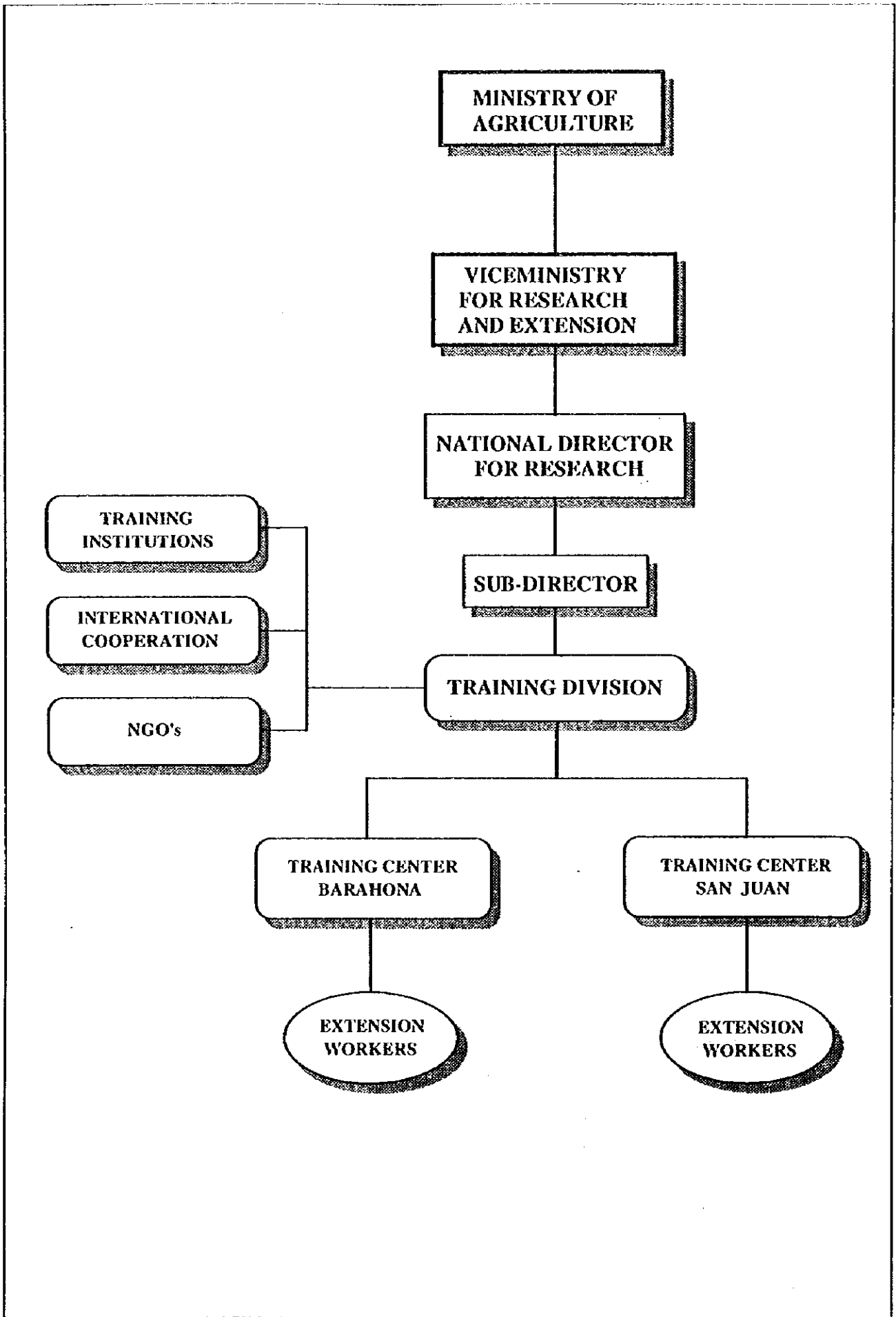


Fig.4.3.5 Proposed Structure for Strengthening Agricultural Cooperatives

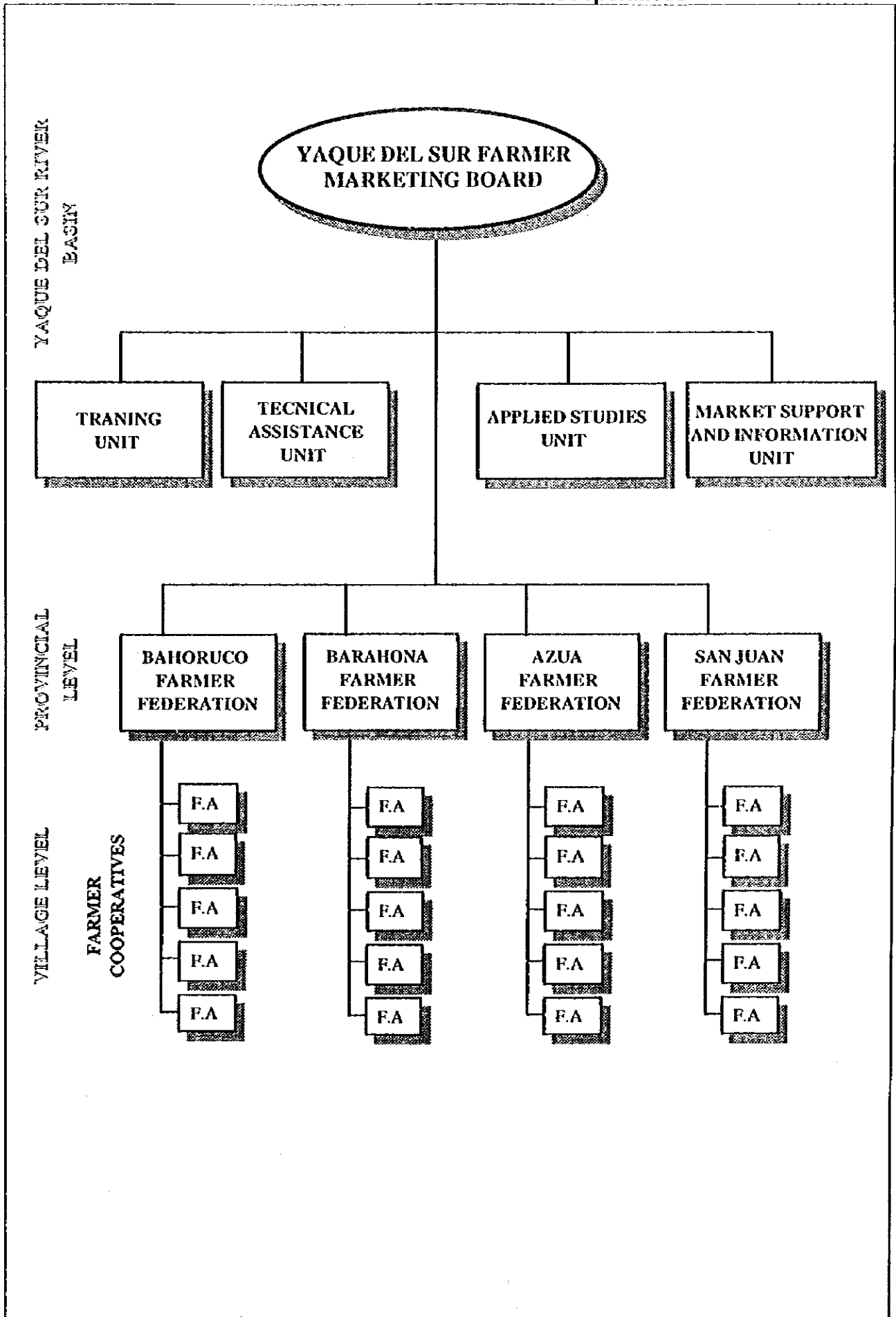
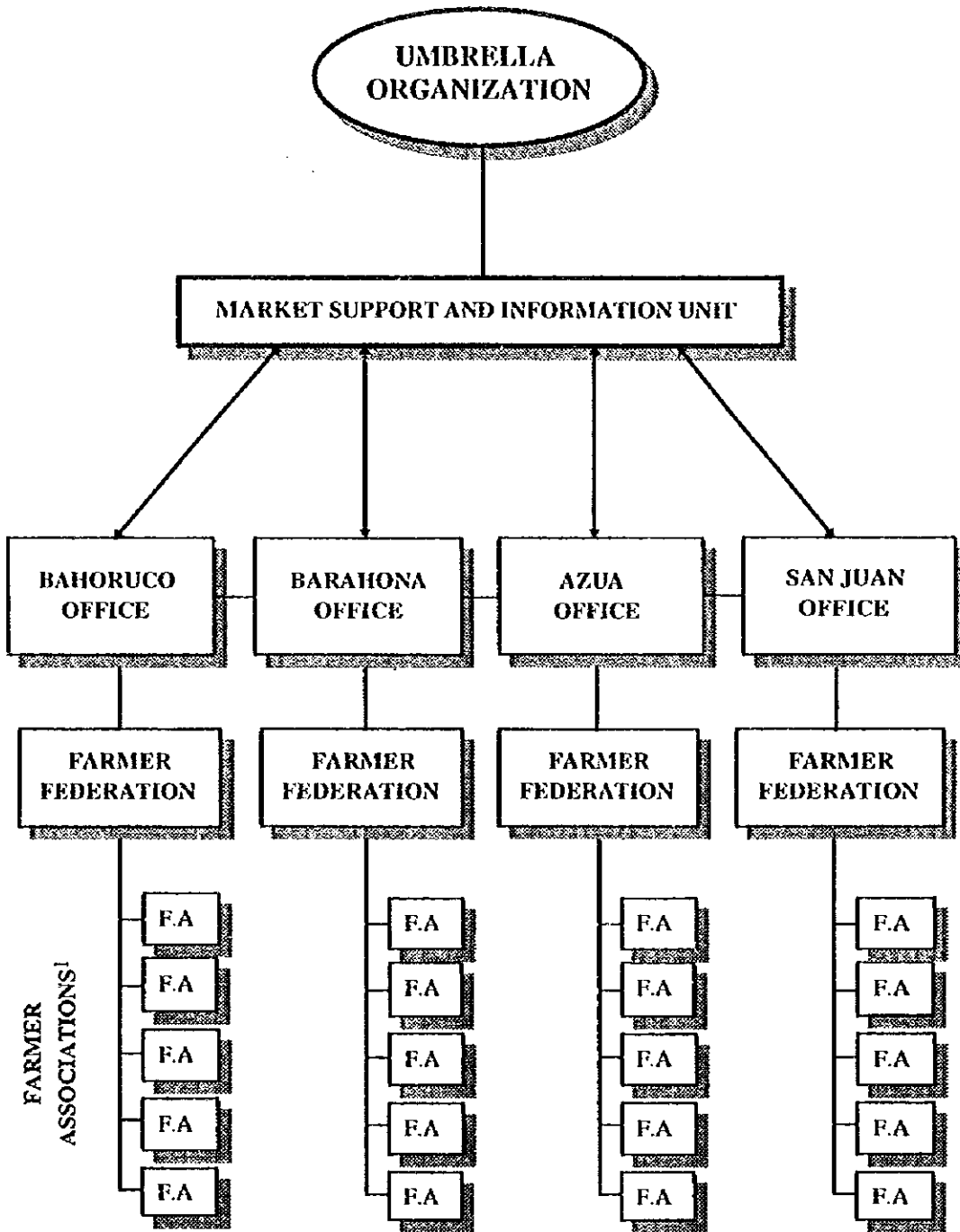


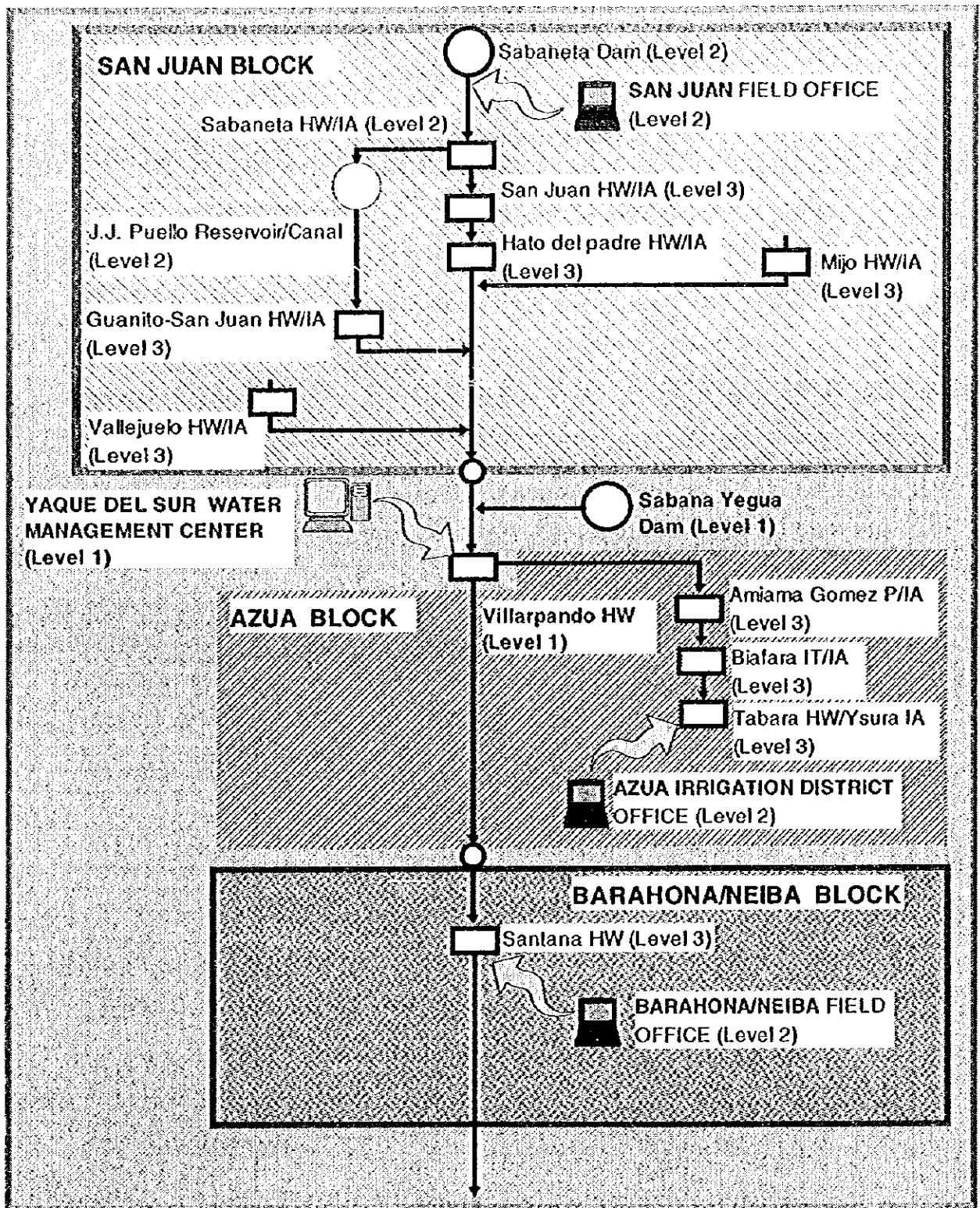
Fig.4.3.6 Proposed Structure for Marketing Information System



Note :

1. Includes water users', coffee growers and other agricultural associations

Fig. 4.4.1 Overall Water Management



LEGEND

- Existing reservoir
- Proposed reservoir
- Existing headworks
- Proposed reservoir

Note: HW; headworks
IA; irrigation area
IT; intake

Fig. 4.4.2 Water Management Organizations

