

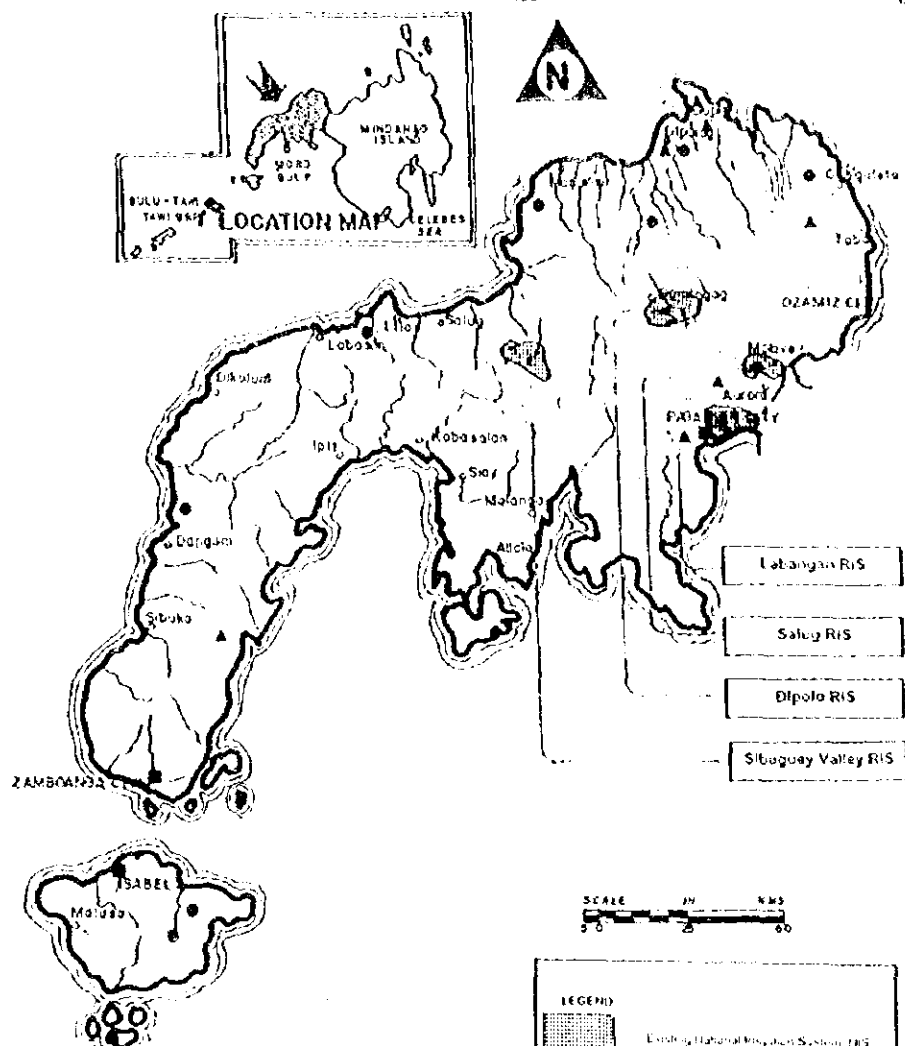
RIS	Source	Service Area (Ha)
Existing		
Zamboanga del Sur		
1. Loloan RIS	Loloan River	3145.0
2. Salog RIS	Salog River	7224.0
3. Dipolo RIS	Dipolo River	1540.0
4. Sibugay Valley RIS	Sibugay River	3143.0
TOTAL		15152.0

Province	No. of C/S	Service Area (Ha)
Existing		
Butuan	2	1860.0
Malabon	43	5110.0
Zamboanga del Norte	81	5314.0
Zamboanga del Sur	226	7204.0
TOTAL	252	19508.0

Province	No. of Small Dams	Service Area (Ha)
Existing		
Butuan	8	134.0
Sulu	5	150.0
Ipil	2	11.0
Zamboanga del Norte	43	454.0
Zamboanga del Sur	23	1078.0
TOTAL	81	1837.0

Province	No. of Branches	Service Area (Ha)
Existing		
Zamboanga del Sur	30	1555.0
TOTAL	31	1555.0

POTENTIAL IRRIGABLE AREA (Ha)	32412.00
TOTAL SERVICE AREA (Ha)	40182.50
IRRIGATION DEVELOPMENT (%)	48.10



Note
The latest data which were collected by the Study Team from the NIA regional offices during the Study period in 1997 were used to prepare this map.

Figure 30 LOCATION MAP OF IRRIGATION DEVELOPMENT SCHEMES: WATER RESOURCES REGION IX

NS	Source	Service Area (Ha)
Existing		
Agusan del Norte		
1. Cagayan River		3,172.0
Agusan del Sur		
2. Agusan River		3,172.0
3. Surigao River		2,164.0
4. Cagayan River		2,164.0
Agusan del Norte		
5. Surigao River		3,172.0
TOTAL		14,704.0
Proposed		
1. Lagoon Baco IP		
2. Lower Agusan Der. Proj.		
3. B. Surigao River		
4. Cagayan River		

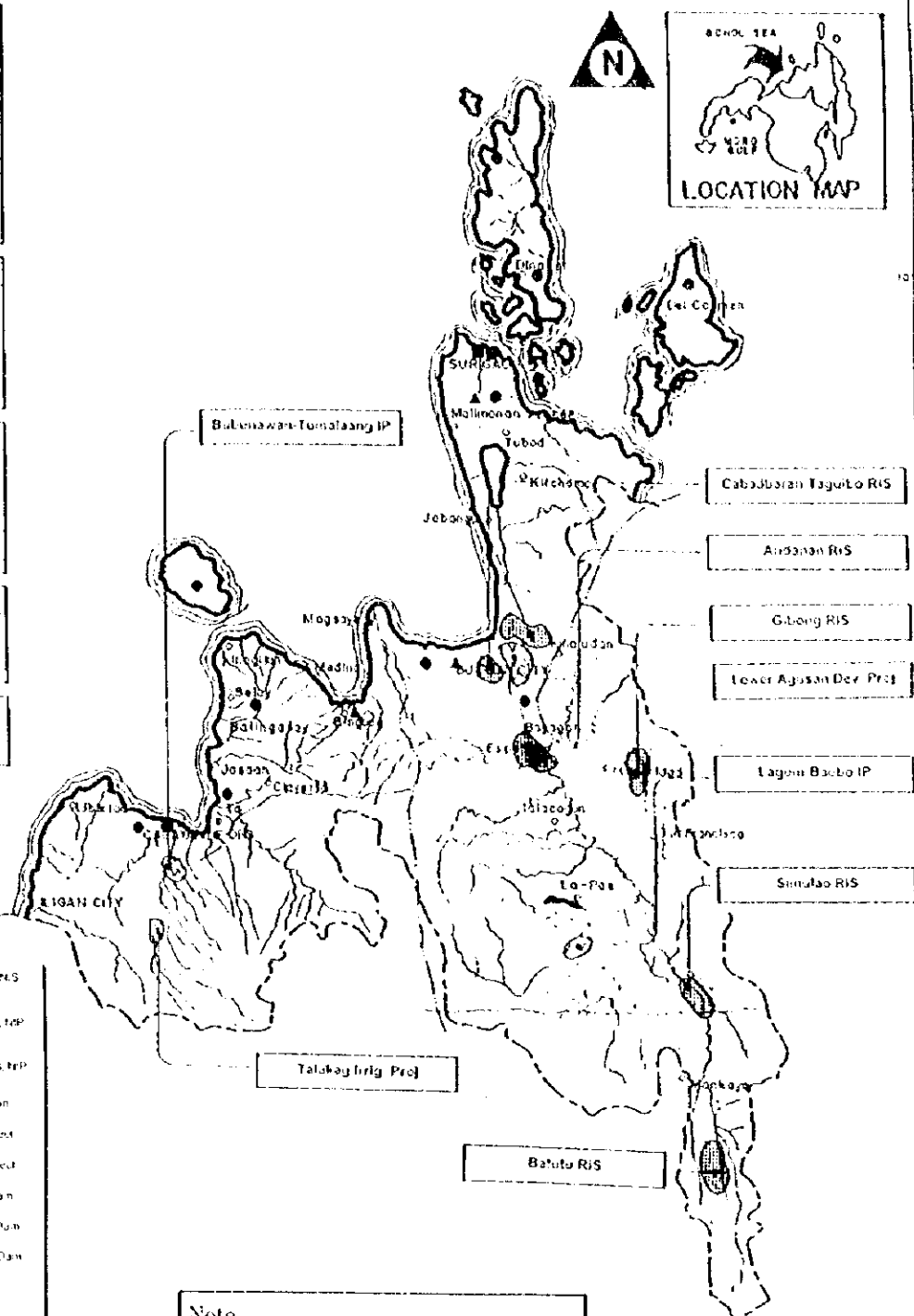
Province	No. of CS	Service Area (Ha)
Existing		
Agusan del Norte	14	5,172.0
Agusan del Sur	87	5,172.0
B. Surigao	12	2,164.0
Cagayan	13	5,172.0
Surigao	12	2,164.0
Surigao del Norte	12	2,164.0
Surigao del Sur	103	5,172.0
TOTAL	215	21,918.0

Province	No. of CS	Service Area (Ha)
Existing		
Agusan del Norte	23	8,172.0
Agusan del Sur	10	2,164.0
B. Surigao	3	50.0
Cagayan	10	1,450.0
Surigao	8	300.0
Surigao del Norte	2	120.0
Surigao del Sur	24	5,000.0
TOTAL	73	17,146.0

Province	No. of CS	Service Area (Ha)
Existing		
B. Surigao	72	2,172.0
Agusan del Norte	3	8.0
Surigao del Norte	5	15.0
TOTAL	80	2,195.0

POTENTIAL IRRIGABLE AREA (Ha)	181,112.00
TOTAL SERVICE AREA (Ha)	42,140.00
IRRIGATION DEVELOPMENT (%)	23.3

- LEGEND**
- Existing National Irrigation System, NIS
 - Ongoing National Irrigation Project, NIP
 - Proposed National Irrigation Project, NIP
 - Existing Communal Irrigation System
 - Ongoing Communal Irrigation Project
 - Proposed Communal Irrigation Project
 - Existing S.W.M. Project Diversion Dam
 - Ongoing S.W.M. Project Diversion Dam
 - Proposed S.W.M. Project Diversion Dam
 - Existing Shallow Tubewell
 - Ongoing Shallow Tubewell
 - Proposed Shallow Tubewell
 - Water Resources Region Boundary
 - River Basin Boundary
 - Province Capital
 - River



Note
The latest data which were collected by the Study Team from the NIA regional offices during the Study period in 1997 were used to prepare this map.

Figure 31 LOCATION MAP OF IRRIGATION DEVELOPMENT SCHEMES: WATER RESOURCES REGION X

No.	Source	Service Area (Ha)
Existing		
1. Davao del Norte	Saug River	2100.0
2. Davao del Sur	Lasang River	1365.0
3. Compostela	Ugou River	2151.0
4. Marikina		2040.0
5. Palawan	Palawan River	3512.0
6. South Cotabato		2110.0
7. Sultan Kudarat		2110.0
8. Tago	Carayan-Sulafa	1100.0
9. Tago		2102.0
TOTAL		20718.0

Province	No. of C/S	Service Area (Ha)
Existing		
Davao del Norte	47	8521.0
Davao del Sur	22	2400.0
Compostela	61	12618.0
South Cotabato	20	3610.0
Sultan Kudarat	25	2912.0
TOTAL	175	30138.0

Province	No. of Small & Micro Schemes	Service Area (Ha)
Existing		
Davao del Norte	6	88.0
Davao del Sur	2	40.0
Compostela	13	1450.0
Sultan Kudarat	5	1250.0
TOTAL	26	2518.0

Province	No. of Small & Micro Schemes	Service Area (Ha)
Existing		
Davao del Norte	4	18
Davao del Sur	1	5
South Cotabato	1	115
TOTAL	6	133

POTENTIAL IRRIGABLE AREA (Ha)	1	18161.00
TOTAL SERVICE AREA (Ha)	2	33475.50
IRRIGATION DEVELOPMENT (%)	3	37.49

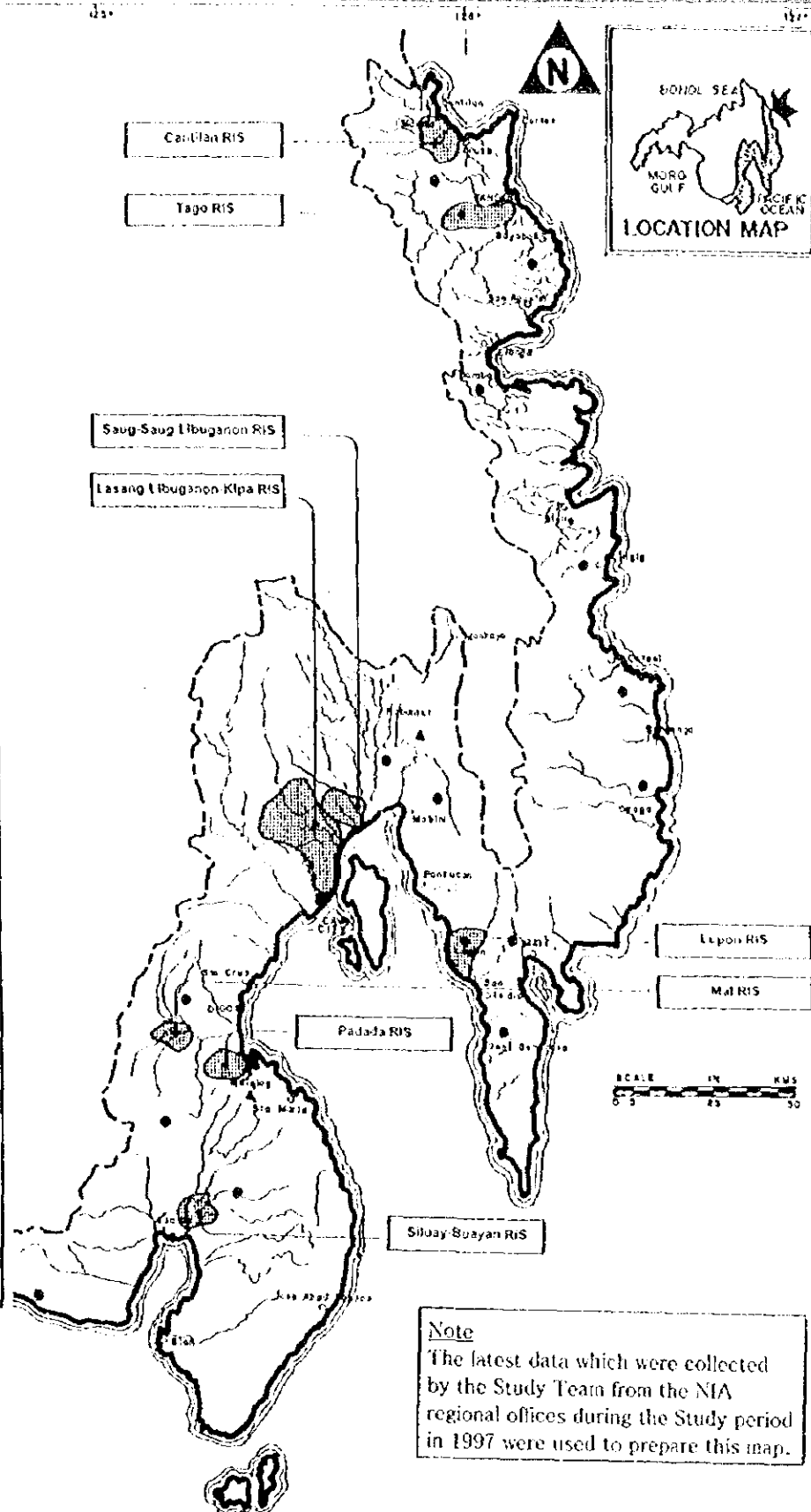
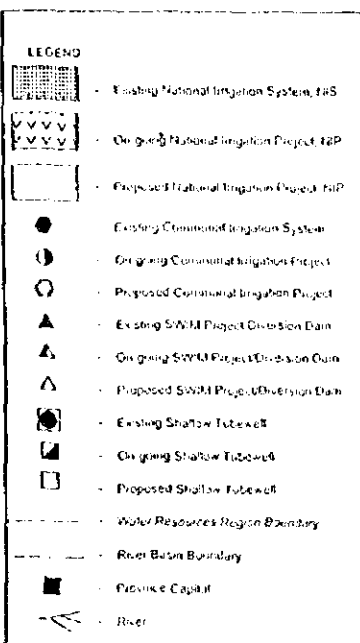


Figure 32 LOCATION MAP OF IRRIGATION DEVELOPMENT SCHEMES: WATER RESOURCES REGION XI

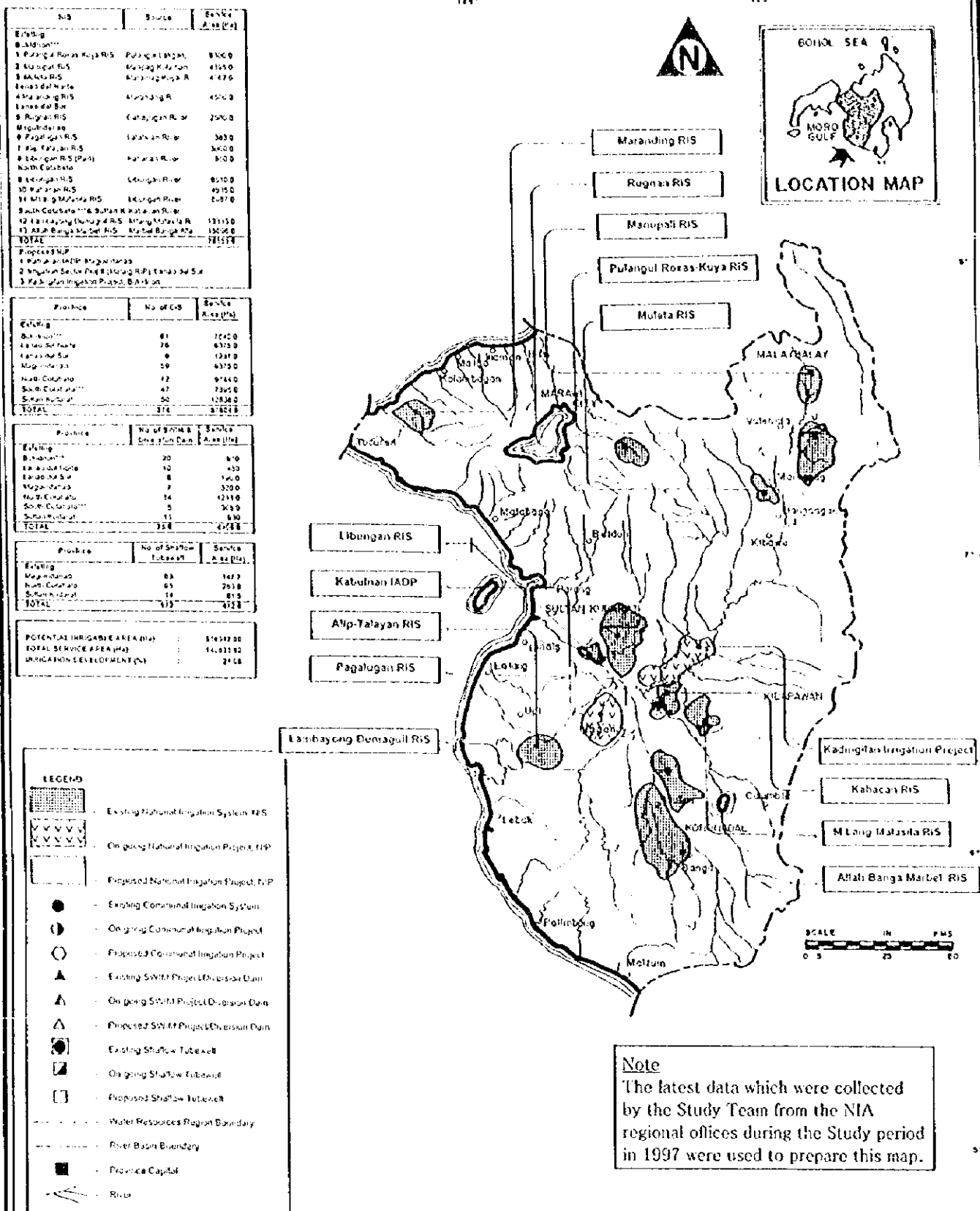
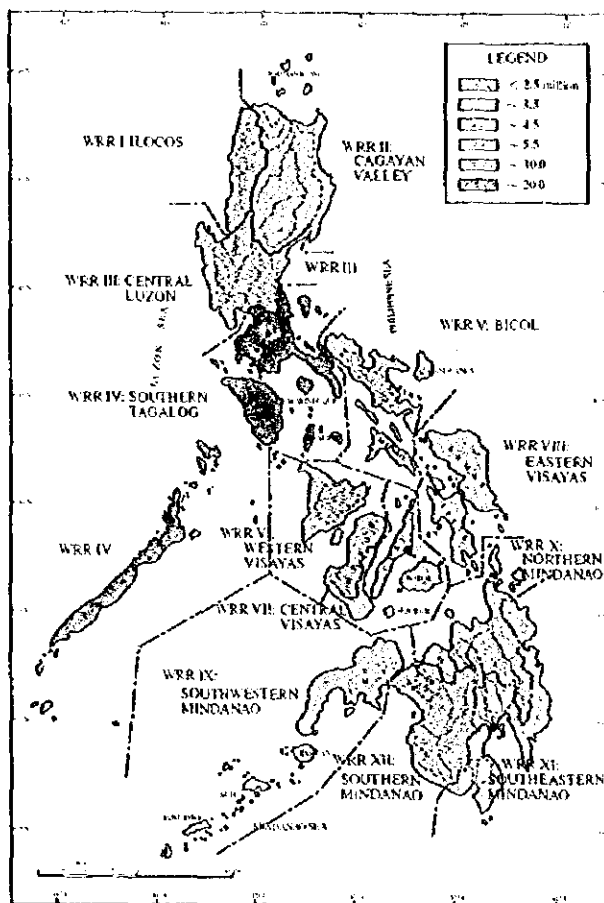
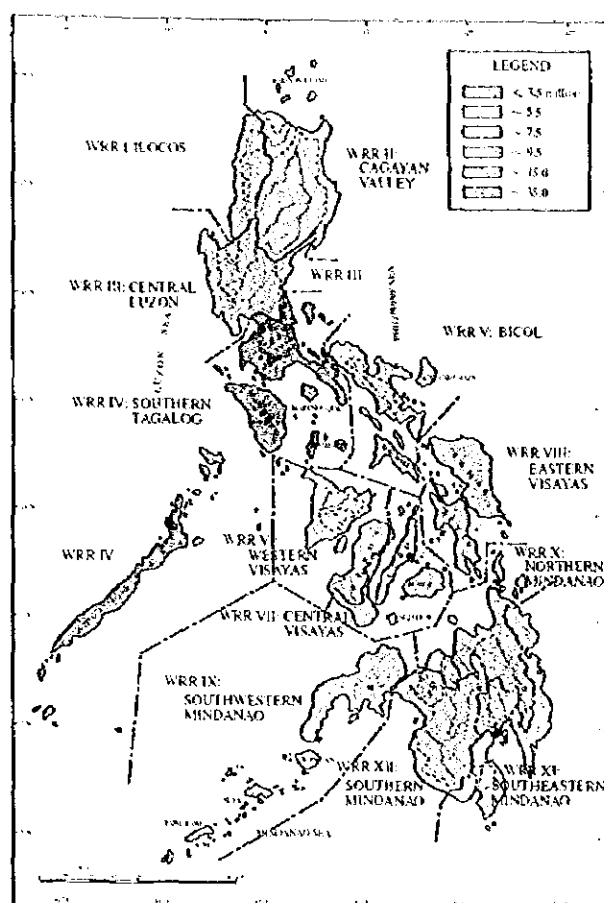


Figure 33 LOCATION MAP OF IRRIGATION DEVELOPMENT SCHEMES: WATER RESOURCES REGION XII



POPULATION BY WATER RESOURCES REGION IN 1995



POPULATION PROJECTION BY WATER RESOURCES REGION IN 2025

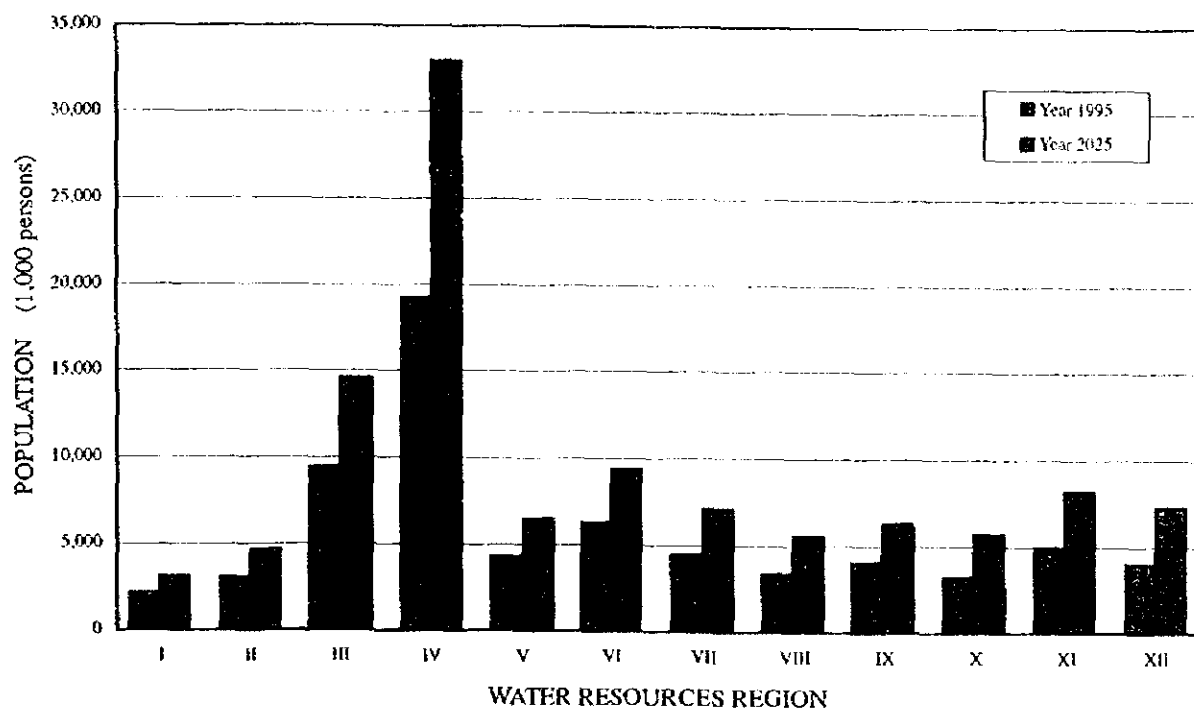
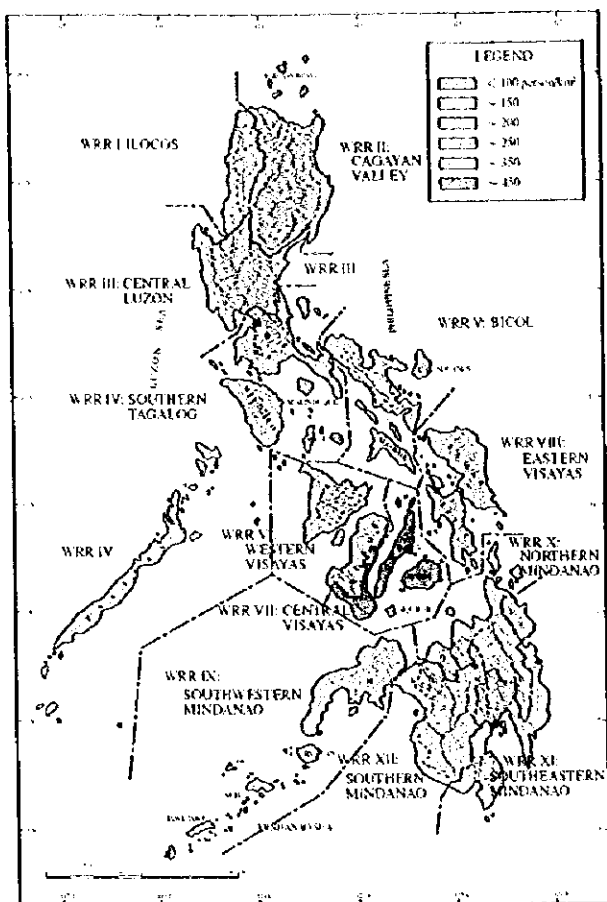
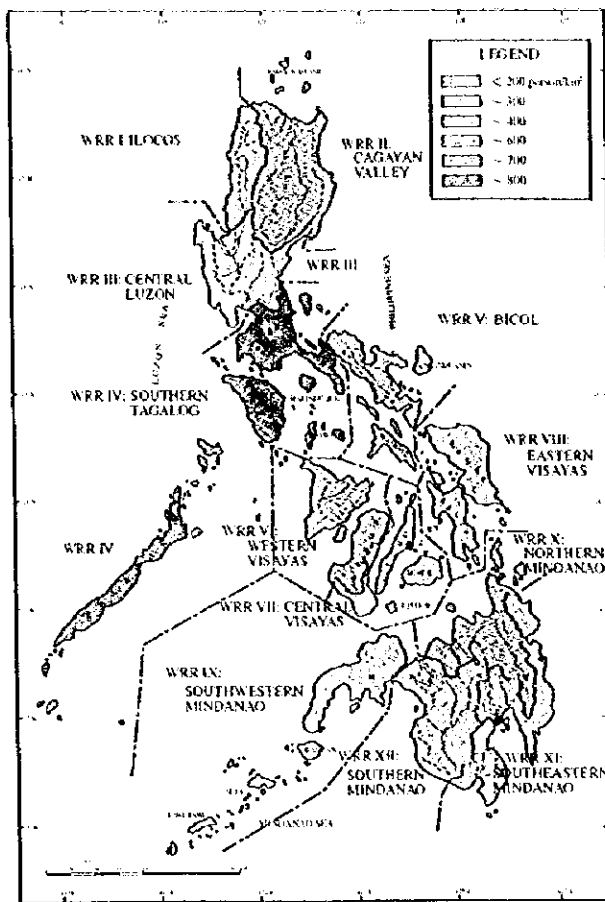


Figure 34 POPULATION PROJECTION BY WATER RESOURCES REGION



POPULATION DENSITY BY WATER RESOURCES REGION IN 1995



POPULATION DENSITY PROJECTION BY WATER RESOURCES REGION IN 2025

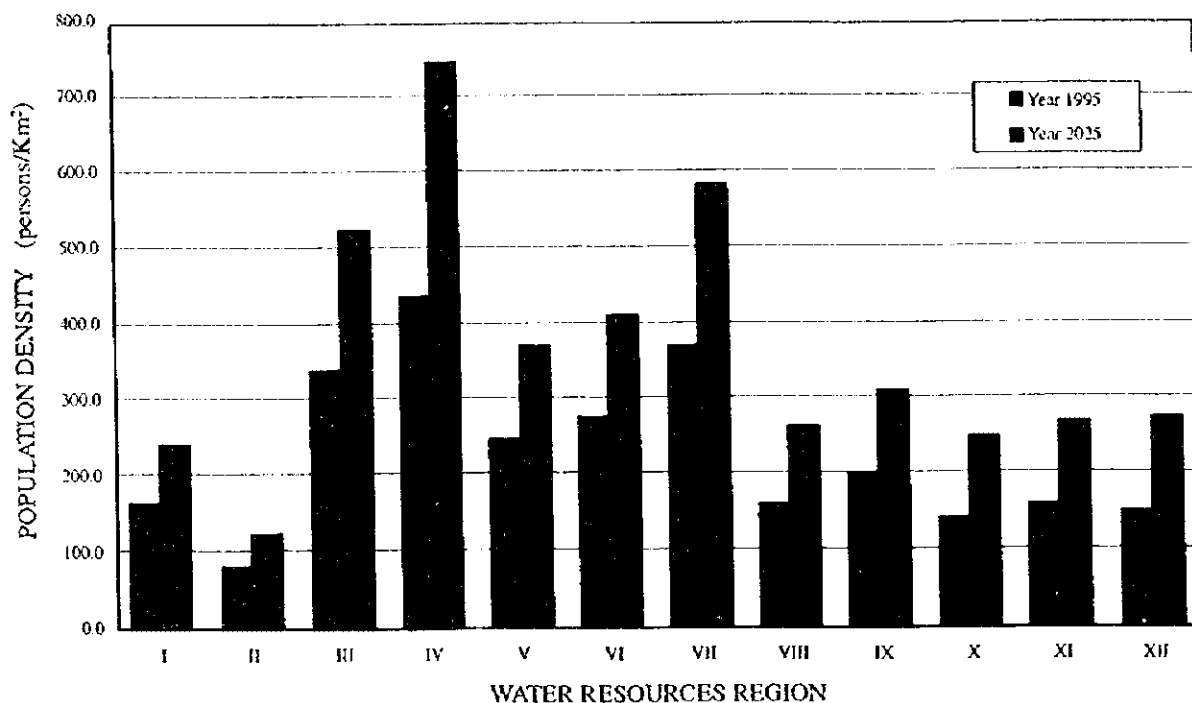
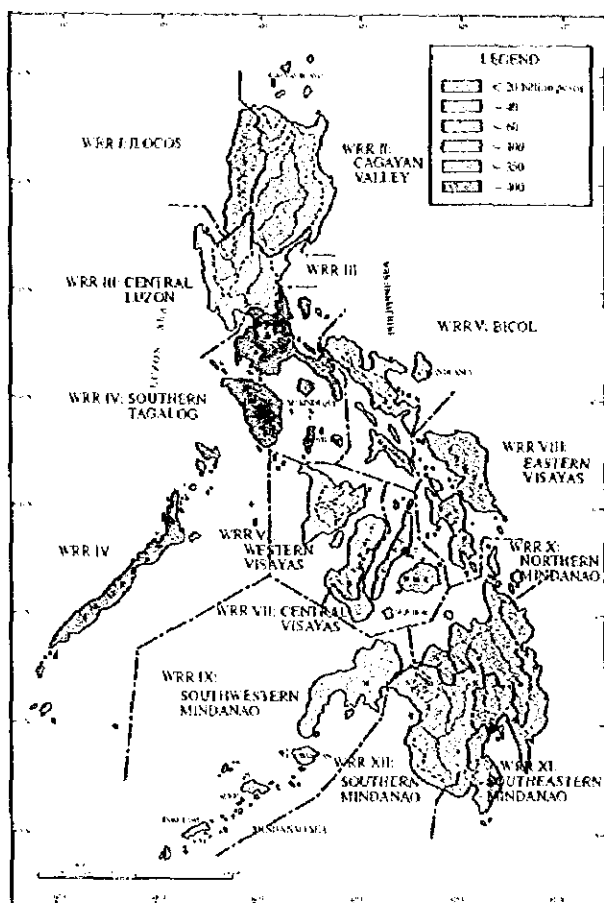
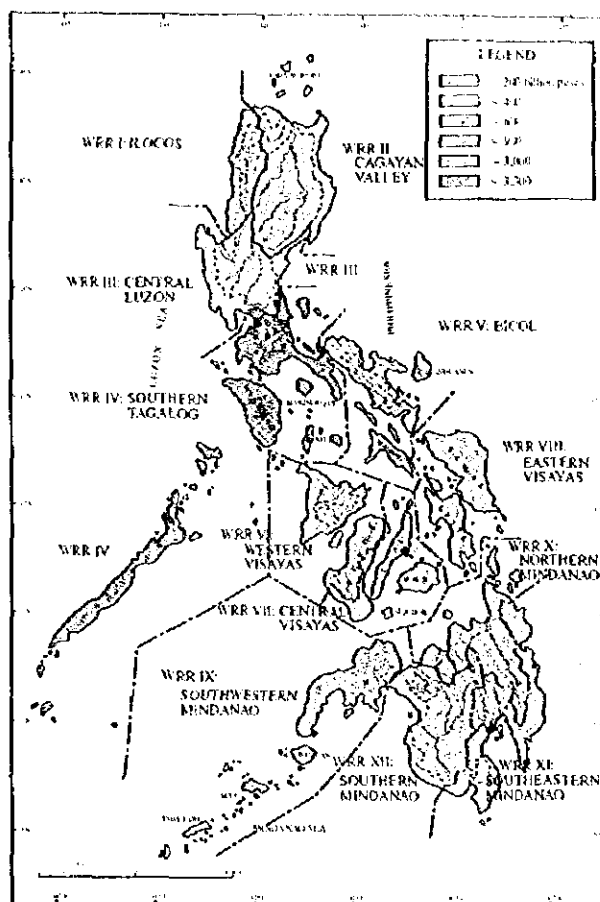


Figure 35 POPULATION DENSITY PROJECTION BY WATER RESOURCES REGION



GRDP BY WATER RESOURCES REGION IN 1995



PROJECTED GRDP BY WATER RESOURCES REGION IN 2025 (HIGH ECONOMIC GROWTH SCENARIO)

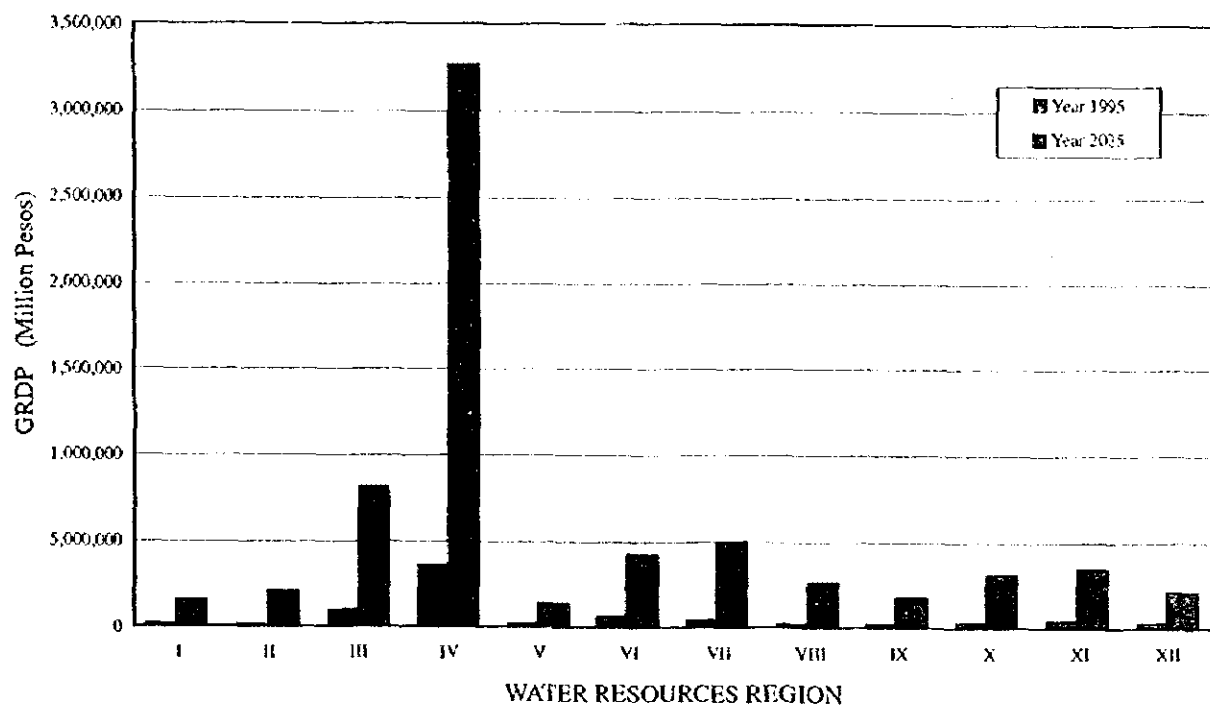
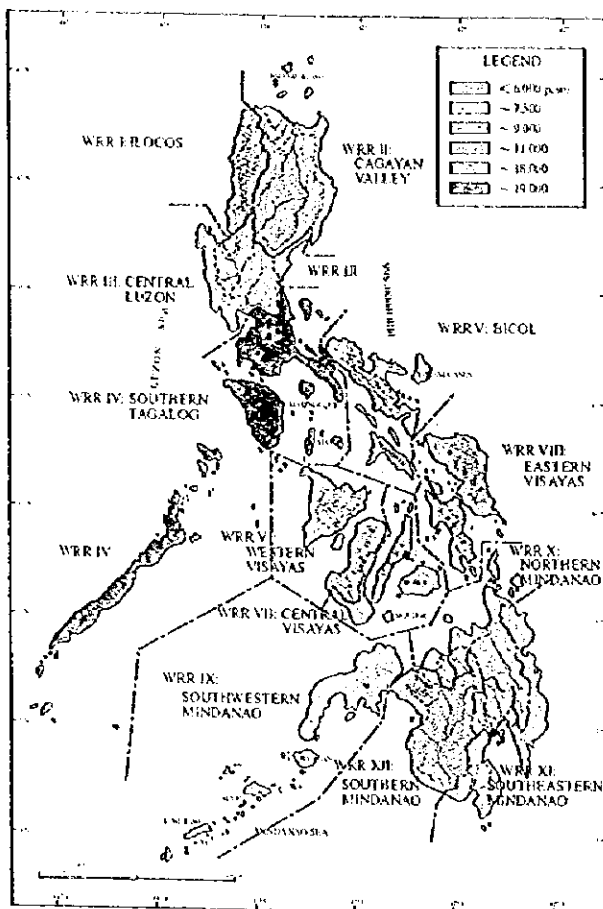
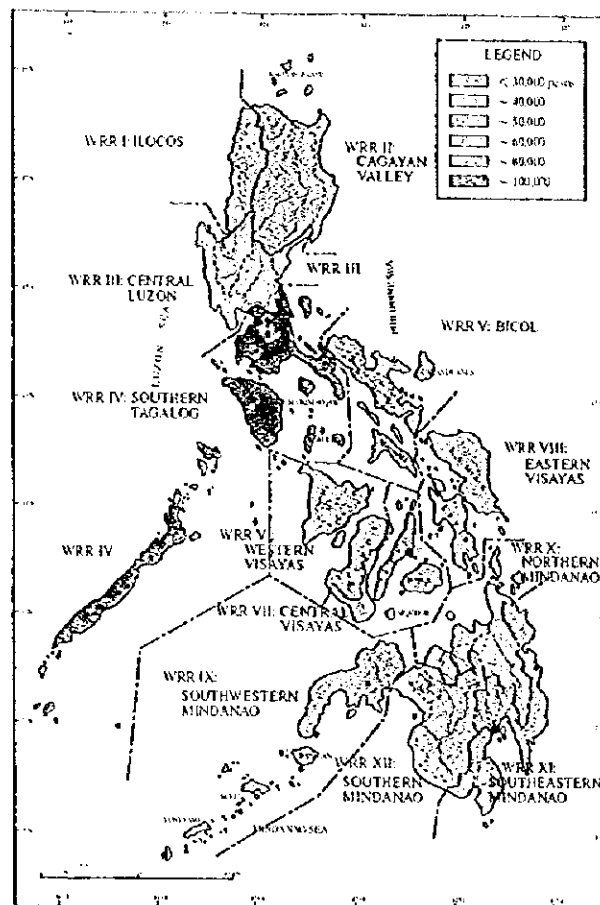


Figure 36 PROJECTION FOR GRDP IN ALL SECTORS BY WATER RESOURCES REGION (HIGH ECONOMIC GROWTH SCENARIO)



PER CAPITA GRDP BY WATER RESOURCES REGION IN 1995



PROJECTED PER CAPITA GRDP BY WATER RESOURCES REGION IN 2025 (HIGH ECONOMIC GROWTH SCENARIO)

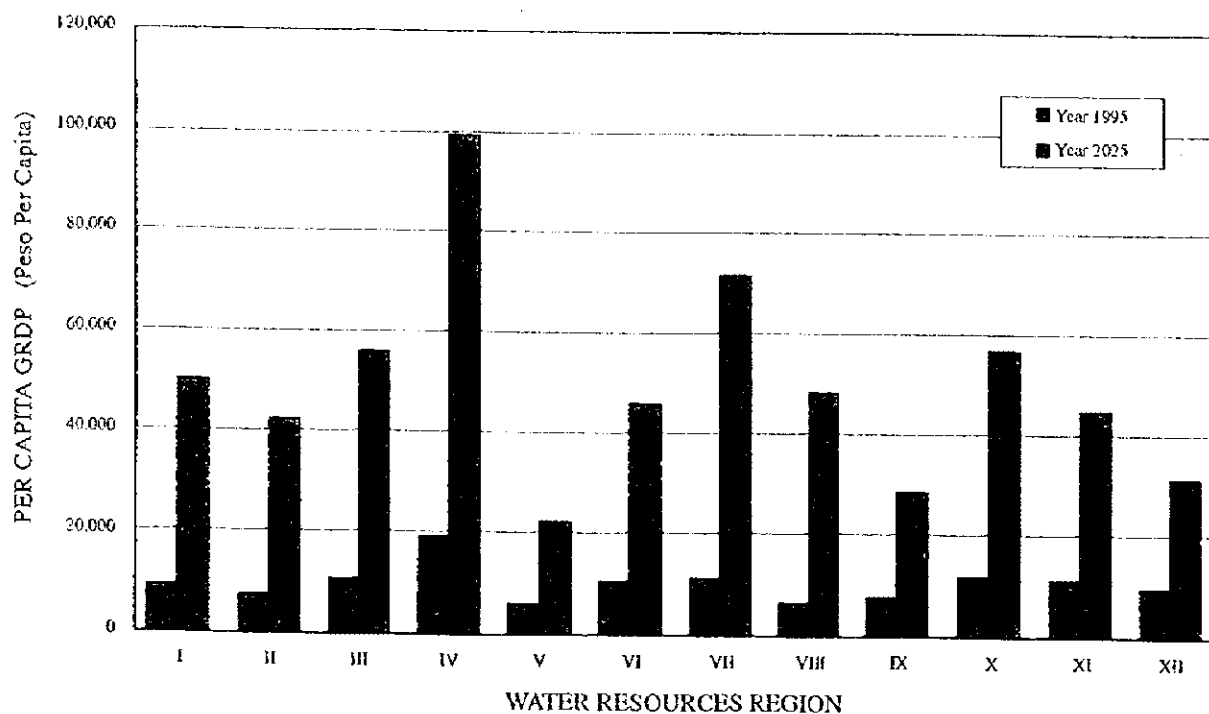
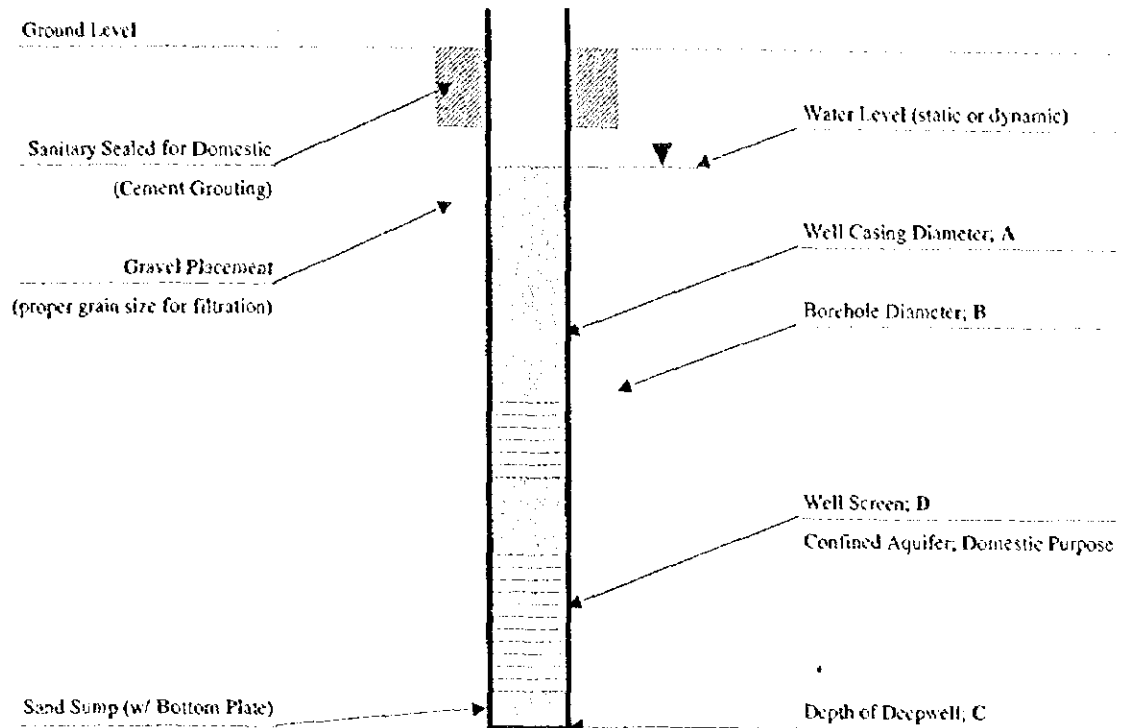


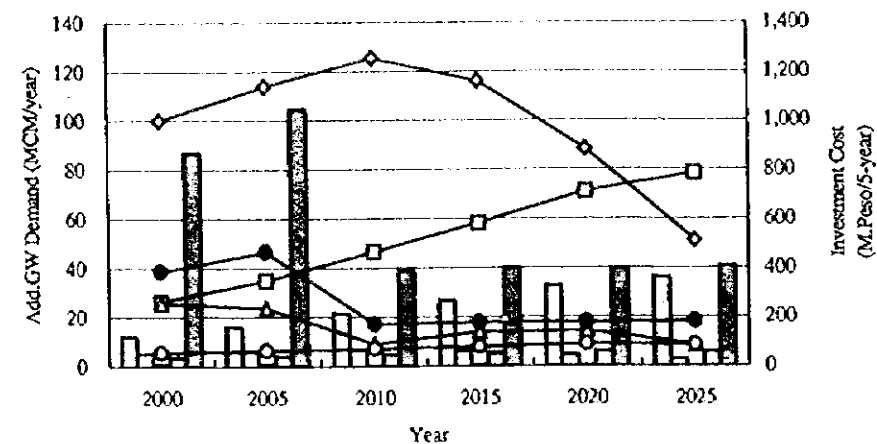
Figure 37 PROJECTION FOR GRDP PER CAPITA IN ALL SECTORS BY WATER RESOURCES REGION (HIGH ECONOMIC GROWTH SCENARIO)



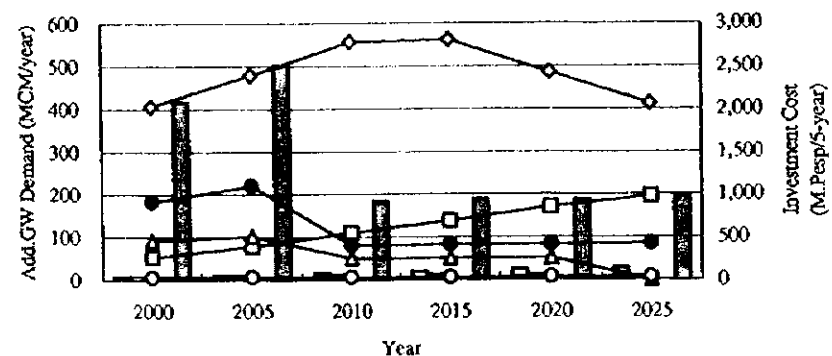
Water Supply Category		Diameter		Depth or Length	
		Well Casing mm (in.) - size A	Borehole mm (in.) - size B	Well String m - size C	Well Screen by Depth - size D
Municipal	Level-III	250 (10")	444.50 (17"-1/2)	103.3 to 218.6	30%
	Level-II	150 (6")	311.15 (12"-1/4)	53.8 to 101.1	25%
	Level-I	100 (4")	269.88 (10"-5/8)	35.9 to 67.4	20%
	Private I-I	100 (4")	200.03 (7"-7/8)	17.9 to 33.7	15%
	Commercial	150 (6")	269.88 (10"-5/8)	16.5 to 42.5	25%
Industrial		250 (10")	444.50 (17"-1/2)	99.1 to 255.2	35%
Irrigation		200 (8")	374.65 (14"-3/4)	16.5 to 42.5	40%

Remarks; Municipal deepwell should be equipped with sanitary material sealed & be designed to fix confined aquifer for domestic water use. Irrigation deepwell shall be utilized (pumped) by seasonal requirement. Various pump will be required for each type of deepwell such as submersible, self-priming, handpump, etc.

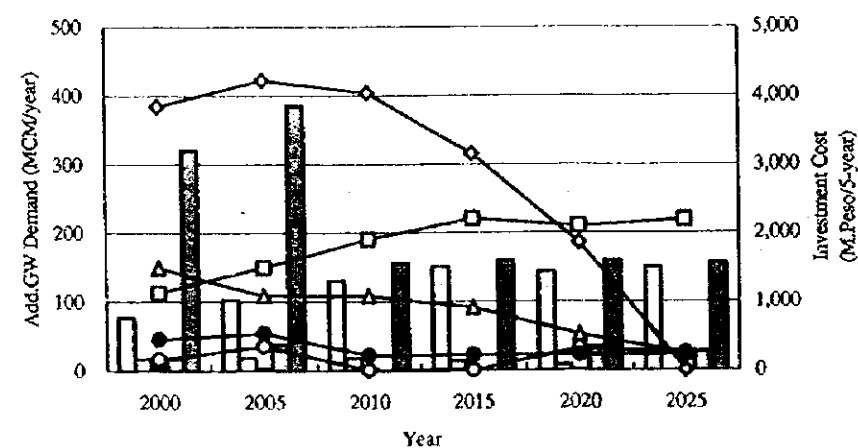
Figure 38 TYPICAL DEEPWELL STRUCTURES



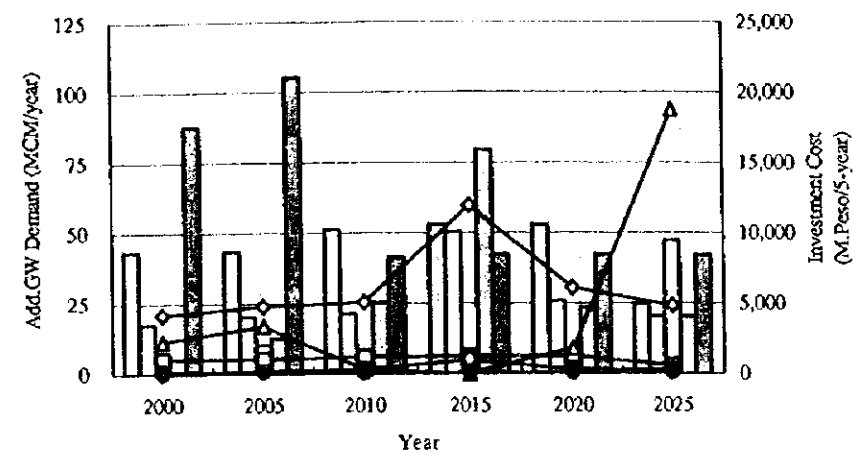
WATER RESOURCES REGION I (WRR-I)



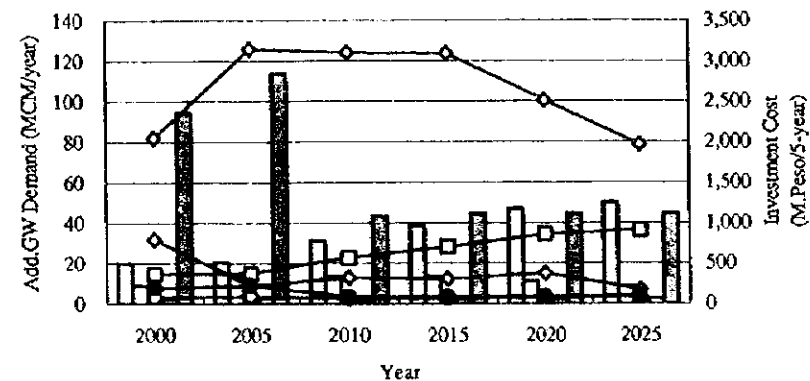
WATER RESOURCES REGION II (WRR-II)



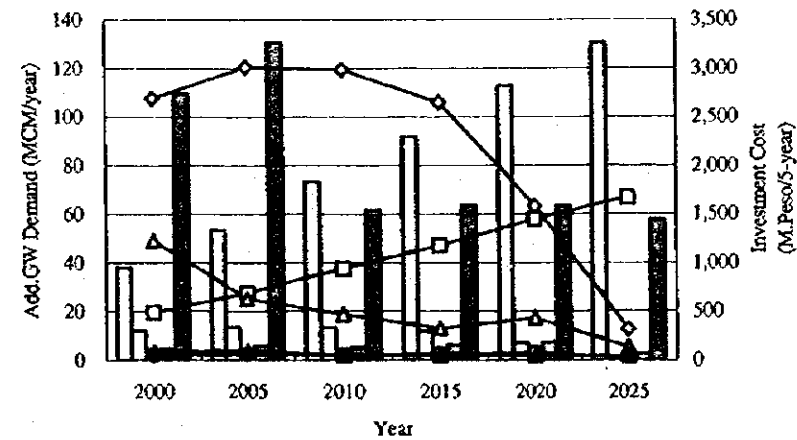
WATER RESOURCES REGION III (WRR-III)



WATER RESOURCES REGION IV (WRR-IV)



WATER RESOURCES REGION V (WRR-V)



WATER RESOURCES REGION VI (WRR-VI)

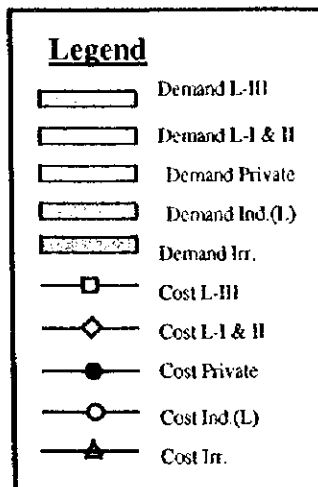
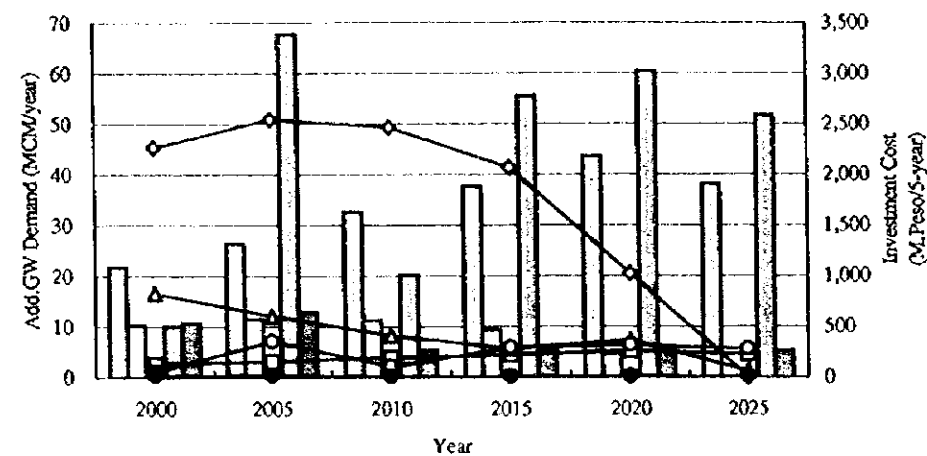
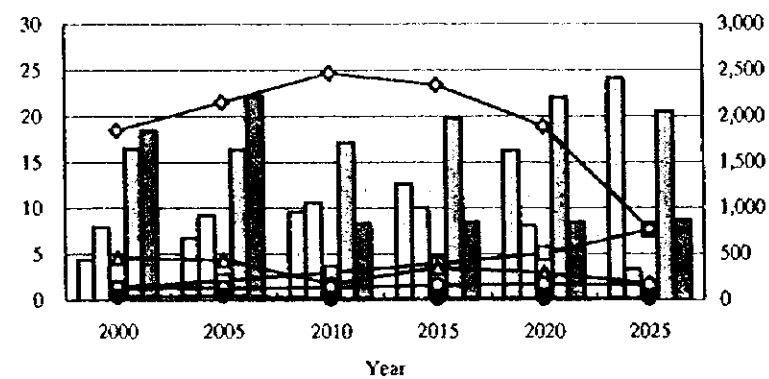


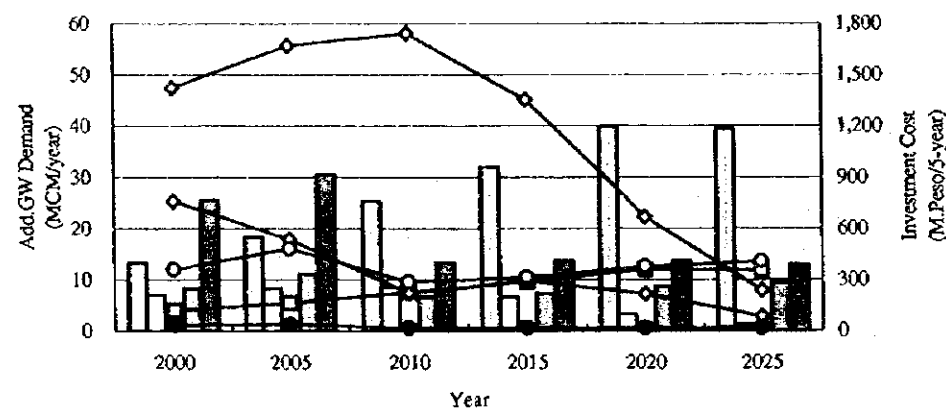
Figure 39 FUTURE REQUIRMENT OF GROUNDWATER DEVELOPMENT BY WATER RESOURCES REGION (1/2)



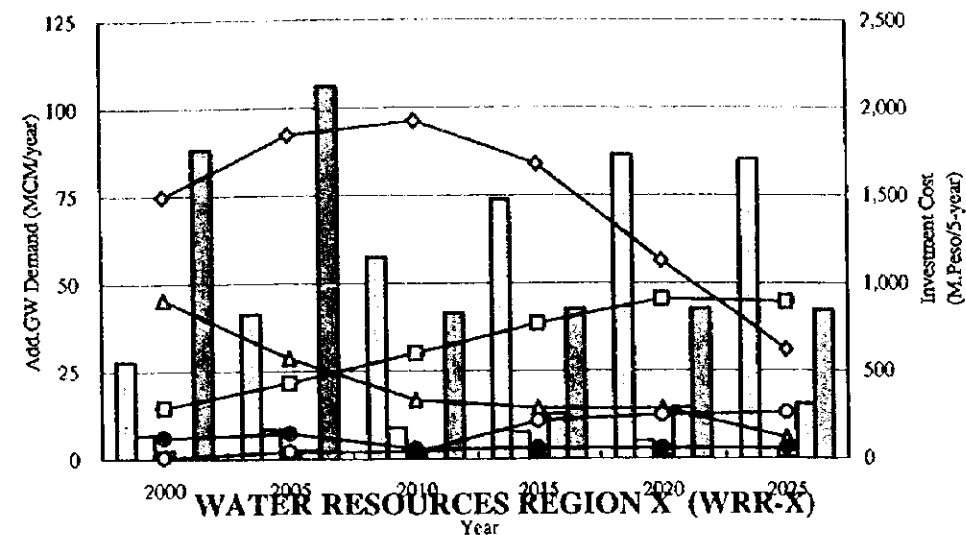
WATER RESOURCES REGION VII (WRR-VII)



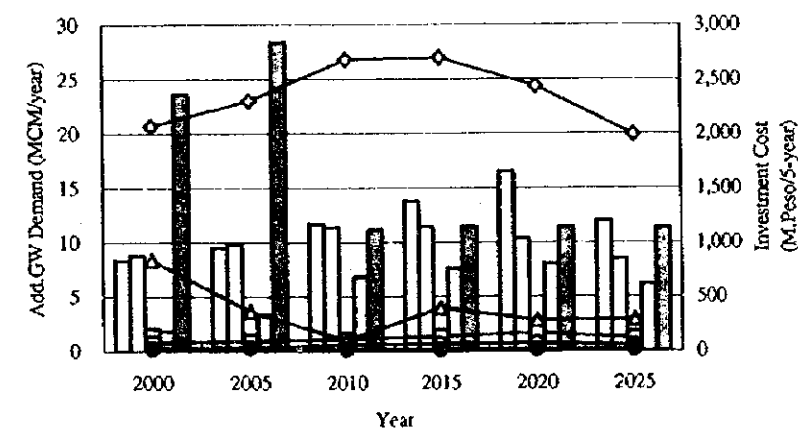
WATER RESOURCES REGION VIII (WRR-VIII)



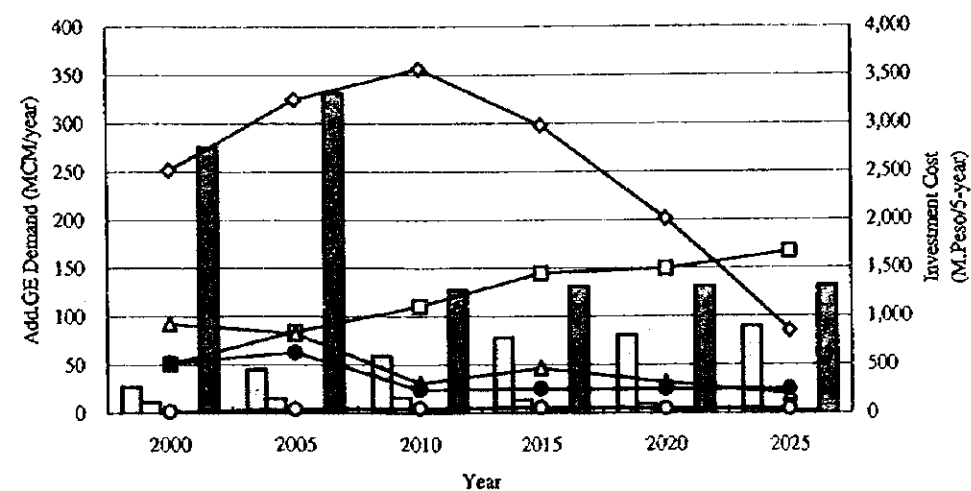
WATER RESOURCES REGION IX (WRR-IX)



WATER RESOURCES REGION X (WRR-X)



WATER RESOURCES REGION XI (WRR-XI)



WATER RESOURCES REGION XII (WRR-XII)

Legen

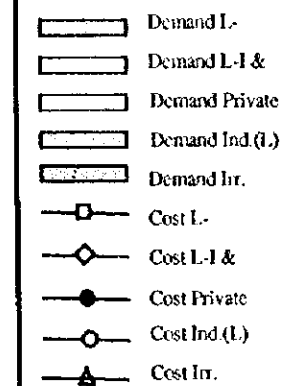


Figure 39 FUTURE REQUIRMENT OF GROUNDWATER DEVELOPMENT BY WATER RESOURCES REGION (2/2)

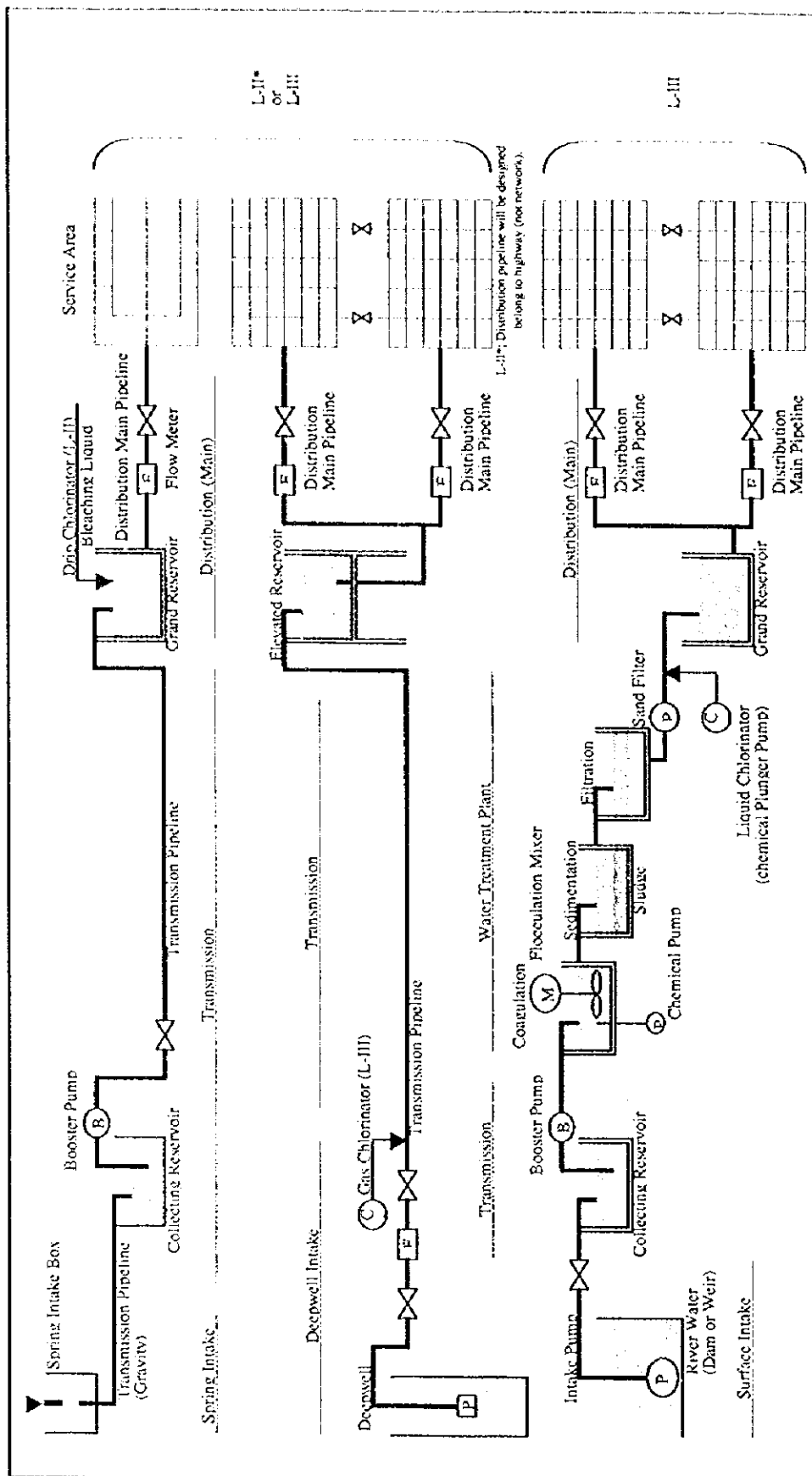
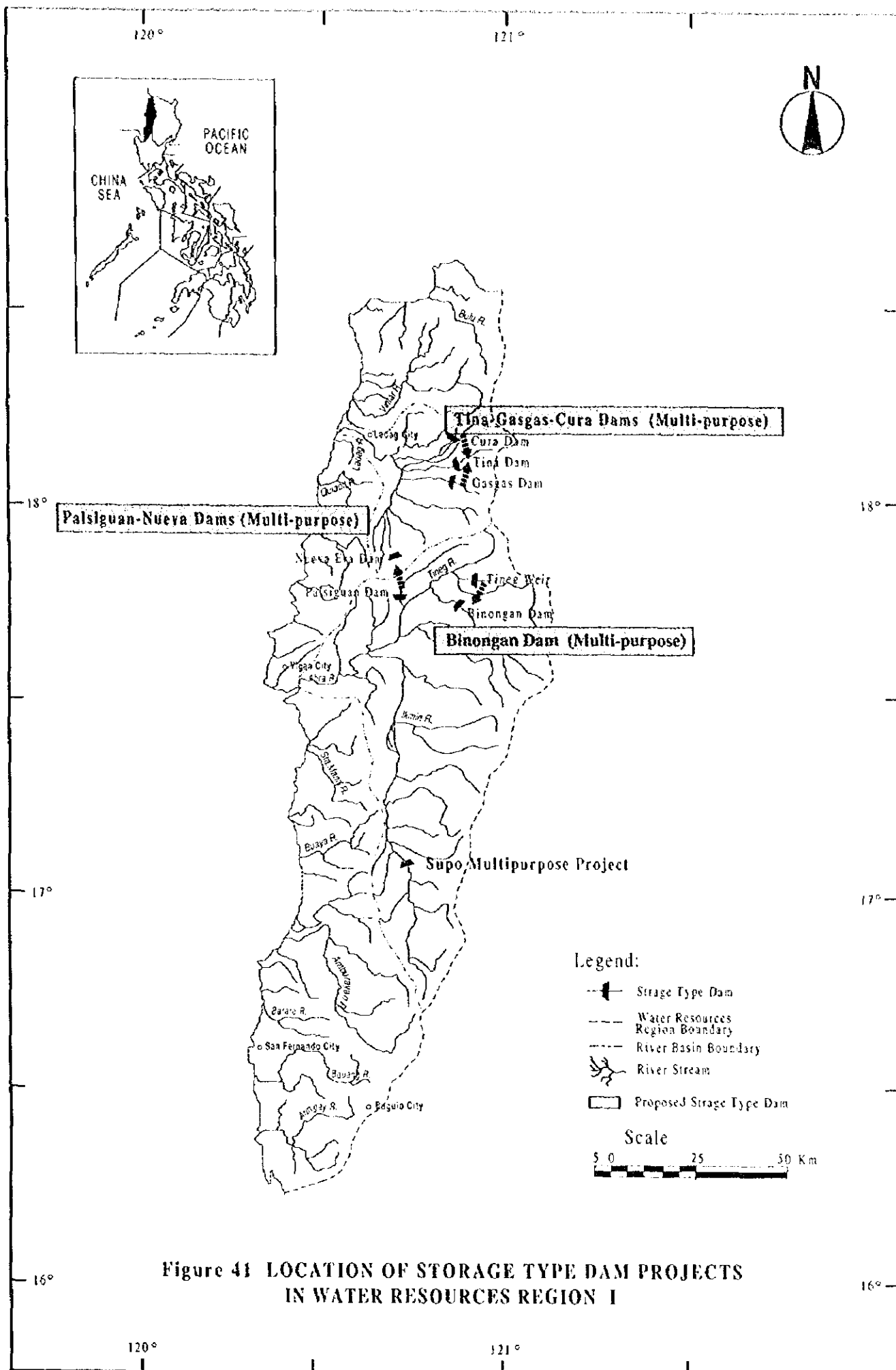
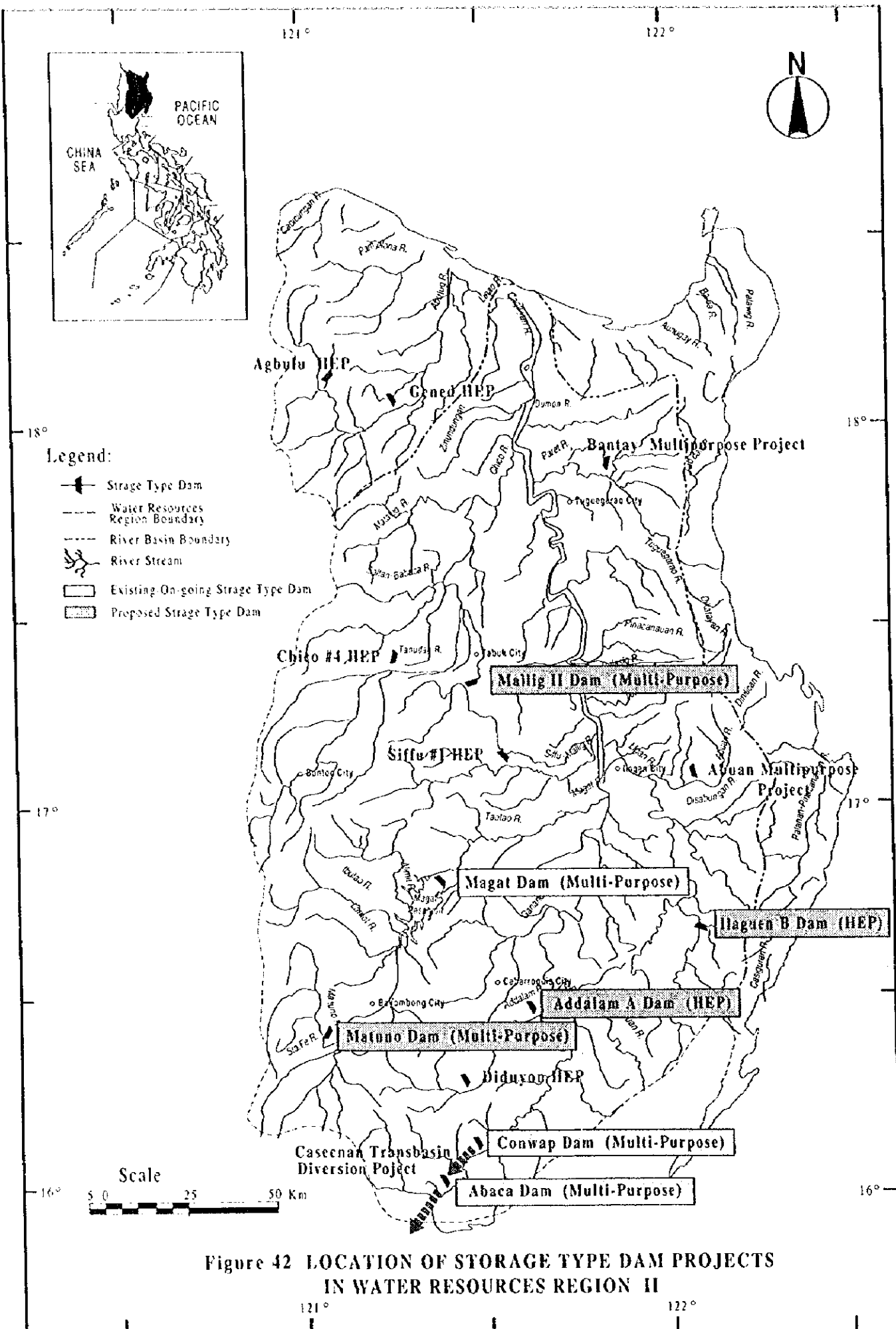
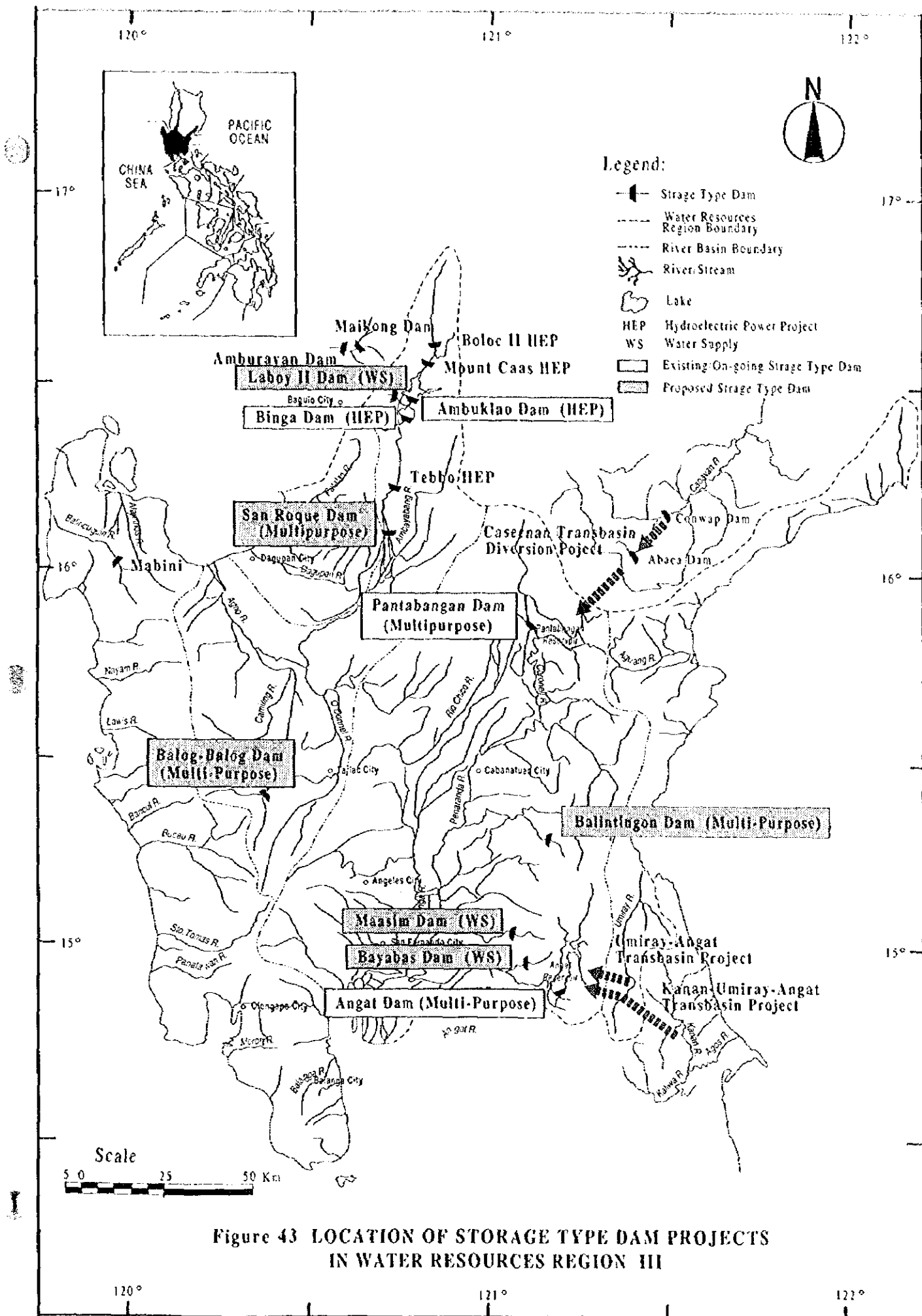
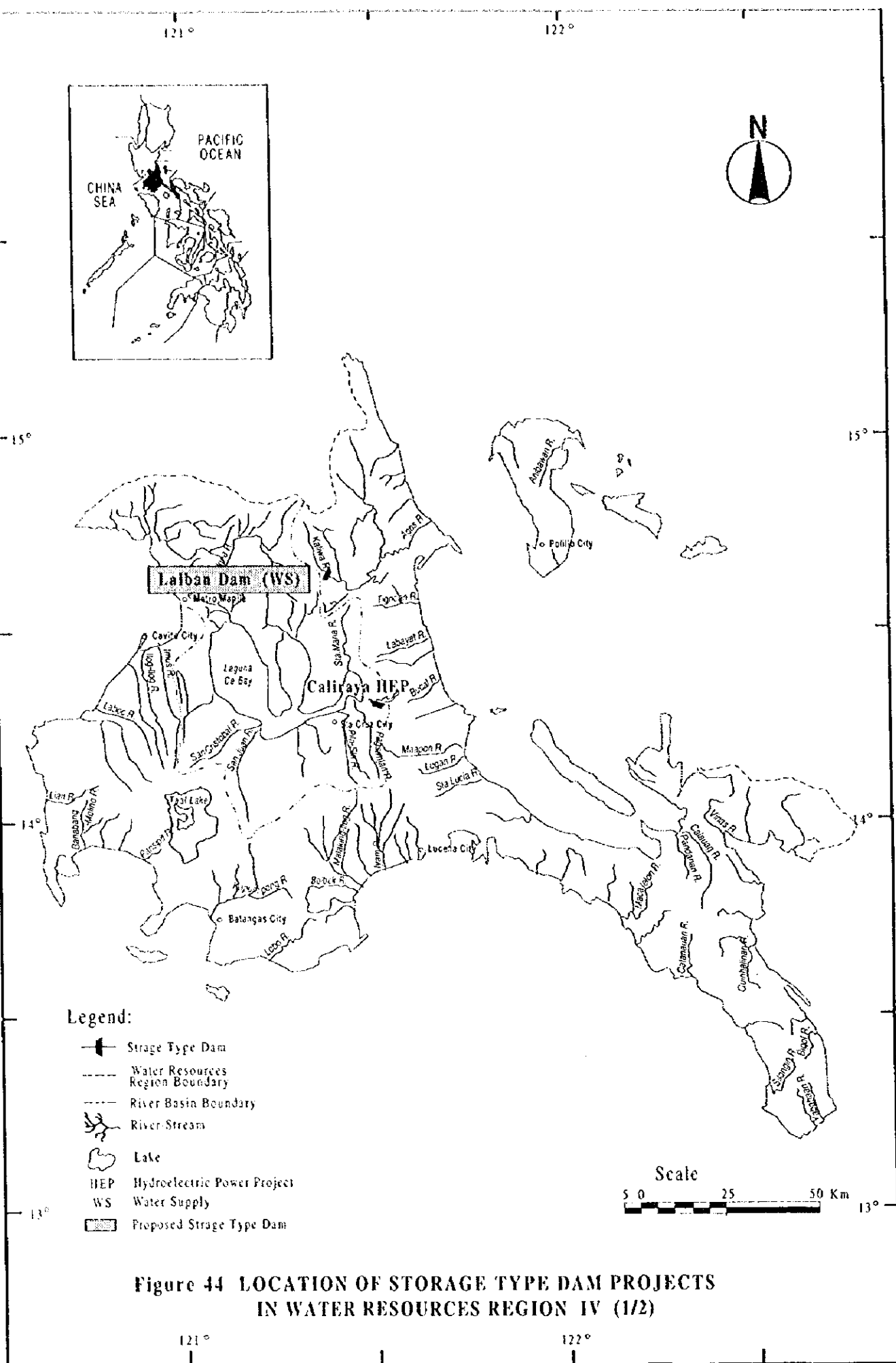


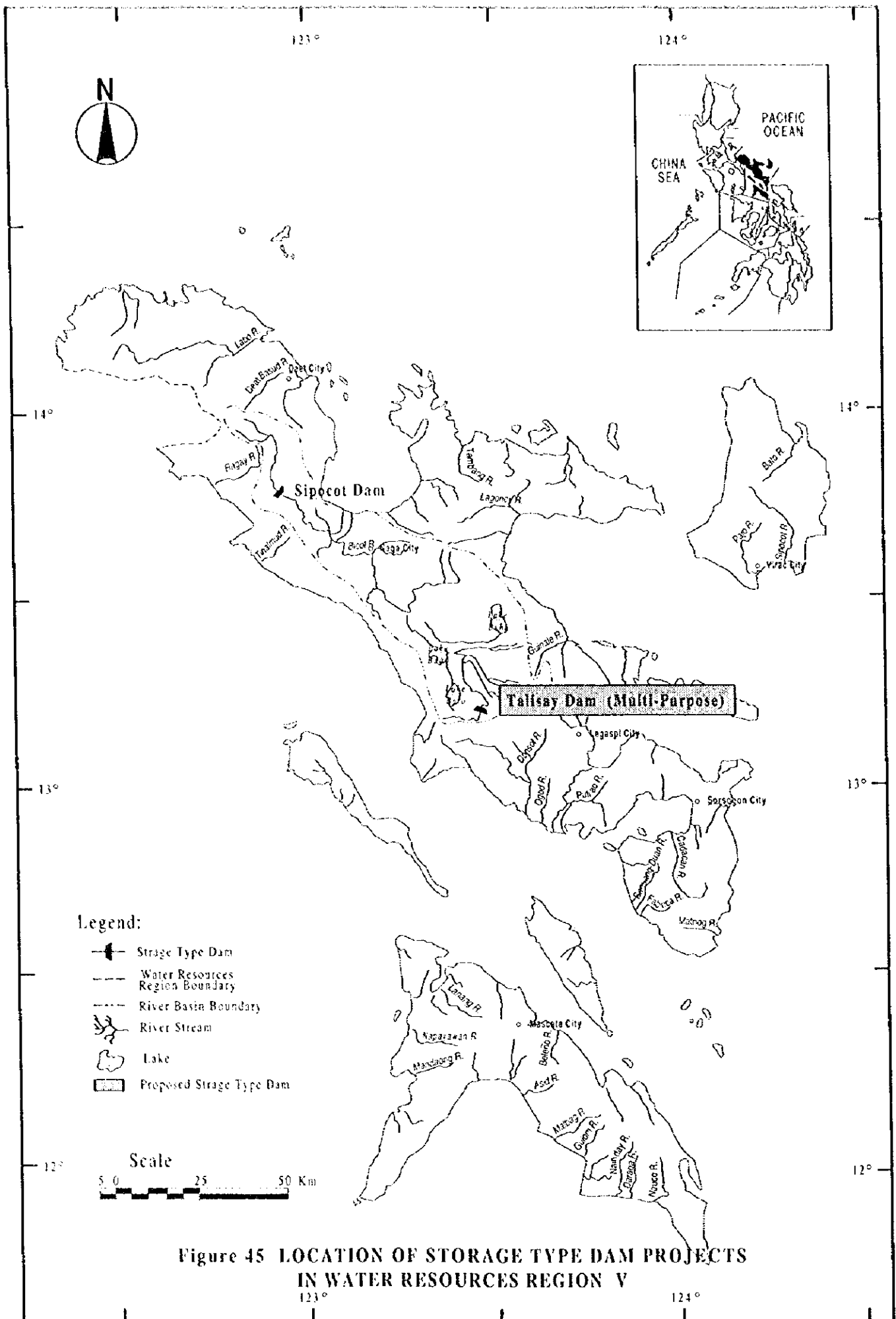
Figure 40 TYPICAL WATER SUPPLY SYSTEMS FOR COST ESTIMATION OF GROUNDWATER DEVELOPMENT

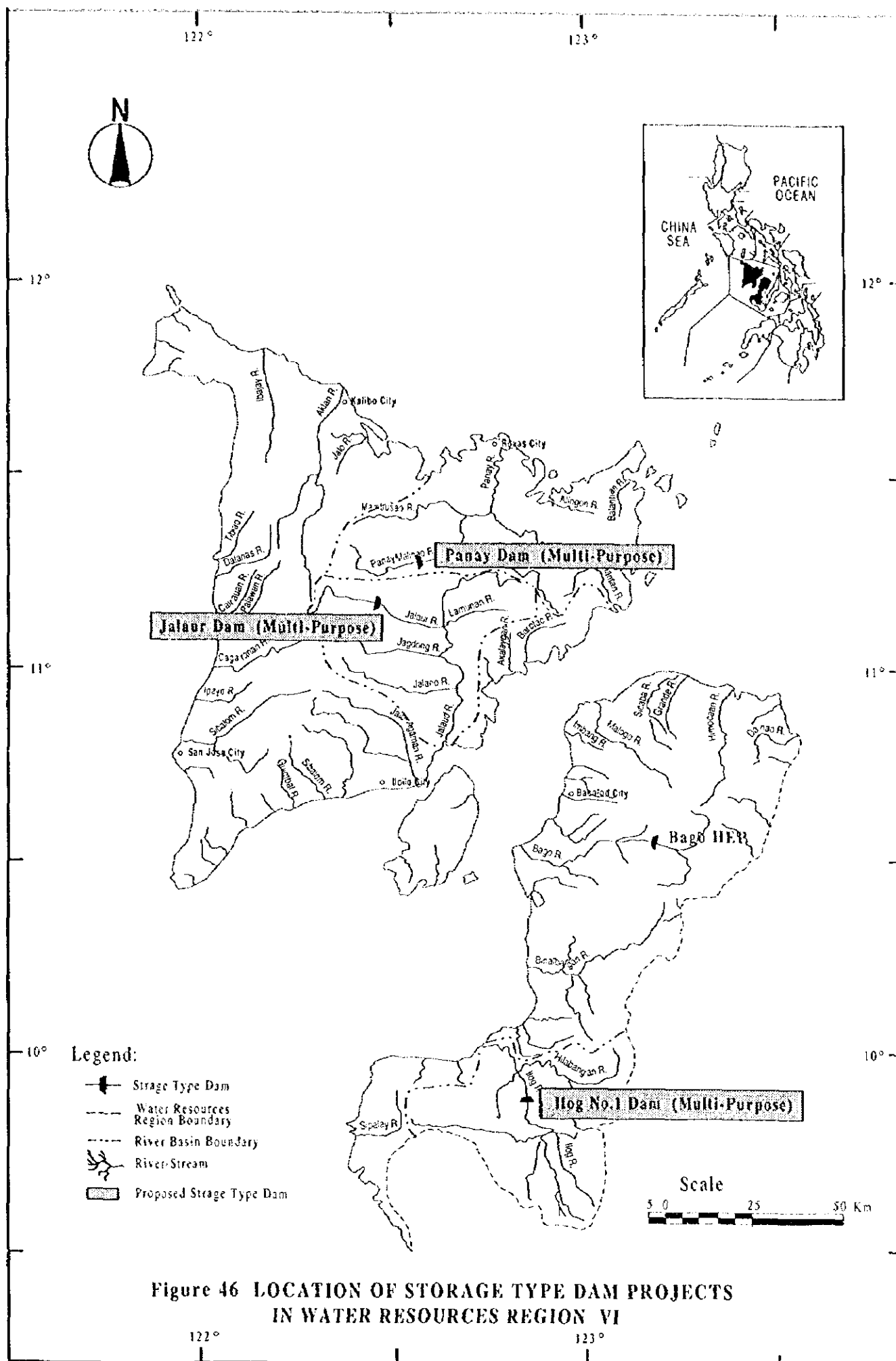


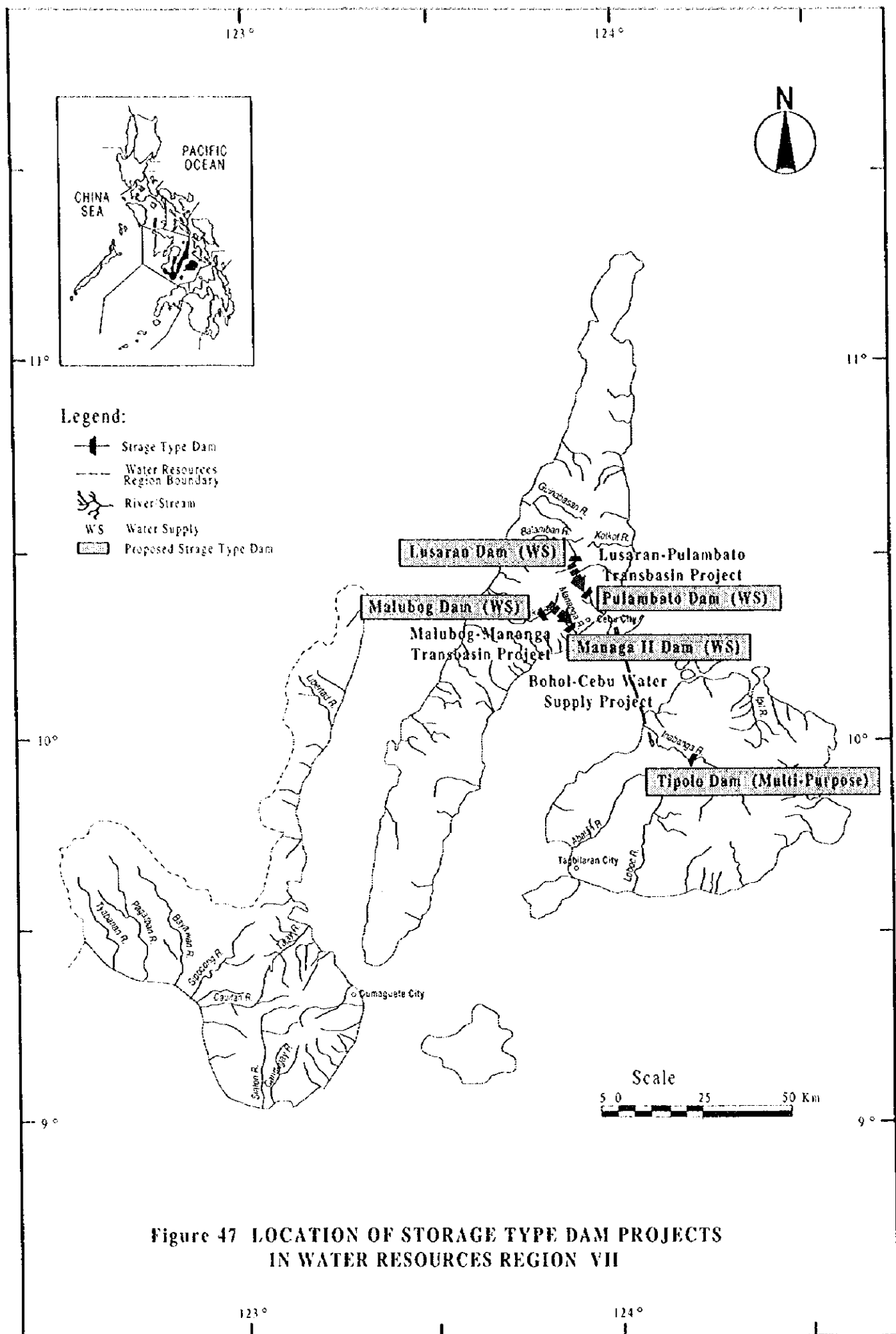




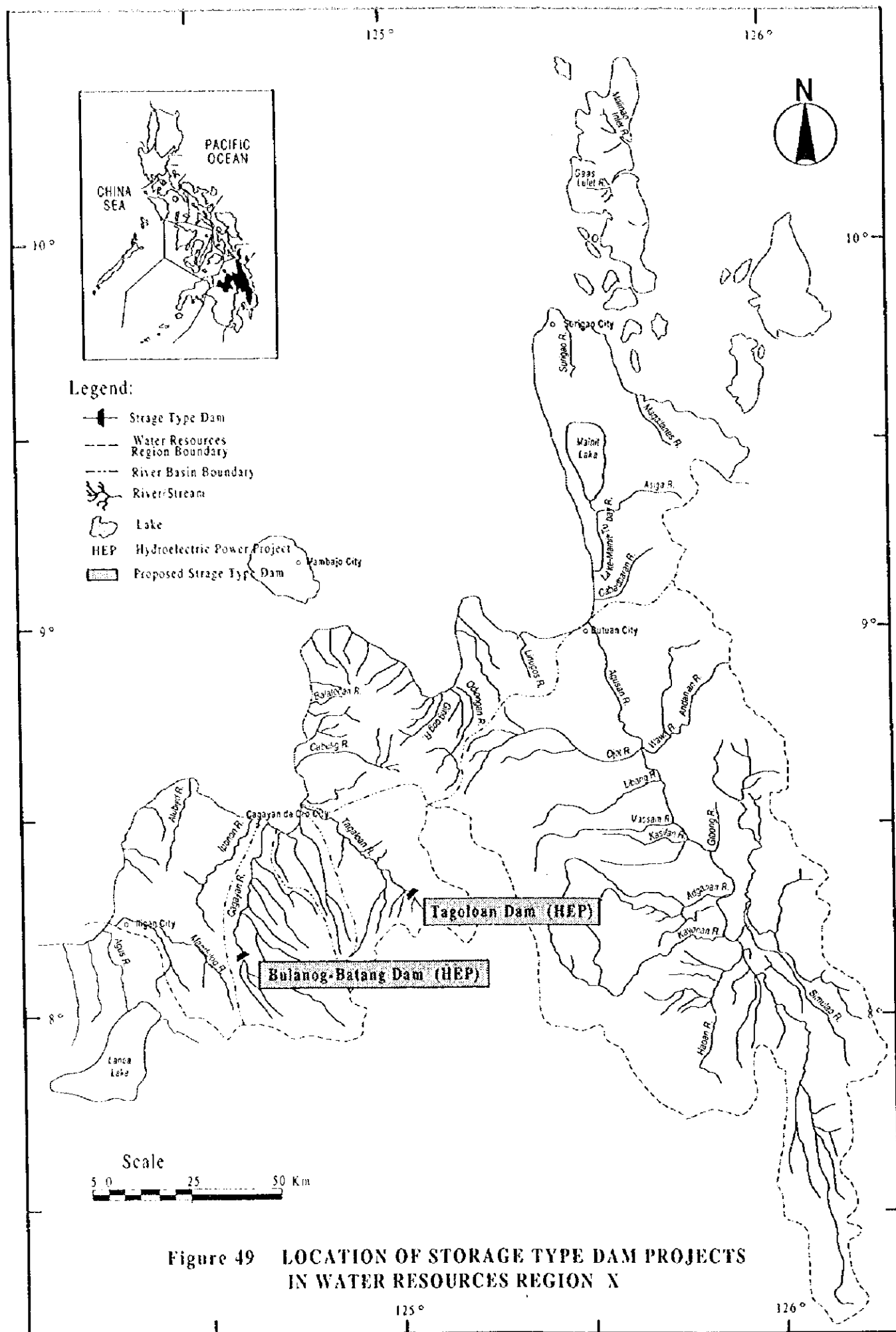


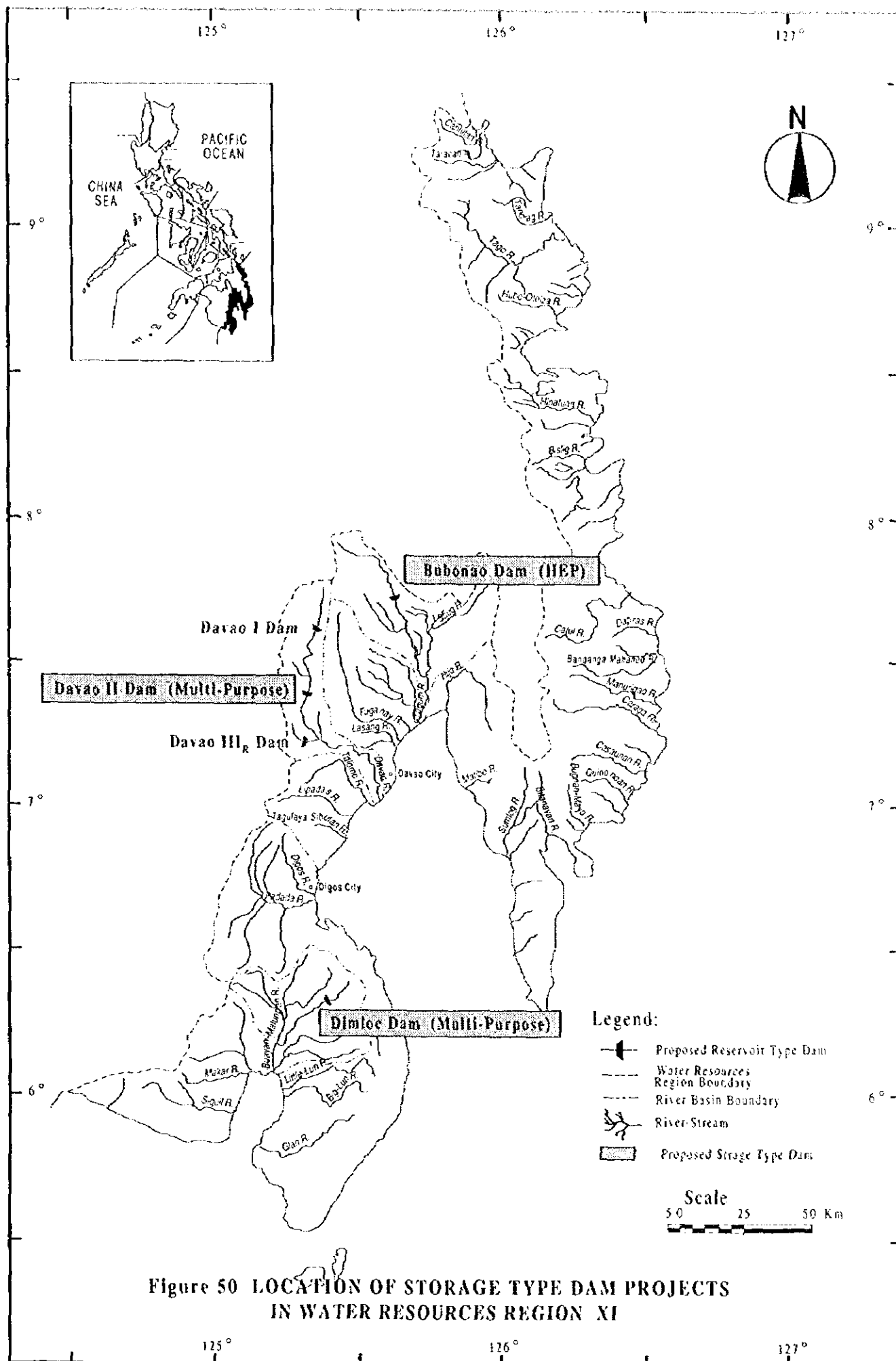


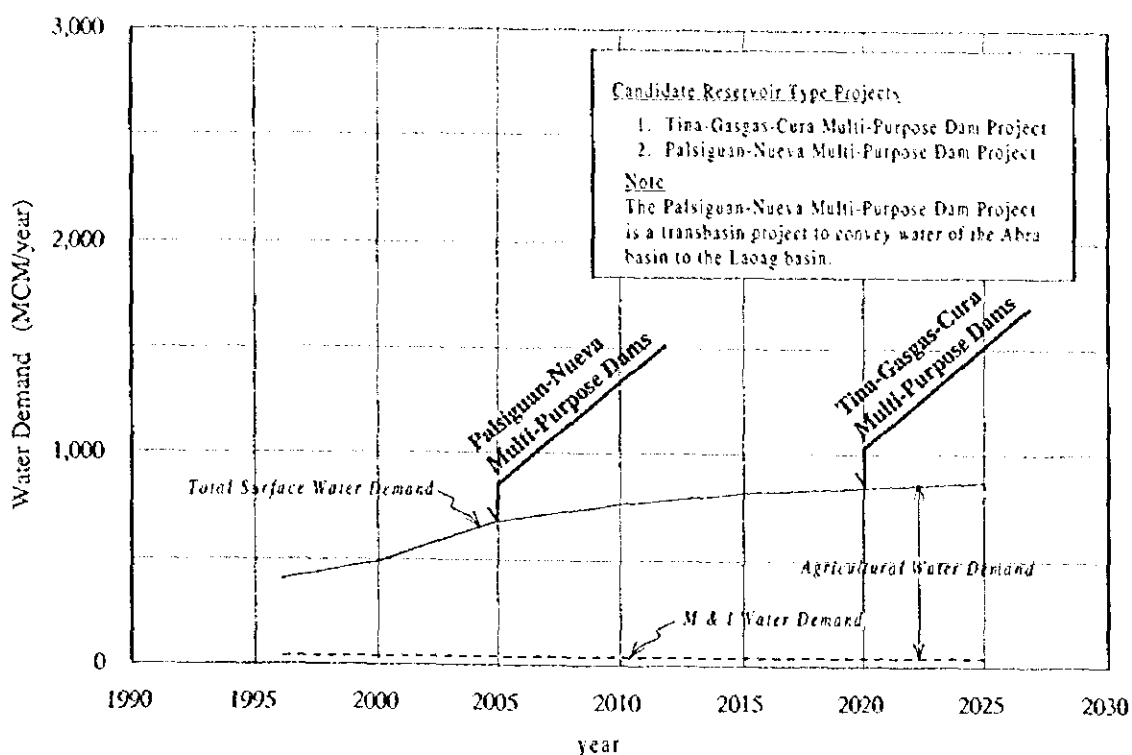




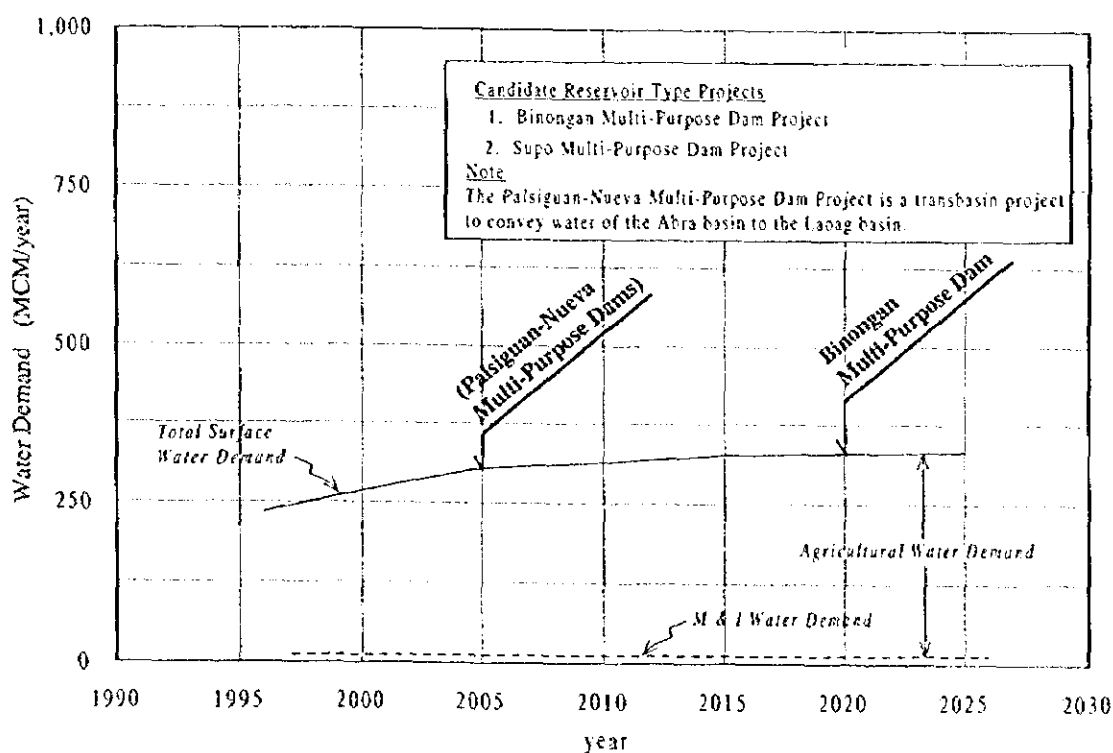
**Figure 47 LOCATION OF STORAGE TYPE DAM PROJECTS
IN WATER RESOURCES REGION VII**







**Figure 52 SURFACE WATER DEMAND FOR LAOAG RIVER BASIN
IN CASE OF HIGH ECONOMIC GROWTH**



**Figure 53 SURFACE WATER DEMAND FOR ABRA RIVER BASIN
IN CASE OF HIGH ECONOMIC GROWTH**

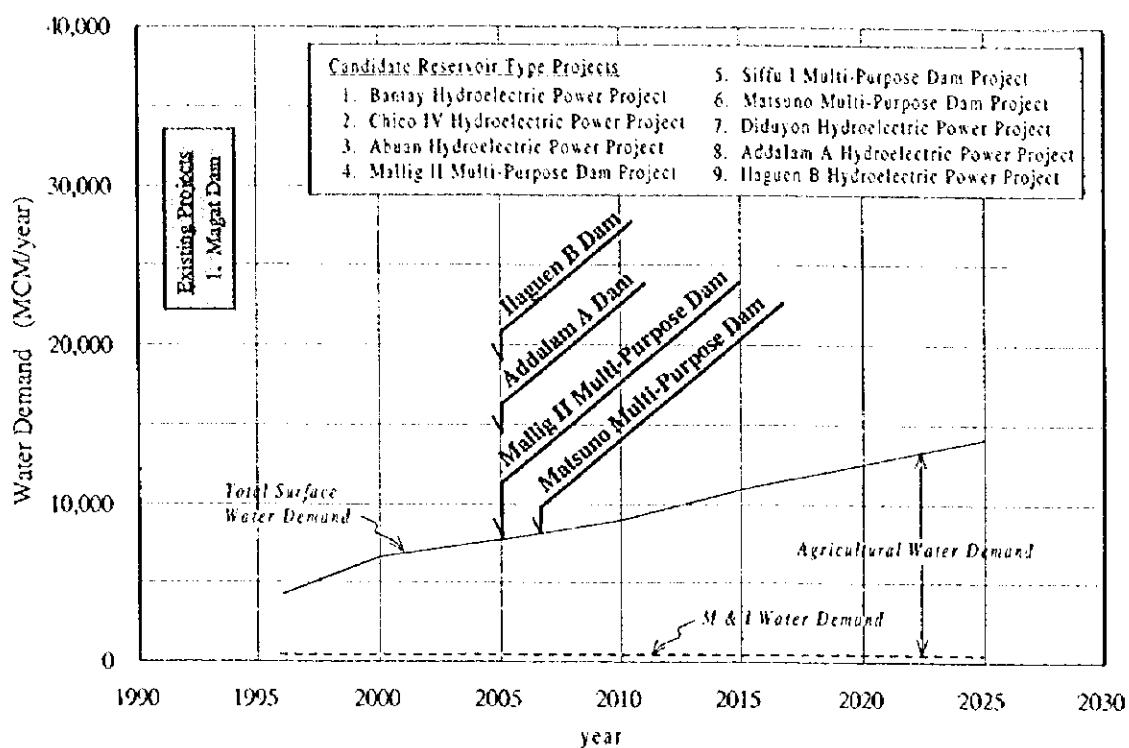


Figure 54 SURFACE WATER DEMAND FOR CAGAYAN RIVER BASIN
IN CASE OF HIGH ECONOMIC GROWTH

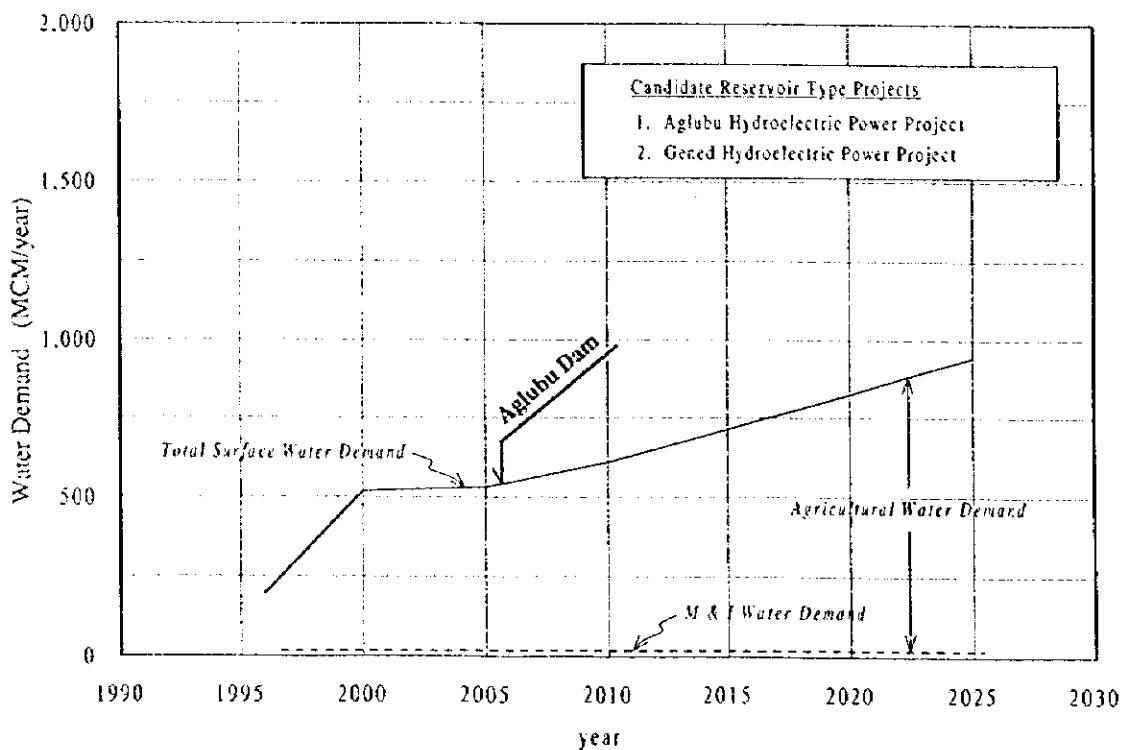
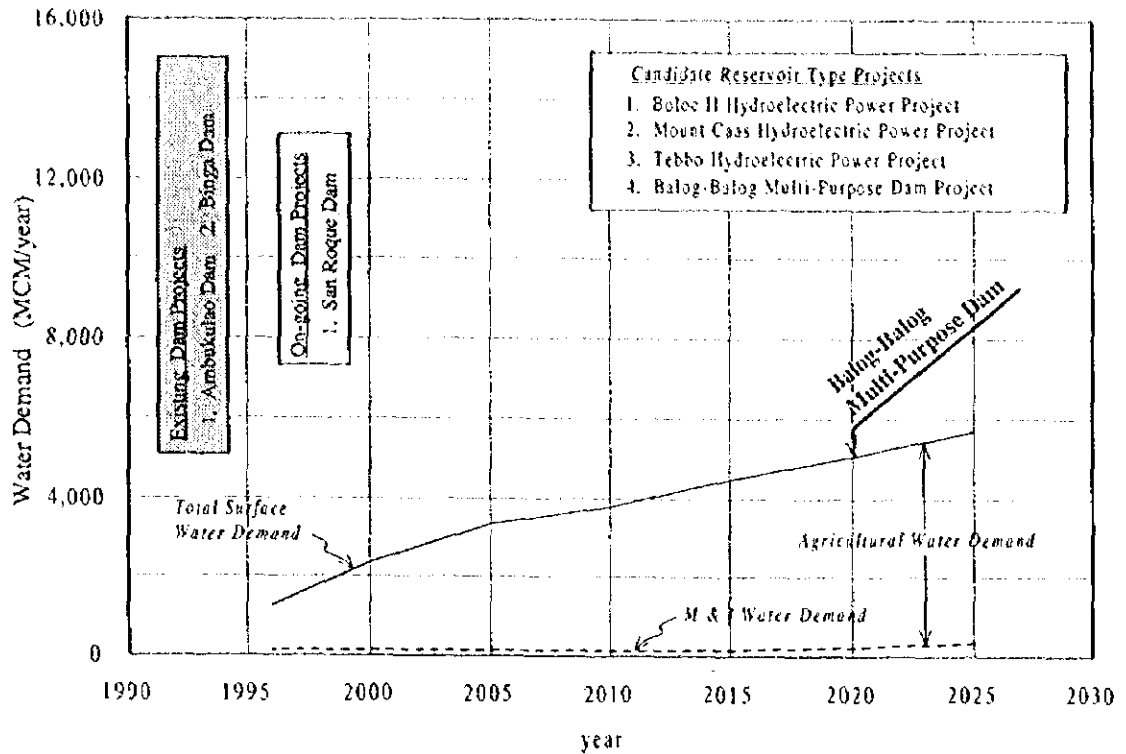
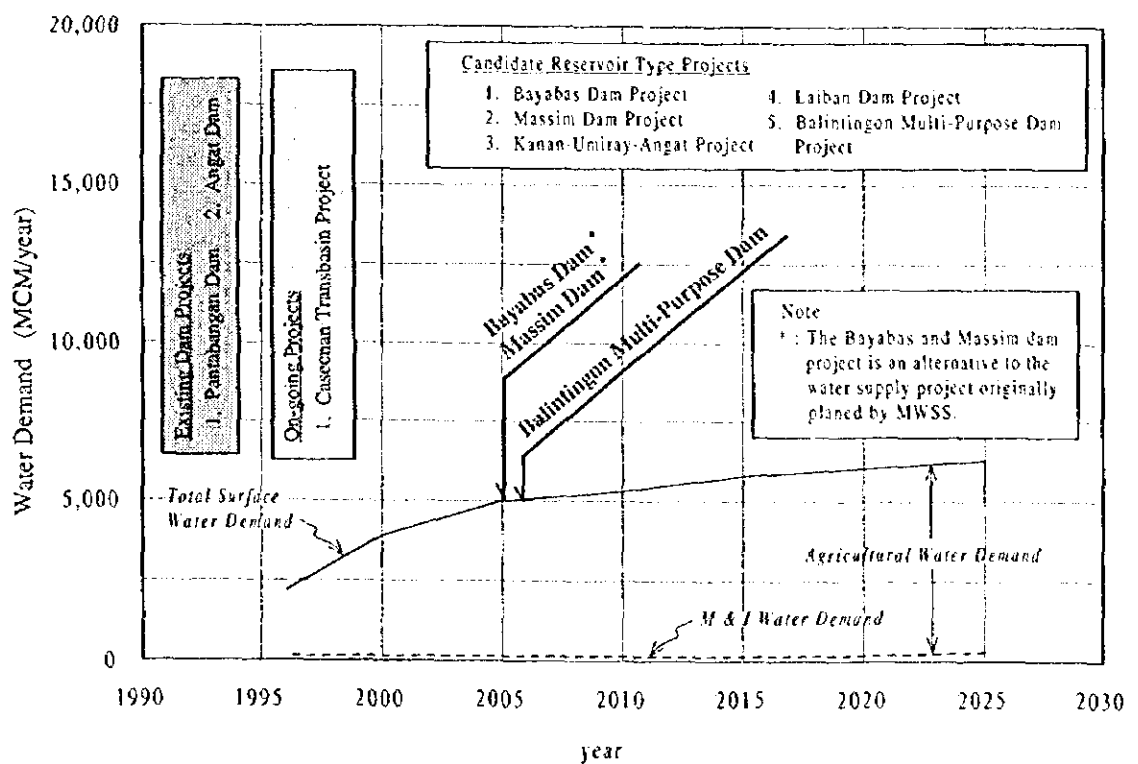


Figure 55 SURFACE WATER DEMAND FOR ABULUG RIVER BASIN
IN CASE OF HIGH ECONOMIC GROWTH



**Figure 56 SURFACE WATER DEMAND FOR AGNO RIVER BASIN
IN CASE OF HIGH ECONOMIC GROWTH**



**Figure 57 SURFACE WATER DEMAND FOR PAMPANGA RIVER BASIN
IN CASE OF HIGH ECONOMIC GROWTH**

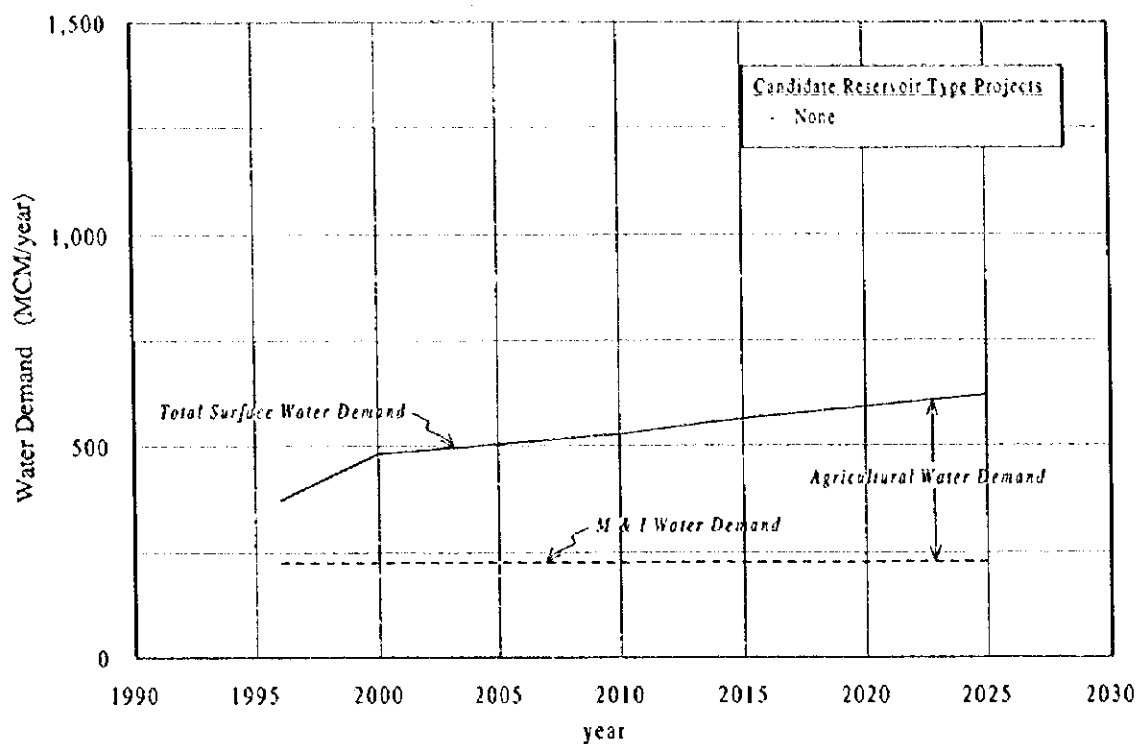


Figure 58 SURFACE WATER DEMAND FOR PASIG-LAGUNA RIVER BASIN IN CASE OF HIGH ECONOMIC GROWTH

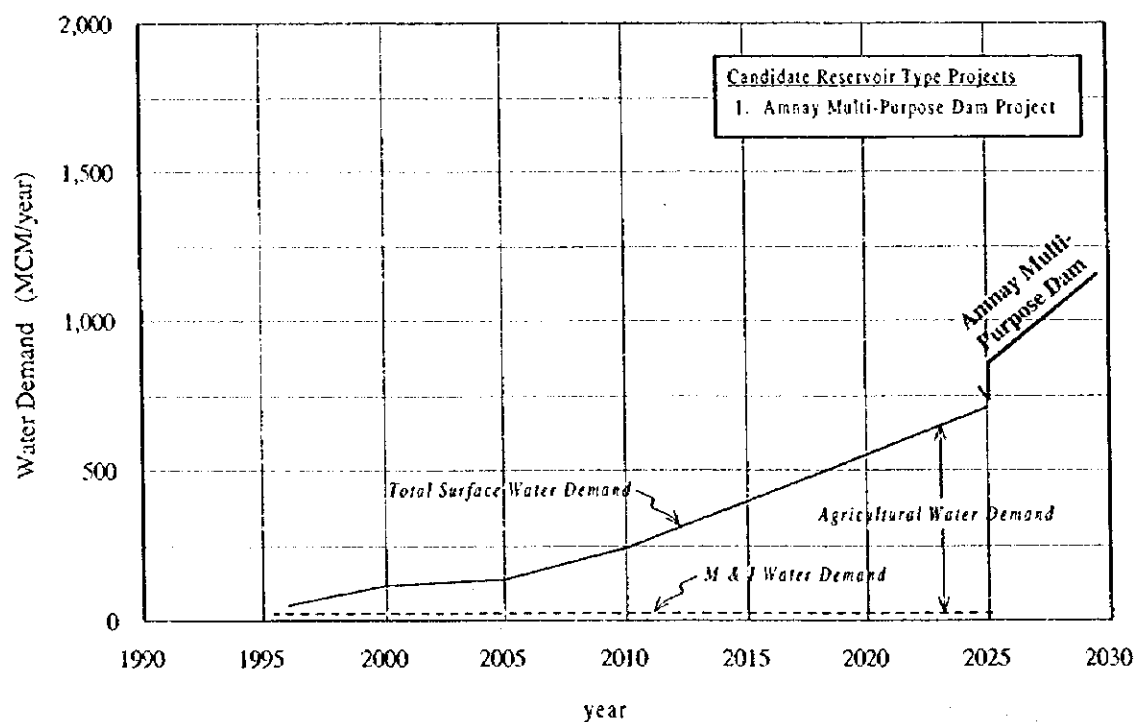


Figure 59 SURFACE WATER DEMAND FOR AMNAY-PATRICK RIVER BASIN IN CASE OF HIGH ECONOMIC GROWTH

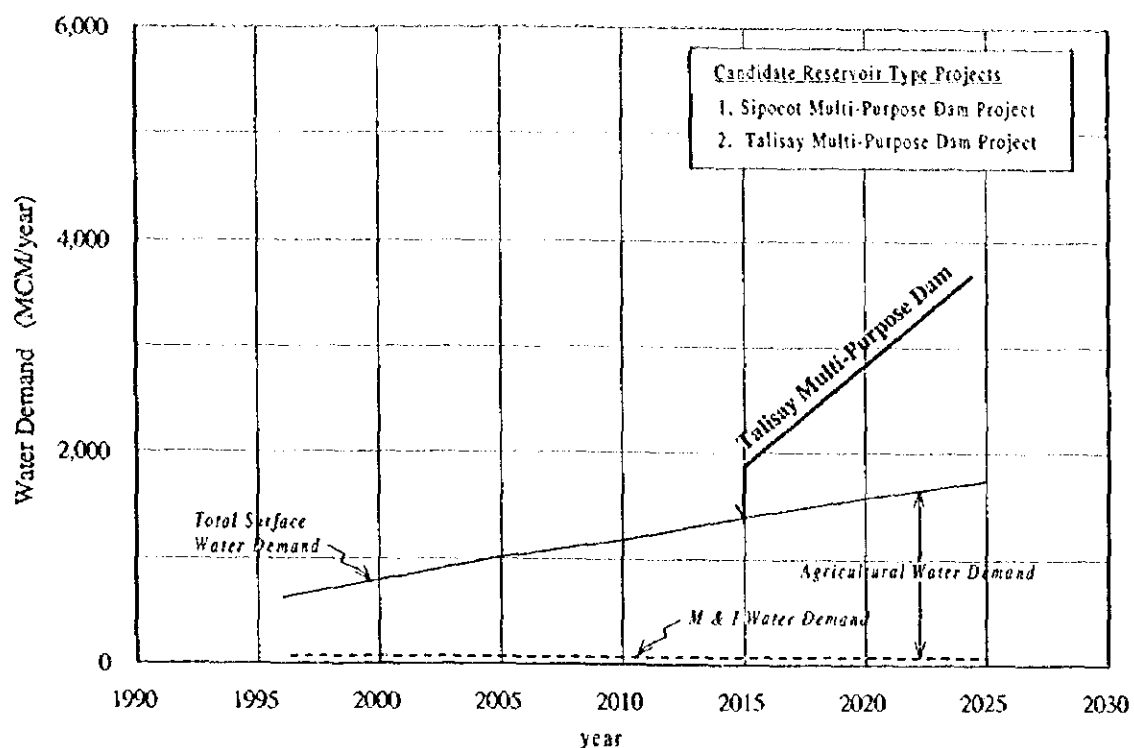


Figure 60 SURFACE WATER DEMAND FOR BICOL RIVER BASIN IN CASE OF HIGH ECONOMIC GROWTH

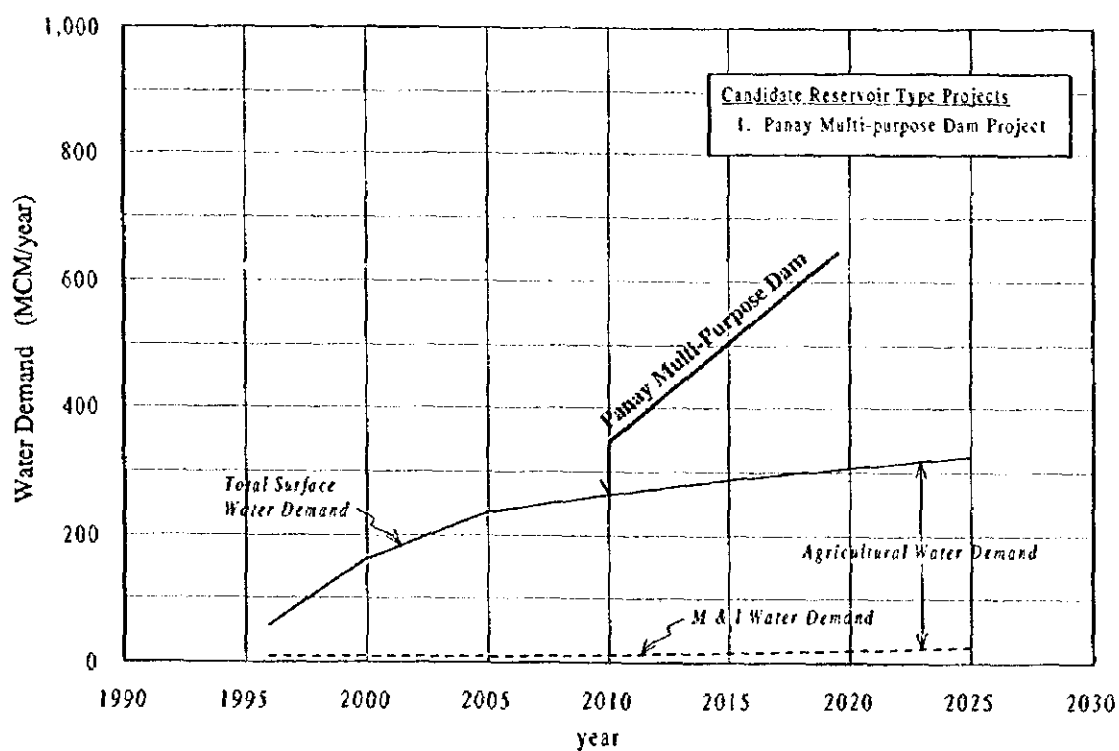
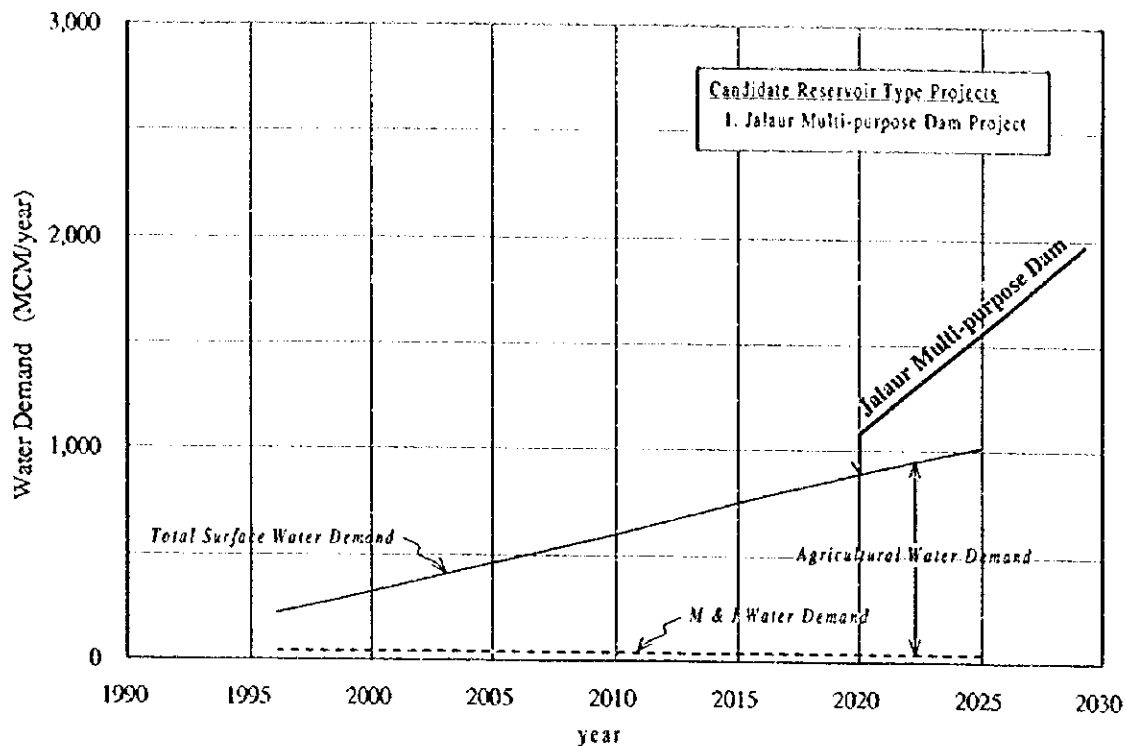
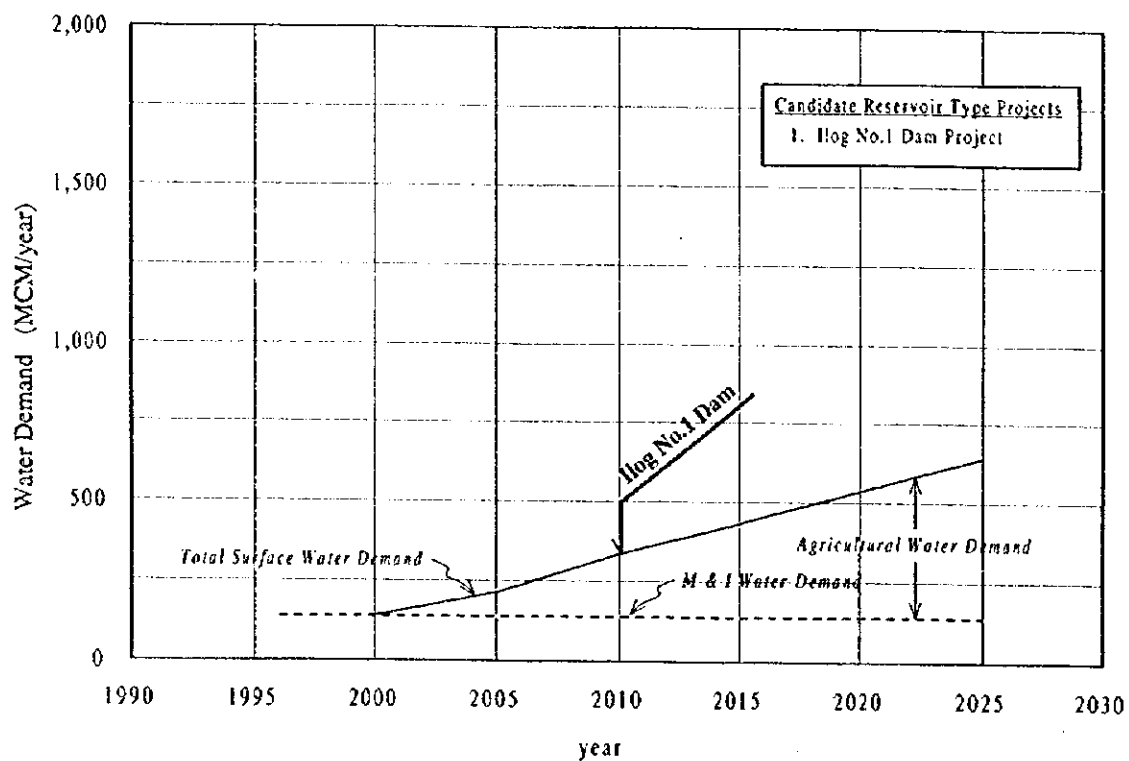


Figure 61 SURFACE WATER DEMAND FOR PANAY RIVER BASIN IN CASE OF HIGH ECONOMIC GROWTH



**Figure 62 SURFACE WATER DEMAND FOR JALAUUR RIVER BASIN
IN CASE OF HIGH ECONOMIC GROWTH**



**Figure 63 SURFACE WATER DEMAND FOR ILOG-HILABANGAN RIVER
BASIN IN CASE OF HIGH ECONOMIC GROWTH**

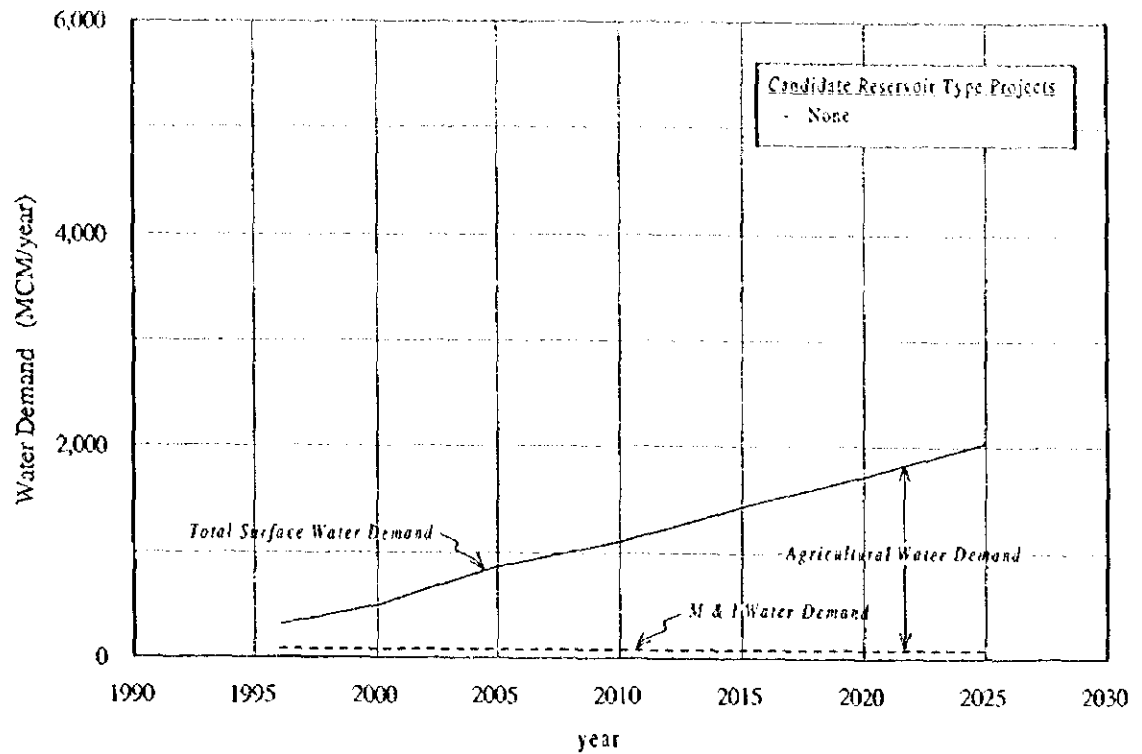


Figure 64 SURFACE WATER DEMAND FOR AGUSAN RIVER BASIN IN CASE OF HIGH ECONOMIC GROWTH

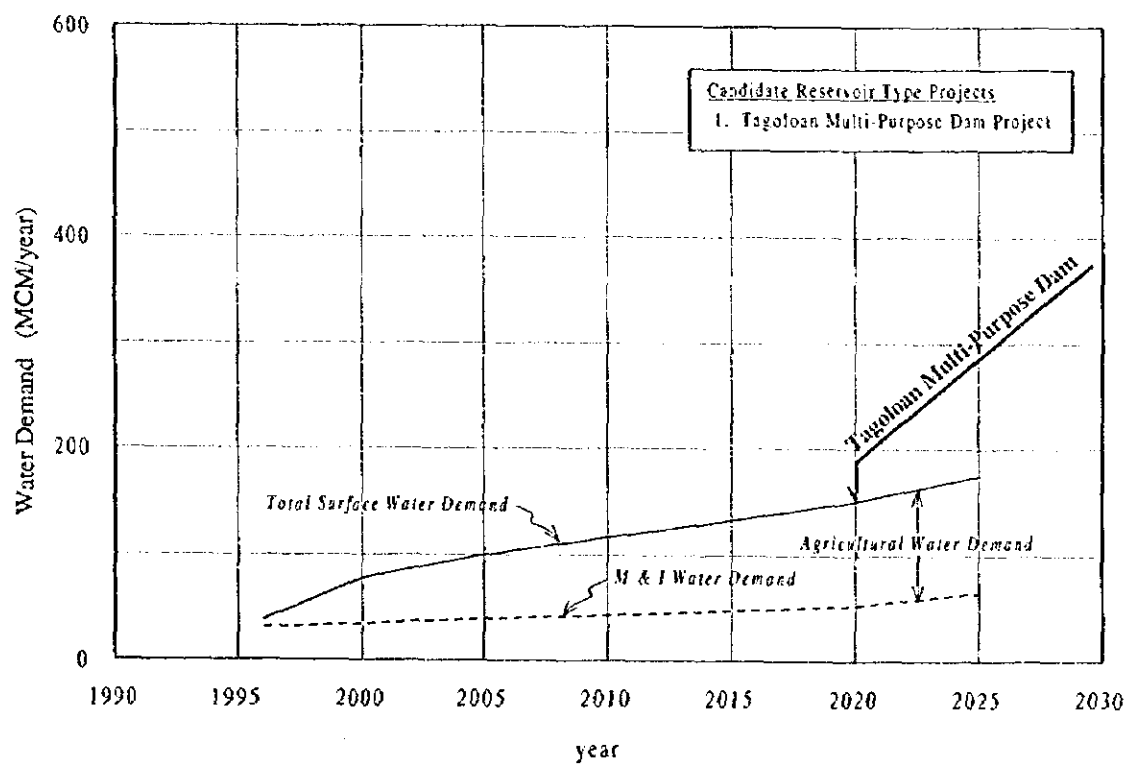


Figure 65 SURFACE WATER DEMAND FOR TAGOLOAN RIVER BASIN IN CASE OF HIGH ECONOMIC GROWTH

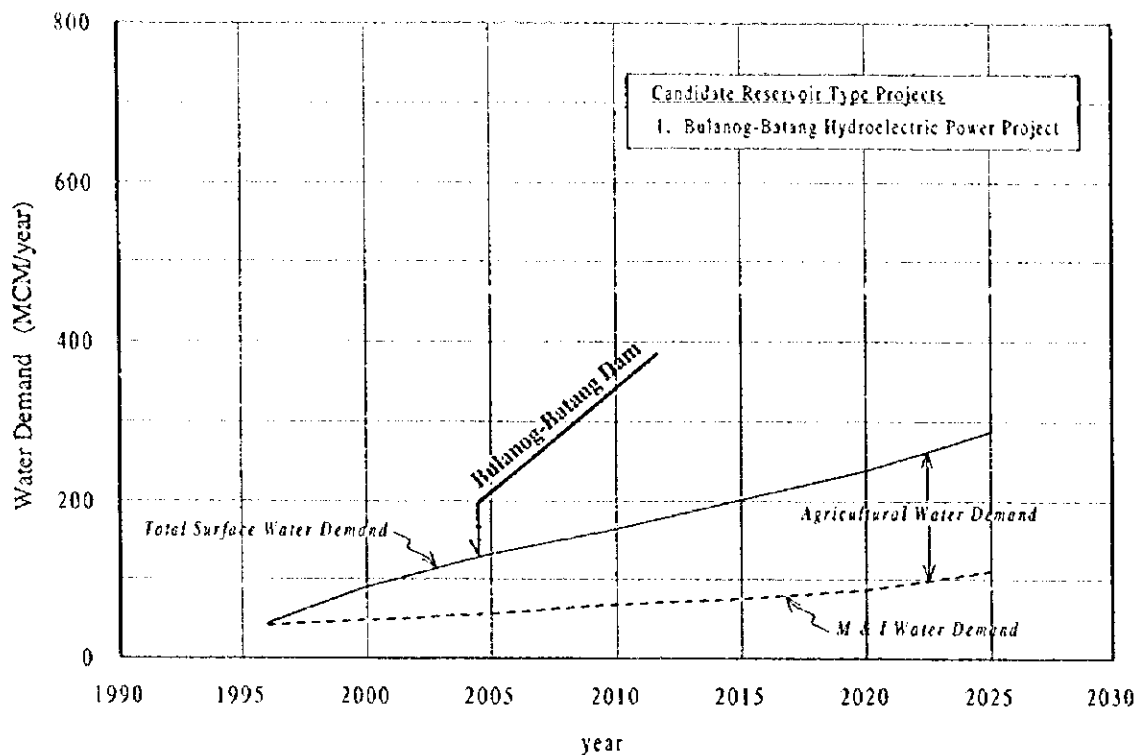


Figure 66 SURFACE WATER DEMAND FOR CAGAYAN DE ORO RIVER BASIN IN CASE OF HIGH ECONOMIC GROWTH

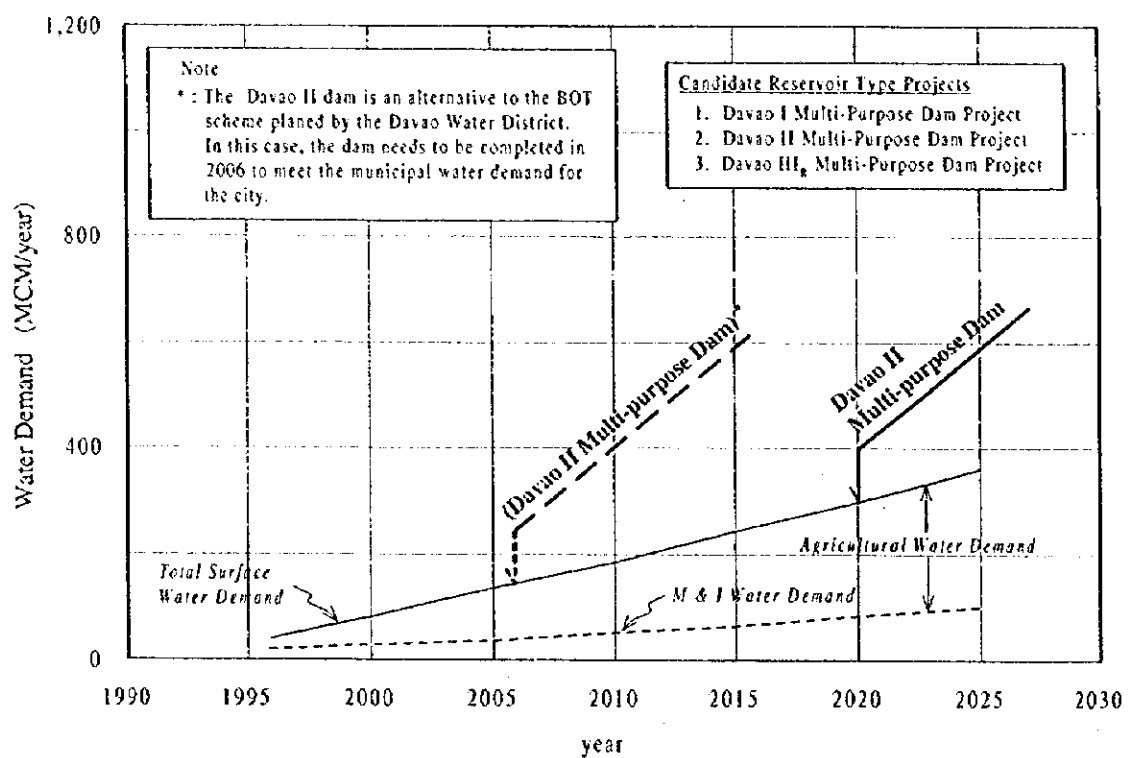


Figure 67 SURFACE WATER DEMAND FOR DAVAO RIVER BASIN IN CASE OF HIGH ECONOMIC GROWTH

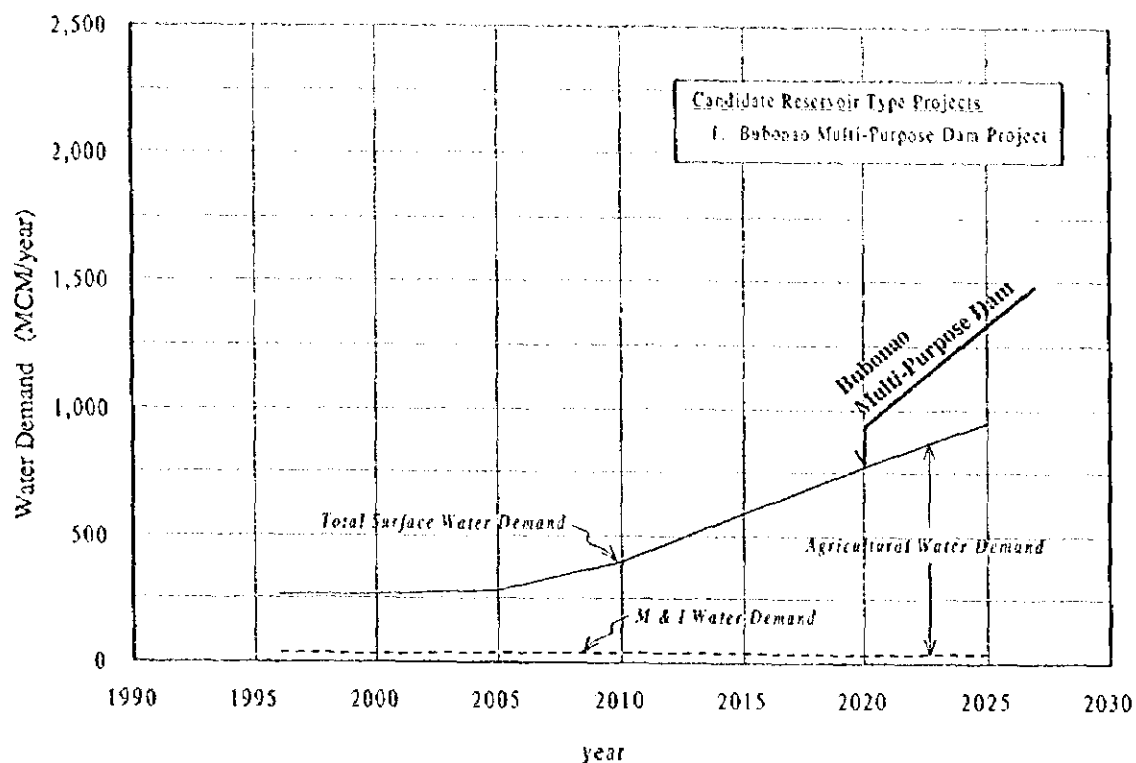


Figure 68 SURFACE WATER DEMAND FOR TAGUM-LIBUGANON RIVER BASIN IN CASE OF HIGH ECONOMIC GROWTH

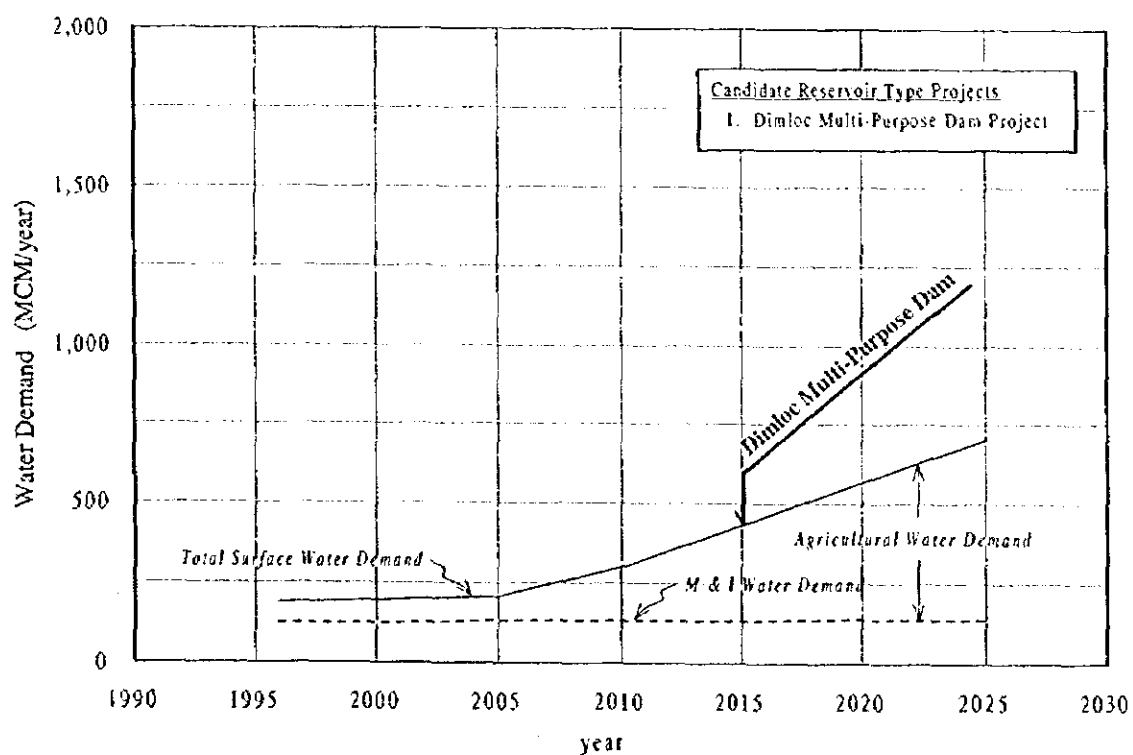
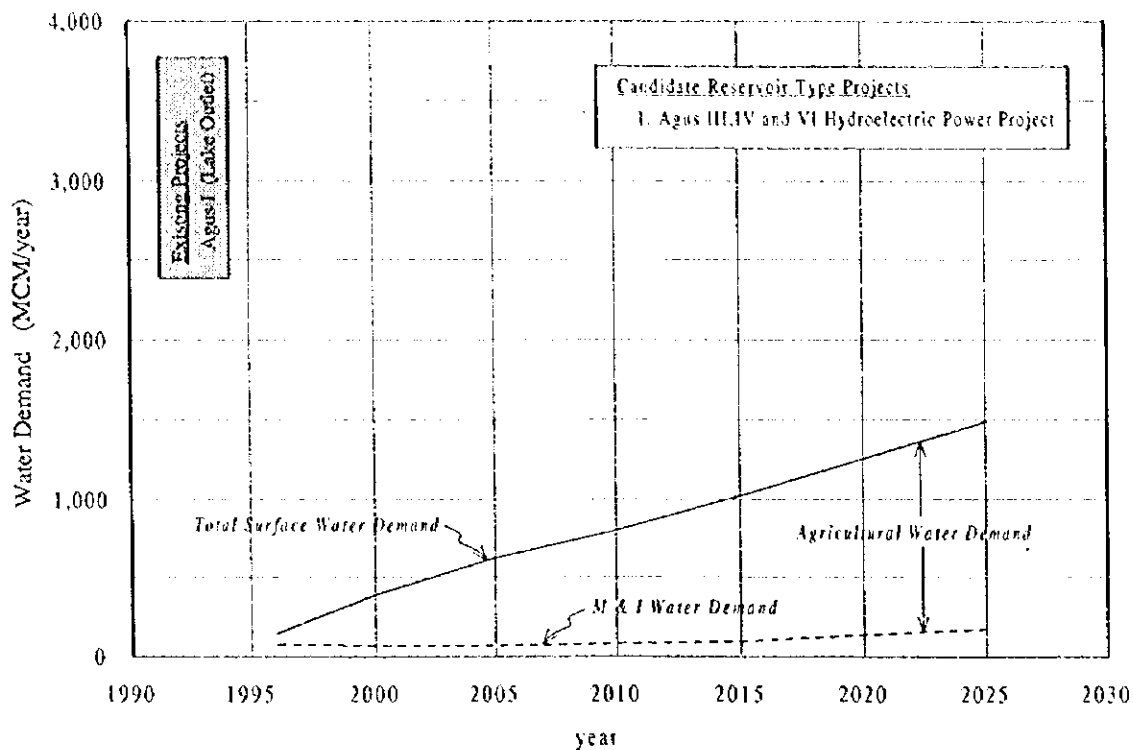
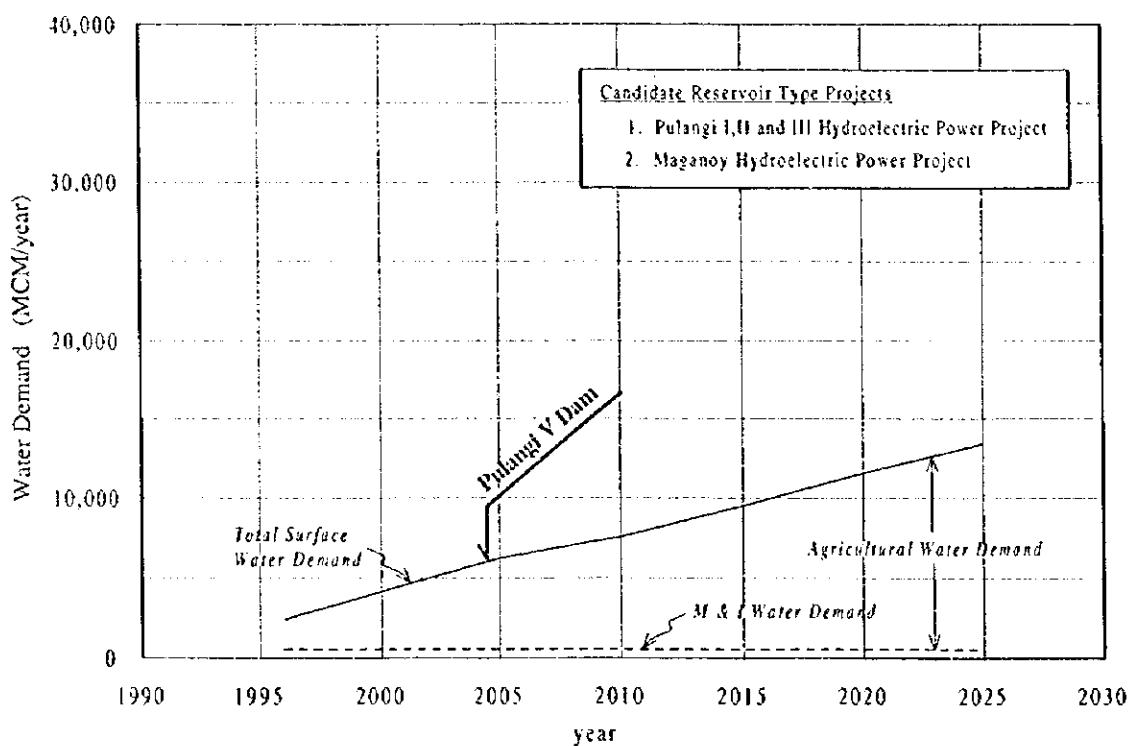


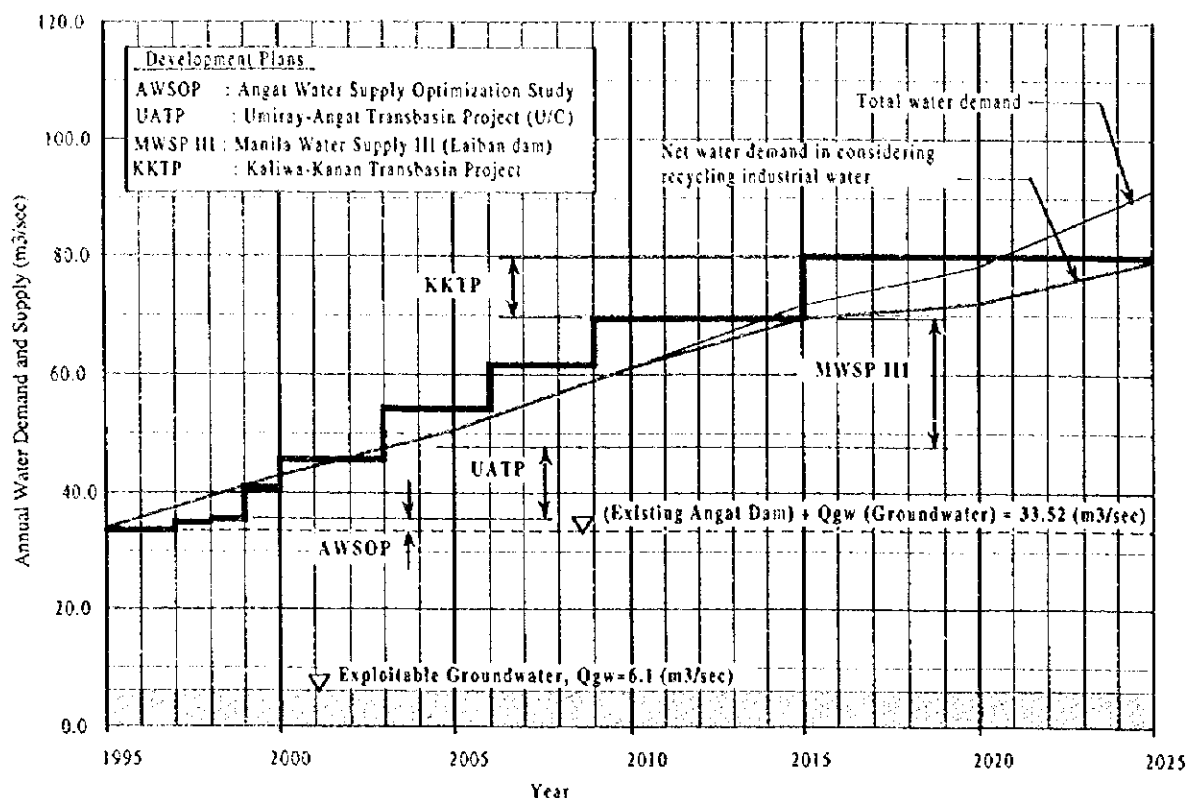
Figure 69 SURFACE WATER DEMAND FOR BUAYAN-MALUNGAN RIVER BASIN IN CASE OF HIGH ECONOMIC GROWTH



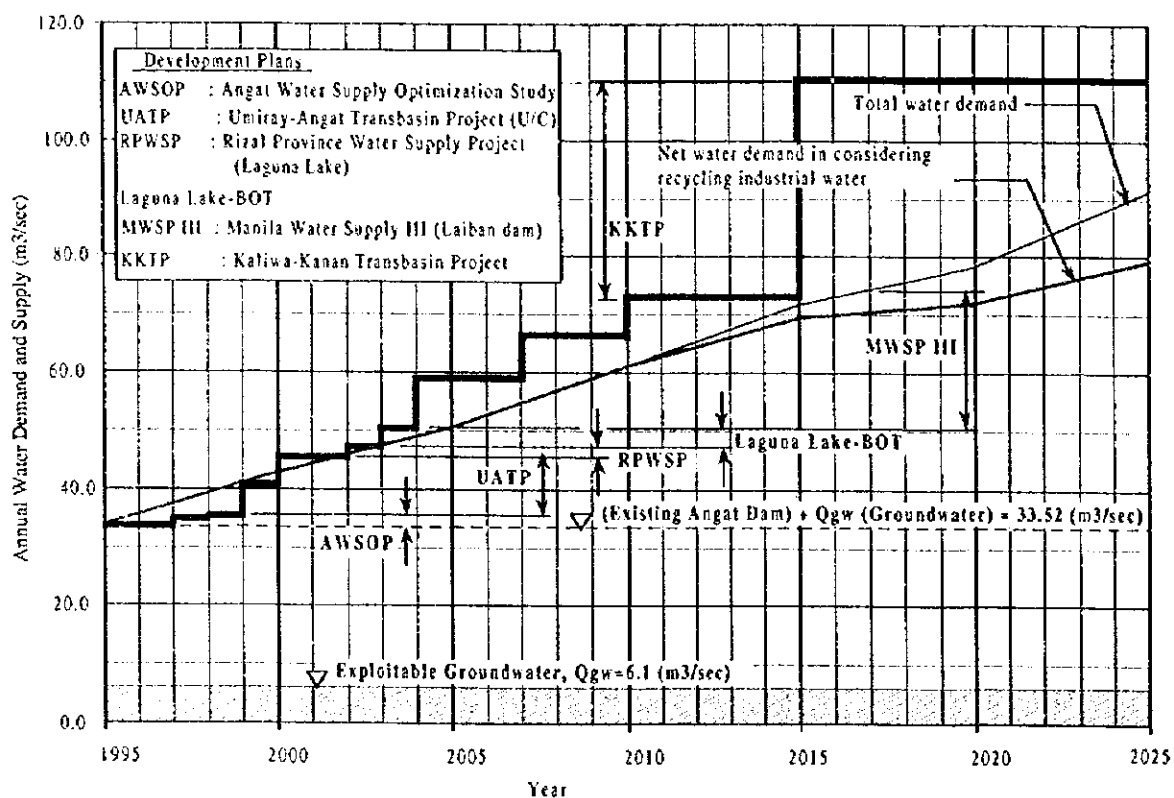
**Figure 70 SURFACE WATER DEMAND FOR AGUS RIVER BASIN
IN CASE OF HIGH ECONOMIC GROWTH**



**Figure 71 SURFACE WATER DEMAND FOR MINDANAO RIVER BASIN
IN CASE OF HIGH ECONOMIC GROWTH**



Scenario-1 (1/2) : Development Plan Proposed in the Study on Water Supply and Sewerage Master Plan of Metro Manila (February 1996)



Scenario-1 (2/2) : Latest Development Plan Proposed by MWSS

Figure 73 IMPLEMENTATION PLAN OF WATER SUPPLY PROJECTS FOR METRO MANILA (SCENARIO-1)

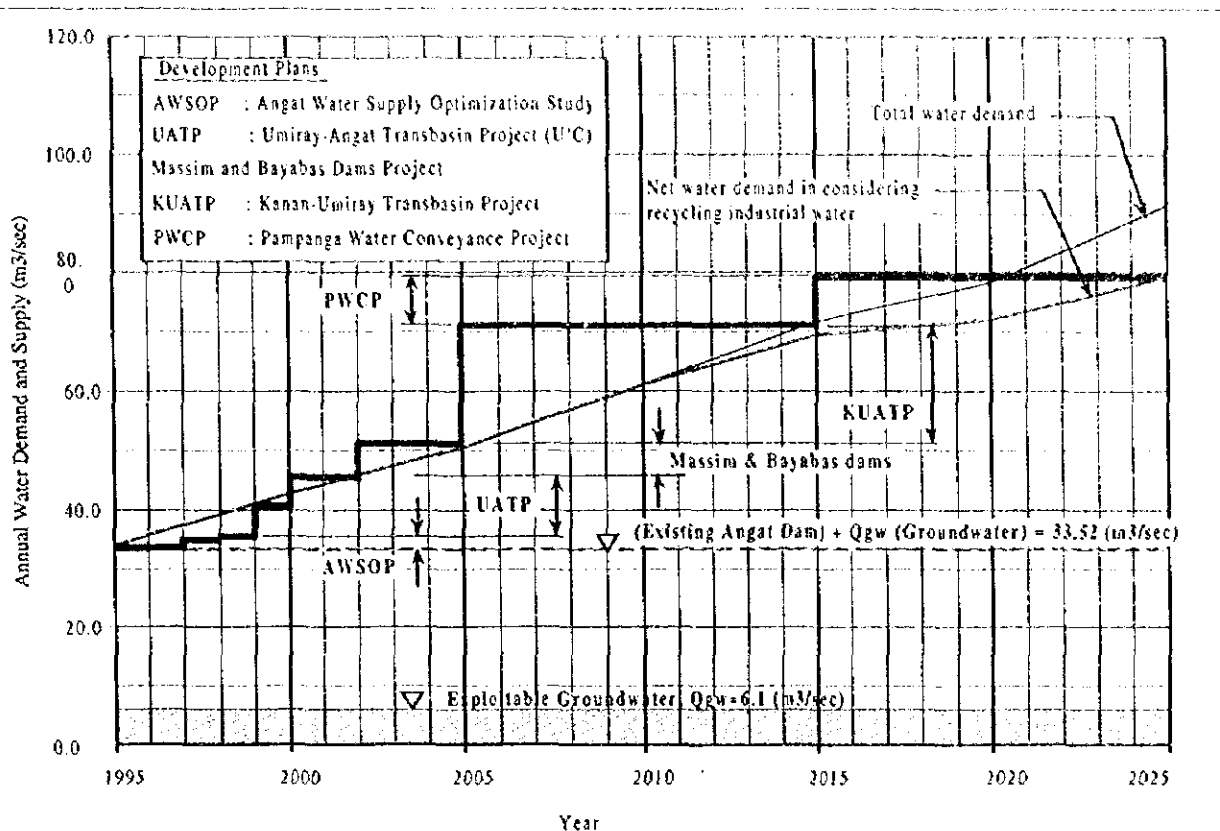


Figure 74 IMPLEMENTATION PLAN OF WATER SUPPLY PROJECTS FOR METRO MANILA (SCENARIO-2)

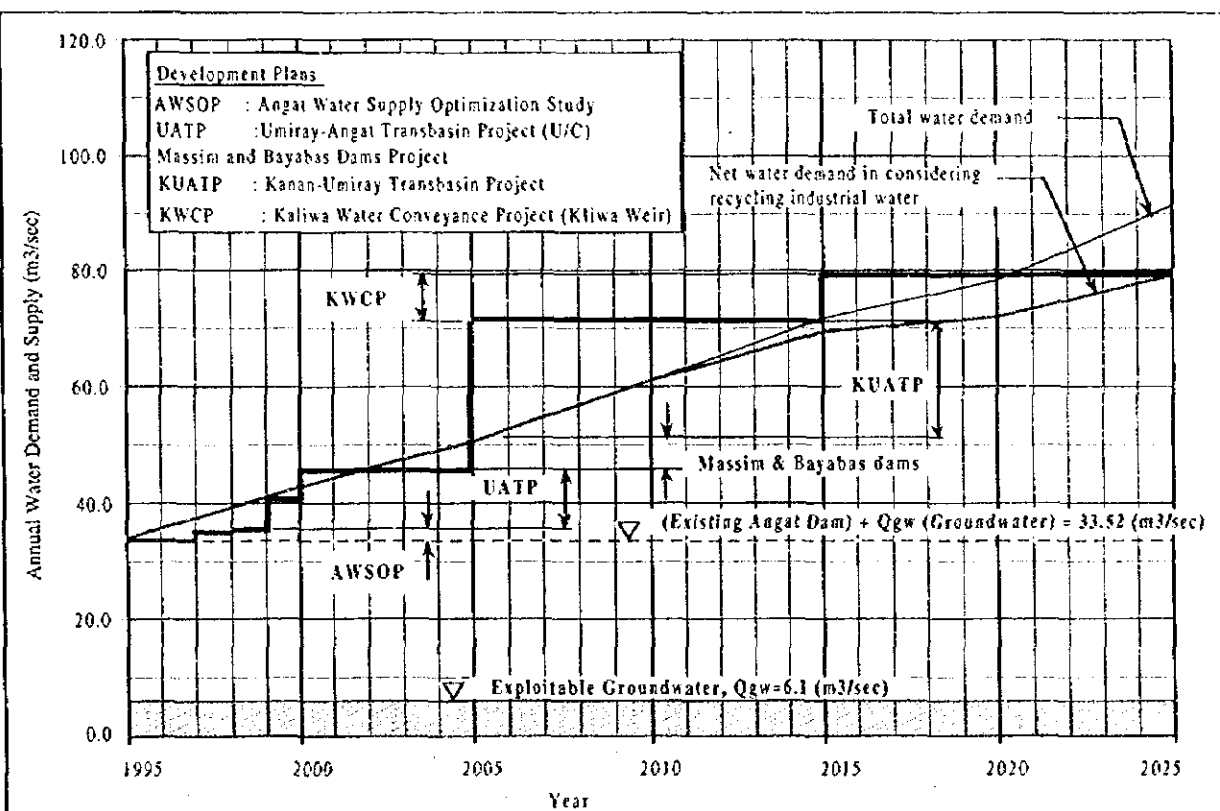


Figure 75 IMPLEMENTATION PLAN OF WATER SUPPLY PROJECTS FOR METRO MANILA (SCENARIO-3)

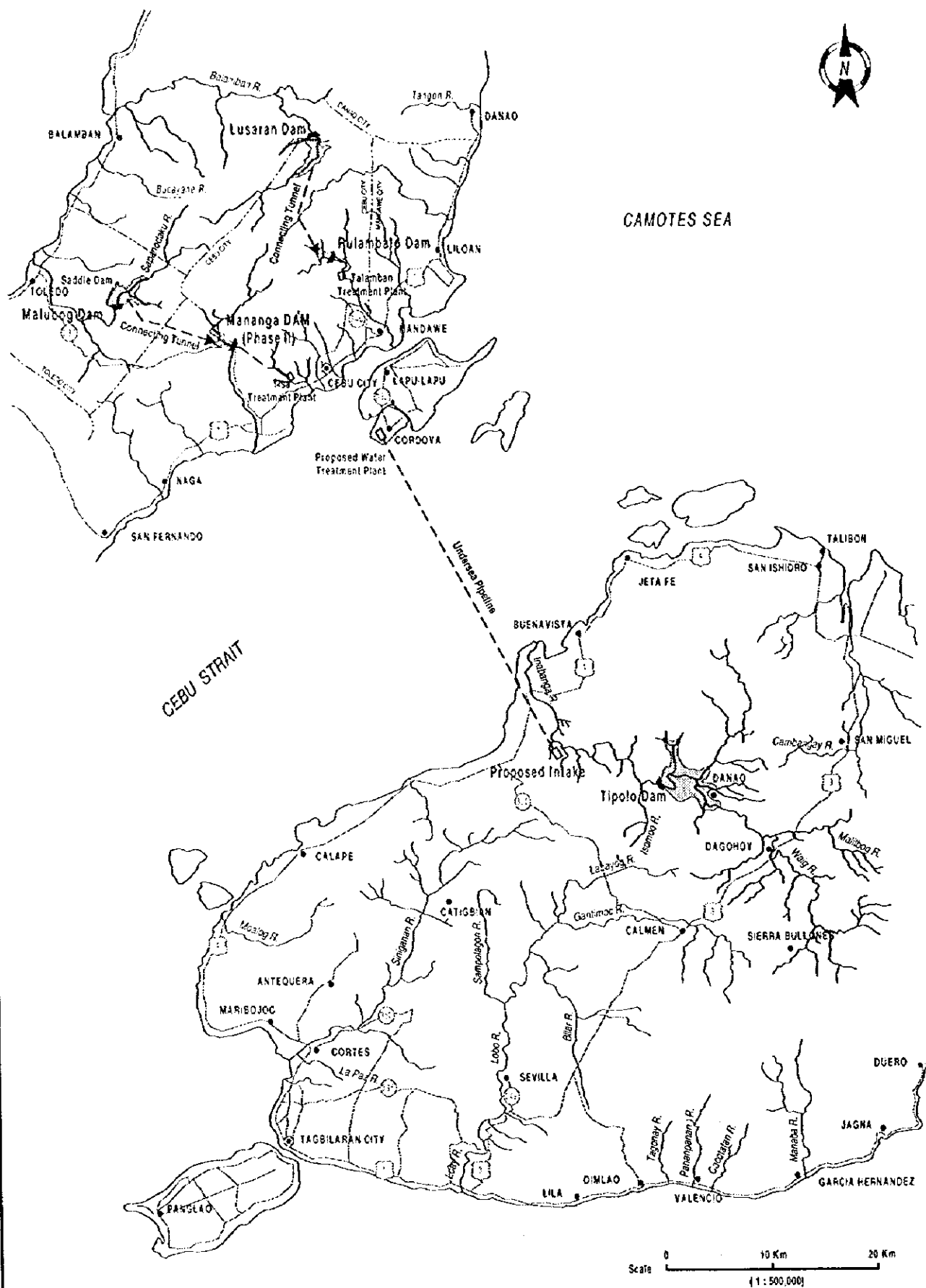
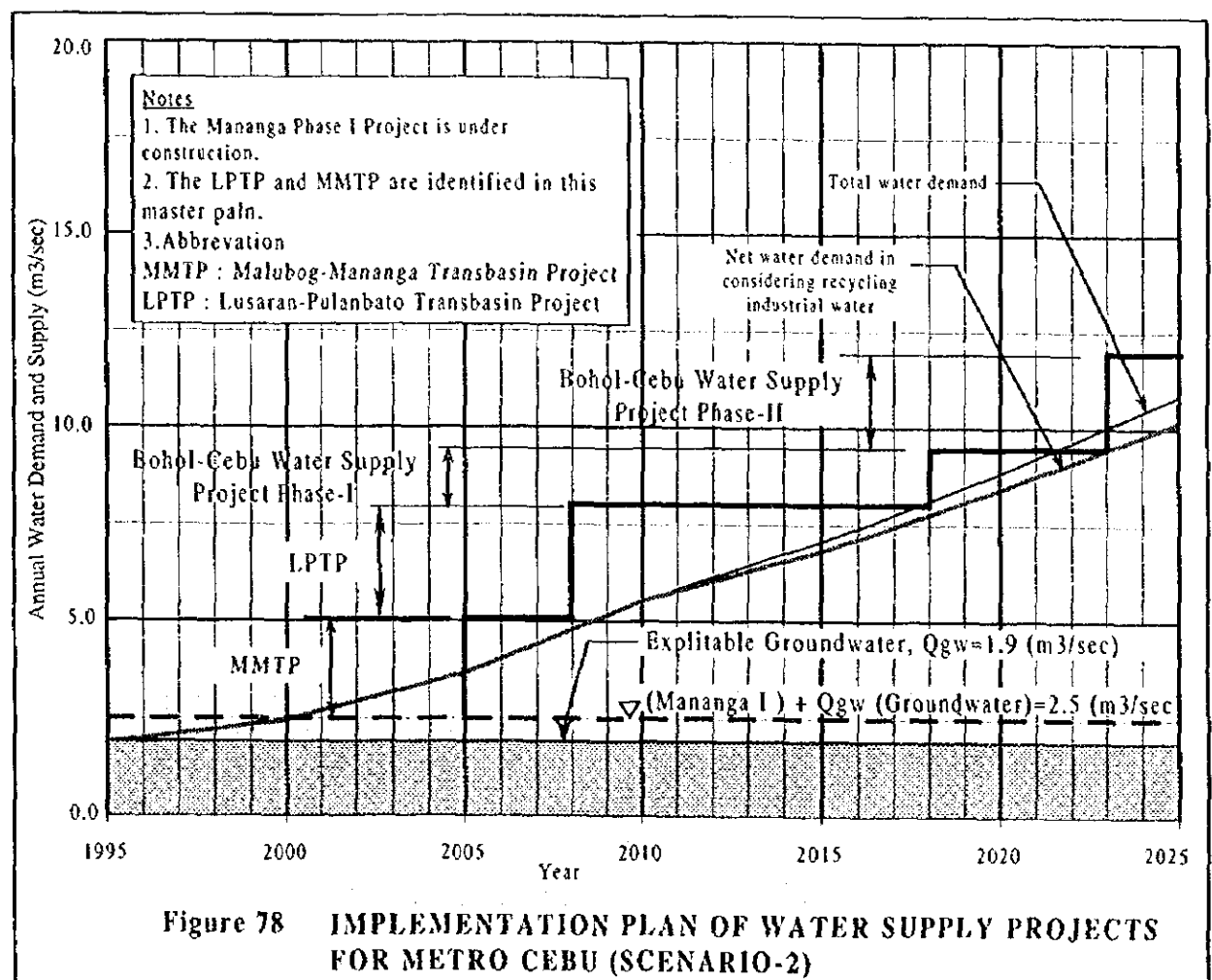
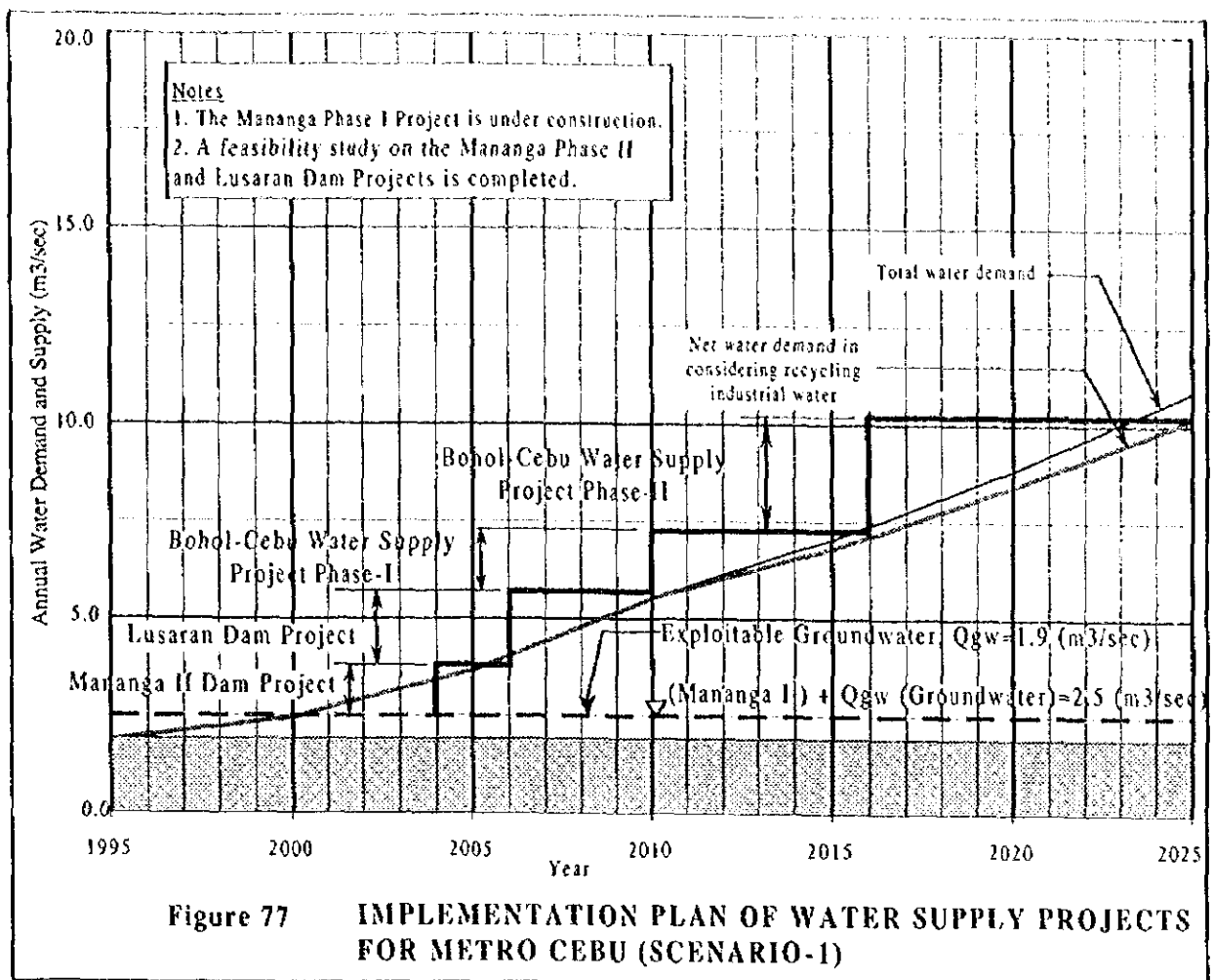
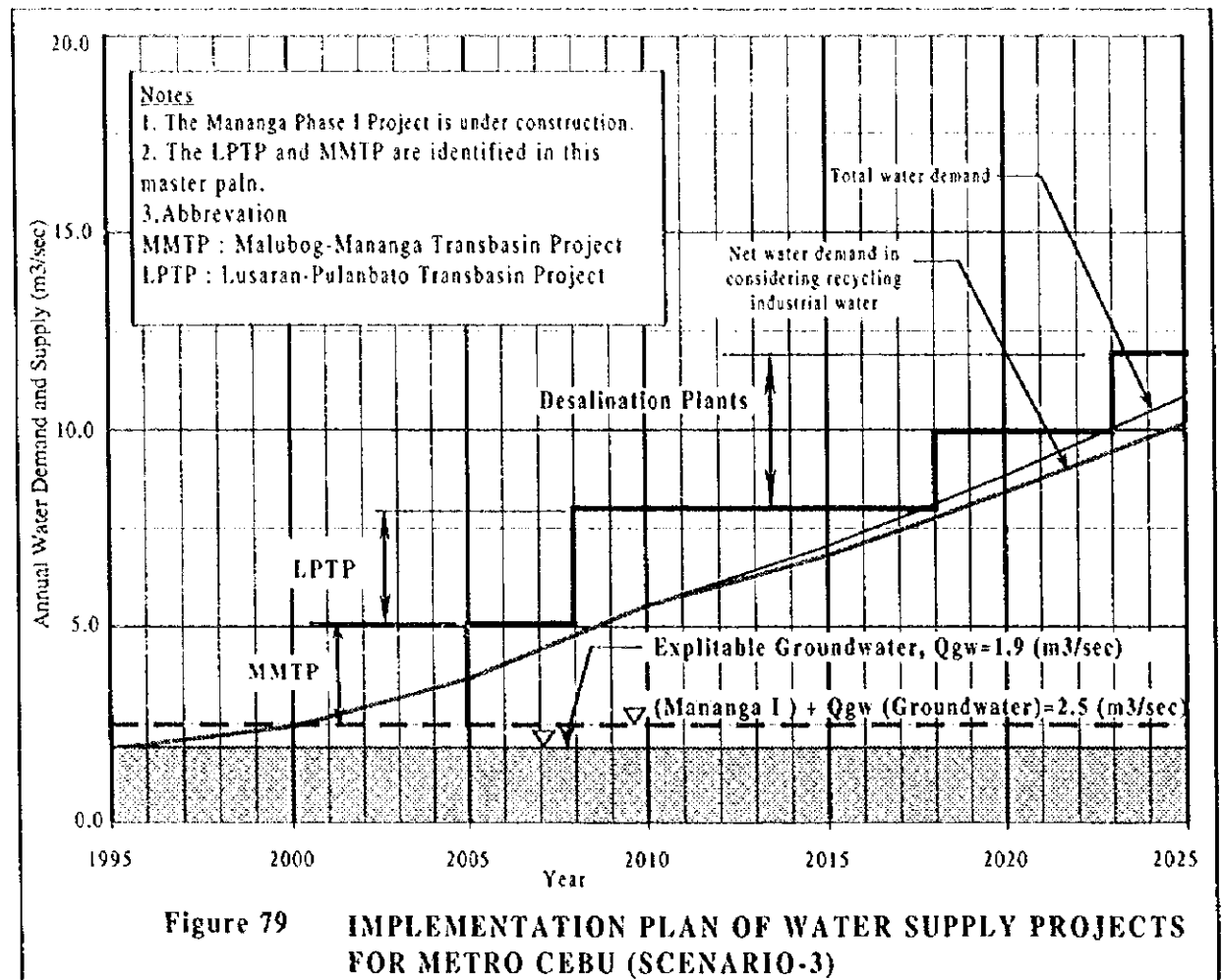


Figure 76 LOCATION MAP OF PROMISING WATER SUPPLY PROJECTS FOR METRO CEBU





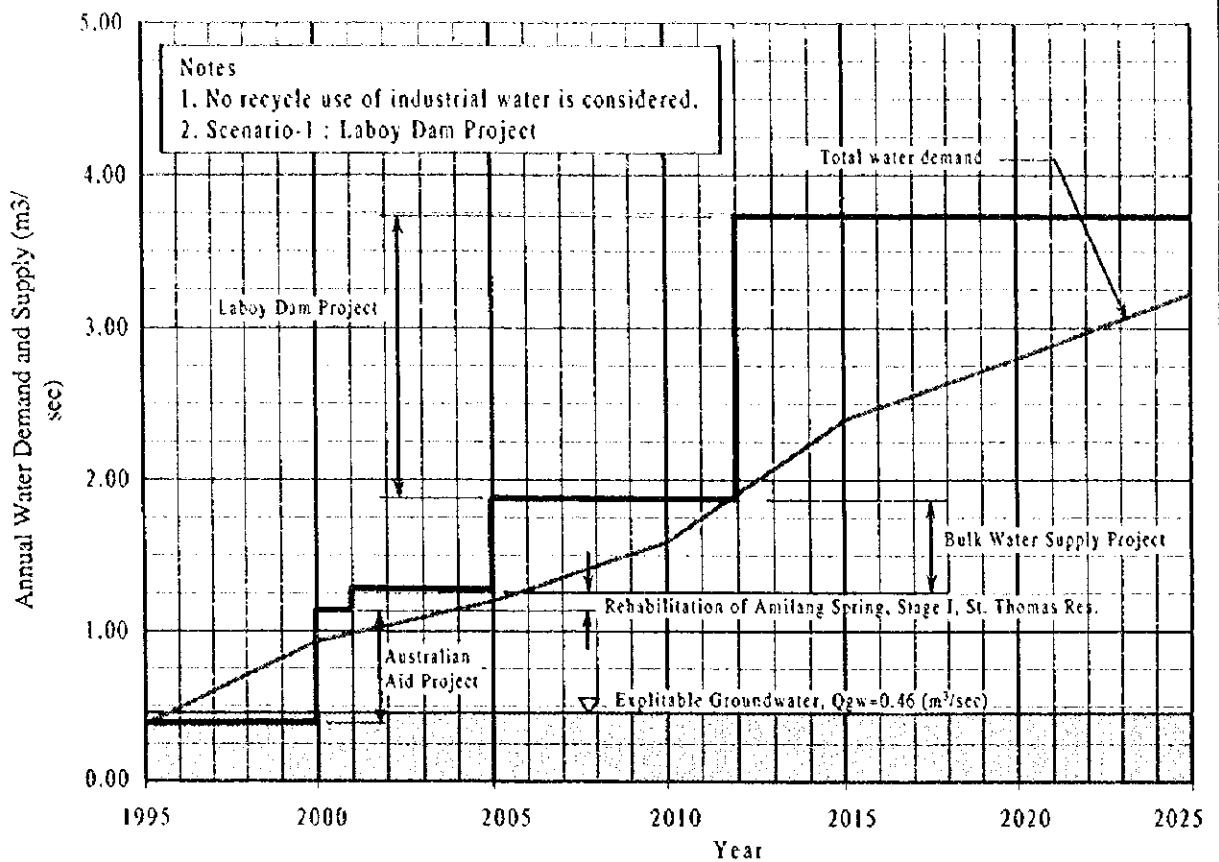


Figure 81 IMPLEMENTATION PLAN OF WATER SUPPLY PROJECTS FOR BAGUIO CITY : SCENARIO-1

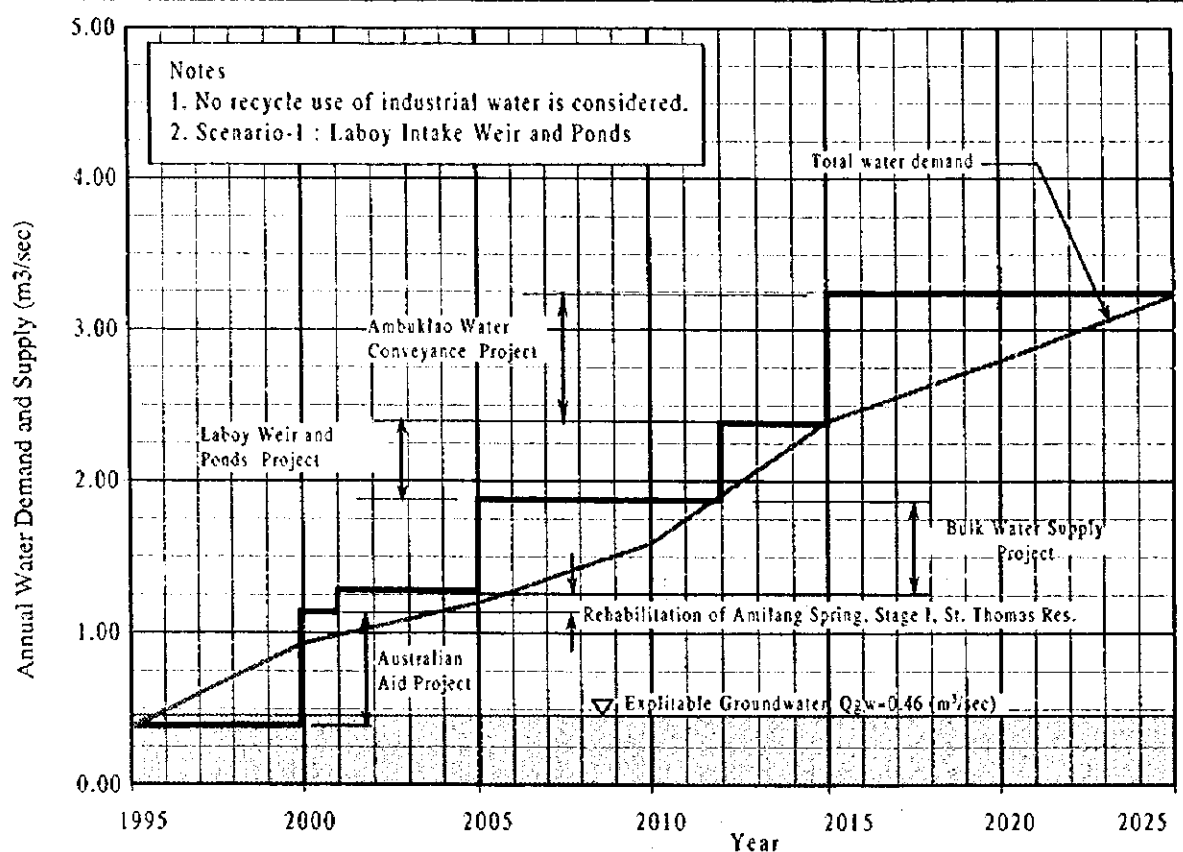
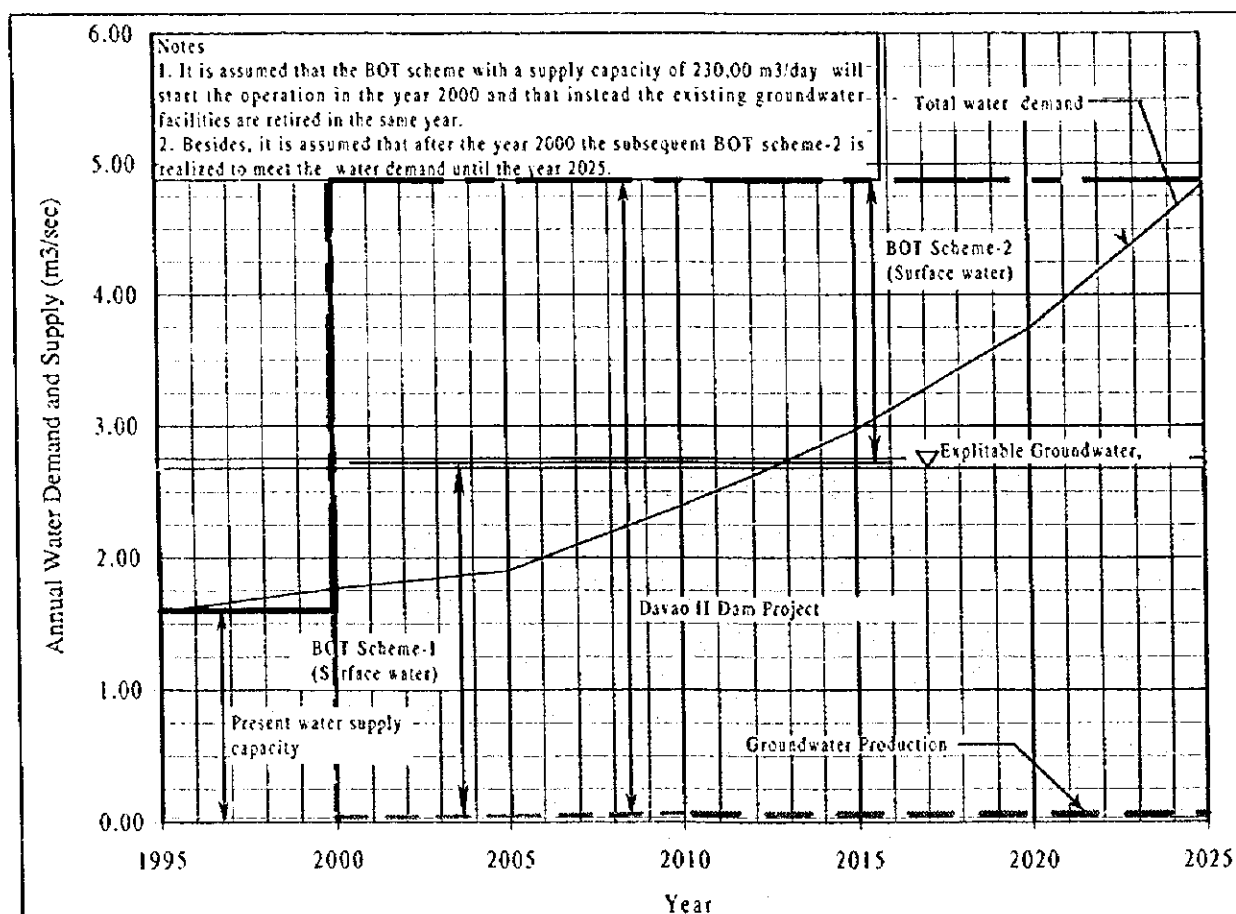
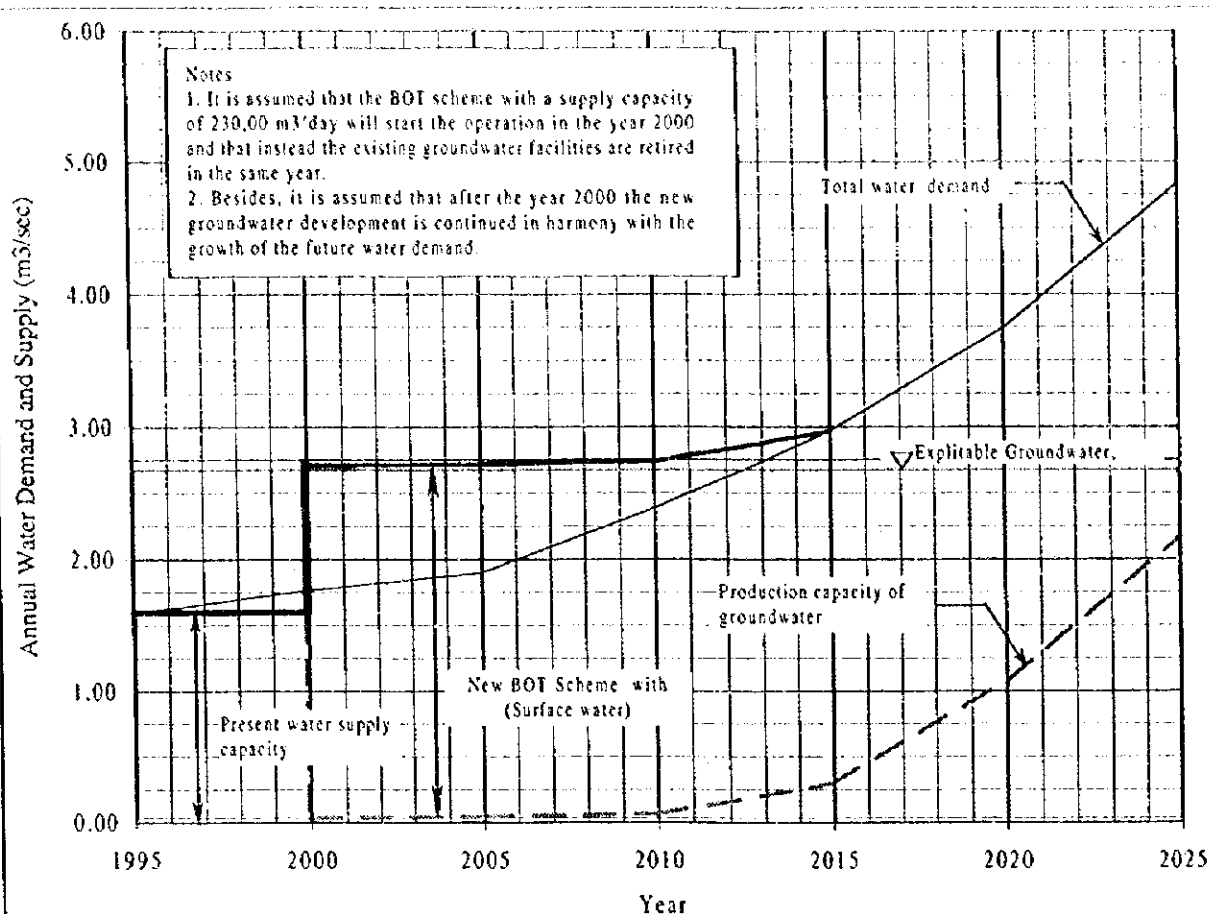
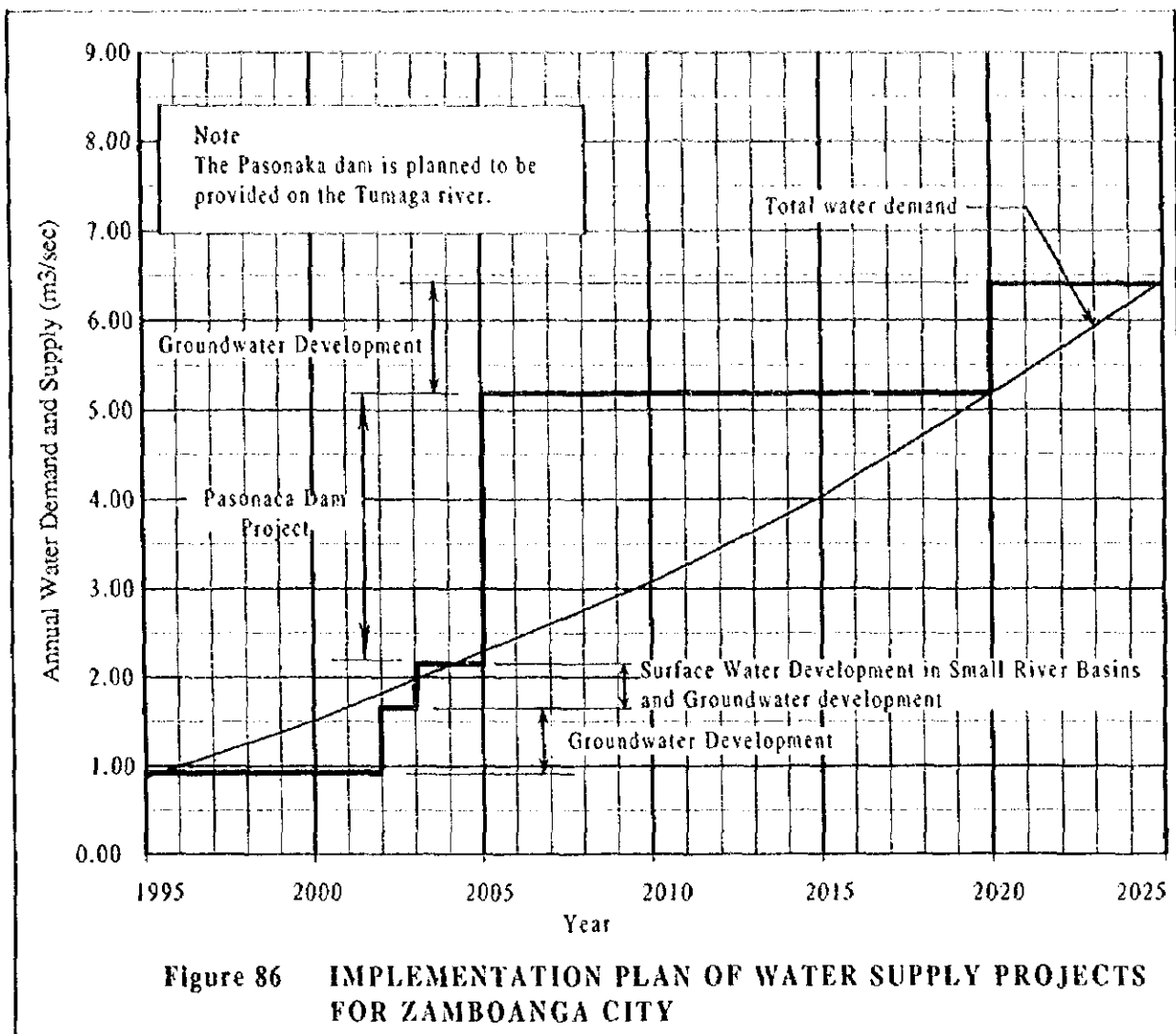


Figure 82 IMPLEMENTATION PLAN OF WATER SUPPLY PROJECTS FOR BAGUIO CITY : SCENARIO-2





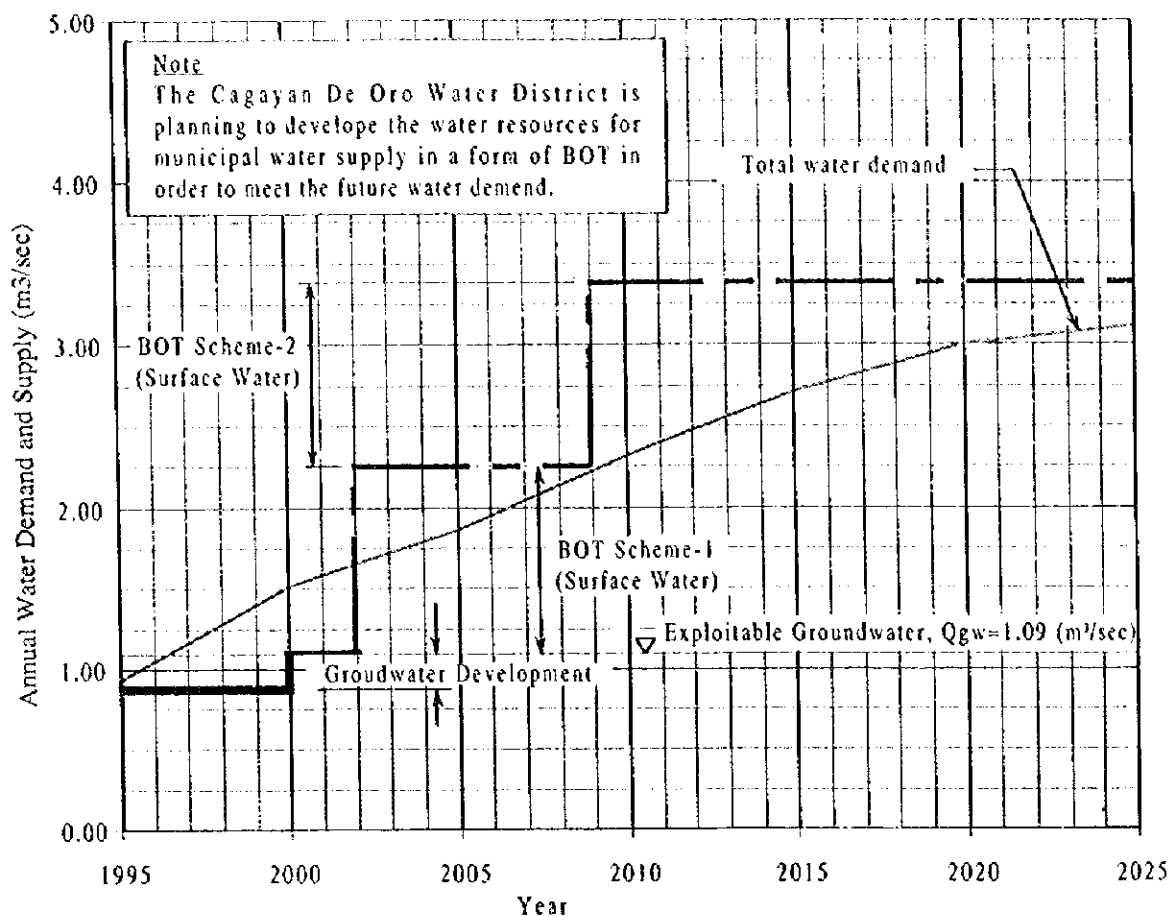


Figure 87

IMPLEMENTATION PLAN OF WATER SUPPLY PROJECTS FOR CAGAYAN DE ORO CITY

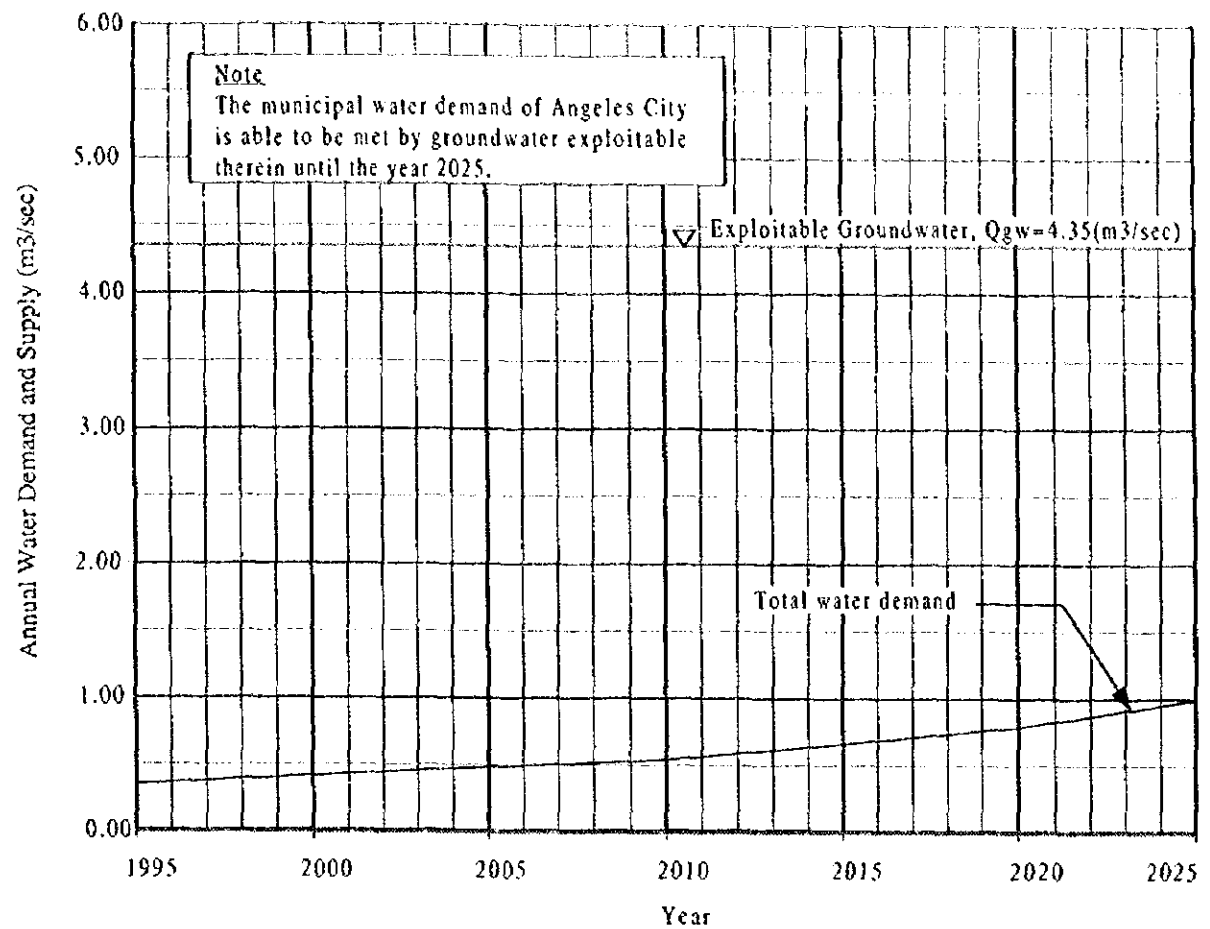
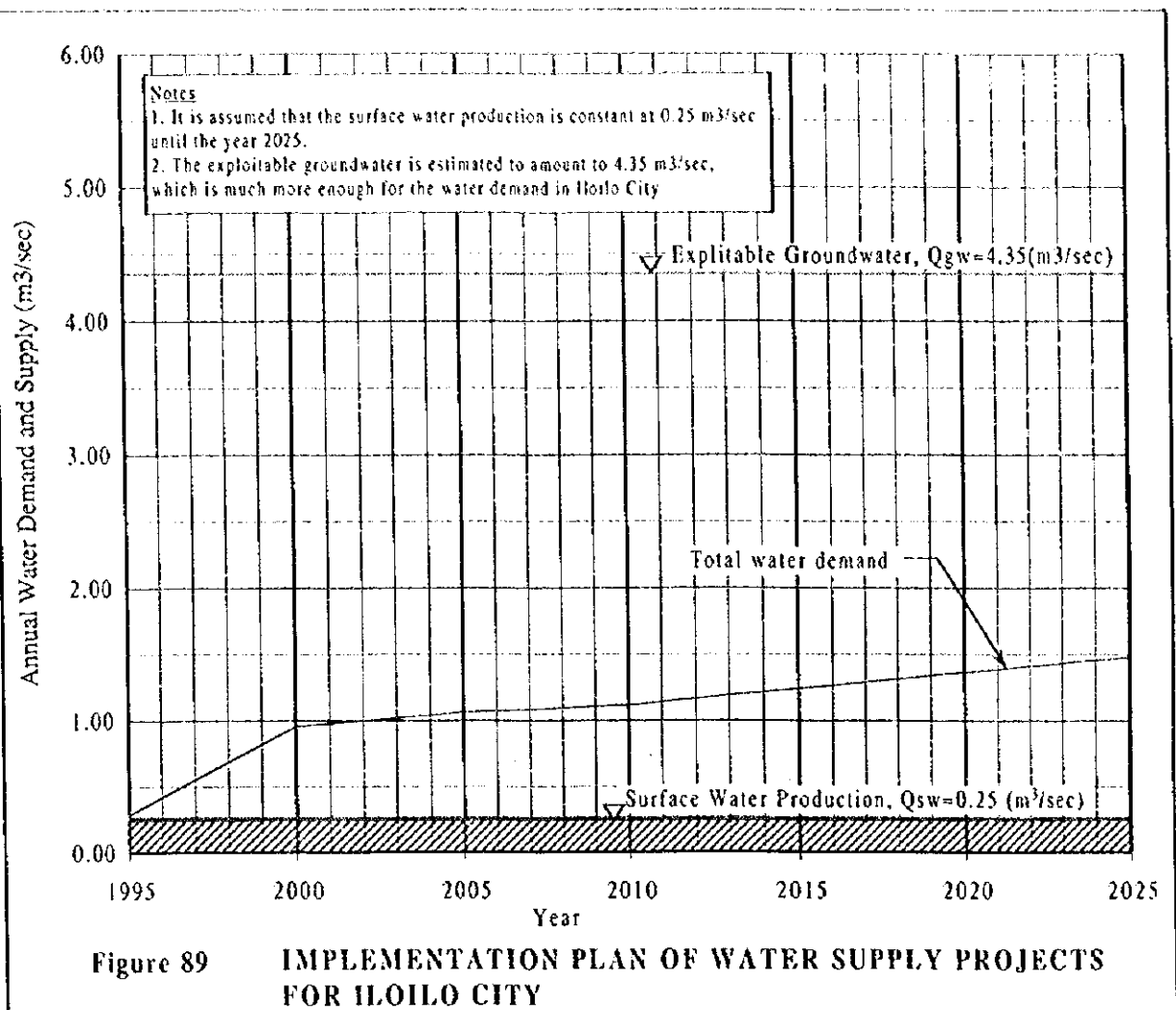


Figure 88 IMPLEMENTATION PLAN OF WATER SUPPLY PROJECTS FOR ANGELES CITY



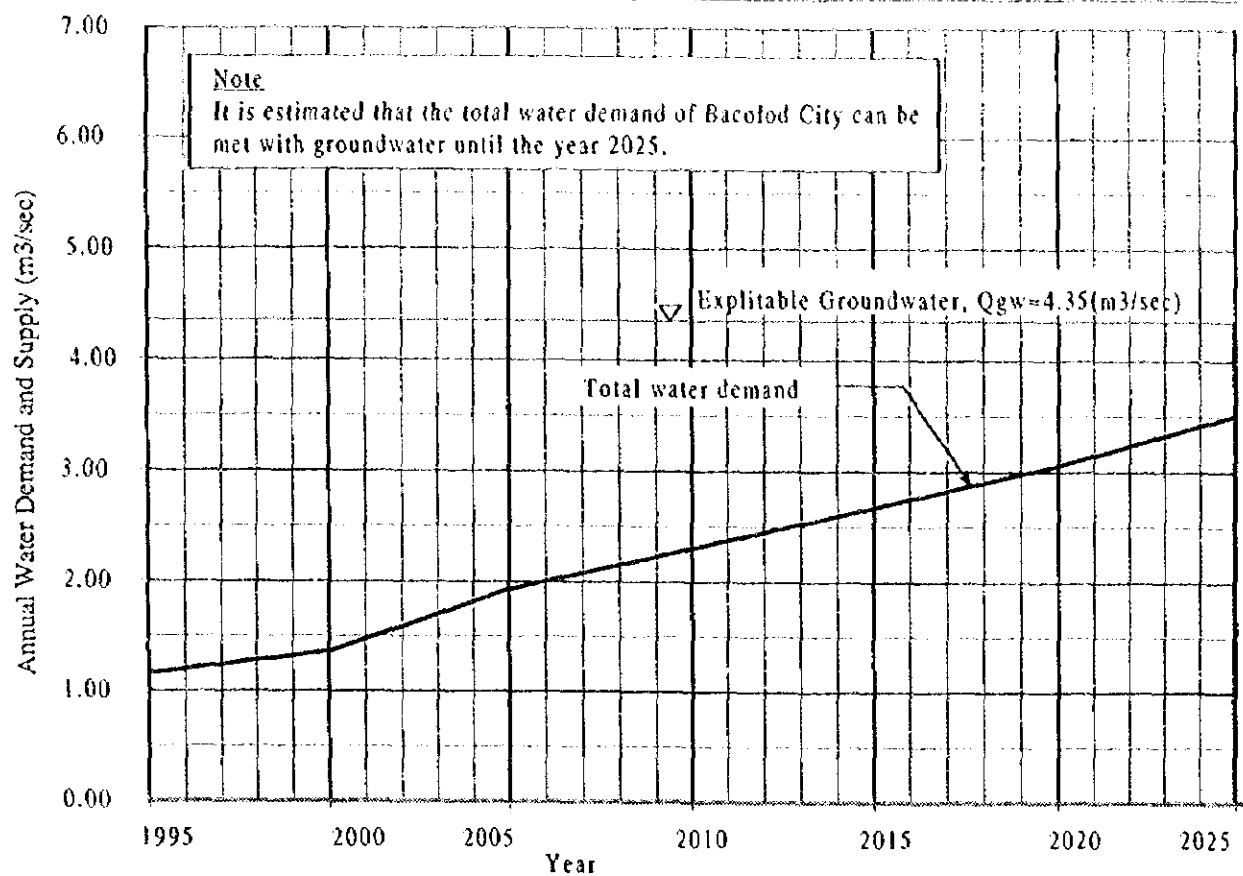


Figure 90 IMPLEMENTATION PLAN OF WATER SUPPLY PROJECTS FOR BACOLOD CITY (SCENARIO-1)

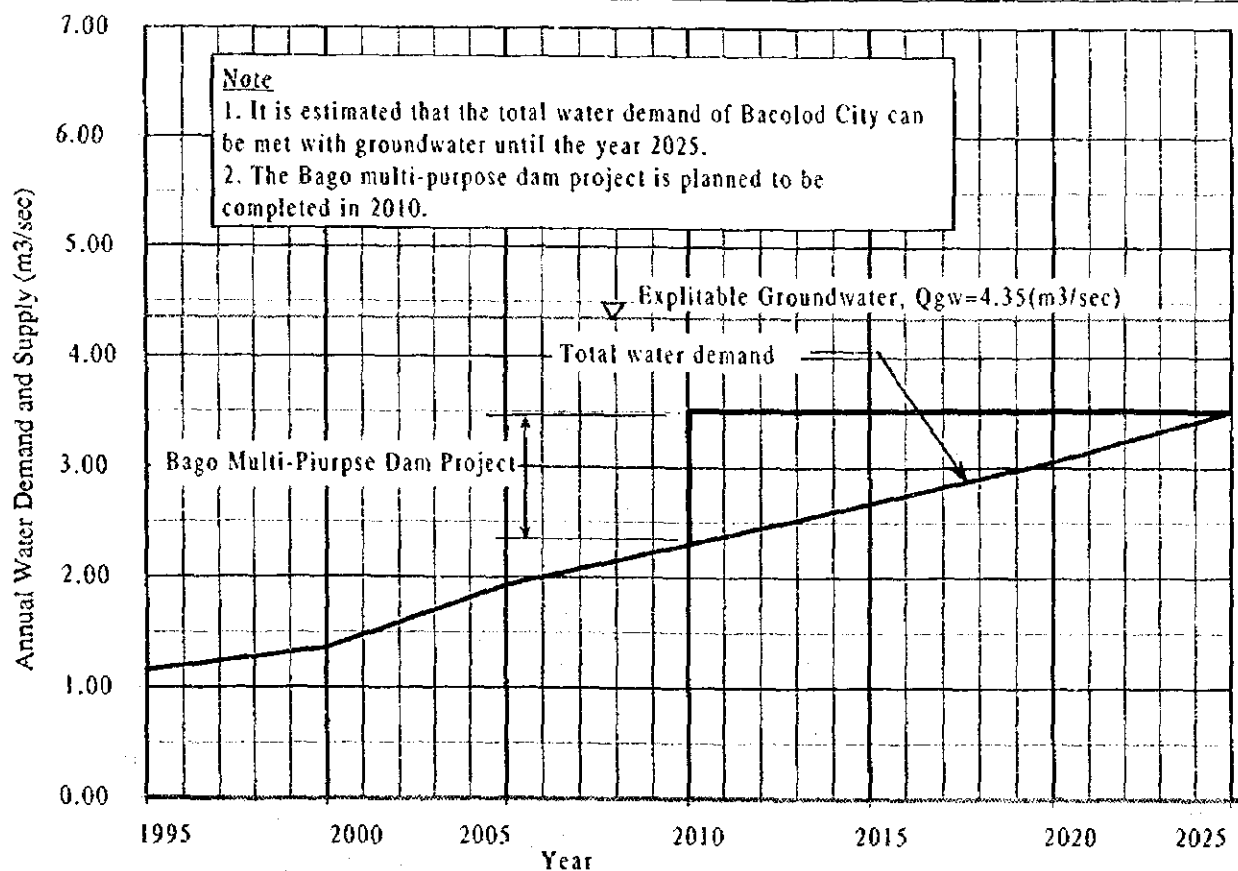


Figure 91 IMPLEMENTATION PLAN OF WATER SUPPLY PROJECTS FOR BACOLOD CITY (SCENARIO-2)

APPENDIX

APPENDIX

- APPENDIX 1 ORGANIZATION OF COMMITTEE CONCERNED WITH THE STUDY
- APPENDIX 2 LIST OF JICA STUDY TEAM MEMBERS
- APPENDIX 3 IMPLEMENTATION PROGRAM OF PROPOSED STORAGE TYPE
DAM PROJECT
- APPENDIX 4 IMPLEMENTATION PROGRAM OF PROPOSED WATER SUPPLY
PROJECT FOR MAJOR CITIES
- APPENDIX 5 IMPLEMENTATION PROGRAM OF PROPOSED IRRIGATION
PROJECT



APPENDIX 1 ORGANIZATION OF COMMITTEE CONCERNED WITH THE STUDY

A. JICA ADVISORY COMMITTEE

(i) Before March 1998		(ii) After March 1998	
Position	Name	Position	Name
Team Leader	Mr. Kazuyuki Sakanoi	Team Leader	Mr. Shigeo Ochi
Member	Mr. Katsunori Takagi	Member	Mr. Takahisa Hikichi
Member	Mr. Yuji Watanabe	Member	Mr. Yuji Watanabe
JICA Coordinator	Mr. Katsuyoshi Saito	JICA Coordinator	Mr. Katsuyoshi Saito

B. STEERING COMMITTEE

Agency	Position	Name
National Water Resources Board (NWRB)	Chairman	Dir. Luis M. Sosa Executive Director
National Economic and Development Authority (NEDA)	Member	Dir. Ruben S. Reinoso Director
Department of Public Works and Highways (DPWH)	-do-	Mrs. Helen G. Marvilla OIC, Project Manager
Department of Environment and Natural Resources (DENR)	-do-	Mr. Jose D. Malvas, Jr Director
Department of Health (DOH)	-do-	Dr. Mario Villaverde Director
Department of Interior and Local Government (DILG)	-do-	Mr. Normando J. Toledo Director, OPDS
Department of Agriculture (DA)	-do-	Dir. Rogelio Concepcion Director
Department of Trade and Industry (DTI)	-do-	Mr. Celestiano B. Santiago OIC, Director
National Irrigation Administration (NIA)	-do-	Mr. Edilberto B. Punzal Manager
Local Water Utilities Administration (LWUA)	-do-	Mr. Edwin Ruiz Department Manager
Metropolitan Waterworks and Sewerage System (MWSS)	-do-	Mr. Francisco Arellano Department Manager
National Power Corporation (NPC)	-do-	Mr. Emmanuel E. Antiola OIC, Division Manager
Presidential Task Force on Water Resources Mgt.	-do-	Atty. Mary Mai Flor Exec. Director
Bureau of Research & Standard, DPWH	-do-	Mr. Raul C. Asis Director

C. TECHNICAL WORKING GROUP / COUNTERPART PERSONNEL

Designation	Name	Agency	
Team Leader	Melchor O. Baltazar	NWRB	Full-time assignment
Water Resources Planner	Lope R. Villenas	NWRB	-do-
Hydrologist	Jorge M. Estioko	NWRB	-do-
	Antonio V. Molano, Jr.	DPWH	Part-time assignment
Hydrogeologist	Isidra D. Penaranda	NWRB	Full-time assignment
Water Demand	Emmie L. Ruales	NWRB	-do-
Forecasting Planner	Arlene C. Diaz	NWRB	-do-
(Industrial Water)	Marietta Flores	MWSS	Part-time assignment
Water Demand	Pacita F. Barba	NWRB	Full-time assignment
Forecasting Planner	Evelyn V. Ayson	NWRB	-do-
(Irrigation)	Silvino Alonzo, Jr.	NIA	Part-time assignment
Groundwater	Jesusa T. Roque	NWRB	Full-time assignment
Resource Planner	Higino C. Mangosing, Jr.	NWRB	-do-
	Jose Rene Rancesvalle	LWUA	Part-time assignment
Dam Engineer	Luis S. Rongavilla	NWRB	Full-time assignment
	Romualdo T. Beltran	NPC	Part-time assignment
Database Specialist	Susan P. Abano	NWRB	Full-time assignment
	Ma. Charina M. Gonzales	NWRB	-do-
	Ma. Victoria M. Astraquillo	NWRB	-do-
Construction Planner	Leonila A. Cagatin	NWRB	-do-
	Filomeno Ventura	NIA	Part-time assignment
Institutional Planner	Jesus G. de Leon	NWRB	Full-time assignment
	Elena Luz J. Alojipan	NWRB	-do-
	Rogelio B. Ocampo	DILG	Part-time assignment
Socio-economist	Florinel R. Balbedina	NWRB	Full-time assignment
	Francis Hilarie	NWRB	-do-
	Librado F. Quitariano	NEDA	Part-time assignment
Environmentalist/Water	Dolores S.D. Cleofas	NWRB	Full-time assignment
Quality Analyst	Jose J. Beltran	NWRB	-do-
	Marcelino Rivera, Jr.	DENR	Part-time assignment
Coordinator	Felisa M. Manlulu	NWRB	Full-time assignment
	Ramon G. Romero	NWRB	-do-

D. ADMINISTRATIVE AND SUPPORTING STAFF

Designation	Name	Agency	
Administrative & Financial Officer	Belen T. Tormon	NWRB	Full-time assignment
Accountant	Marilyn T. San Pedro	NWRB	-do-
Budget Officer	Elizabeth P. Sepina	NWRB	-do-
Personnel Officer	Normita G. Flores	NWRB	-do-
Disbursing Officer	Remigia V. Beadoy	NWRB	-do-
Supply Officer	Susan V. Tenorio	NWRB	-do-
Data Encoder/Researcher	Lilian P. Gacusan	NWRB	-do-
Data Encoder/Researcher	Milagros M. Velasco	NWRB	-do-
Data Encoder/Researcher	Josephine R. Billones	NWRB	-do-
Data Encoder/Researcher	Ma. Angelica T. Raquepo	NWRB	-do-
Tracer/Draftsman	Nora M. Andrade	NWRB	-do-
Liaison Officer	David M. de Jesus	NWRB	-do-
Secretary	Arleen E. Batac	NWRB	-do-
Machine Operator	Larry E. Aquino	NWRB	-do-
Utilityman	Alberto V. Bautista	NWRB	-do-
Driver	Isidro L. Simeon	NWRB	-do-
Driver	Eduardo F. Pacio	NWRB	-do-
Driver	Meynardo C. Balba	NWRB	-do-

APPENDIX 2 LIST OF JICA STUDY TEAM MEMBERS

	Name	Organization	Position
(1)	Norio Takayanagi	NK	Team Leader
(2)	Toshio Katayama	NK	Water Resources Planner
(3)	Harold E. Mullis	(NK)	Hydrologist
(4)	Kenji Takayanagi	NJS	Hydrogeologist
(5)	Nobuki Abe	NJS	Water Demand Analyst (Municipal and Industrial Water)
(6)	Emerson M. Coloma	(NK)	Water Demand Analyst (Agricultural Water)
(7)	Nobukatsu Sakiyama	NJS	Groundwater Resources Planner
(8)	Yasuo Iwasaki	NK	Dam Engineer
(9)	Takenori Morita	NK	Database Specialist
(10)	Hidenori Matsuura	NK	Construction Planner
(11)	Aramando C. Lizaso	(NJS)	Institutional Planner
(12)	Kiminori Tachiyama	(NK)	Socio-Economist
(13)	Juntaro Mizutani	NJS	Environmental Expert
(14)	Shigeyoshi Hanada	NK	Project Cycle Management (PCM) Expert
(15)	Yutaka Baba	NK	Assistant Coordinator

Note

NK : Nippon Koei Co., Ltd.

NJS : Nippon Kogesuido Sekkei Co., Ltd.

APPENDIX 3 IMPLEMENTATION PROGRAM OF PROPOSED STORAGE TYPE DAM PROJECT (1/2)

Region Code	Project Name	River Name	Implementation Schedule																						
			2000					2010					2020												
			98	99	1	2	3	4	5	6	7	8	9	11	12	13	14	15	16	17	18	19	21	22	23
WRR I	Palsiguan-Nueva Multi-Purpose Dam Project	Laoag/Abra River	•	•	•	•	•	•	•																
WRR I	Cula-Gasgas-Tina Multi-Purpose Dam Project	Laoag/Cura, Tina River															•	•	•	•	•	•			
WRR I	Binongan Multi-Purpose Dam Project	Abra River															•	•	•	•	•	•			
WRR II	Malig II Multi-Purpose Dam Project	Cagayan River	•	•	•	•	•	•	•																
WRR II	Matuno Multi-Purpose Dam Project	Cagayan River			•	•	•	•	•	•	•														
WRR II	Addalan A Dam Hydroelectric Power Project	Cagayan River				•	•	•	•																
WRR II	Ilague B Dam Hydroelectric Power Project	Cagayan River				•	•	•	•																
WRR II	Aglubu Dam Project	Abulog/Apayao River	•	•	•	•	•	•	•	•															
WRR III	Balog-Balog Multi-Purpose Dam Project	Agno River															•	•	•	•	•	•			
WRR III	Balintongan Multi-Purpose Dam Project	Pampanga River	•	•	•	•	•	•	•																
WRR III	Bayabas Dam Project and Maasim Dam Project	Bayabas & Maasim River	•	•	•	•	•	•	•	•															
WRR IV	Amnay Dam	Amnay-Patric River																				•	•	•	•
WRR V	Talisay Multi-Purpose Dam Project	Bicol River											•	•	•	•	•	•							
WRR VI	Panay Multi-Purpose Dam Project	Panay River						•	•	•	•	•	•												
WRR VI	Jalaur Multi-Purpose Dam Project	Jalaur River															•	•	•	•	•	•			
WRR XI	Ilog No. I Dam Project	Ilog-Hilabangan River						•	•	•	•	•	•												
WRR X	Bulang-Batang Dam Project	Cagayan de Oro	•	•	•	•	•																		
WRR X	Tagaloan Dam	Tagaloan River																•	•	•	•	•			
WRR XI	Bubonao Dam	Tagum-Libuganon River																•	•	•	•	•			

Note:

* : The Bayabas and Maasim Dam Project is an alternative to the water supply project originally planned by MWSS.

APPENDIX 3 IMPLEMENTATION PROGRAM OF PROPOSED STORAGE TYPE DAM PROJECT (2/2)

Region Code	Project Name	River Name	Implementation Schedule																								
			2000					2010										2020									
			98	99	1	2	3	4	5	6	7	8	9	11	12	13	14	15	16	17	18	19	21	22	23	24	25
WRR XI	Davao II Multi-Purpose Dam Project	Davao River			○	○	○	○	○	**							●	●	●	●	●	●					
WRR XI	Dimuloc Multi-Purpose Dam Project	Buayan-Malungan River										●	●	●	●	●	●										
WRR XII	Plangi V Dam Project	Mindanao River	●	●	●	●	●																				

Note:
** : The Bayabas and Maasin Dam Project is an alternative to the water supply project originally planned by MWSS.

**APPENDIX 4 IMPLEMENTATION PROGRAM OF PROPOSED WATER SUPPLY PROJECT FOR
SELECTED MAJOR CITIES (1/2)**

Region Code	Project Name	River Name	Implementation Schedule																								
			2000					2010					2020														
			98	99	1	2	3	4	5	6	7	8	9	11	12	13	14	15	16	17	18	19	21	22	23	24	25
WRR IV	Water Supply Project for Metro Manila																										
	Kanan-Kaliwa Transbasin Project (Scenario-1)	Kanan River																									
	Manila Water Supply III Laiban Dam (Scenario-1)	Kaliwa River																									
	Pampanga Water Conveyance Project (Scenario-2)	Pampanga River																									
	Kanan-Uniray Transbasin Project (Scenario-2)	Kanan River																									
	Maasin Dam Project (Scenario-2 and 3)	Maasin River																									
	Bayabas Dam Project (Scenario-2 and 3)	Bayabas River																									
	Kaliwa-Water Conveyance Project (Scenario-3)	Kaliwa River																									
	Water Supply Project for Metro Cebu																										
	Bohol-Cebu Water Supply Project Phase-I(Scenario-1 and 2)	Inabanga River																									
WRR VII	Bohol-Cebu Water Supply Project Phase-II(Scenario-1 and 2)	Inabanga River																									
	Lusaran Dam Project Phase-1 (Scenario-1)	Balamban River																									
	Mananga II Dam project (Scenario-1)	Mananga River																									
	Malubog-Mananga Transbasin Project (Scenario-2 and 3)	Sapang Daku River																									
	Lusaran- Pulambato Transbasin Project (Scenario-2 and 3)	Balamban & Butuanon																									
	Water Supply Project for Baguio City																										
	Laboy Dam Water Supply Project (Scenario-1)	Laboy River																									
	Bulk Water Supply Project (Scenario-1)	Laboy River																									
	Rehabilitation of Amilang Spring Stage-I, St. Thomas Reservoir (Scenario-1)	Amilang Spring																									
	Laboy Weir Water Supply Project (Scenario-2)	Laboy River																									

**APPENDIX 4 IMPLEMENTATION PROGRAM OF PROPOSED WATER SUPPLY PROJECT FOR
SELECTED MAJOR CITIES (2/2)**

Region Code	Project Name	River Name	Implementation Schedule																								
			2000					2010										2020									
			98	99	1	2	3	4	5	6	7	8	9	11	12	13	14	15	16	17	18	19	21	22	23	24	25
WRR III	Ambuklao Water Conveyance Project (Scenario-2) Water supply project for Davao City	Agno River																									
WRR XI	Davao II Dam Project (Alternative to BOT Project)																										
WRR IX	Water supply project of Zamboanga City Pasonaca Dam Project																										
WRR VI	Water supply project for Bacolod City Bago Multi-Purpose Dam Project (Alternative to Ground Water Development)																										

APPENDIX 5 IMPLEMENTATION PROGRAM OF PROPOSED IRRIGATION PROJECT (1/6)

Region Code	Project Name	River Name	Implementation Schedule																											
			2000					2010										2020												
			98	99	1	2	3	4	5	6	7	8	9	11	12	13	14	15	16	17	18	19	21	22	23	24	25			
WRR 3	(On-going Irrigation Project) Diversified Crops Irrigation Project II		•																											
WRR 4	Palawan Integrated Area Development Project II - IC		•																											
WRR 7	Bohol Irrigation Project I (Until the 1997)																													
WRR 6, 7 & 8	Visayas Communal Irrigation and Participatory Project		•																											
WRR 12	Malitubog-Maridagao Irrigation Project	Maridagao River	•	•	•	•																								
Nation- Wide	Second Communal Irrigation Development Project		•																											
WRR 12	Kabulan Irrigation & Area Development Project	Kabulan River	•																											
WRR 3	Pampanga Delta Development Project (IC)	Pampanga River	•	•	•																									
Nation- Wide	Irrigation Operation Support Project II,		•																											
WRR 10	Lower Agusan Development Project - IC	Agusan River	•	•	•	•																								
WRR 7	Irrigation Systems Improvement Project II		•	•	•	•																								
WRR 3	Casencan Multipurpose Irrigation & Power Project - IC	Casencan River (Cagayan River)	•	•	•	•	•	•																						
Nation- Wide	Water Resource Development Project		•	•	•	•	•																							
Nation- Wide	Repair and Rehabilitation of Existing National and Communal Irrigation Facilities.		•	•	•	•	•	•	•	•	•																			
Nation- Wide	Repair and Rehabilitation of existing Service and Access Roads in National Irrigation Systems, Farm-to- Market Roads Nationwide.		•	•																										
Nation- Wide	Repair and Establishment of Groundwater Pump Projects		•	•	•																									
Nation- Wide	Small Reservoir Irrigation Project (SRIP)		•	•	•	•	•																							
Nation- Wide	Rehab, repair and Improvement of Drainage & Flood Protection System (CIS & NIS)		•	•																										

APPENDIX 5 IMPLEMENTATION PROGRAM OF PROPOSED IRRIGATION PROJECT (2/6)

Region Code	Project Name	River Name	Implementation Schedule																									
			2000					2010										2020										
			98	99	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Nation-Wide	Feasibility Study and Detailed Engineering of Proposed Irrigation Projects		•	•	•	•	•	•	•	•																		
Nation-Wide	Agri-Institutional Development Program Nationwide.		•	•	•	•	•	•	•	•	•																	
WRR 2	Apayao-Abulog Irrigation System Improvement Project Kalinga-Apayao	Abulog River	•	•	•																							
WRR 3	Rehabilitation Of areas affected by Mt. Pinatubo, Tarlac, Zambales & Pampanga		•	•	•																							
WRR 2	Ibayat Integrated Detailed Engineering of Proposed Projects		•	•	•																							
WRR 8	Catubig Irrigation Project		•	•	•																							
WRR 8	Dolores Irrigation Project		•	•	•																							
WRR 8	Basey Irrigation Project	Bugasan River	•	•	•																							
WRR 19	Bubunawan-Tumalaong Irrigation Project	Bubunawan River & Tumalaong River	•	•	•	•																						

APPENDIX 5 IMPLEMENTATION PROGRAM OF PROPOSED IRRIGATION PROJECT (3/6)

Region Code	Project Name	River Name	Implementation Schedule																											
			2000					2010										2020												
			98	99	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
WRR 2	(Priority Pipeline Projects) Addalam River Irrigation Project	Addalam River	•	•	•	•																								
WRR 3	Infanta Impounding Irrigation Project		•	•	•																									
WRR 2	Pump Projects for Corn and Other Diversified Crops		•	•	•	•																								
WRR 4	Upland Irrigation and Rural Development Project in Southern Luzon (Southern Tagalog IP)		•																											
WRR 3	Revitalization of Central Luzon Groundwater Irrigation Project		•	•	•																									
WRR 6, 10 & 11	Southern Philippine Irrigation Sector Project		•	•	•	•	•																							
WRR 7	Aklan RIS and Rural Areas Environment Improvement Project		•	•	•																									
WRR 7	Bohol Irrigation Project II	Wahig-Pamacsalan River	•	•	•	•	•																							
WRR 3	Lower Agno (San Roque) Irrigation Project	Agno River, Ambayonan, Dipalo River	•	•	•	•	•	•	•																					
Nation-Wide	Pump Irrigation Project II (Spanish Loan)		•	•																										
WRR 3	Rationalization Project of Irrigation Water Use for AMRIS Pampanga and Bulacan		•	•	•	•																								
WRR 2	Baligatan Mini-Hydro Project II		•	•																										
WRR 3	North Lawis Irrigation Project		•	•																										
WRR 8	Help for Catubig Agricultural Advancement Project, Stage I		•	•	•	•	•																							
Nation-Wide	Control & Prevention of Sedimentation and Siltation in Irrigation Canal & Facilities		•	•	•	•	•																							
WRR 3	Mapanuepe Lake Irrigation Project	Mapanuepe Lake	•	•	•																									
WRR 6	Sibalom-San Jose Reservoir Project	Naoit River	•	•	•	•																								
WRR 1	Ilocos Sur Transbasin project	Abra River	•	•	•	•	•																							
WRR 1	Ilocos Norte Irrigation Project (Palsiguan) Phase II	Palsiguan River	•	•	•	•	•	•	•																					

APPENDIX 5 IMPLEMENTATION PROGRAM OF PROPOSED IRRIGATION PROJECT (4/6)

Region Code	Project Name	River Name	Implementation Schedule																						
			2000					2010										2020							
			98	99	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
WRR 12	Land Reclamation and Resettlement Project in Liguasan Marsh and Maguindano	Mayag River			•	•	•	•	•																
WRR 10	Lake Mainit Integrated Area Development Project IC				•	•	•	•	•																
WRR 6	Negros Occidental Irrigation Package Negros Occidental				•	•	•	•	•	•															
WRR 6	Jalaur Irrigation Systems and Rural Areas Development Project Iloilo				•	•	•	•	•	•															

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