

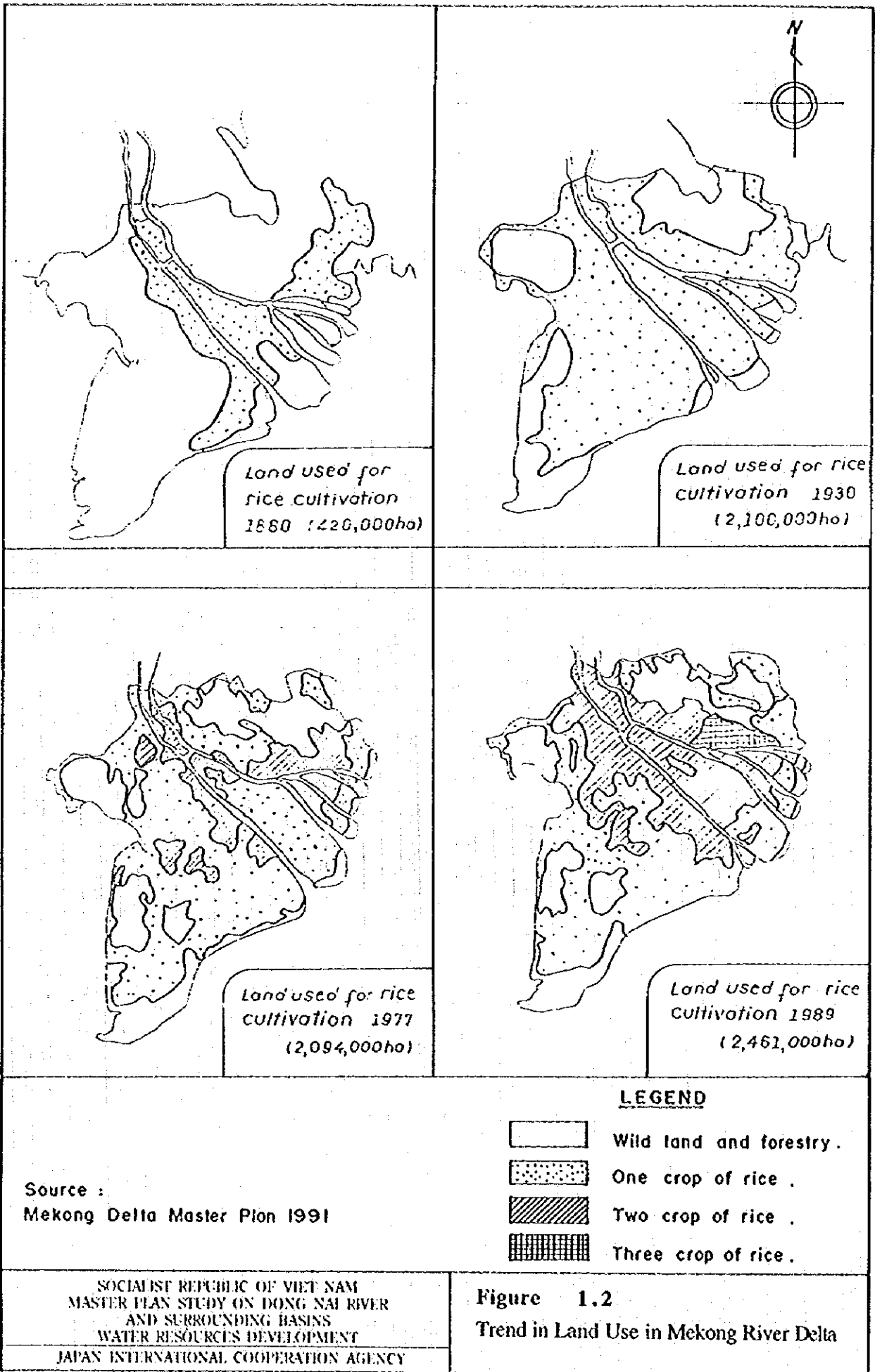
FIGURES



Ecological Zones in Dong Nai River Basin

	South-West Lowlands	Central Upland Zone	Hilly & Undulated Zone (Piedmont & Plain Areas)	South-Eastern Coastal Zone
Major Characteristics	<ul style="list-style-type: none"> - Repeated floods, waterlogging, salinity intrusion & acidification - Relatively developed irrigation systems - Fertile soils & flat plains and rice bowl of Vietnam - Big potentials for industrial development (especially the triangle economic growth zone) - Power shortages and repeated blackouts 	<ul style="list-style-type: none"> - Deforestation, soil erosion and watershed degradation - Low population density and resettlement projects - Cultivation in alluvial plains and plateaus (by poor ethnic groups) - Upland climate & cash crops (vegetables & fruits) production 	<ul style="list-style-type: none"> - Environment hazards (soil erosion, watershed degradation) - Undulating hilly lands dissected by creeks - Fertile soils in valleys and high value (industrial) crops production - Sparse population - Existence of poor farmers 	<ul style="list-style-type: none"> - Narrow peninsulas and shortage of irrigation water - Existence of tidal and inland swamplands & poor access - Environmental conservation (swamp forests) and hazards (siltation & pollution) - Existence of poor fishermen
Key Theme	Intensification / Conservation	Conservation / Intensification	Conservation / Extensification	Conservation / Intensification
Development Focus	Intensification on the key production areas, integrated farming & diversification of crops, especially high-value ones, promotion of small scale industry based on local indigenous materials	Reforestation in denuded areas and intensification of agro-forestry development program (commercial crops)	Afforestation on the sloping areas and development of the high potential areas by sustainable agro-forestry approach (orchard & processing)	Conservation of the coastal zone and intensification on the existing high potential areas and industry (processing & marketing)
Major Agricultural Development Schemes	<ol style="list-style-type: none"> 1) Irrigation Dev. & Drainage Improv. 2) Consolidation of Existing Farm Land 3) Flood Control & Protection 4) Prevention of Salinity Intrusion 5) Intensification of Rice Production 6) Diversification to High-valued Crops 7) Postharvest Service System 8) Agricultural Marketing Service System 	<ol style="list-style-type: none"> 1) Upland Pump Irrigation Dev. 2) Small Water Impounding 3) Intensification of Cash Crops (vegetables & fruits) Production 4) Postharvest Service System 5) Backyard Animal Production 6) Reservoir fishery Development 	<ol style="list-style-type: none"> 1) Small Water Impounding 2) Irrigation Dev. for Rainfed Areas 3) Reservoir fishery Development 4) Intensification of Farming & Agro-Forestry (industrial crops) Dev. 5) Watershed Conservation 	<ol style="list-style-type: none"> 1) National & Communal Irrigation Dev. 2) Intensification of Crop Production 3) Inland & Brackish Fishery Dev. 4) Fishery Port Complex (incl. Processing Center) 5) Coastal Rehabilitation and Resource Management
Major Rural Development Schemes	<ol style="list-style-type: none"> 1) Water Supply & Sewerage Improv. 2) Rural Electrification 3) Agro-Industrial (incl. Processing) Development 4) Agricultural/Rural Credit System Dev. 	<ol style="list-style-type: none"> 1) Watershed Conservation 2) Rural Electrification 3) Water Supply & Sanitation Improv. 4) Community Development (incl. Co-operatives) 5) Agro-Industrial Centers Dev. 	<ol style="list-style-type: none"> 1) Rural Electrification 2) Water Supply & Sanitation Improv. 3) Resettlement and Livelihood Development 4) Community Development (incl. Co-operatives) 	<ol style="list-style-type: none"> 1) Water Supply & Sanitation Improvement 2) Livelihood Development 3) Community Development (incl. Co-operatives)

Note: The Schemes in bold relief would be the priority schemes related to the Dong Nai Water Resources M/P Study.



Crop Coefficient of Paddy
(Experimental Data at Binh Dinh Irrigation Project)

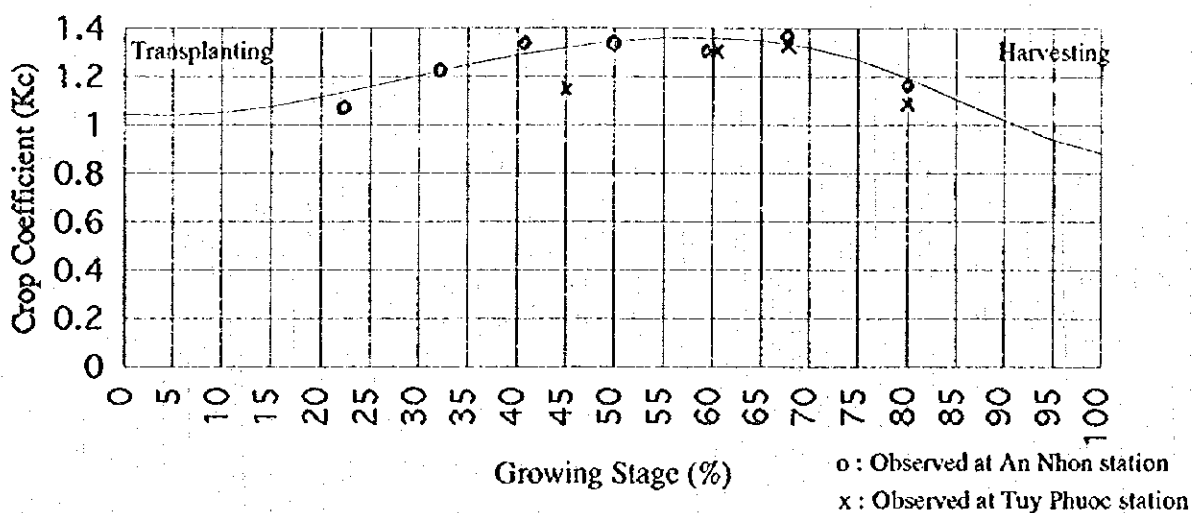


Figure 2.1
Crop Coefficient of Paddy

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.							
	W-S Paddy		S-A Paddy		Rainy Season Paddy														
Rain																			
Kc-1	1.04	1.08	1.16	1.25	1.32	1.34	1.27	1.10	0.95										
Kc-2	1.04	1.08	1.16	1.25	1.32	1.34	1.27	1.10	0.95										
Kc-3	1.04	1.08	1.16	1.25	1.32	1.34	1.27	1.10	0.95										
Kc-av.	0.95	0.71	1.09	1.16	1.24	1.30	1.31	1.24	1.11	0.88	0.71								
ETe	50	55	59	59	47	65	65	72	66	66	66								
ET	50.2	192	259	139															
Padding	40	40	40																
Percolation	31	56	62	47															
Total	207	248	321	186	254	249	313	238	284										
Effect. Rain	4	1	5	8	33	32	24	33	72										
Field WR	203	247	316	178	221	217	289	205	0										
(lit/sec/ha)	0.76	1.02	1.18	0.69	0.82	0.84	1.06	0.77	0										
Diversion WR	1.17	1.57	1.81	1.06	1.27	1.29	1.66	1.18	0										
Kc-1										1.04	1.08	1.16	1.25	1.32	1.34	1.27	1.10	0.95	
Kc-2										1.04	1.08	1.16	1.25	1.32	1.34	1.27	1.10	0.95	
Kc-3										1.04	1.08	1.16	1.25	1.32	1.34	1.27	1.10	0.95	
Kc-av.										0.35	0.71	1.09	1.16	1.24	1.30	1.31	1.24	1.11	
ETe										45	45	50	44	44	44	44	47	47	52
ET										163									177
Padding										20	20	20							
Percolation										3	3	3							
Total										23	190	223							239
Effect. Rain										72	89	87							33
Field WR										0	101	136							206
(lit/sec/ha)										0.38	0.53	0.53							0.77
Diversion WR										0	0.98	0.81							1.18
Total DWR	1.61	1.87	1.81	1.06	1.27	1.29	1.66	1.18	0	0.58	0.81	1.18							1.18

SOCIALIST REPUBLIC OF VIET NAM
 MASTER PLAN STUDY ON DONG NAI RIVER
 AND SURROUNDING BASINS
 WATER RESOURCES DEVELOPMENT
 JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 2.2
 Cropping Calendar and Water Requirements
 of Paddies in Phan Rang Plain

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.											
	W - S Paddy			S - A Paddy				Rainy Season Paddy															
Kc-1	1.16	1.25	1.32	1.36	1.35	1.28	1.11	0.95				1.04	1.06										
Kc-2	1.04	1.16	1.25	1.32	1.36	1.35	1.28	1.11	0.95				1.04										
Kc-3	1.04	1.08	1.16	1.25	1.32	1.36	1.35	1.28	1.11	0.95													
Kc-av.	1.09	1.16	1.24	1.31	1.34	1.33	1.25	1.11	0.99														
ETe	58	54	64	63	63	50	68	66	75	74			53										
ET	210		234		212		224		196				594										
Puddling				50	50								60										
Penetration				20	20								31										
Total	272	290	290	140	245	257	258	245	110	82			150										
Effect Rain	1	0	5	20	83	94	106	110	110	6			6										
Field WR	271	290	285	123	162	159	152	152	162	104			144										
(W/m ² /ha)	1.01	1.2	0.95	0.48	0.6	0.61	0.57	0.57	0.61	0.54			0.54										
Diversion WR	1.56	1.34	1.46	0.73	0.91	0.94	0.87	0.87	0.80	0.81			0.81										
Kc1									1.04	1.04	1.16	1.25	1.32	1.34	1.27	1.10	0.95						
Kc-2										1.04	1.04	1.16	1.25	1.32	1.34	1.27	1.1	0.95					
Kc-3											1.04	1.04	1.16	1.25	1.32	1.34	1.27	1.1	0.95				
Kc-av.												0.35	0.71	1.09	1.16	1.24	1.3	1.31	1.24	1.11	0.68	0.52	
ETe												48	48	48	49	49	54	50	50	50	53	53	53
ET												103	103	103	103	103	103	103	103	103	103	103	103
Puddling												20	20	20	20	20	20	20	20	20	20	20	20
Penetration												10	10	10	10	10	10	10	10	10	10	10	10
Total												50	50	50	50	50	50	50	50	50	50	50	50
Effect Rain												176	176	176	176	176	176	176	176	176	176	176	176
Field WR												110	110	110	110	110	110	110	110	110	110	110	110
(W/m ² /ha)												0	0	0	0	0	0	0	0	0	0	0	0
Diversion WR												0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Total 13 WR	1.56	1.34	1.46	0.73	0.91	0.94	0.87	0.87	0.80	0.81	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87

SOCIALIST REPUBLIC OF VIET NAM
 MASTER PLAN STUDY ON DONG NAI RIVER
 AND SURROUNDING BASINS
 WATER RESOURCES DEVELOPMENT
 JAPAN INTERNATIONAL COOPERATION AGENCY

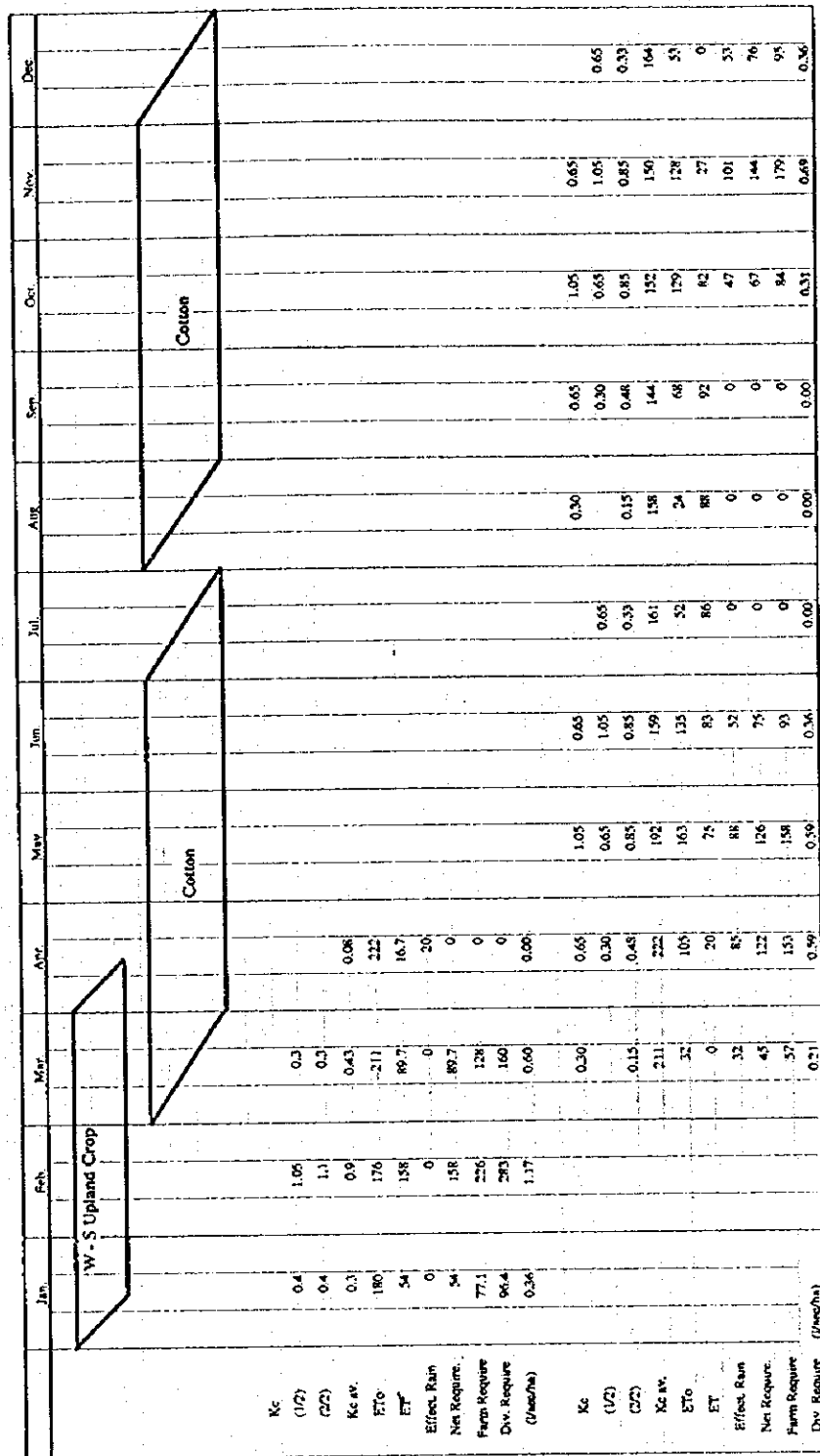
Figure 2.3
 Cropping Calendar and Water Requirements
 of Paddies in Phan Ri and Phan Thiet Plains

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	W - S Paddy											
Kc-1	1.27	1.1	0.95									
Kc-2	1.34	1.27	1.1	0.95								
Kc-3	1.32	1.34	1.27	1.1	0.95							
Kc av.	1.31	1.24	1.11	0.88	0.82							
ETc	53	53	58	59	59							
ET	146											
Percolation	62	24										
Total	201	87										
Effect. Rain	3	2										
Field WR	2.54	85										
(lit/ha/ha)	0.96	0.35										
Diversion WR	1.48	0.54										
	S - A Paddy											
Kc-1	1.04	1.08	1.16	1.25	1.32	1.34	1.27	1.1	0.95			
Kc-2	1.04	1.08	1.16	1.25	1.32	1.34	1.27	1.1	0.95			
Kc-3	1.04	1.08	1.16	1.25	1.32	1.34	1.27	1.1	0.95			
Kc av.	0.35	0.71	1.09	1.16	1.24	1.3	1.31	1.24	1.11	0.68	0.32	
ETc	47	65	65	72	68	68	68	57	57	63	47	
ET	163	201										
Percolation	50	50	50									
Total	12	59										
Effect. Rain	128	310										
Field WR	2	32										
(lit/ha/ha)	1.26	298										
Diversion WR	0.52	1.11										
	0.8	1.71										
	Rainy Season Paddy											
Kc-1	1.04	1.08	1.16	1.25	1.32	1.36	1.35	1.27	1.11	0.94		
Kc-2	1.04	1.08	1.16	1.25	1.32	1.36	1.35	1.27	1.11	0.94		
Kc-3	1.04	1.08	1.16	1.25	1.32	1.36	1.35	1.27	1.11	0.94		
Kc av.	0.35	0.71	1.09	1.16	1.24	1.31	1.34	1.33	1.24	1.13	0.68	0.31
ETc	47	47	52	45	45	50	44	44	48	45	45	50
ET	106											
Percolation	20	20	20									
Total	4	47										
Effect. Rain	24	183										
Field WR	0	0										
(lit/ha/ha)	0	0.48										
Diversion WR	0.00	0.74										
	W - S Paddy											
Kc-1	1.04	1.08	1.16	1.25	1.32	1.34	1.27	1.1	0.95			
Kc-2	1.04	1.08	1.16	1.25	1.32	1.34	1.27	1.1	0.95			
Kc-3	1.04	1.08	1.16	1.25	1.32	1.34	1.27	1.1	0.95			
Kc av.	0.35	0.71	1.09	1.16	1.24	1.31	1.34	1.33	1.24	1.13	0.68	0.31
ETc	45	45	45	45	47	47	52	45	45	47	47	52
ET	146											
Percolation	62	24										
Total	201	87										
Effect. Rain	3	2										
Field WR	2.54	85										
(lit/ha/ha)	0.96	0.35										
Diversion WR	1.48	0.54										
Total DWR	1.48	1.34										1.34

SOCIALIST REPUBLIC OF VIET NAM
 MASTER PLAN STUDY ON DONG NAI RIVER
 AND SURROUNDING BASINS
 WATER RESOURCES DEVELOPMENT

JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 2.4
 Cropping Calendar and Water Requirements
 of Paddies in Lower La Nga Plain



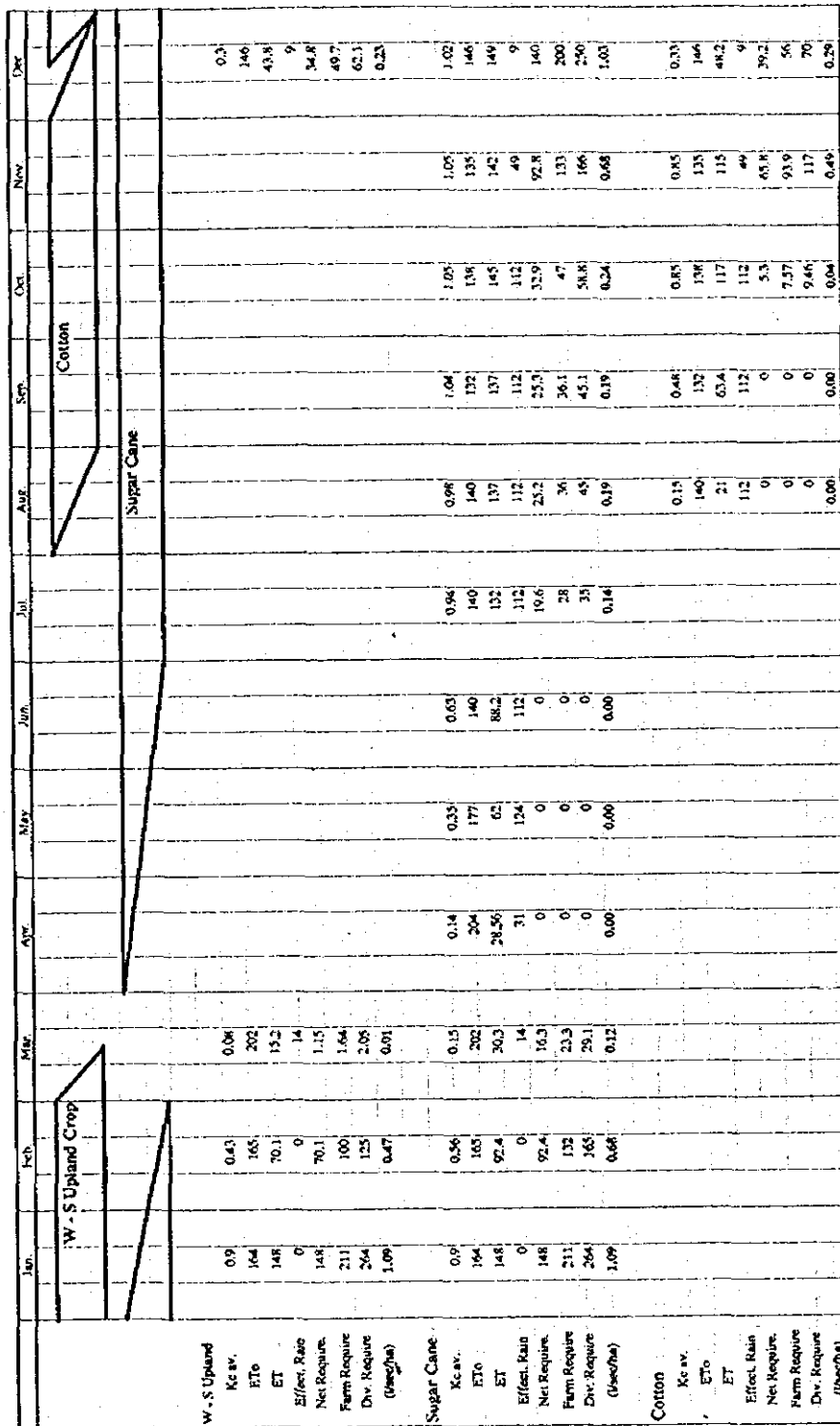
SOCIALIST REPUBLIC OF VIET NAM
 MASTER PLAN STUDY ON DONG NAI RIVER
 AND SURROUNDING BASINS
 WATER RESOURCES DEVELOPMENT
 JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 2.5
 Cropping Calendar and Water Requirements
 of Winter-Spring Upland Crop and Cotton
 in East Coast

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Plant Date							Sugar cane (Planted)					
Kc			0.55	0.85	1.00	1.03	1.05	1.05	1.05	1.05	0.95	0.60
(1/4)	0.60		0.55	0.55	0.85	1.00	1.03	1.05	1.05	1.05	1.05	0.90
(2/4)	0.70				0.85	0.85	1.00	1.05	1.05	1.05	1.05	1.05
(3/4)	0.93	0.60			0.88	0.88	0.85	1.00	1.05	1.05	1.05	1.05
(4/4)	0.56	0.15	0.14	0.15	0.63	0.94	0.98	1.04	1.05	1.05	1.02	0.90
Kc av.	1.00	1.76	2.11	2.22	1.92	1.59	1.61	1.58	1.44	1.52	1.50	1.64
ET ₀	100	26.4	29	77.7	121	149	158	164	151	140	153	148
ET	0	0	0	30	75	83	86	88	92	82	27	0
Effect. Rain	100	26.4	29	57.7	44.4	66.5	72.2	75.9	59.2	77.6	126	148
Net Require.	143	37.7	41.4	82.4	66.3	94.9	103	108	84.6	111	180	211
Farm Require	179	47.11	51.4	104	82.9	119	129	136	106	139	225	264
Div. Require	0.67	0.19	0.19	0.40	0.33	0.46	0.48	0.51	0.41	0.52	0.87	0.98

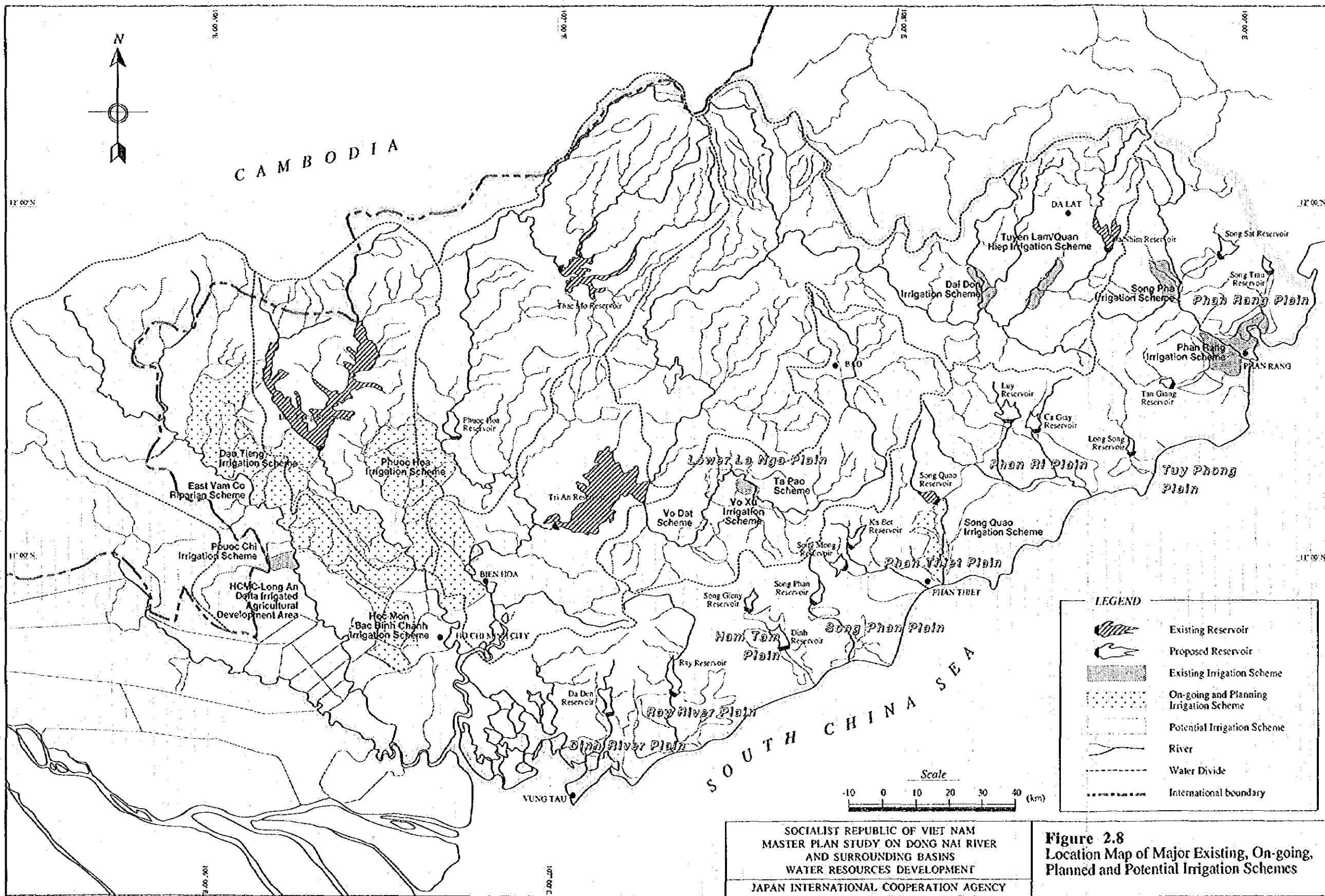
SOCIALIST REPUBLIC OF VIET NAM
 MASTER PLAN STUDY ON DONG NAI RIVER
 AND SURROUNDING BASINS
 WATER RESOURCES DEVELOPMENT
 JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 2.6
 Cropping Calendar and Water Requirements
 of Sugarcane in East Coast



SOCIALIST REPUBLIC OF VIET NAM
 MASTER PLAN STUDY ON DONG NAI RIVER
 AND SURROUNDING BASINS
 WATER RESOURCES DEVELOPMENT
 JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 2.7
 Cropping Calendar and Water Requirements
 of Winter-Spring Upland Crop, Cotton and
 Sugarcane in Lower La Nga Plain



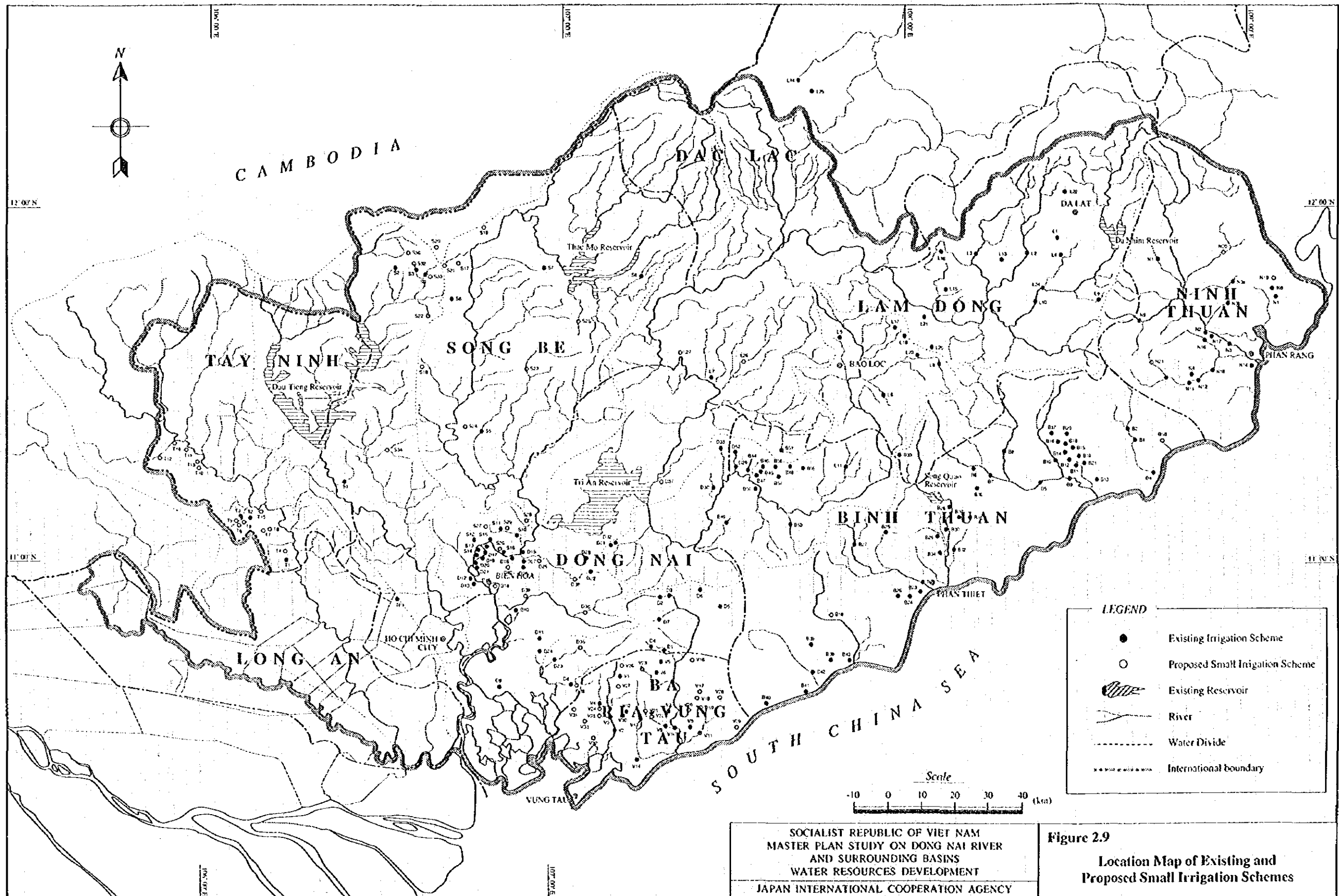


Figure 2.9
Location Map of Existing and Proposed Small Irrigation Schemes

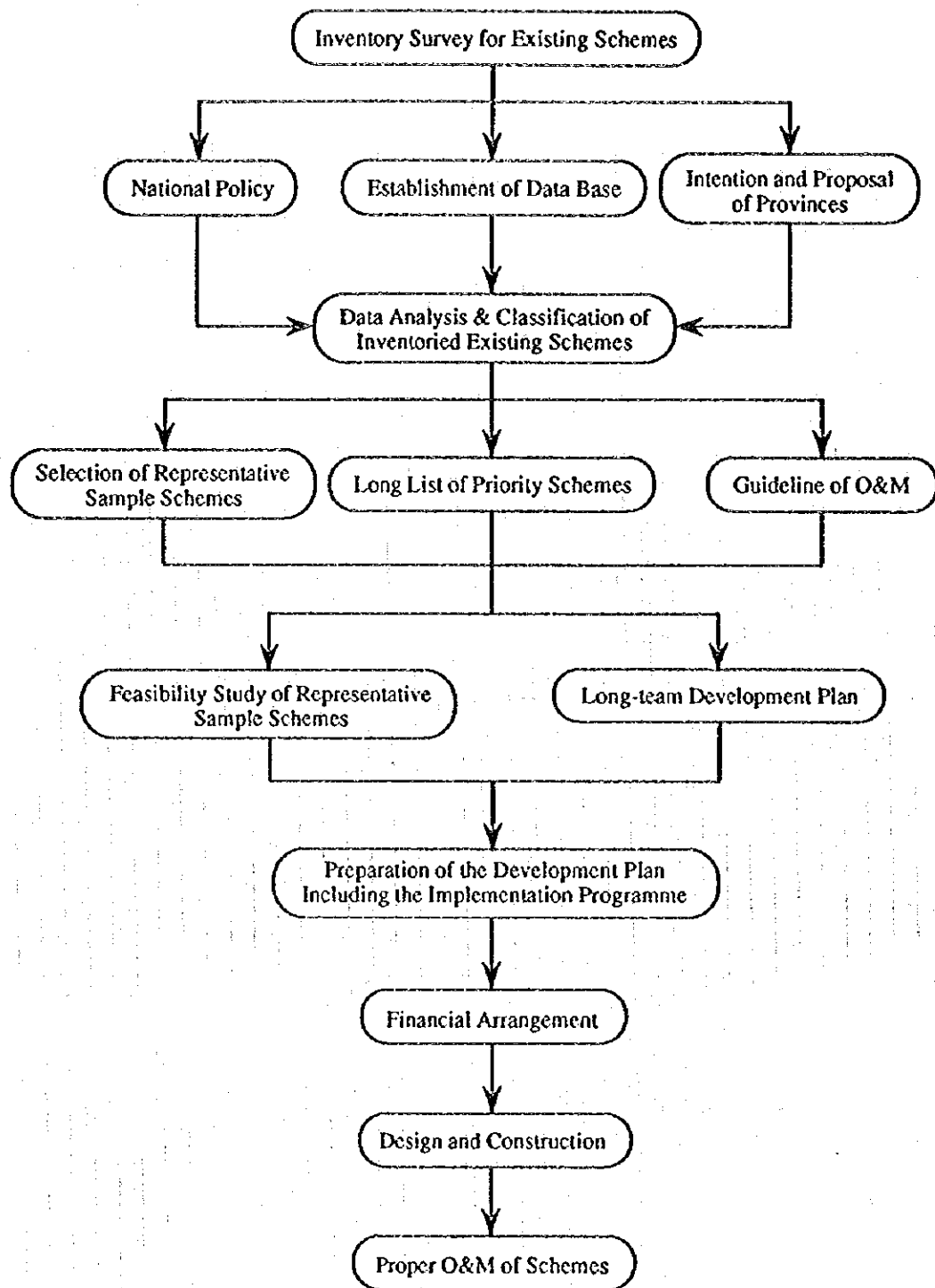
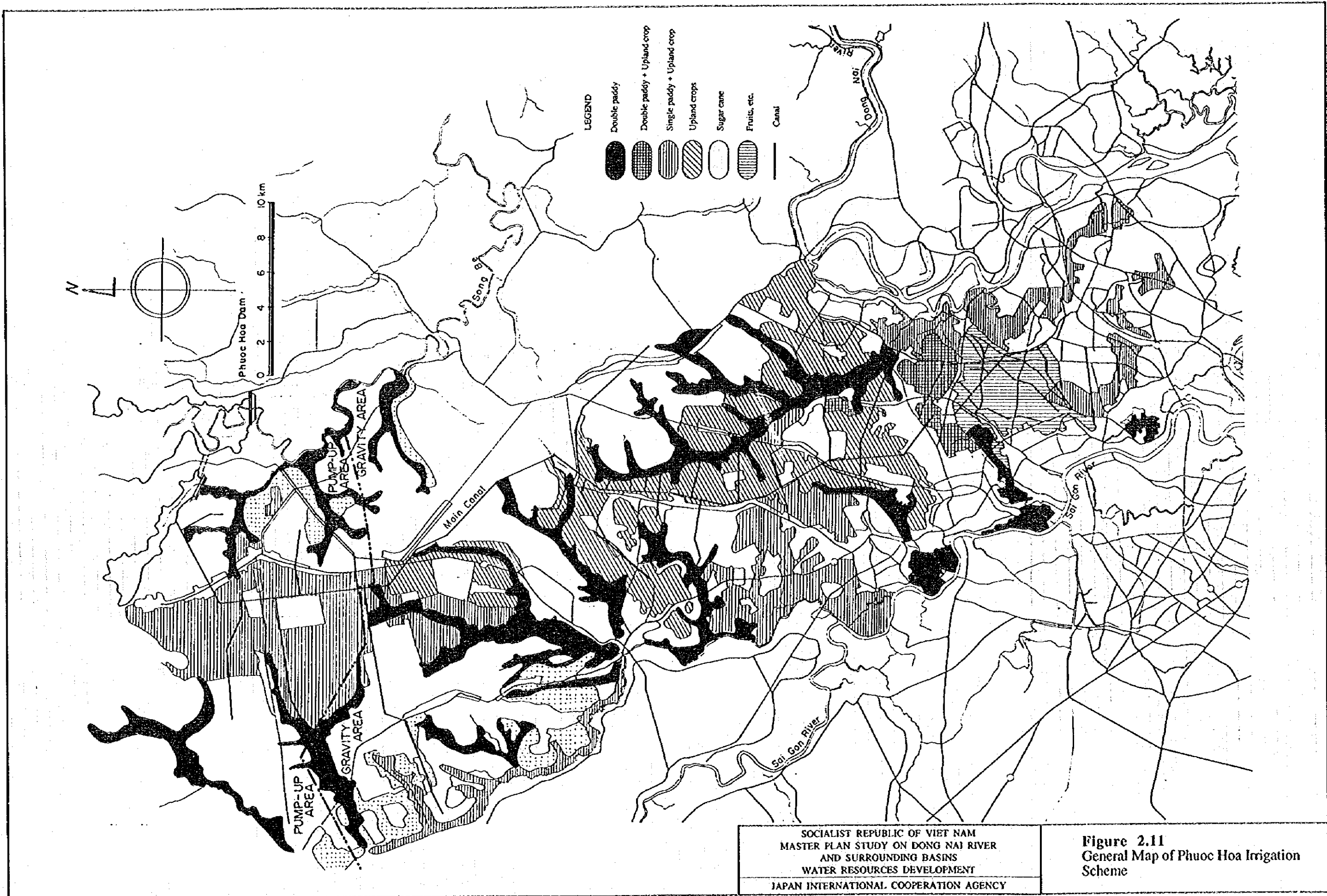
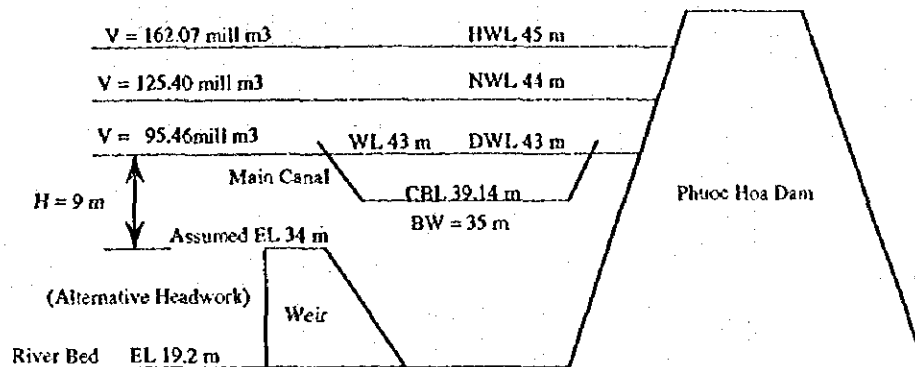


Figure 2.10
 Procedure to Implement the Rehabilitation
 Programme of Existing Irrigation Schemes



SOCIALIST REPUBLIC OF VIET NAM
 MASTER PLAN STUDY ON DONG NAI RIVER
 AND SURROUNDING BASINS
 WATER RESOURCES DEVELOPMENT
 JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 2.11
 General Map of Phuoc Hoa Irrigation
 Scheme

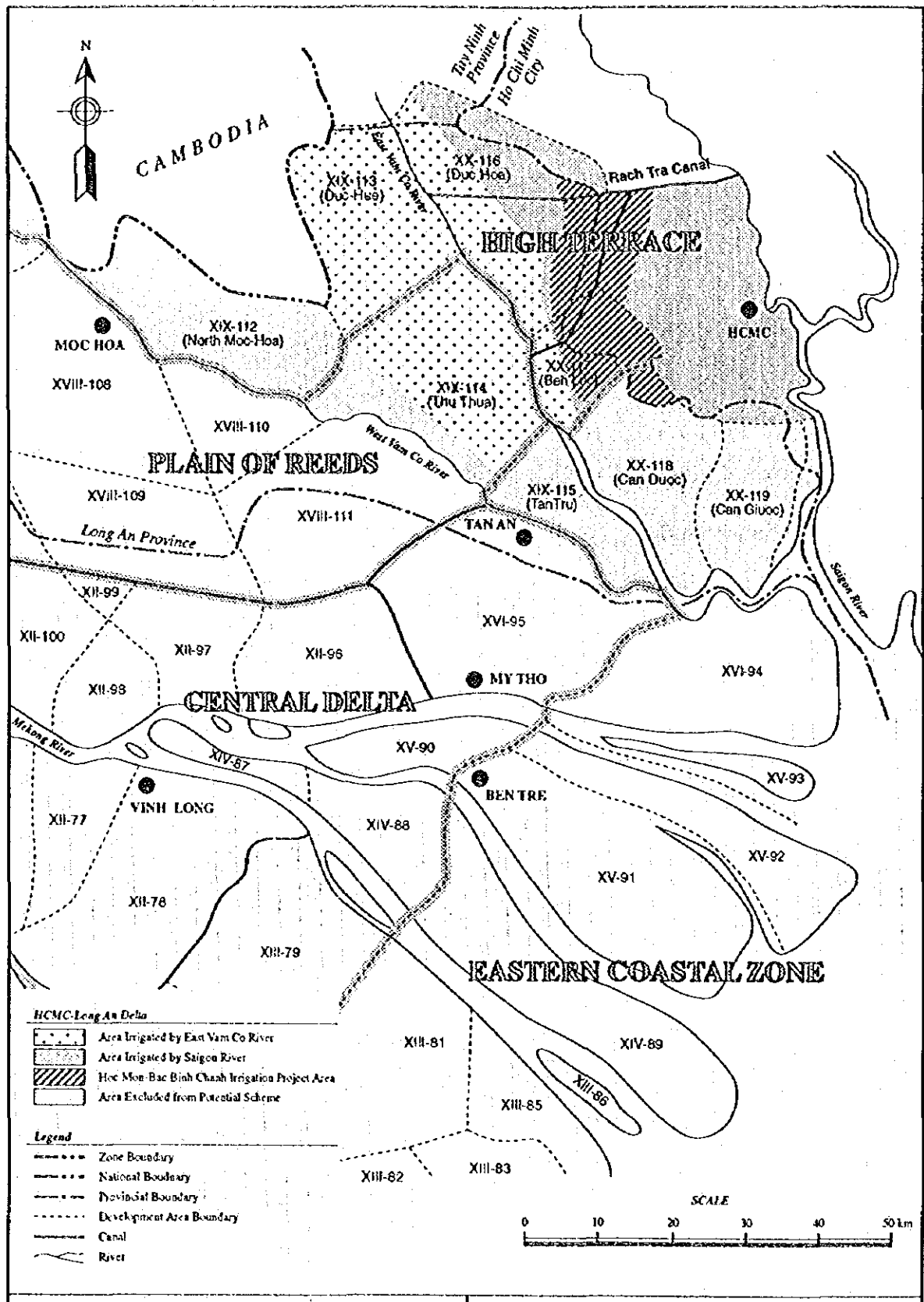


Water Demand

1. Domestic Water Supply including industrial use : 4.0 m³/sec (including loss)
2. Mandate release to Song Be river : 8.2 m³/sec
3. Irrigation Water for 45,680 ha

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
FWR (l/s/ha)	0.32	0.47	0.17	0.29	0.50	0.06	0.06	0.12	0.09	0.04	0.17	0.23
DWR (l/s/ha)	0.53	0.78	0.28	0.48	0.83	0.10	0.10	0.20	0.15	0.07	0.28	0.38

FWR : Field water requirement
DWR : Diversion water requirement

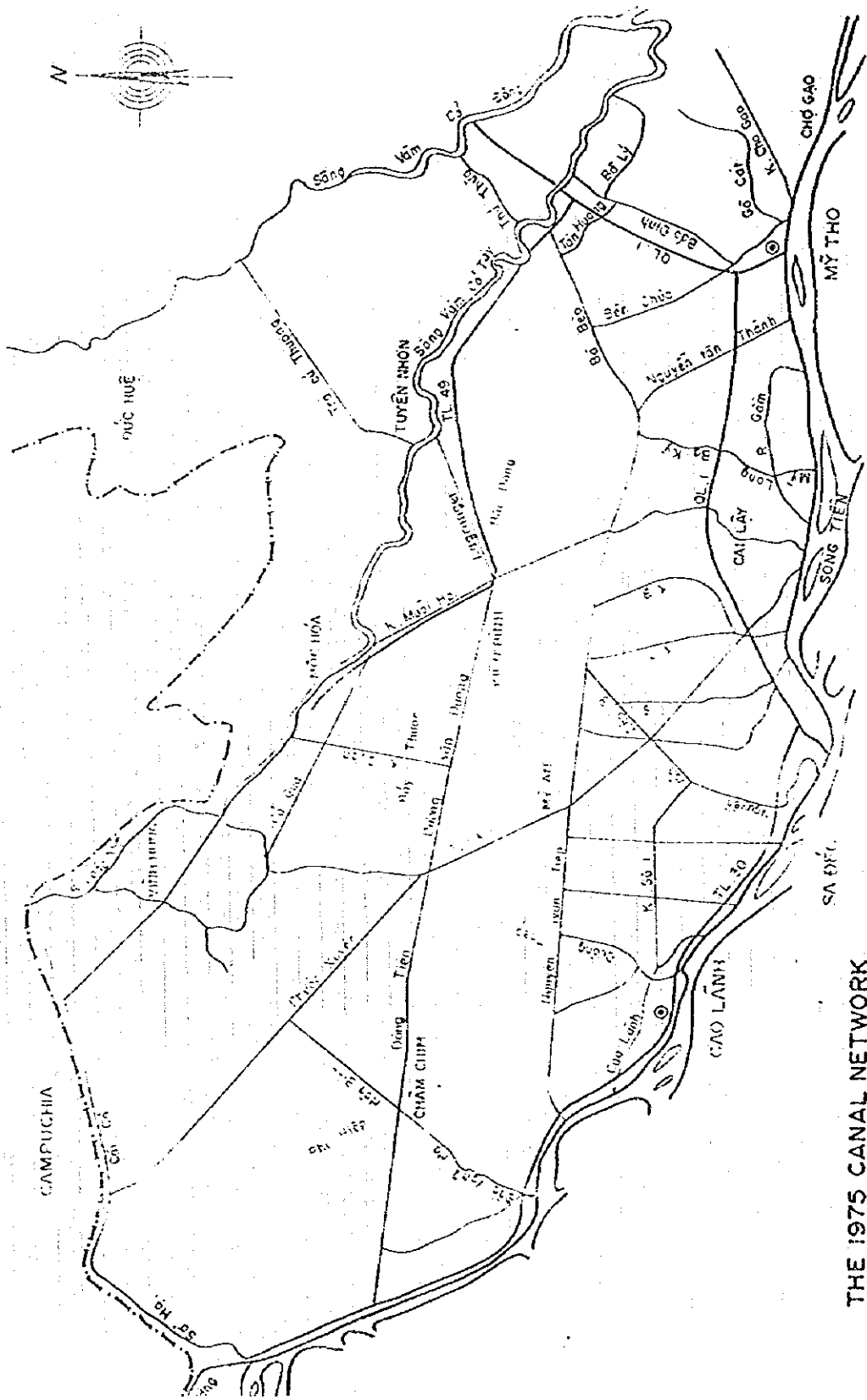


SOCIALIST REPUBLIC OF VIET NAM
 MASTER PLAN STUDY ON DONG NAI RIVER
 AND SURROUNDING BASINS
 WATER RESOURCES DEVELOPMENT

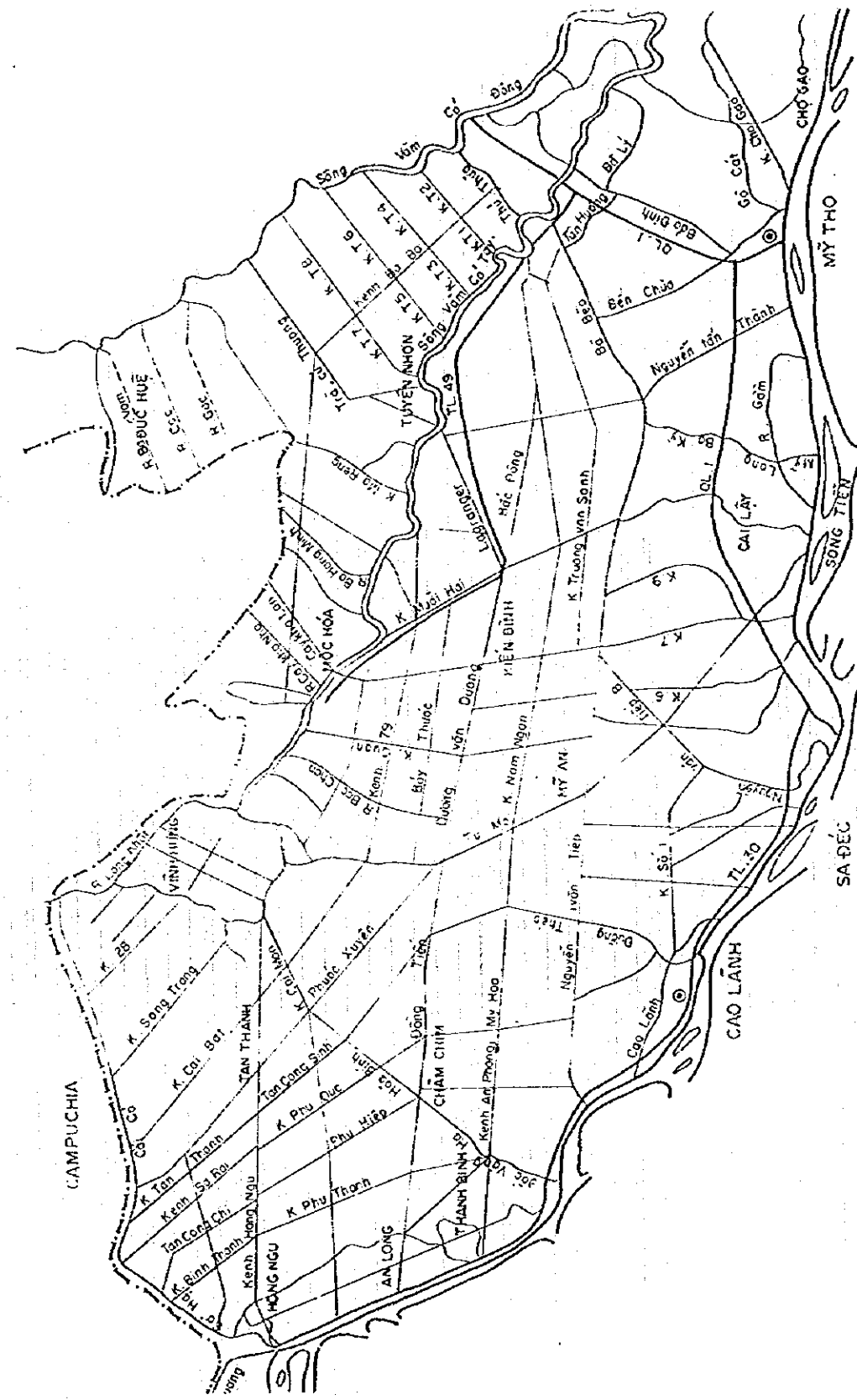
JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 2.13
HCMC-Long An Delta

THE 1992 CANAL NETWORK IN COMPARISON WITH THE 1975 CANAL NETWORK



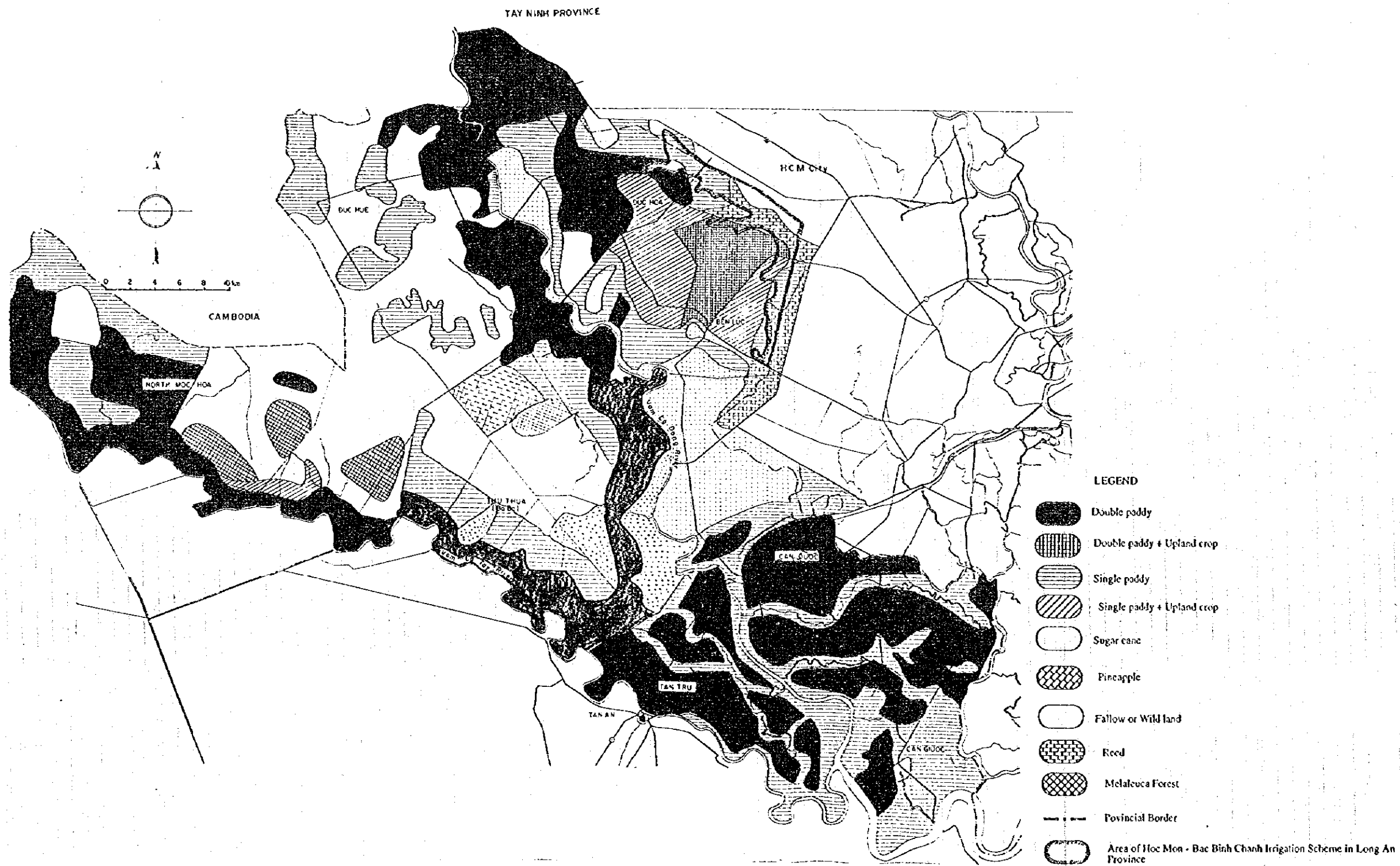
THE 1975 CANAL NETWORK



THE 1992 CANAL NETWORK

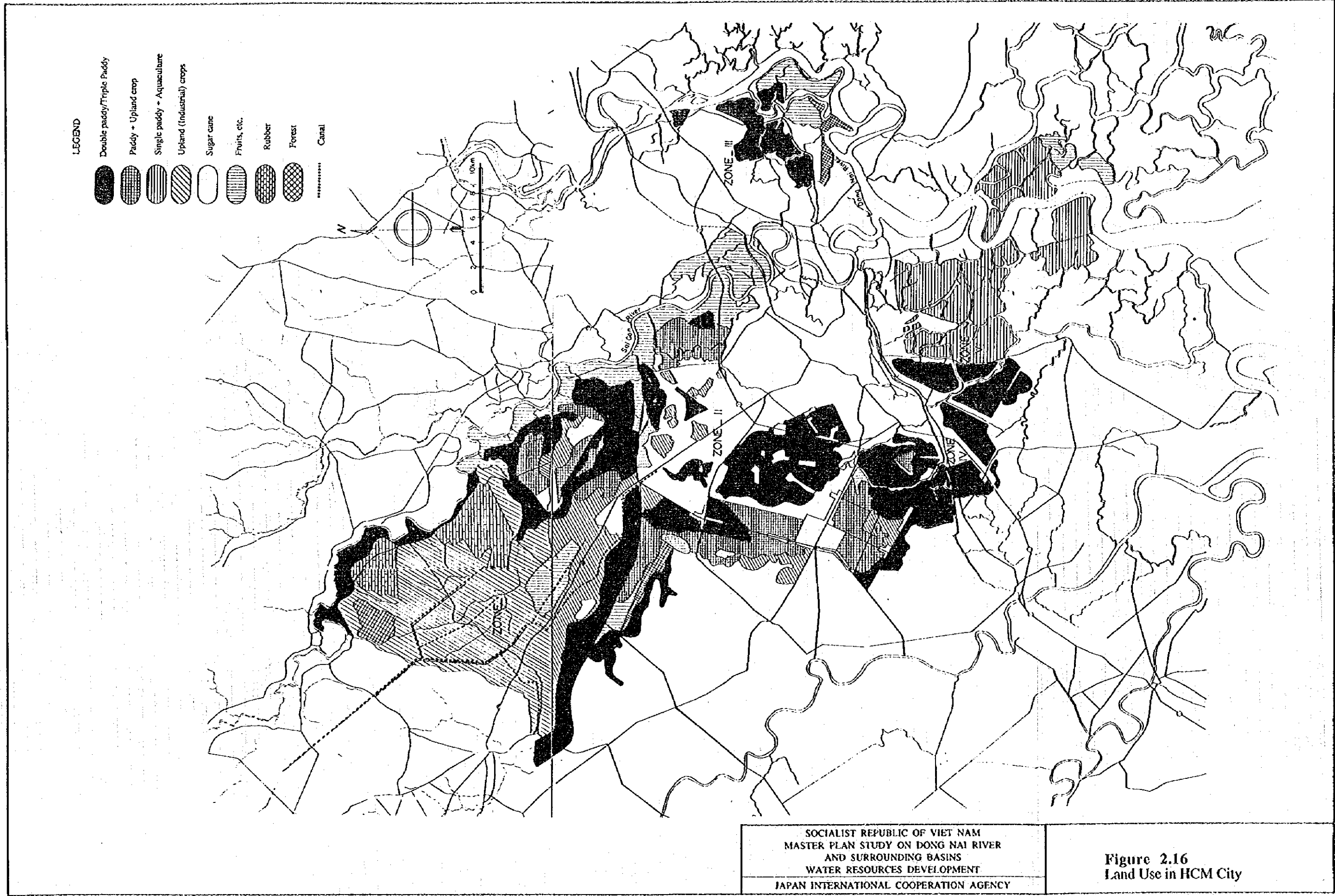
SOCIALIST REPUBLIC OF VIET NAM
 MASTER PLAN STUDY ON ĐÔNG NAI RIVER
 AND SURROUNDING BASINS
 WATER RESOURCES DEVELOPMENT
 JAPAN INTERNATIONAL COOPERATION AGENCY

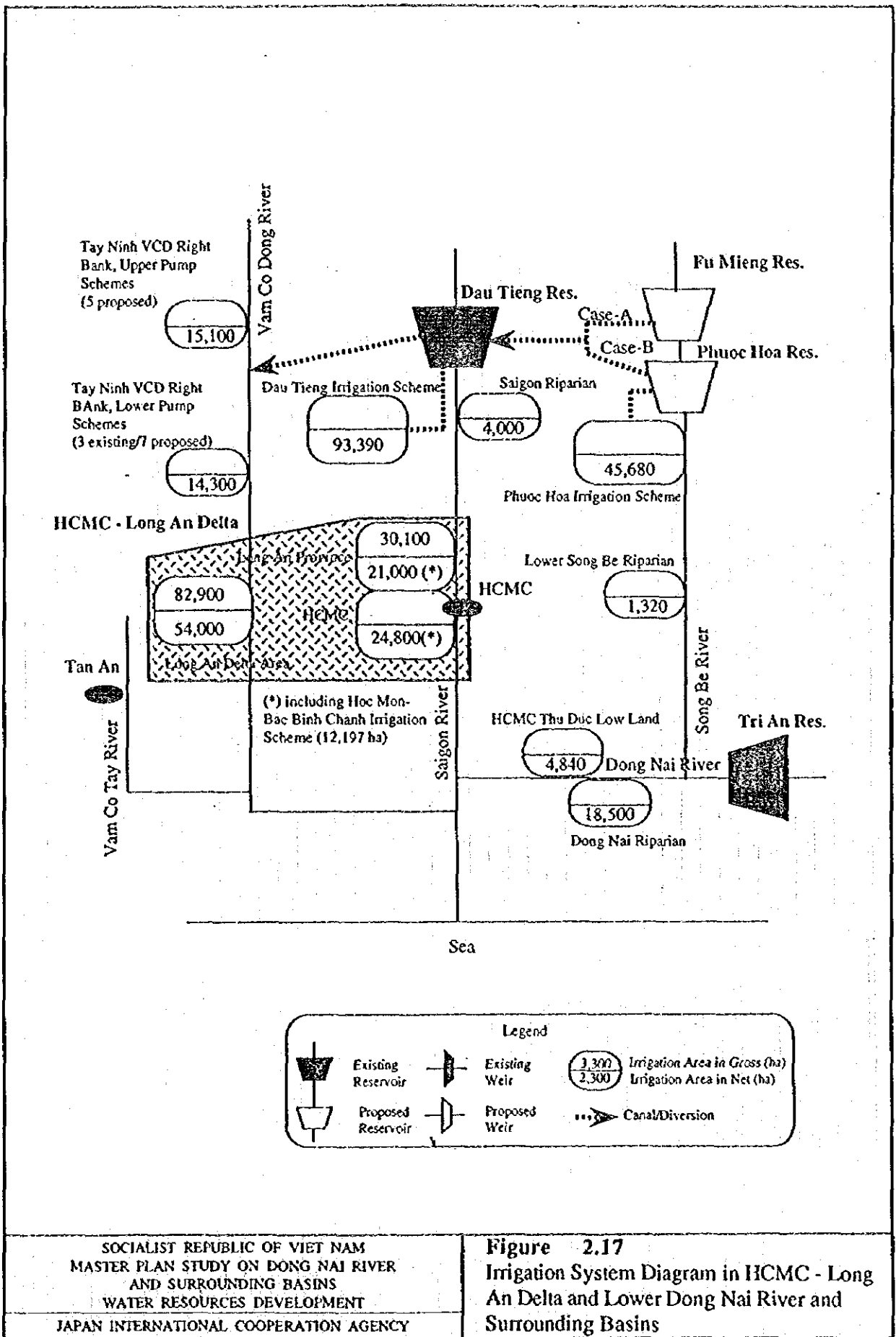
Figure 2.14
 Development of Canal System in Mekong
 Delta

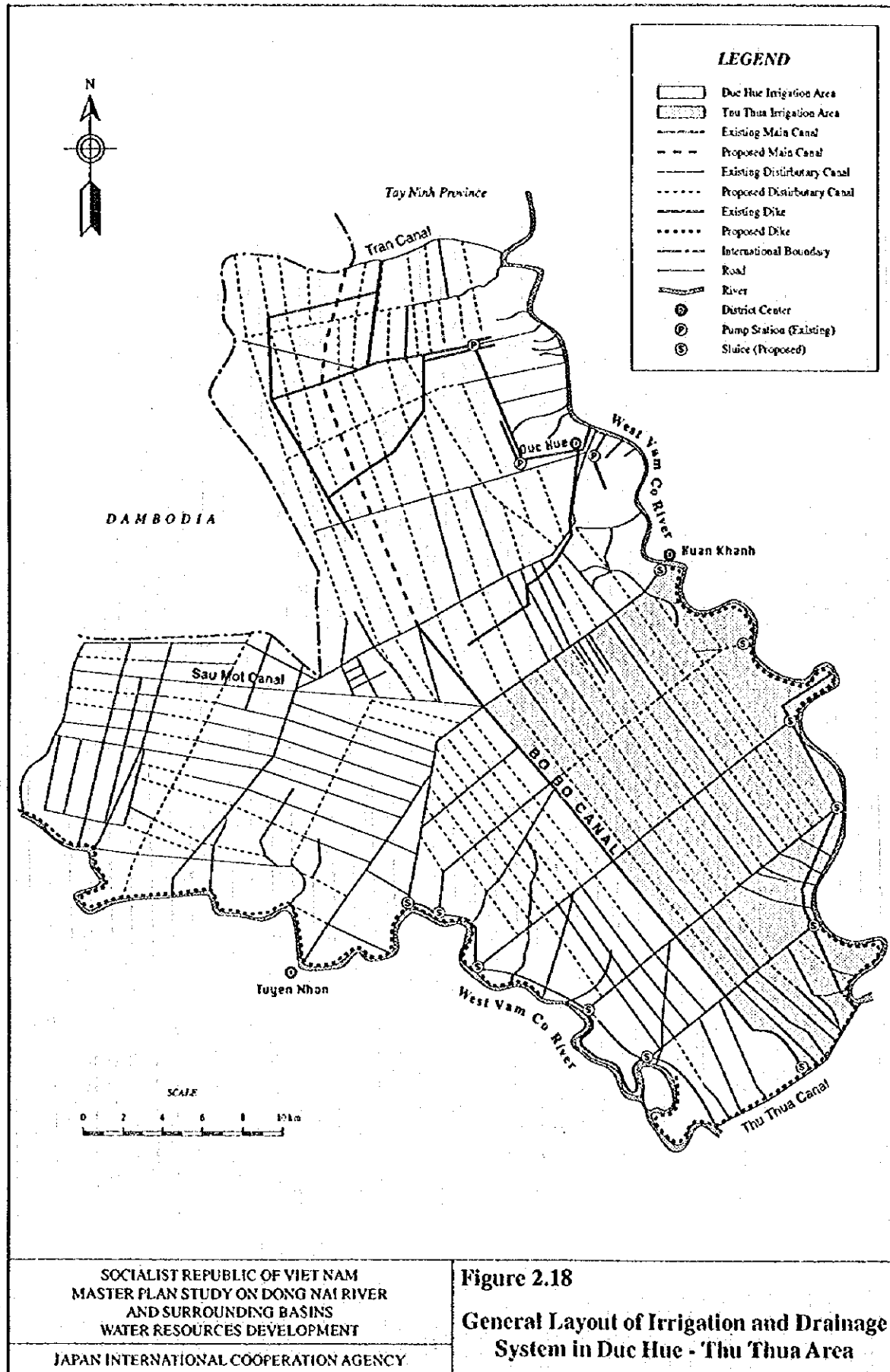


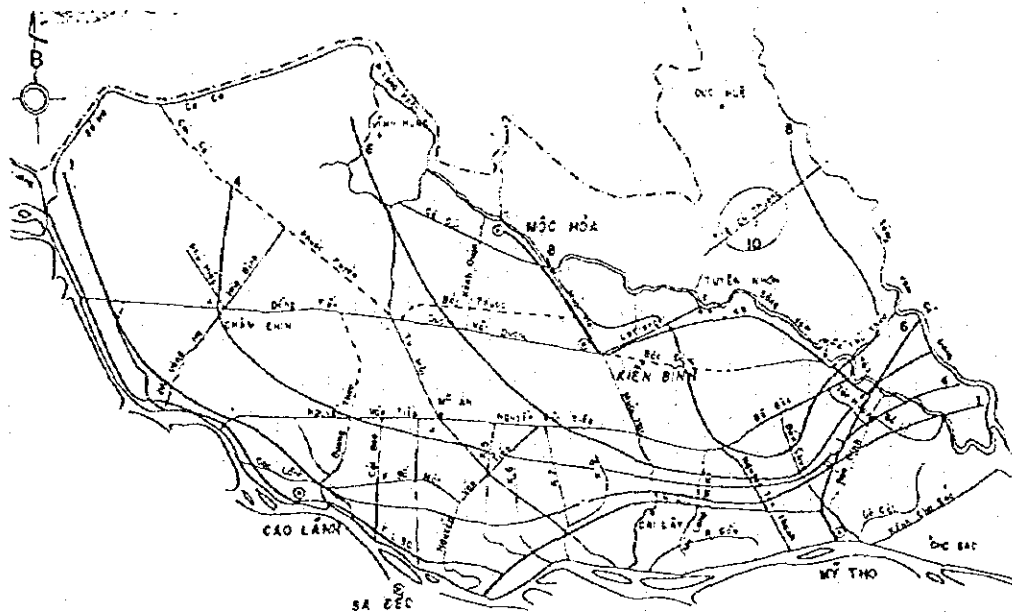
SOCIALIST REPUBLIC OF VIET NAM
 MASTER PLAN STUDY ON DONG NAI RIVER
 AND SURROUNDING BASINS
 WATER RESOURCES DEVELOPMENT
 JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 2.15
 Land Use in Long An Province

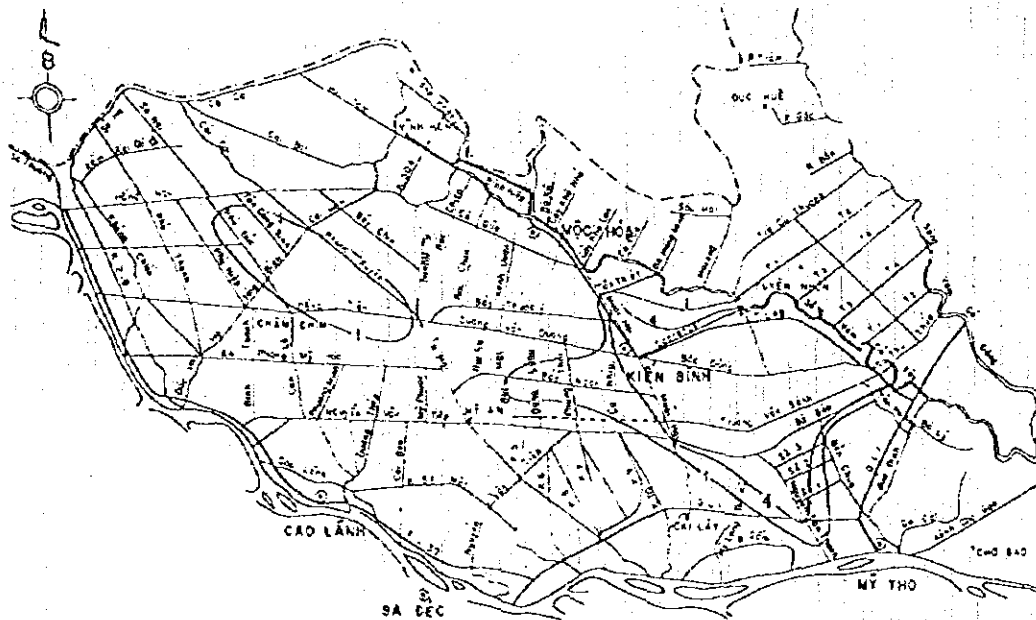








Isolines of Months of pH<5 in 1980

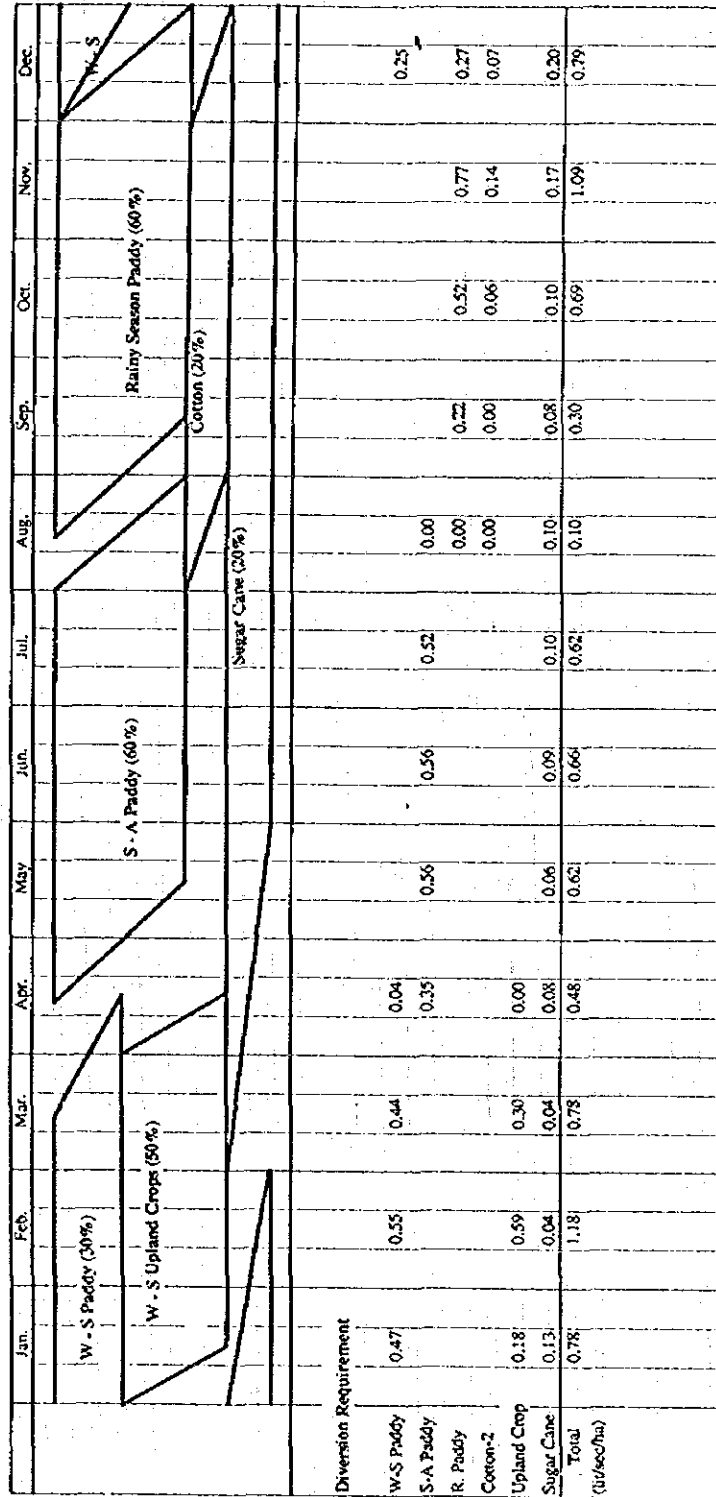


Isolines of Months of pH<5 in 1987

Source : Ministry of Water Resources

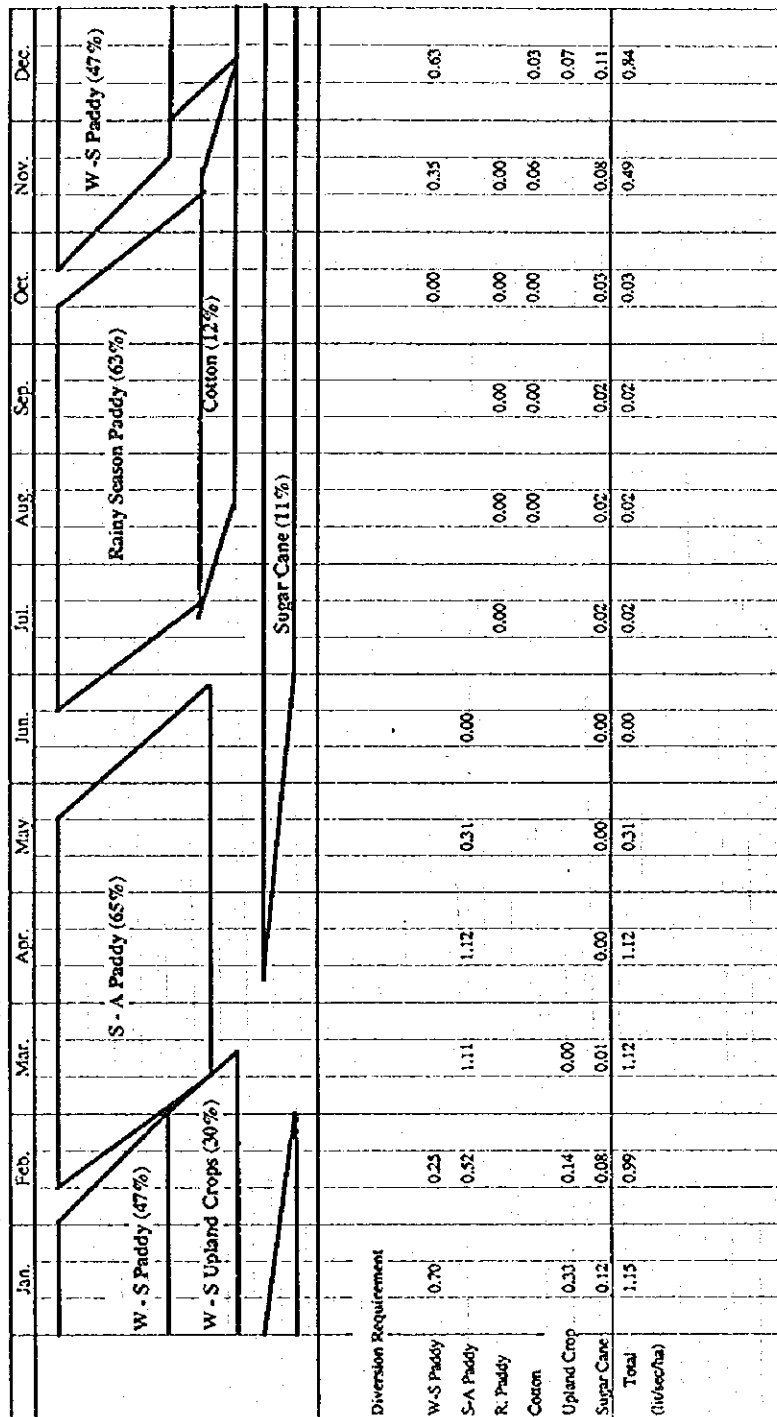
SOCIALIST REPUBLIC OF VIET NAM
 MASTER PLAN STUDY ON DONG NAI RIVER
 AND SURROUNDING BASINS
 WATER RESOURCES DEVELOPMENT
 JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 2.19
 Isolines of Months of pH Value Smaller
 than 5 in 1980 and 1987



SOCIALIST REPUBLIC OF VIET NAM
 MASTER PLAN STUDY ON DONG NAI RIVER
 AND SURROUNDING BASINS
 WATER RESOURCES DEVELOPMENT
 JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 2.20
 Diversified Cropping Patterns and Water
 Requirement in Phan Ri and Phan Thiet
 Plains



SOCIALIST REPUBLIC OF VIET NAM
 MASTER PLAN STUDY ON DONG NAI RIVER
 AND SURROUNDING BASINS
 WATER RESOURCES DEVELOPMENT
 JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 2.21
 Diversified Cropping Patterns and Water
 Requirement for Ta Pao Irrigation Scheme
 in Lower La Nga Plain

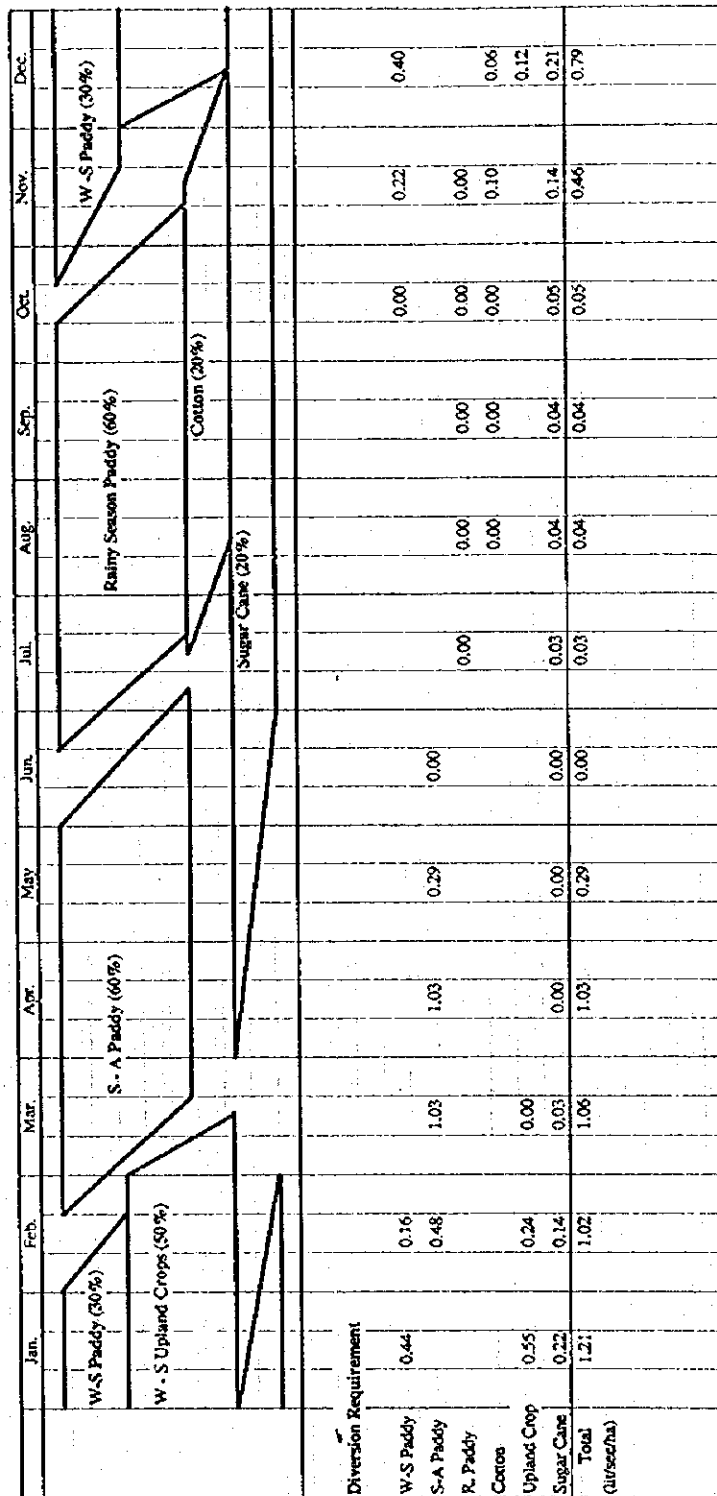


Figure 2.22
 Diversified Cropping Patterns and Water
 Requirement for Vo Dat Irrigation Scheme
 in Lower La Nga Plain

Figure 2.23 Diversified Cropping Patterns and Water Requirement in Phan Rang Plain

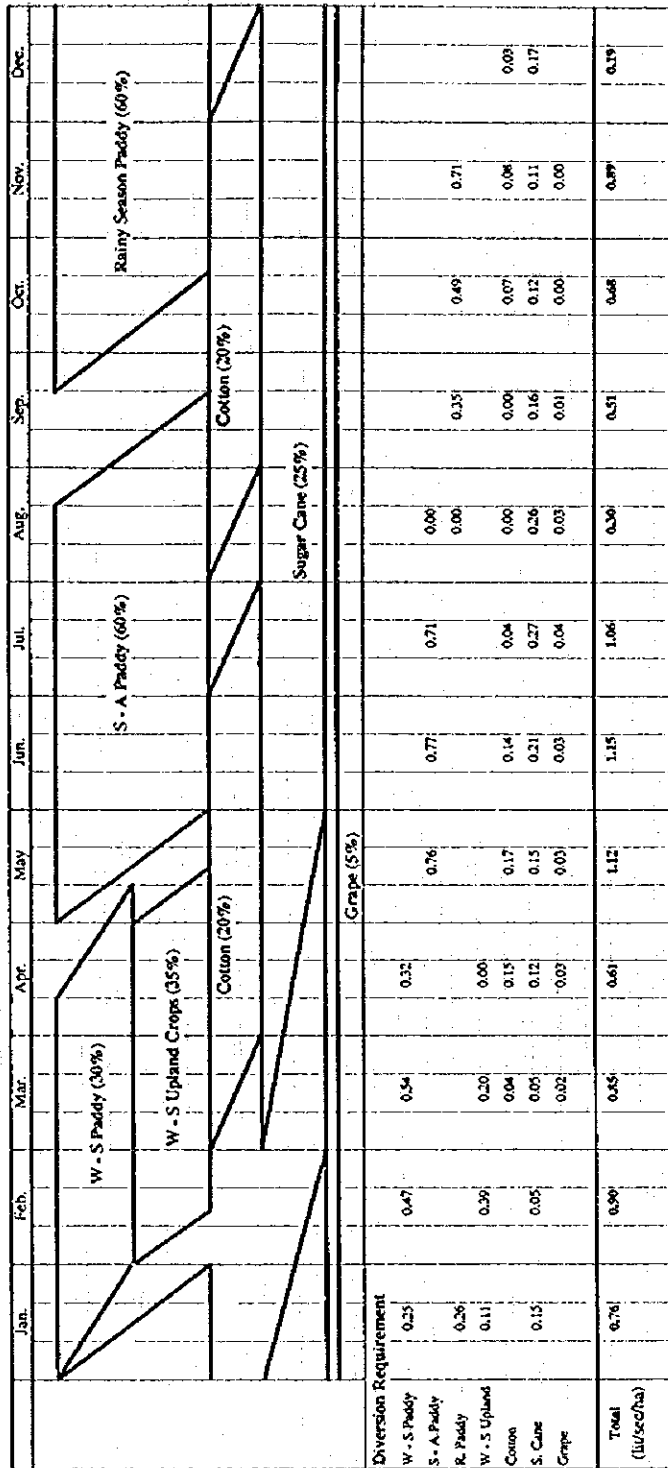


Figure 2.24 Diversified Cropping Pattern and Water Requirement in Ray and Dinh River Plains (Provisional and Reference Only)

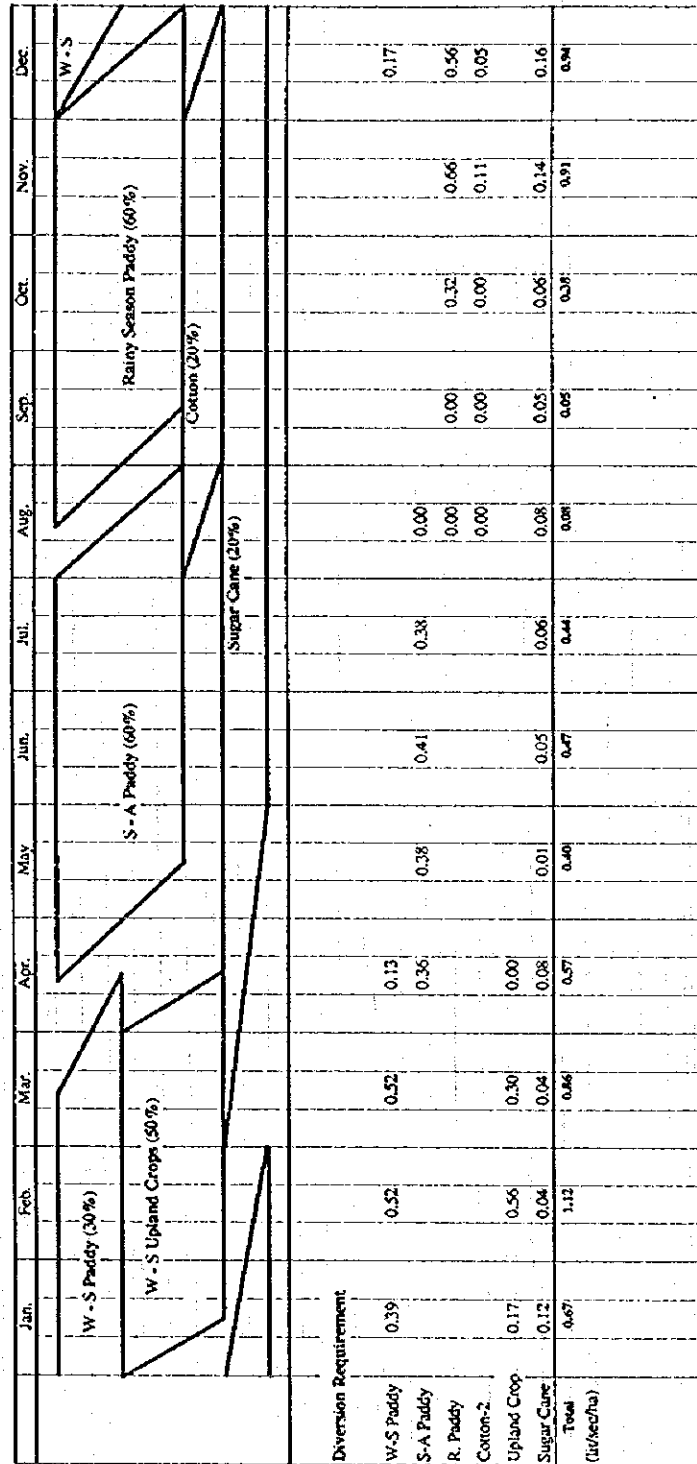
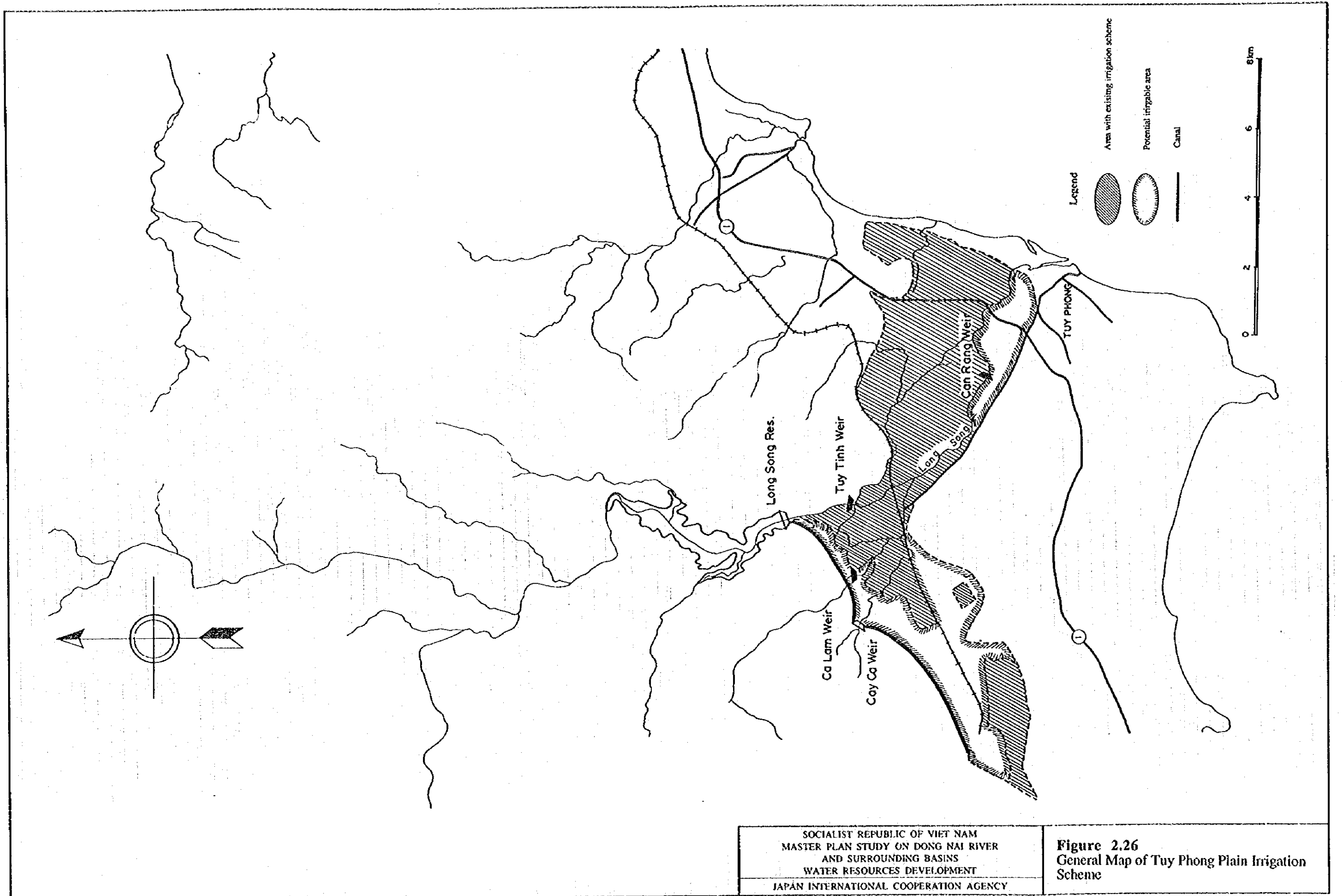
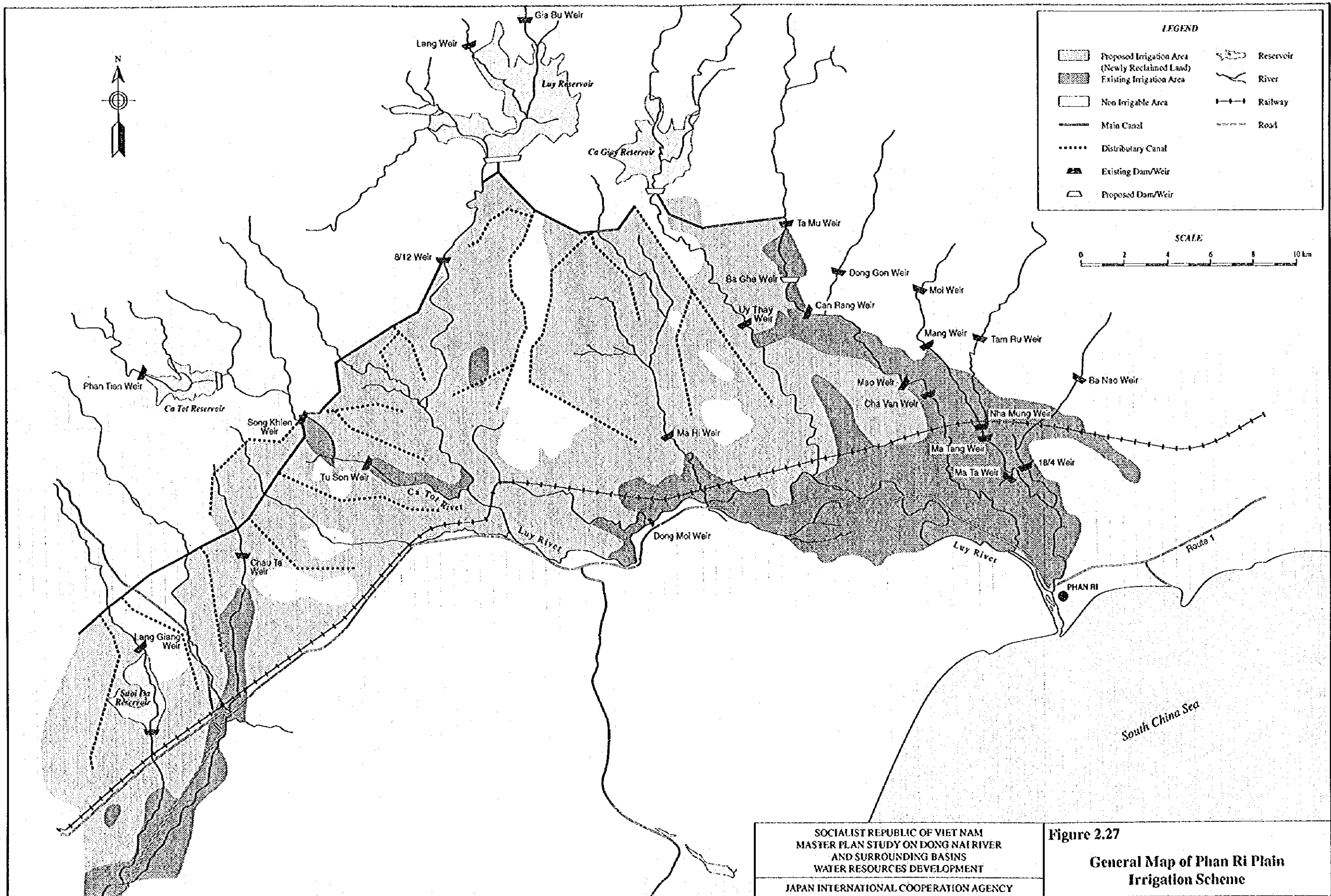


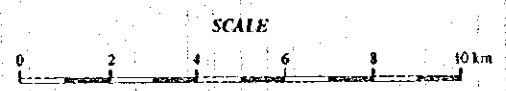
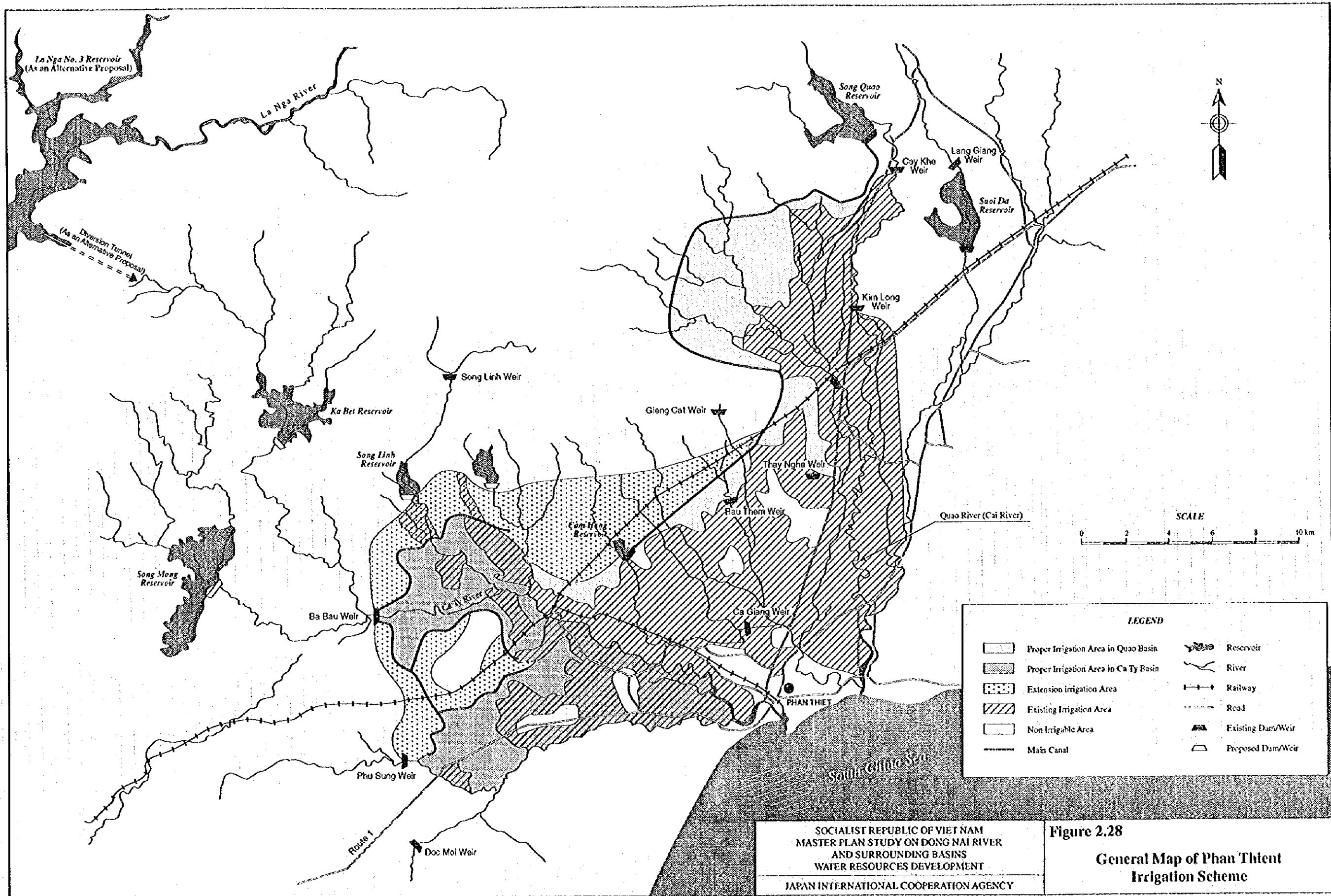
Figure 2.24
 Diversified Cropping Pattern and Water
 Requirement in Ray and Dinh River Plains



SOCIALIST REPUBLIC OF VIET NAM
 MASTER PLAN STUDY ON DONG NAI RIVER
 AND SURROUNDING BASINS
 WATER RESOURCES DEVELOPMENT
 JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 2.26
 General Map of Tuy Phong Plain Irrigation Scheme



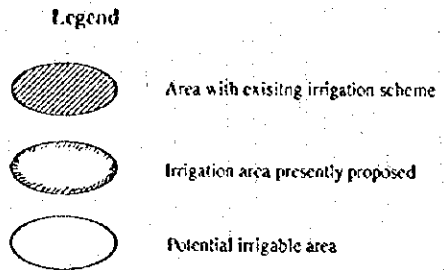
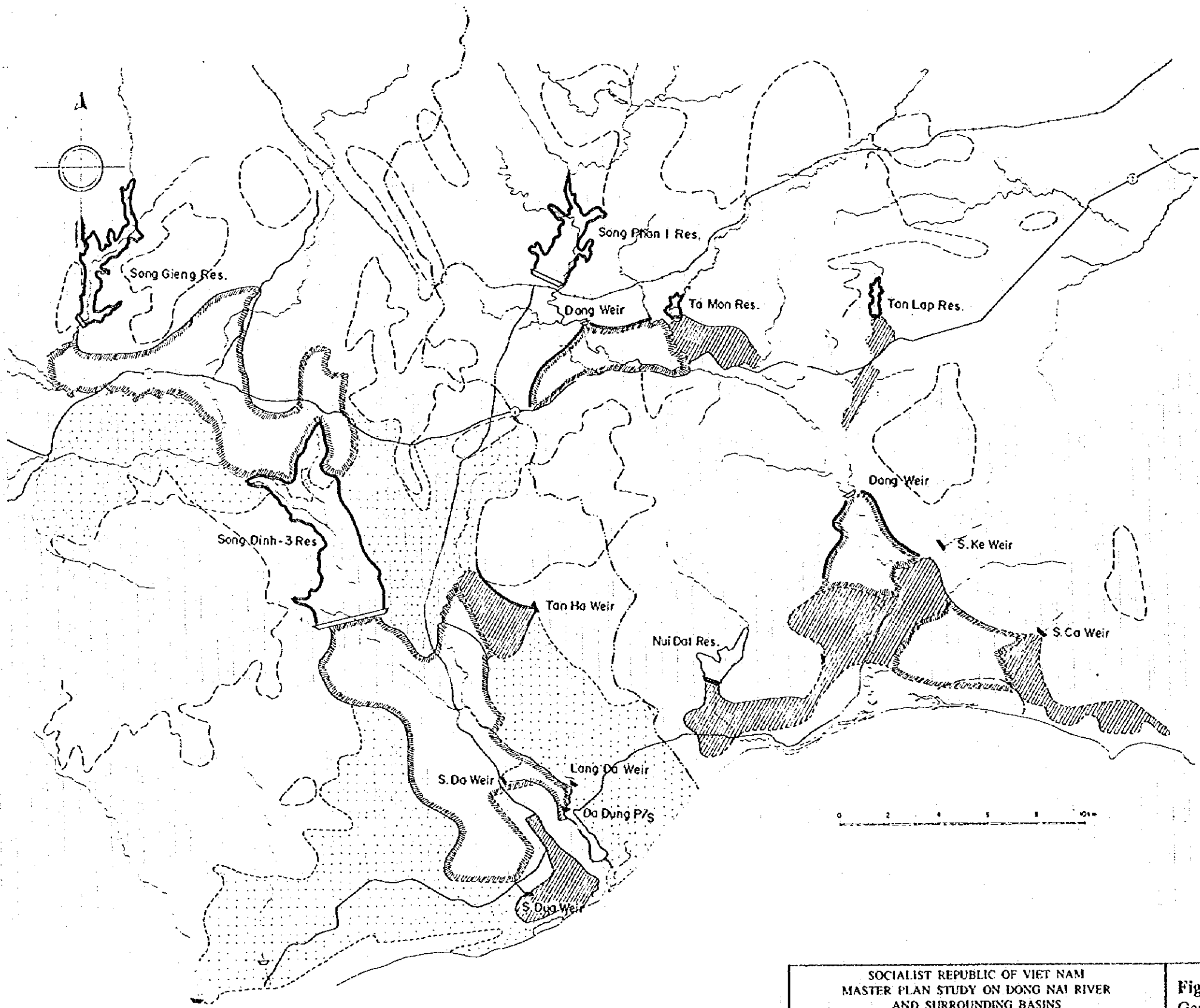


LEGEND

	Proper Irrigation Area in Quao Basin		Reservoir
	Proper Irrigation Area in Ca Ty Basin		River
	Extension Irrigation Area		Railway
	Existing Irrigation Area		Road
	Non Irrigable Area		Existing Dam/Weir
	Main Canal		Proposed Dam/Weir

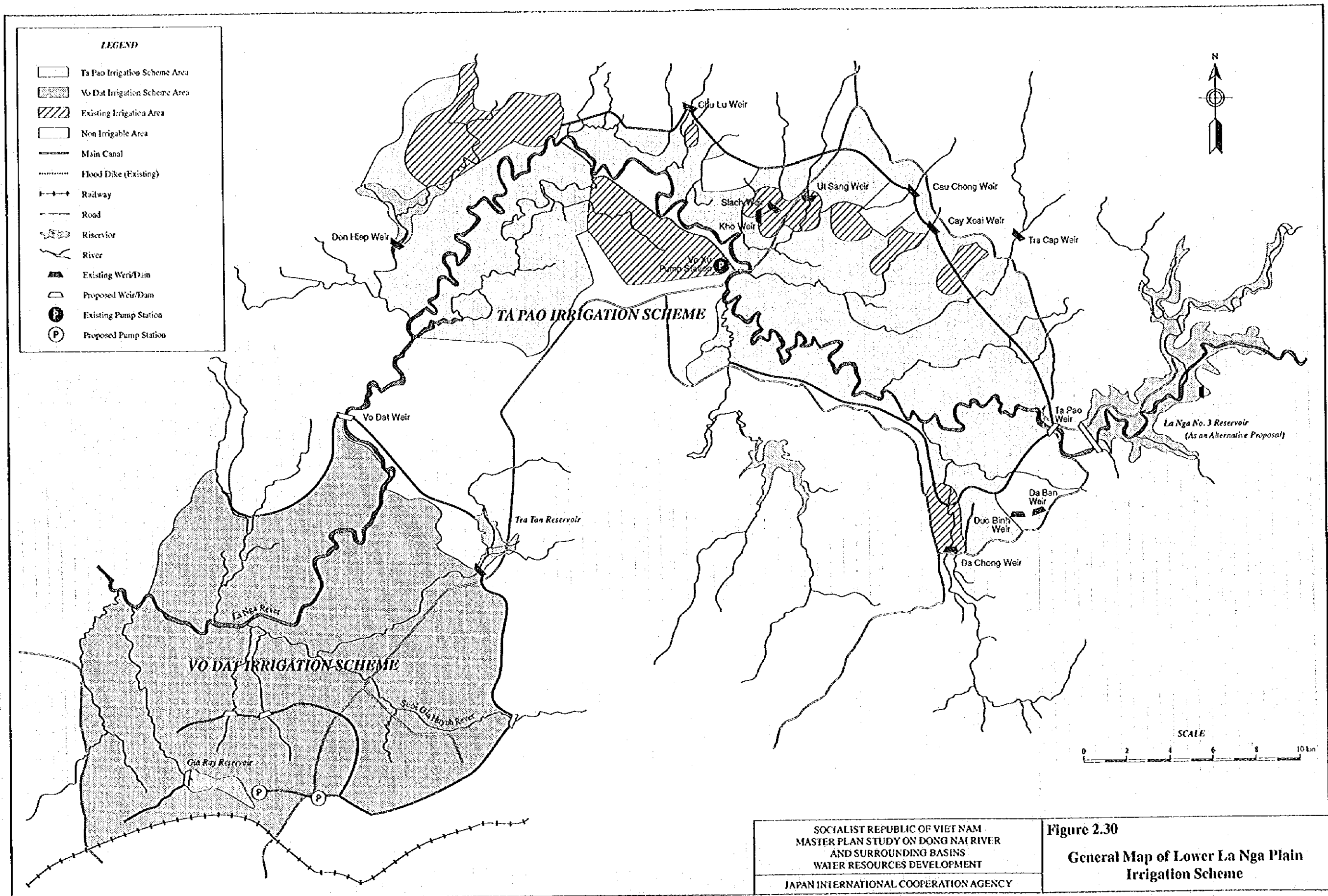
SOCIALIST REPUBLIC OF VIET NAM
 MASTER PLAN STUDY ON DONG NAI RIVER
 AND SURROUNDING BASINS
 WATER RESOURCES DEVELOPMENT
 JAPAN INTERNATIONAL COOPERATION AGENCY

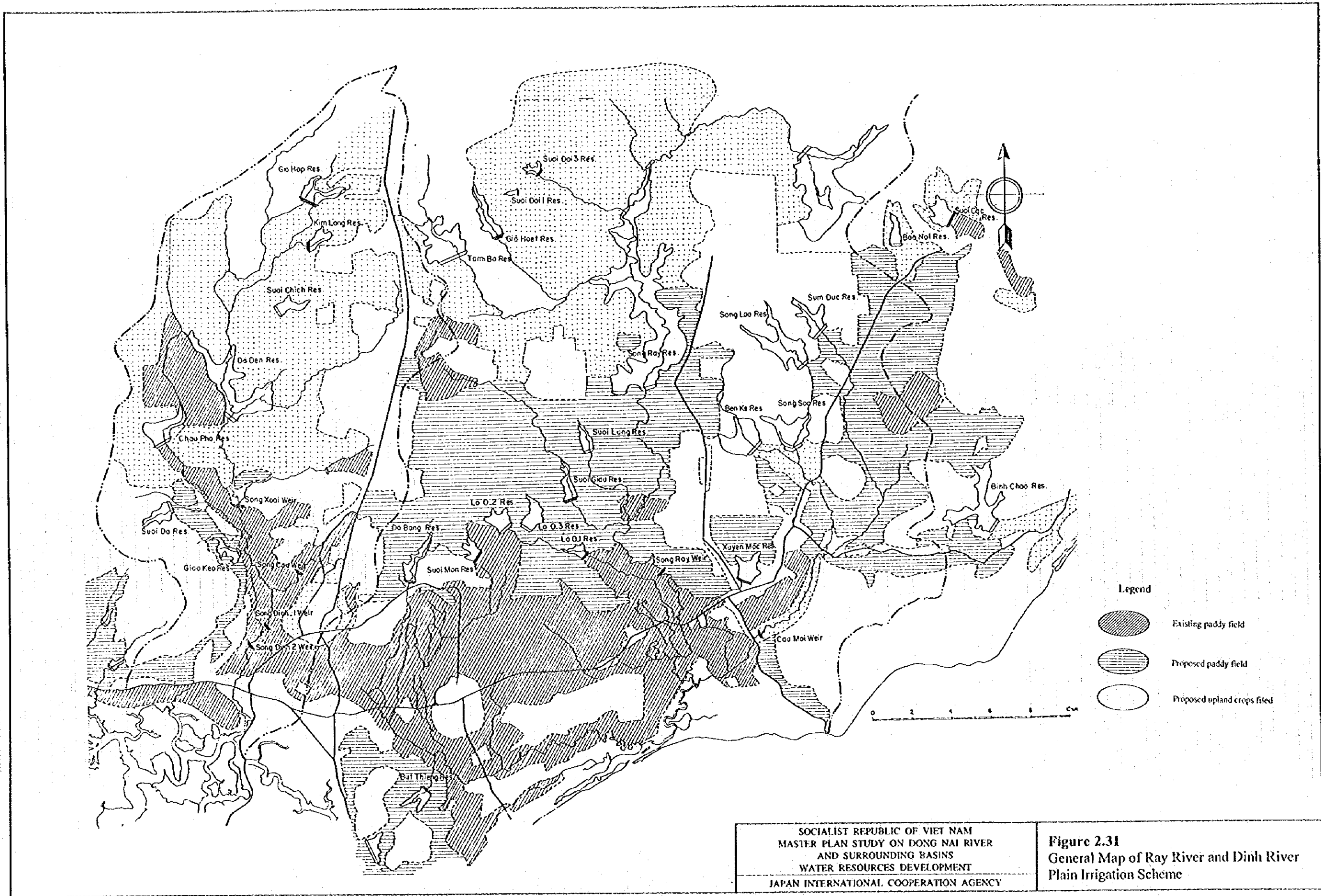
Figure 2.28
 General Map of Phan Thiet
 Irrigation Scheme



SOCIALIST REPUBLIC OF VIET NAM
 MASTER PLAN STUDY ON DONG NAI RIVER
 AND SURROUNDING BASINS
 WATER RESOURCES DEVELOPMENT
 JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 2.29
 General map of Song Phan and Ham Tan
 Plain Irrigation Scheme





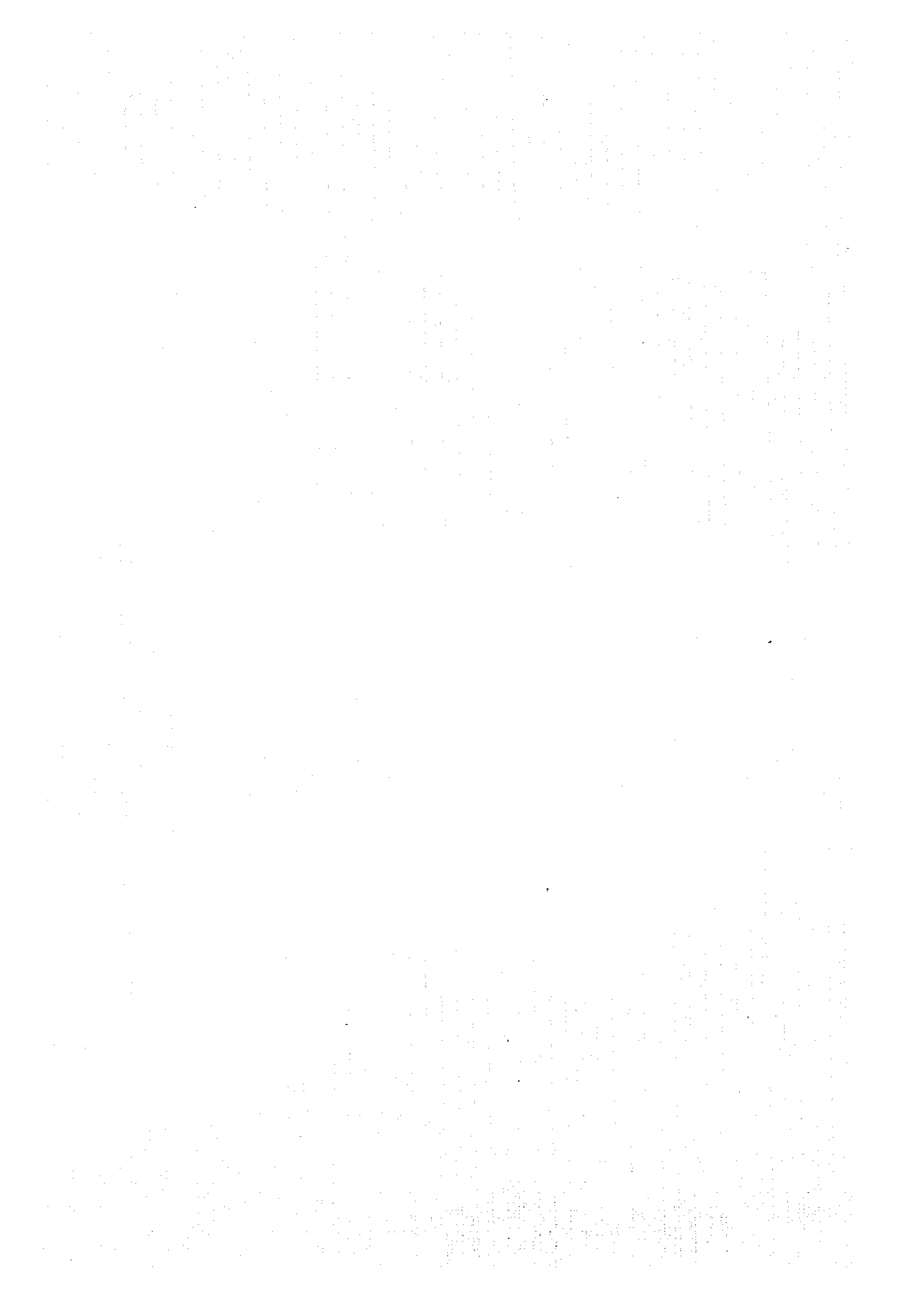


Figure 2.32 Irrigation System Diagram of Phan Rang Plain

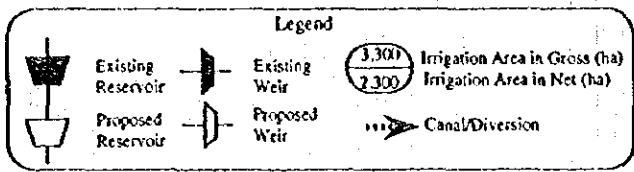
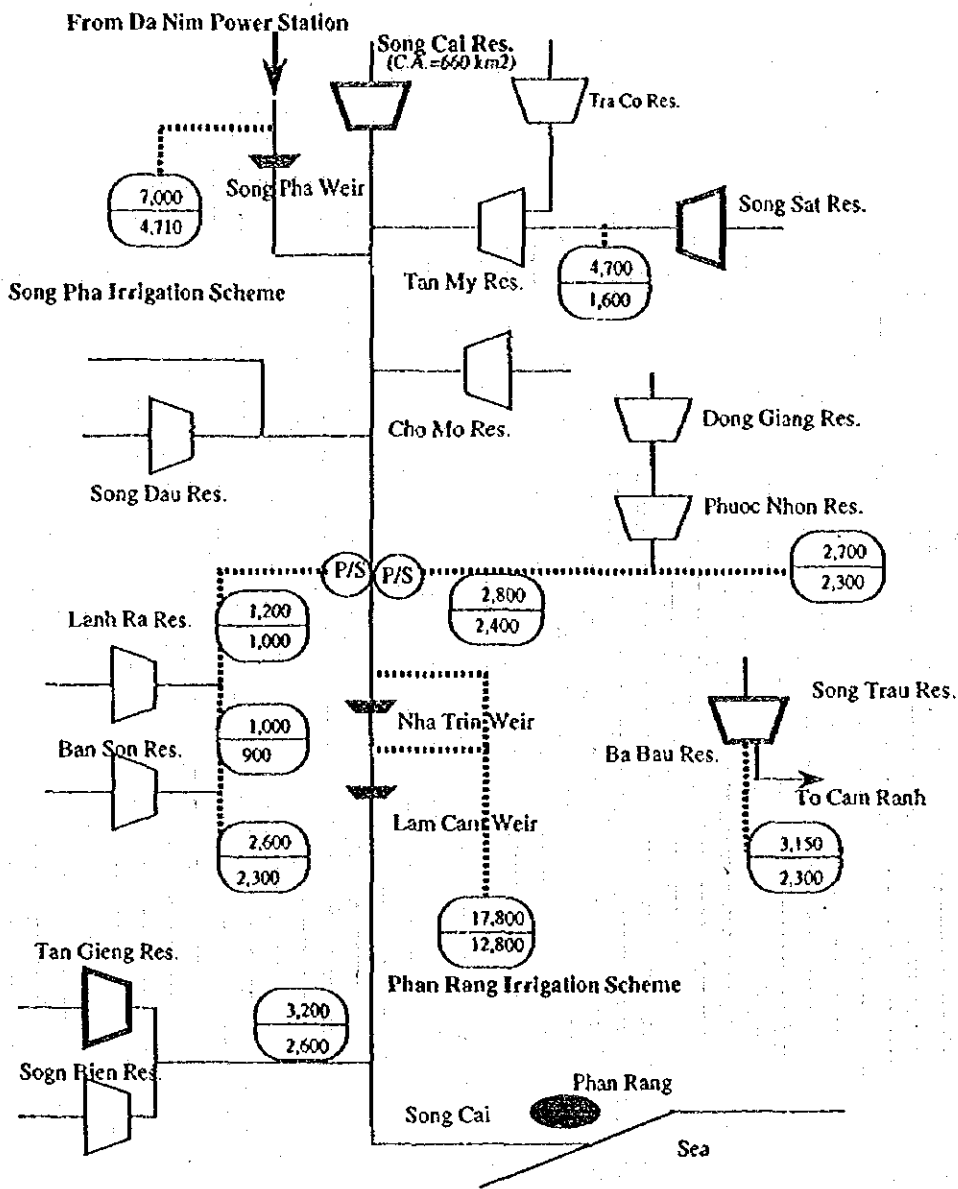
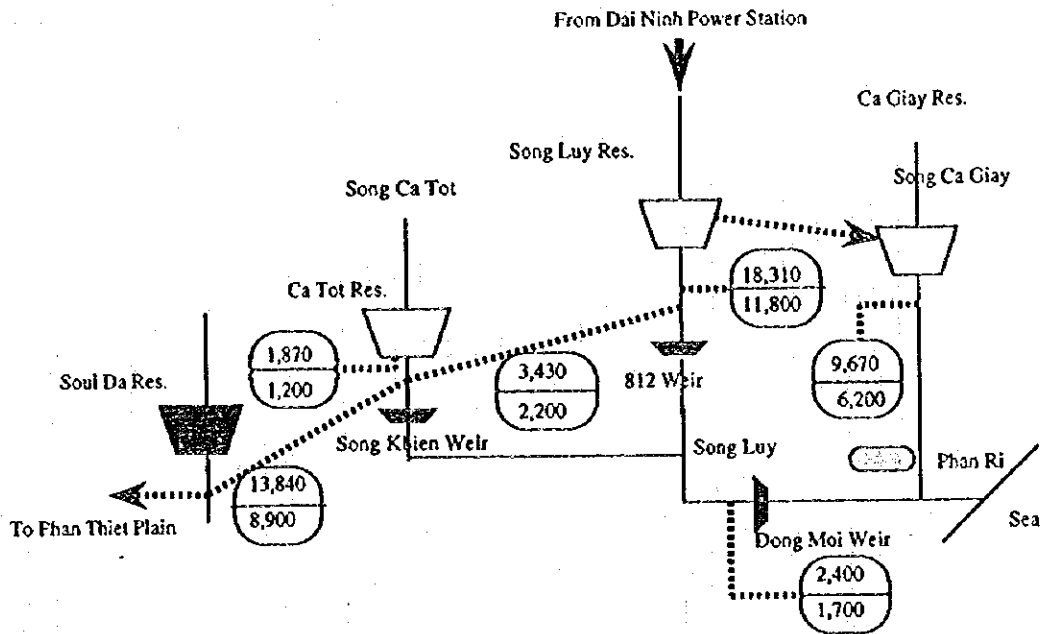
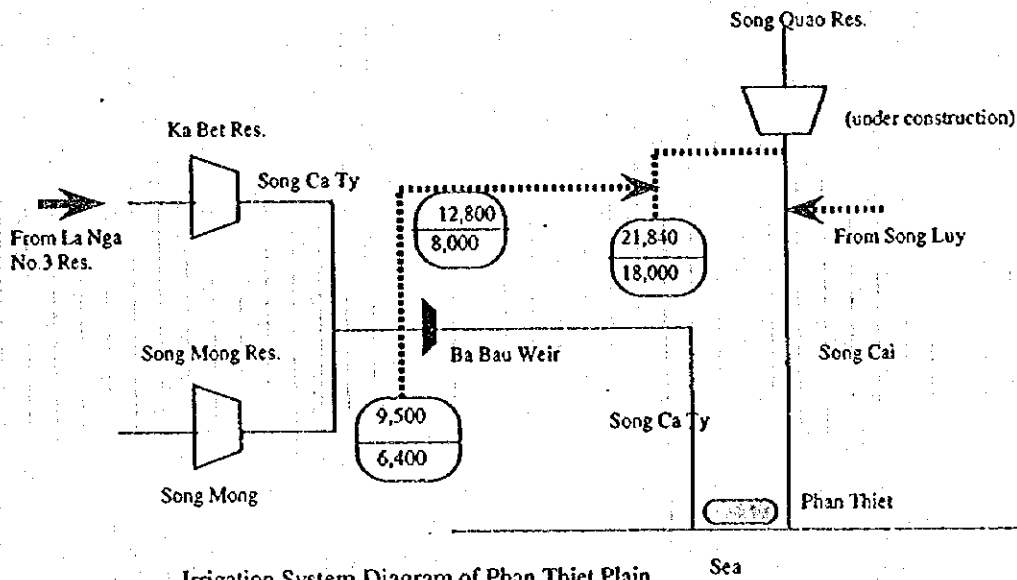


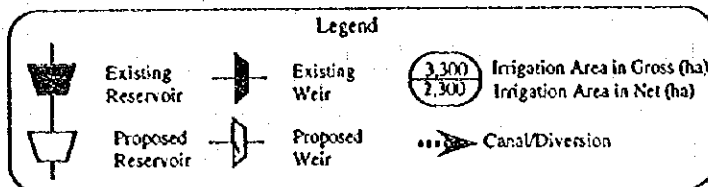
Figure 2.32
 Irrigation System Diagram of Phan Rang Plain



Irrigation System Diagram of Phan Ri Plain



Irrigation System Diagram of Phan Thiet Plain



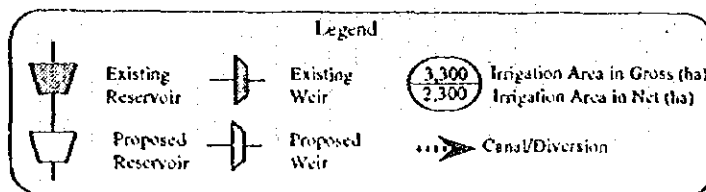
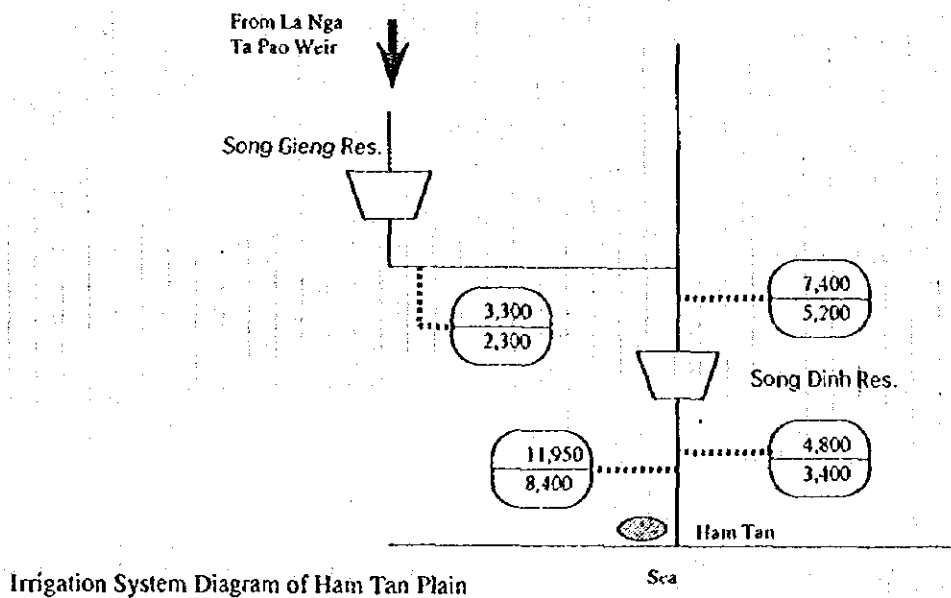
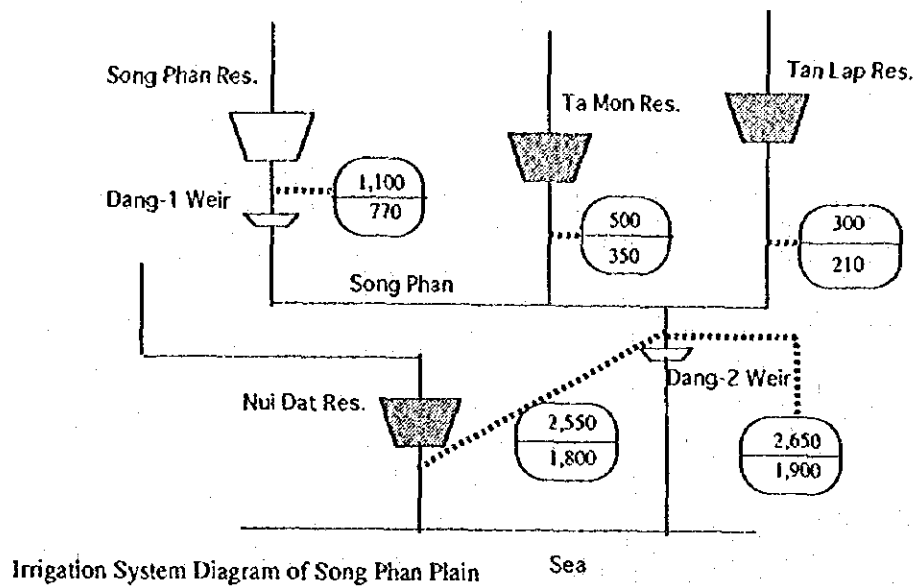
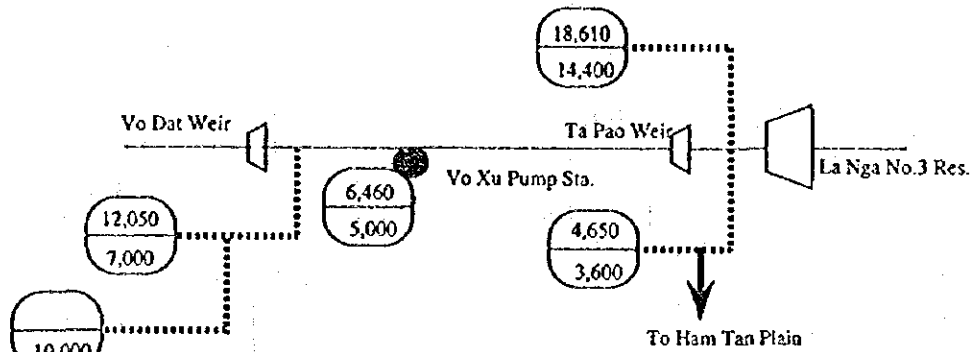
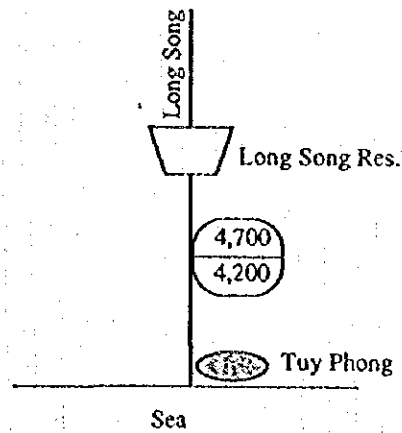


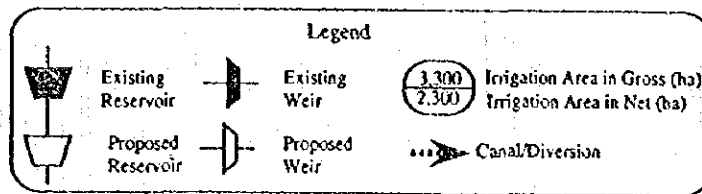
Figure 2.34
 Irrigation System Diagrams of Song Phan
 and Ham Tan Plains

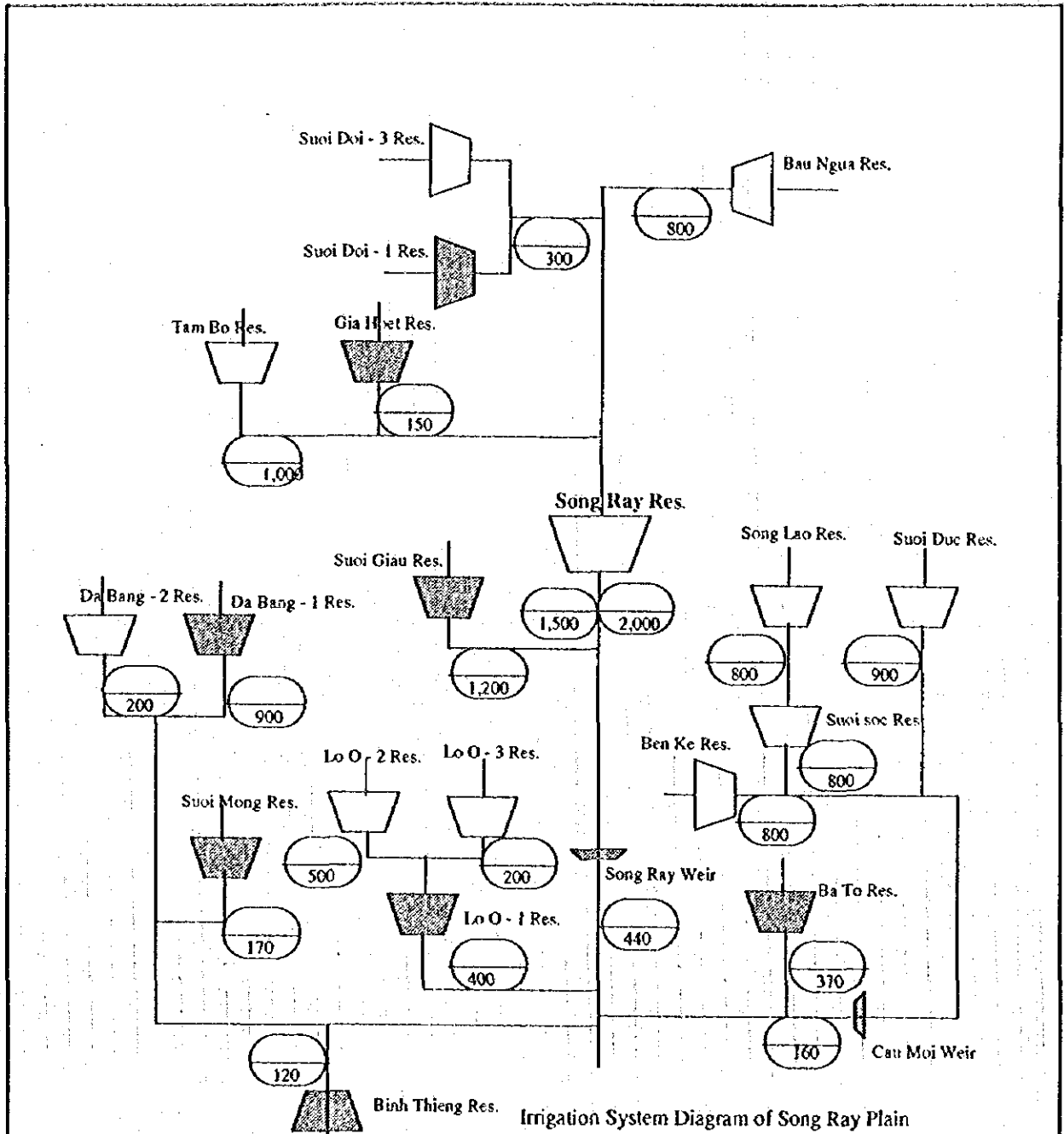


Irrigation System Diagram of Lower La Nga Plain



Irrigation System Diagram of Tuy Phong Plain



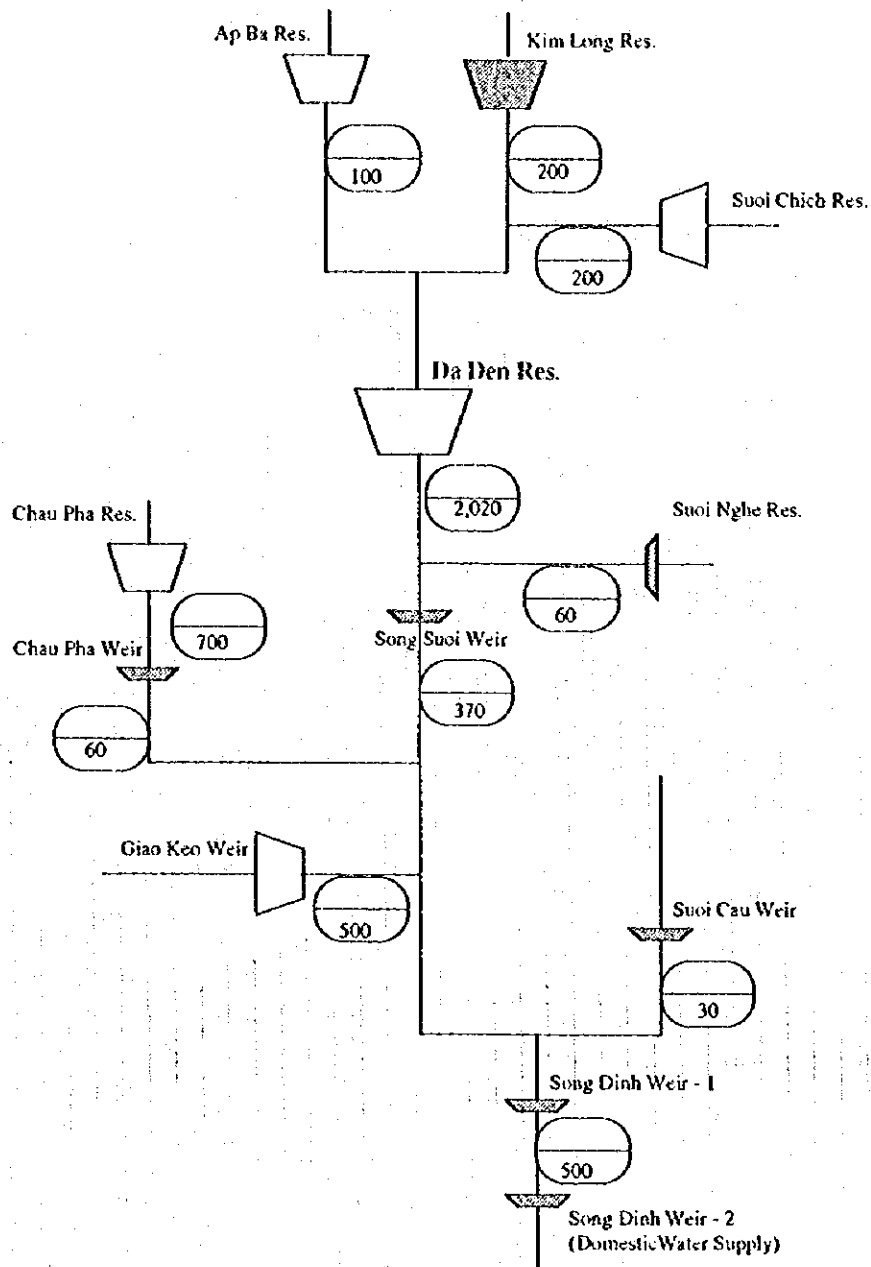


Legend

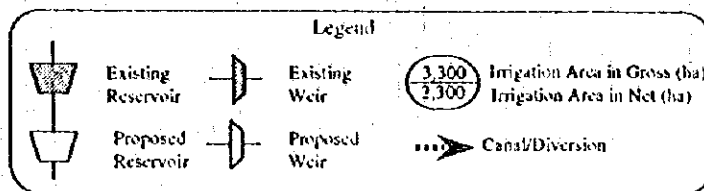
Existing Reservoir	Existing Weir	Irrigation Area in Gross (ha)
Proposed Reservoir	Proposed Weir	Irrigation Area in Net (ha)
Canal/Diversion		

SOCIALIST REPUBLIC OF VIET NAM
 MASTER PLAN STUDY ON DONG NAI RIVER
 AND SURROUNDING BASINS
 WATER RESOURCES DEVELOPMENT
 JAPAN INTERNATIONAL COOPERATION AGENCY

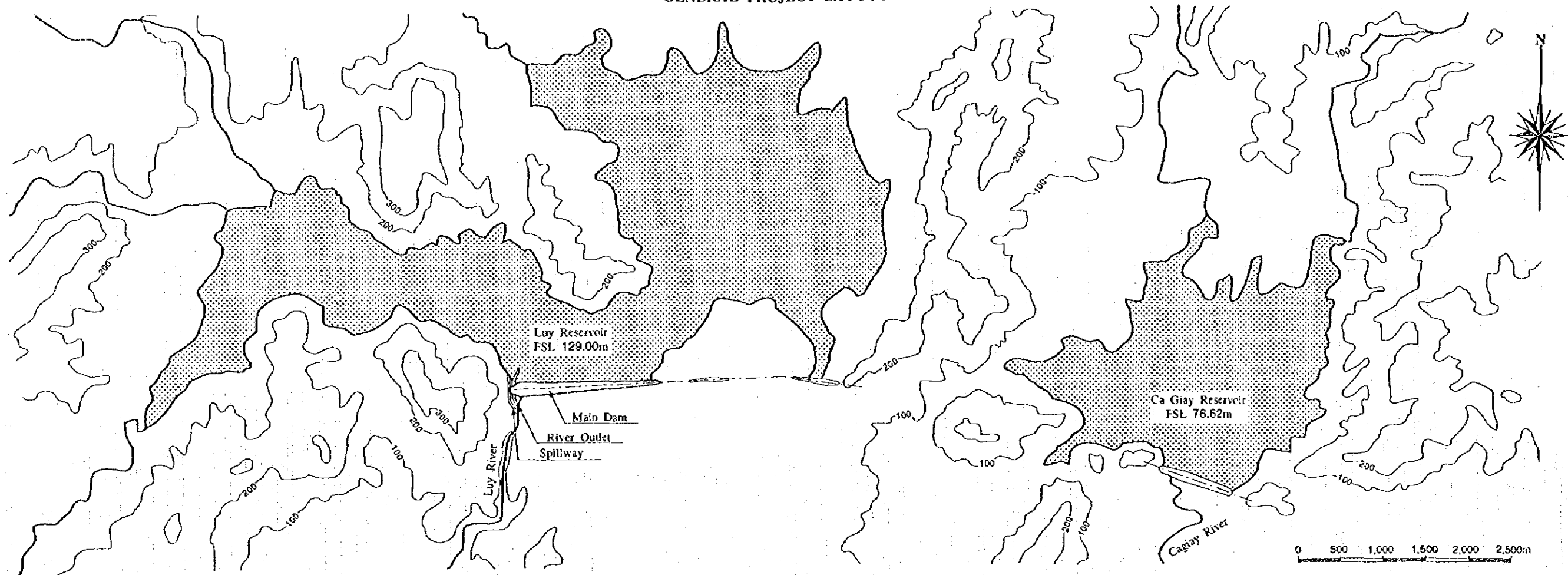
Figure 2.36
Irrigation System Diagram of Ray River Plain



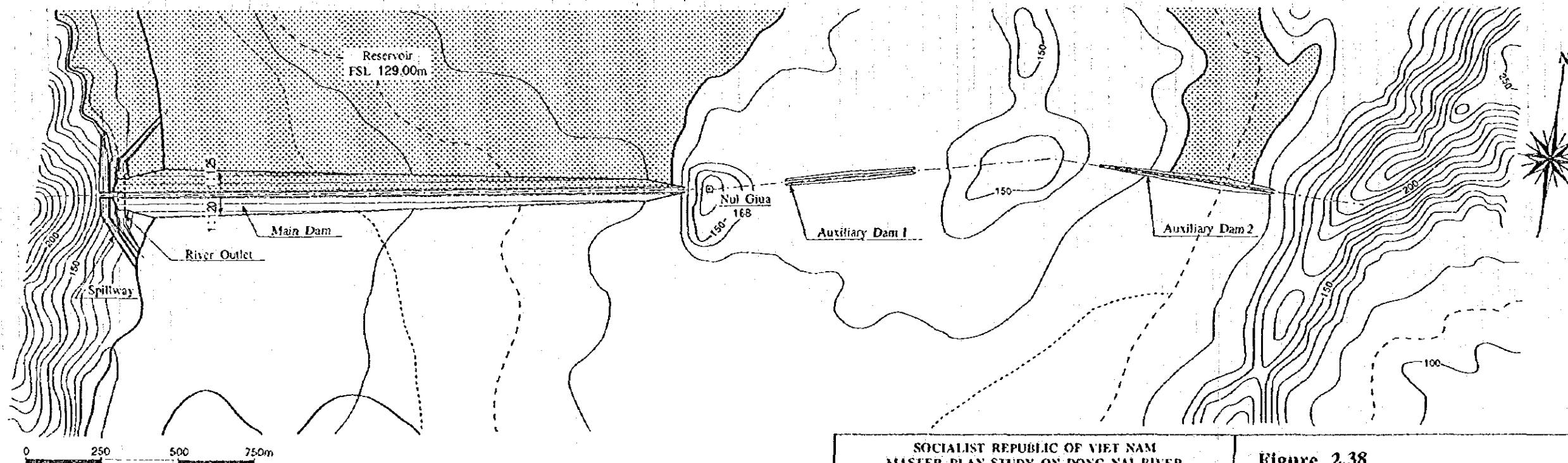
Irrigation System Diagram of Song Dinh Plain



GENERAL PROJECT LAYOUT



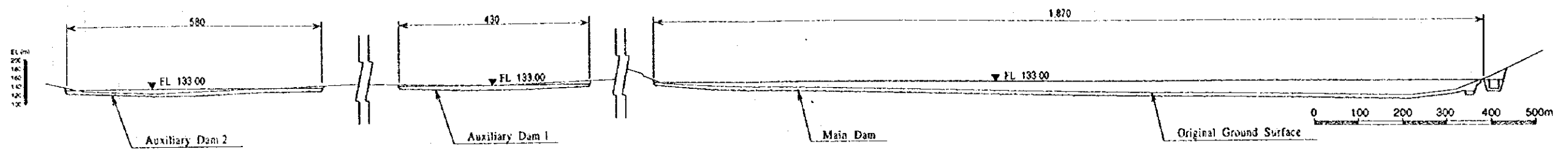
PLAN OF DAM



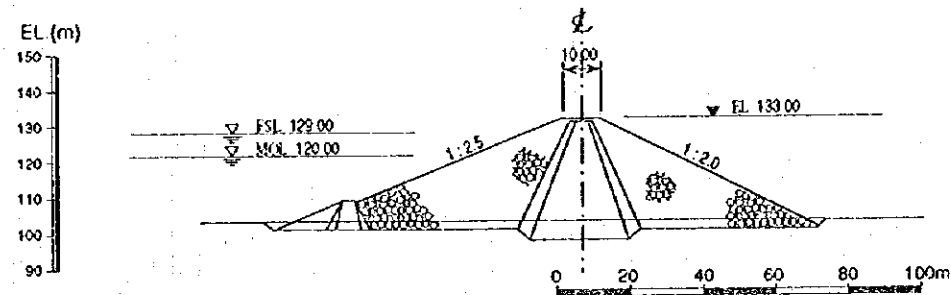
SOCIALIST REPUBLIC OF VIET NAM
 MASTER PLAN STUDY ON DONG NAI RIVER
 AND SURROUNDING BASINS
 WATER RESOURCES DEVELOPMENT
 JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 2.38
 Preliminary Design of Luy Dam (1/2)

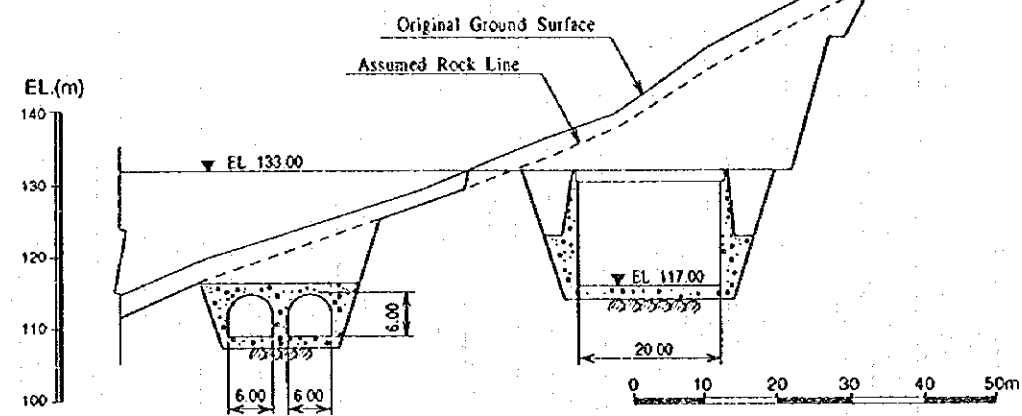
UPSTREAM ELEVATION OF DAM



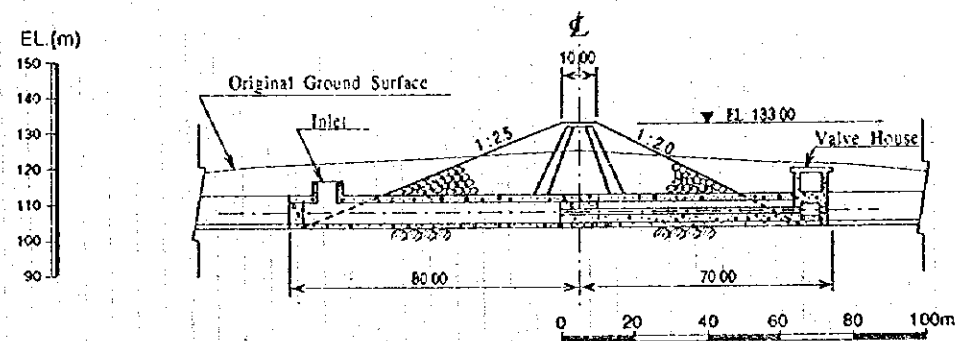
TYPICAL SECTION OF DAM



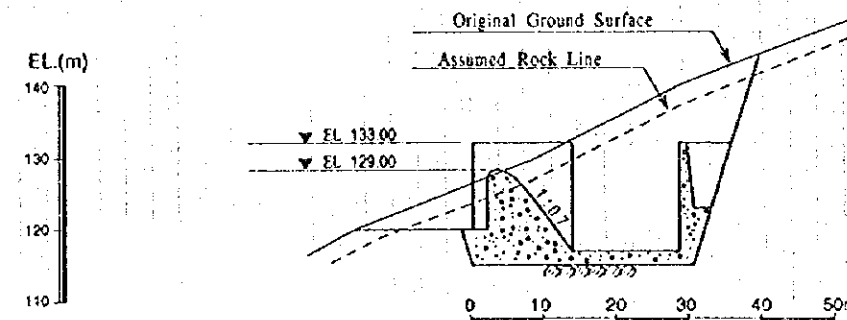
TYPICAL SECTION OF RIVER OUTLET AND SPILLWAY



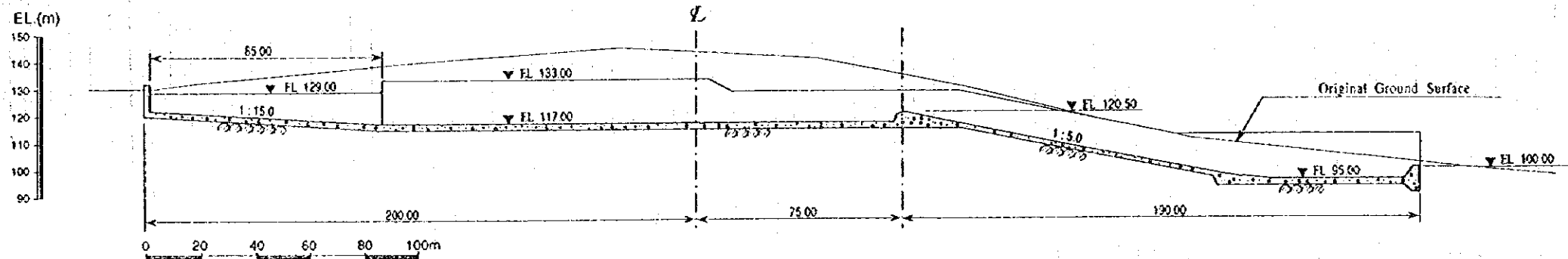
PROFILE OF RIVER OUTLET



TYPICAL OVERFLOW SECTION OF SPILLWAY



PROFILE OF SPILLWAY



SOCIALIST REPUBLIC OF VIET NAM
 MASTER PLAN STUDY ON DONG NAI RIVER
 AND SURROUNDING BASINS
 WATER RESOURCES DEVELOPMENT
 JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 2.39
 Preliminary Design of Luy Dam (2/2)

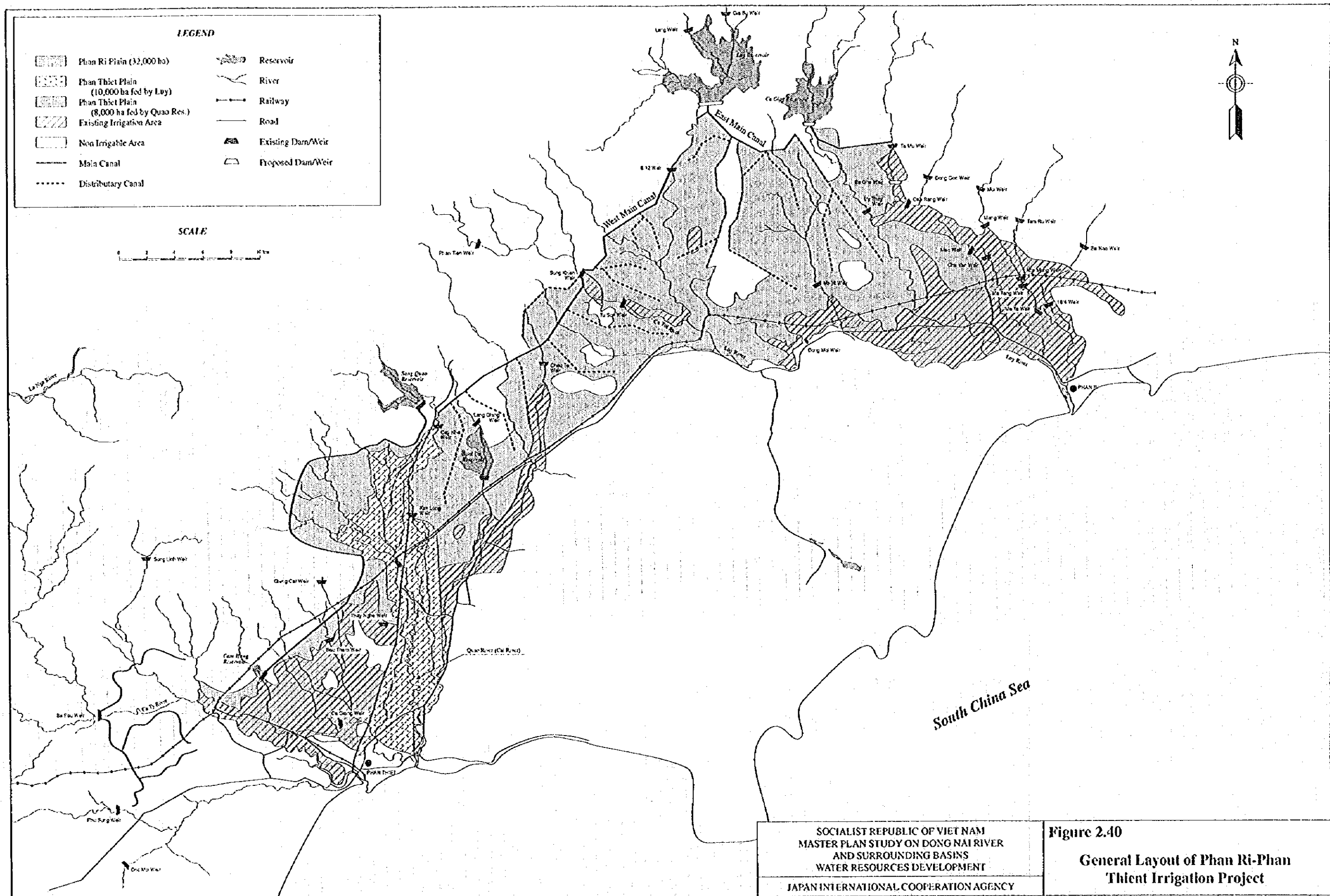
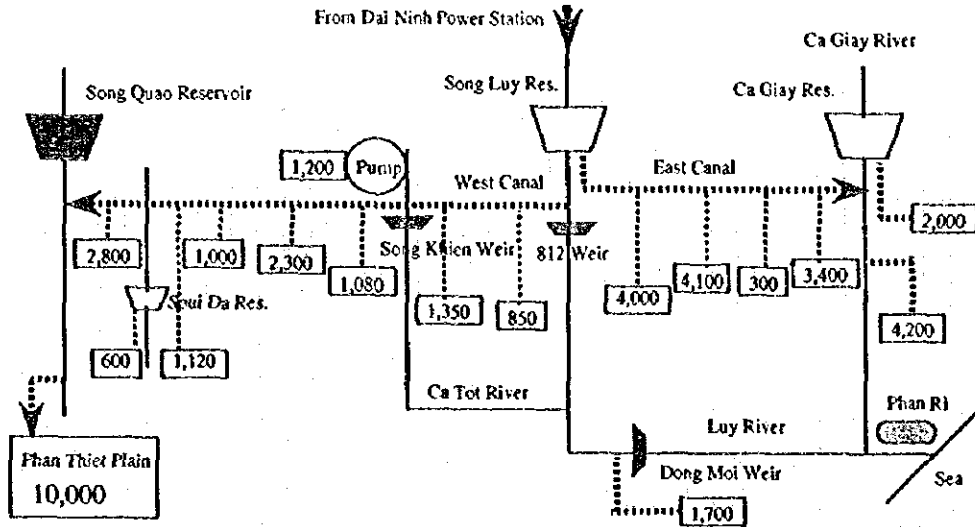
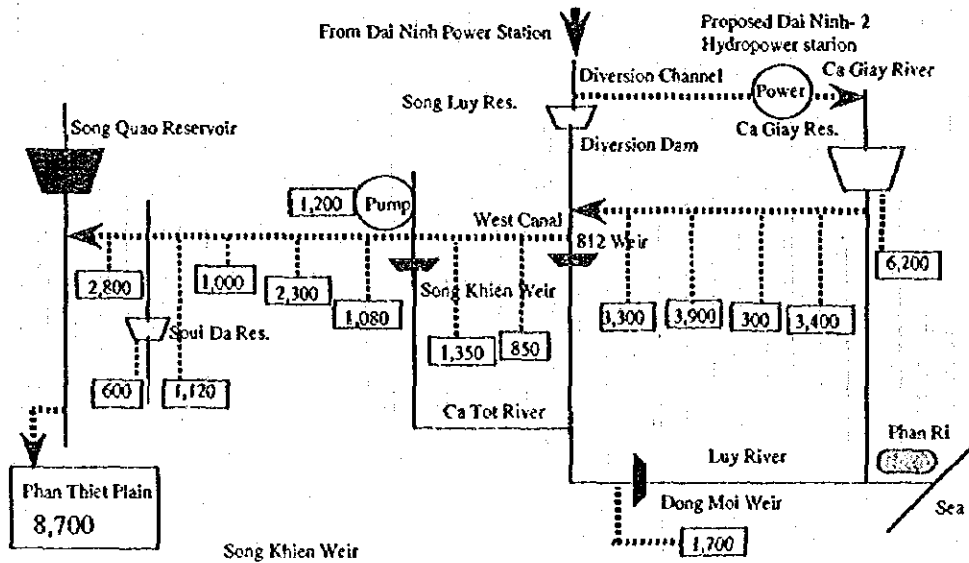


Figure 2.40
General Layout of Phan Ri-Phan Thient Irrigation Project

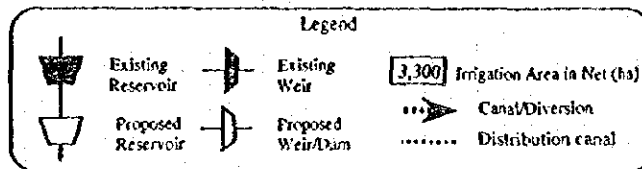
Figure 2.41 Irrigation System Diagram of Phan Ri - Phan Thiet Irrigation Project

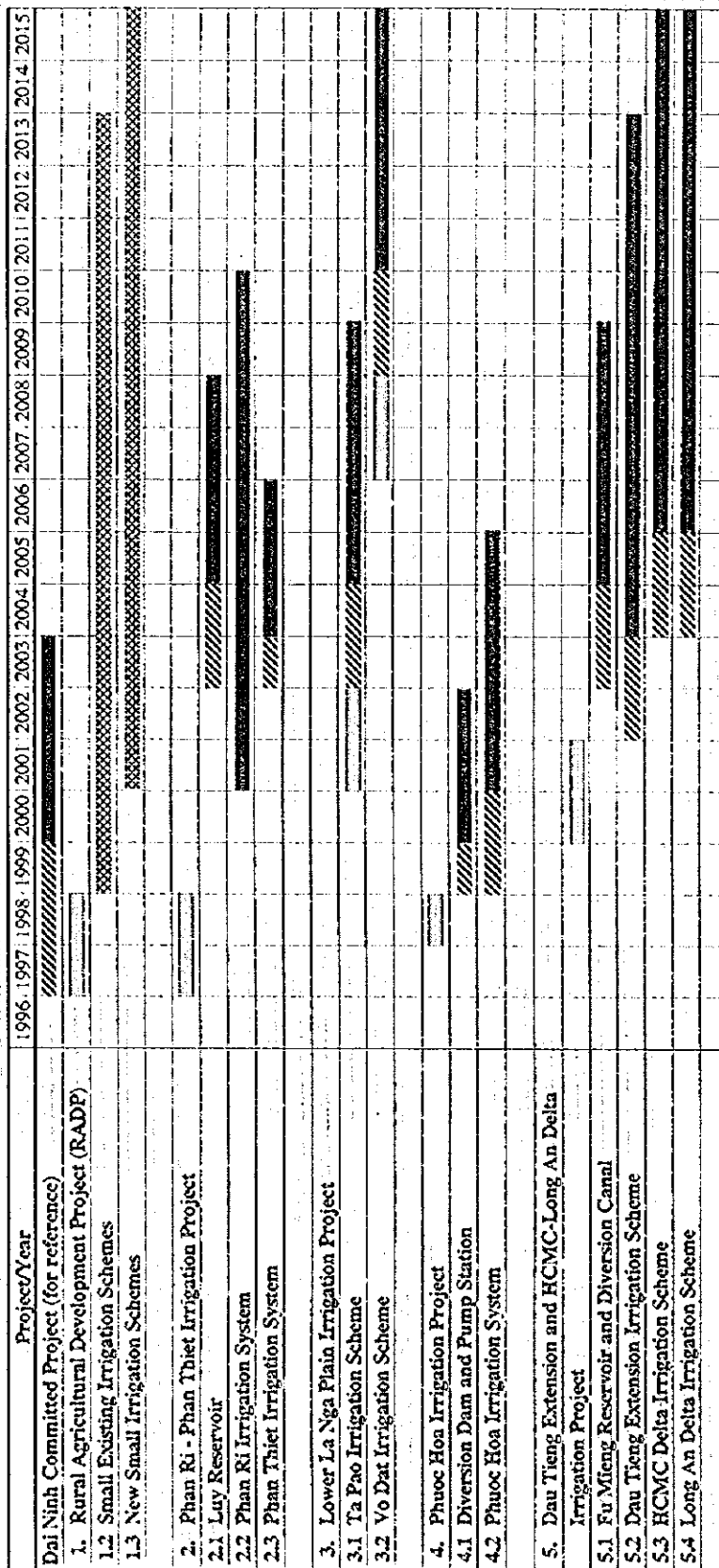






Alt-1: Irrigation System Diagram with Luy and Ca Giay Reservoirs



Alt-2: Irrigation System Diagram with Ca Giay Reservoir Only





 : Master Plan Study/Feasibility Study
 : Design
 : Construction
 : Construction in parallel with Design

SOCIALIST REPUBLIC OF VIET NAM
 MASTER PLAN STUDY ON DONG NAI RIVER
 AND SURROUNDING BASINS
 WATER RESOURCES DEVELOPMENT
 JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 2.42
 Preliminary Implementation Schedule of
 Master Plan Projects

ANNEX



JICA Dong Nai Project Inventory Survey of Irrigation Systems

1. Name of Irrigation System

Province

2. Condition of the System

a. Existing b. Planned

*completion year

3. Name of source river

4. Name of Water Intake Structures (list all)

Dam

Weir

Pump Station

Well

Sluice

5. Maximum Command Area of the System(ha)

6. Planned Net Irrigable Area (ha) and Unit Yields(ton/ha)

		Area (ha)	Yields (ton/ha)
Winter - Spring	Paddy		
	Other Crops		
Summer - Autumn	Paddy		
	Other Crops		
Wet Season, Other	Paddy		
	Other Crops		

7. Currently Net Irrigated Area and Unit Yield

		Area (ha)	Yields (ton/ha)
Winter - Spring	Paddy		
	Other Crops		
Summer - Autumn	Paddy		
	Other Crops		
Wet Season, Other	Paddy		
	Other Crops		

8. Number of Beneficiary Farm Households Covered by the System

9. Number of Cooperatives in the System

10. What Organization is in Charge of the Operation of the System?

a. Cooperative b. Others Specify

11. Reasons for the Under-utilization of the System, if any

a. Inadequate Design

i) no regulation for the collection of water charge

Annex-I Form of Questionnaire for Agriculture and Irrigation (2/3)

JICA Dong Nai Project Inventory Survey of Irrigation Systems

- ii) resistance of farmers in paying the water charge
- iii) others, specify
- c. Reluctance of farmers in planting crops
- d. Insufficient development in on-farm irrigation systems
- e. Water shortage
- f. Broken-down of the system
- g. Others, specify

12. Regulated Charges for Irrigation Water Supply, if any

	Winter-Spring	Summer-Autumn	Wet Season
--	---------------	---------------	------------

Kg/ha

dong/ha

13. Actual Collection of Water Charges

Kg/ha

dong/ha

14. Existing Facilities

a. Irrigation and Drainage Facilities

Intake weir height (m)

Intake weir crest length (m)

Designed intake discharge (m³/sec)

Present maximum intake discharge (m³/sec)

Main canal length (km)

Secondary canal length (km)

Tertiary canal length (km)

Drainage canal length (km)

Number of related structures

b. Reservoir and Dam

Reservoir and Dam type

Reservoir and Dam length (m)

Reservoir and Dam height (m)

Gross Storage Capacity (MCM)

Effective Storage Capacity (MCM)

Flood water level (elevation, m)

Normal water level (elevation, m)

Low water level (elevation, m)

Other information

c. Pump

Driving by

Electric motor Diesel engine

Driving power (HP)

Lifting height (m)

Designed pumping discharge (m³/sec)

Present maximum pumping discharge (m³/sec)

JICA Dong Nai Project Inventory Survey of Irrigation Systems

15. Constraints

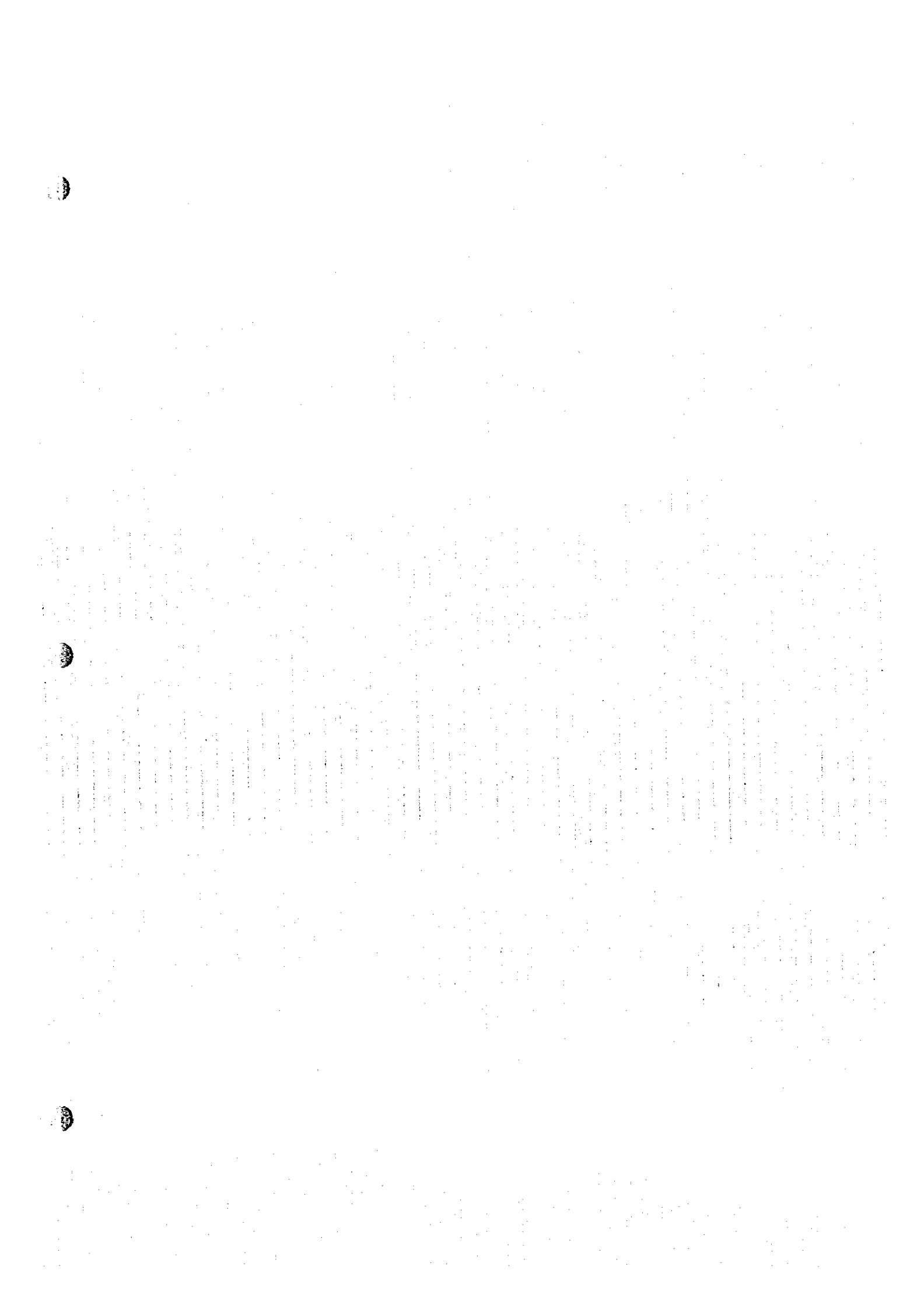
16. Development Plan

Type of Development Plan

Facilities to be Rehabilitated and Newly Constructed

Estimated Development Cost







11111