

**LEGEND**

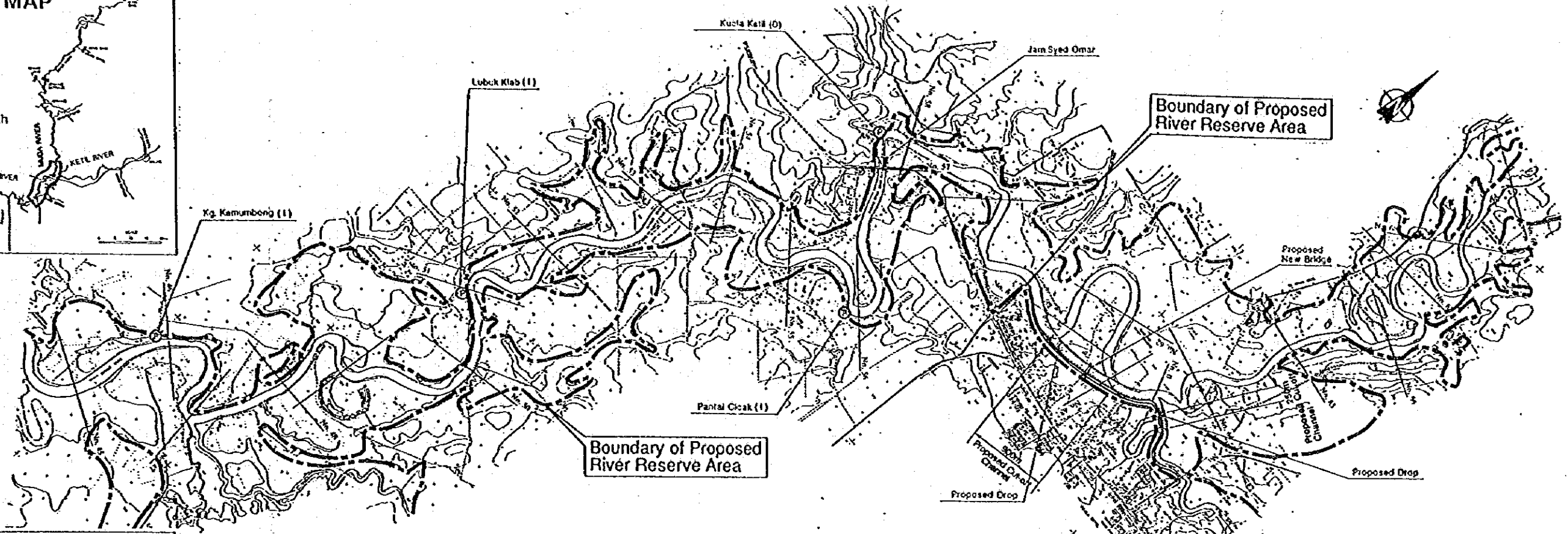
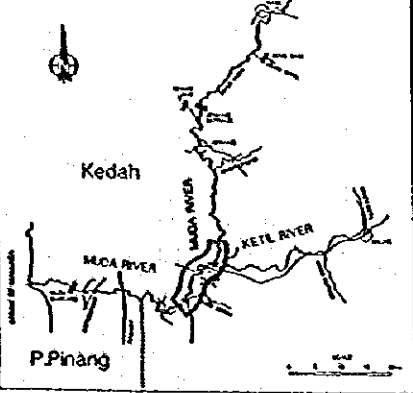
—	Proposed Dam	◁	Proposed Drop
—	Proposed Low Water Channel	▽	Discharge Station
△△△△△	Proposed Revestment	◇	Proposed Silt
----	Existing Sea Ckts	⊙	Pump Station
—	Boundary of Proposed River Reserve Area	(I)	Irrigation Purpose
—	Proposed Barrage	(O)	Corrective/Industrial Purpose

**COMPREHENSIVE MANAGEMENT PLAN OF  
MUDA RIVER BASIN**

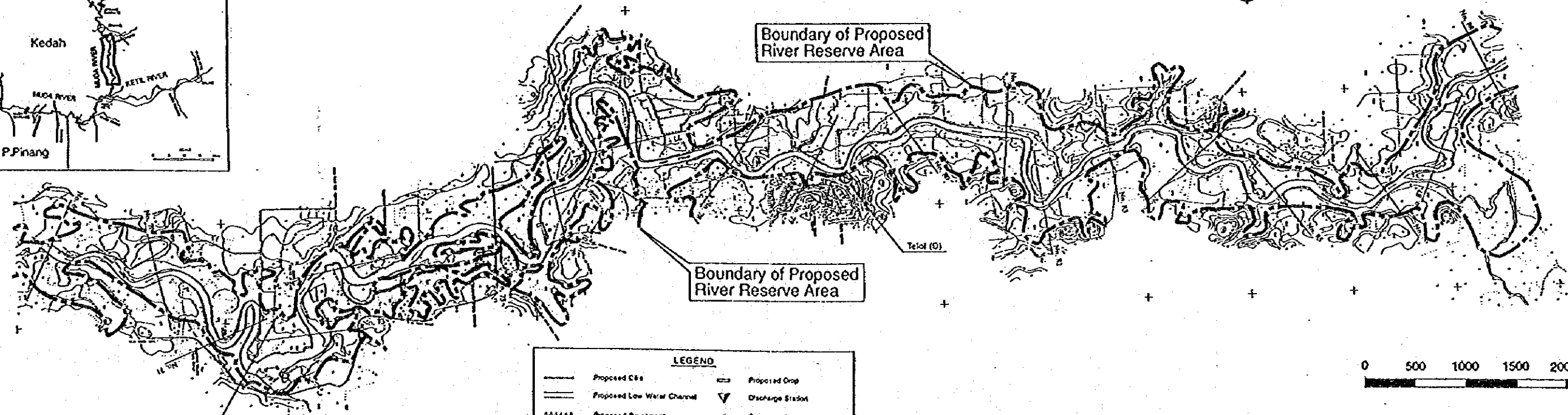
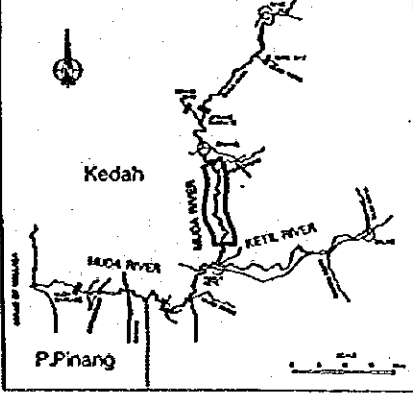
JAPAN INTERNATIONAL COOPERATION AGENCY

図 3.2.1 (1/3)  
ムダ川の計画河川保全区域

**INDEX MAP**

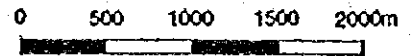


**INDEX MAP**



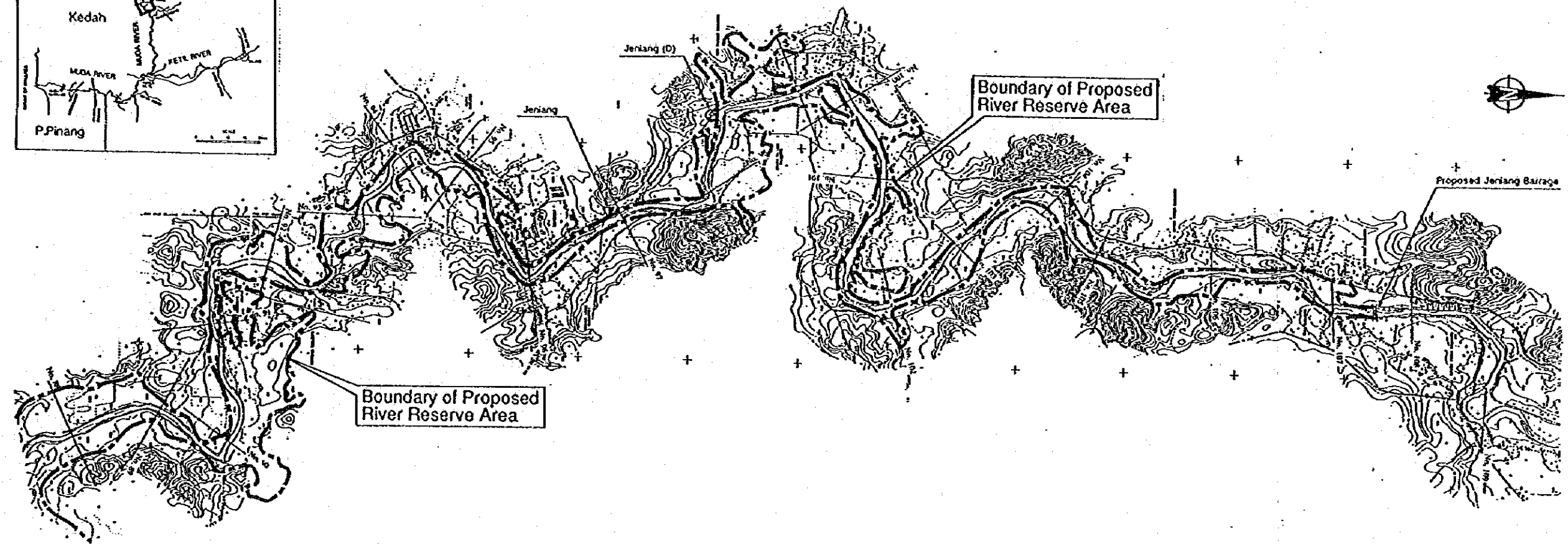
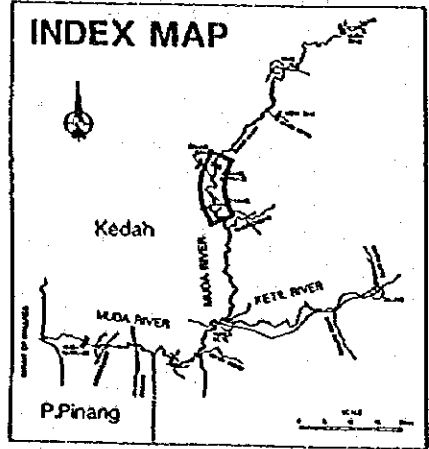
**LEGEND**

—	Proposed C&S	—	Proposed Drop
—	Proposed Low Water Channel	▽	Discharge Station
△△△△	Proposed Revetment	○	Proposed Sluice
----	Existing Sea C&S	⊙	Pump Station
—	Boundary of Proposed River Reserve Area	(1)	Irrigation Purpose
—	Proposed Barrage	(0)	Domestic / Industrial Purpose



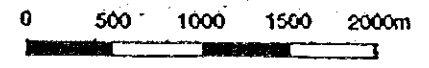
COMPREHENSIVE MANAGEMENT PLAN OF  
MUDA RIVER BASIN  
JAPAN INTERNATIONAL COOPERATION AGENCY

図 3.2.1 (2/3)  
ムダ川の計画河川保全区域



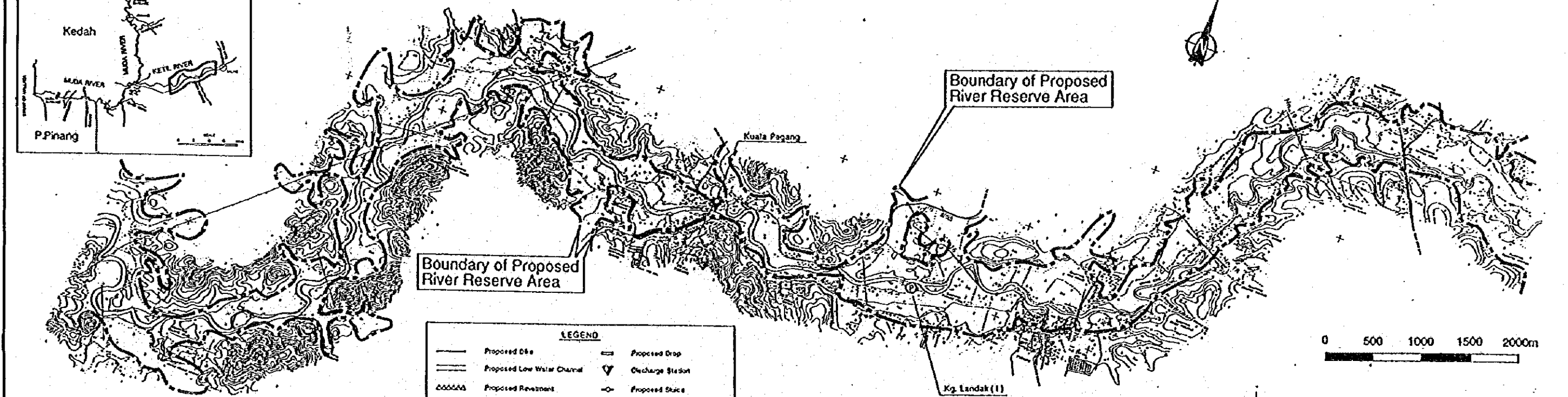
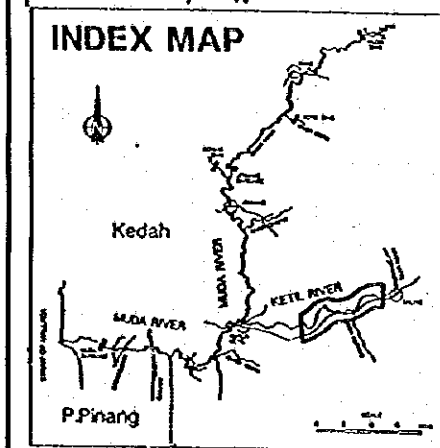
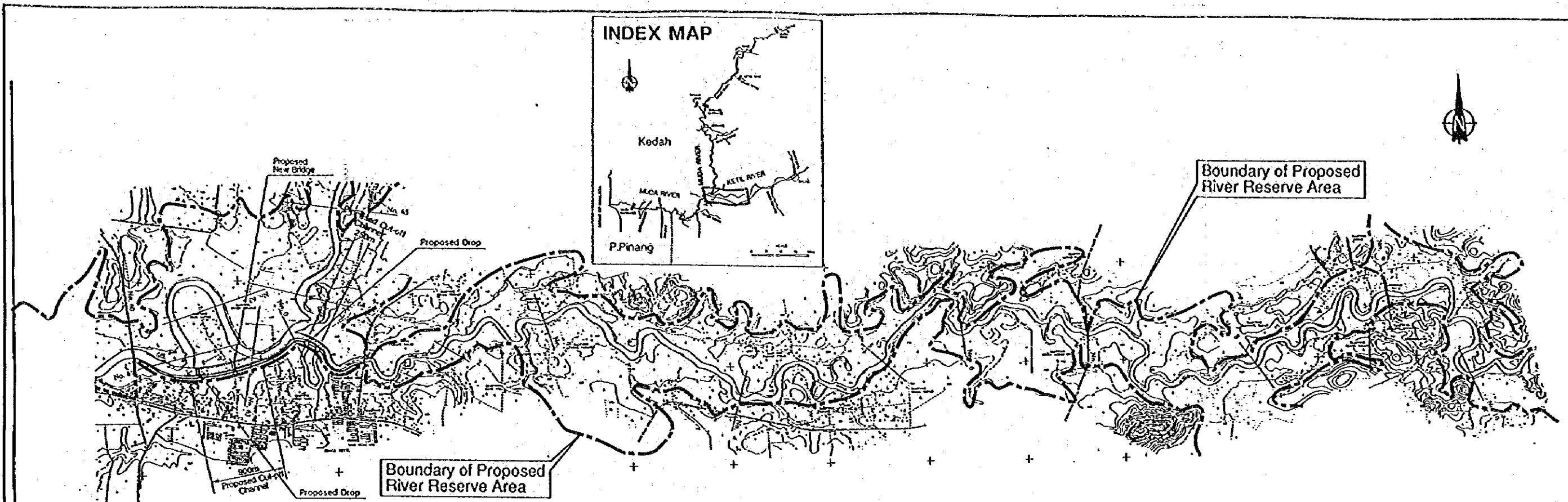
**LEGEND**

—	Proposed Dike	—	Proposed Drop
—	Proposed Low Water Channel	▽	Discharge Station
δδδδδδ	Proposed Revetment	◇	Proposed Sluice
- - - -	Existing Sea Dike	⊙	Pump Station
—	Boundary of Proposed River Reserve Area	(I)	Irrigation Purpose
—	Proposed Barrage	(D)	Domestic / Industrial Purpose



COMPREHENSIVE MANAGEMENT PLAN OF  
MUDA RIVER BASIN  
JAPAN INTERNATIONAL COOPERATION AGENCY

図 3.2.1 (3/3)  
ムダ川の計画河川保全区域



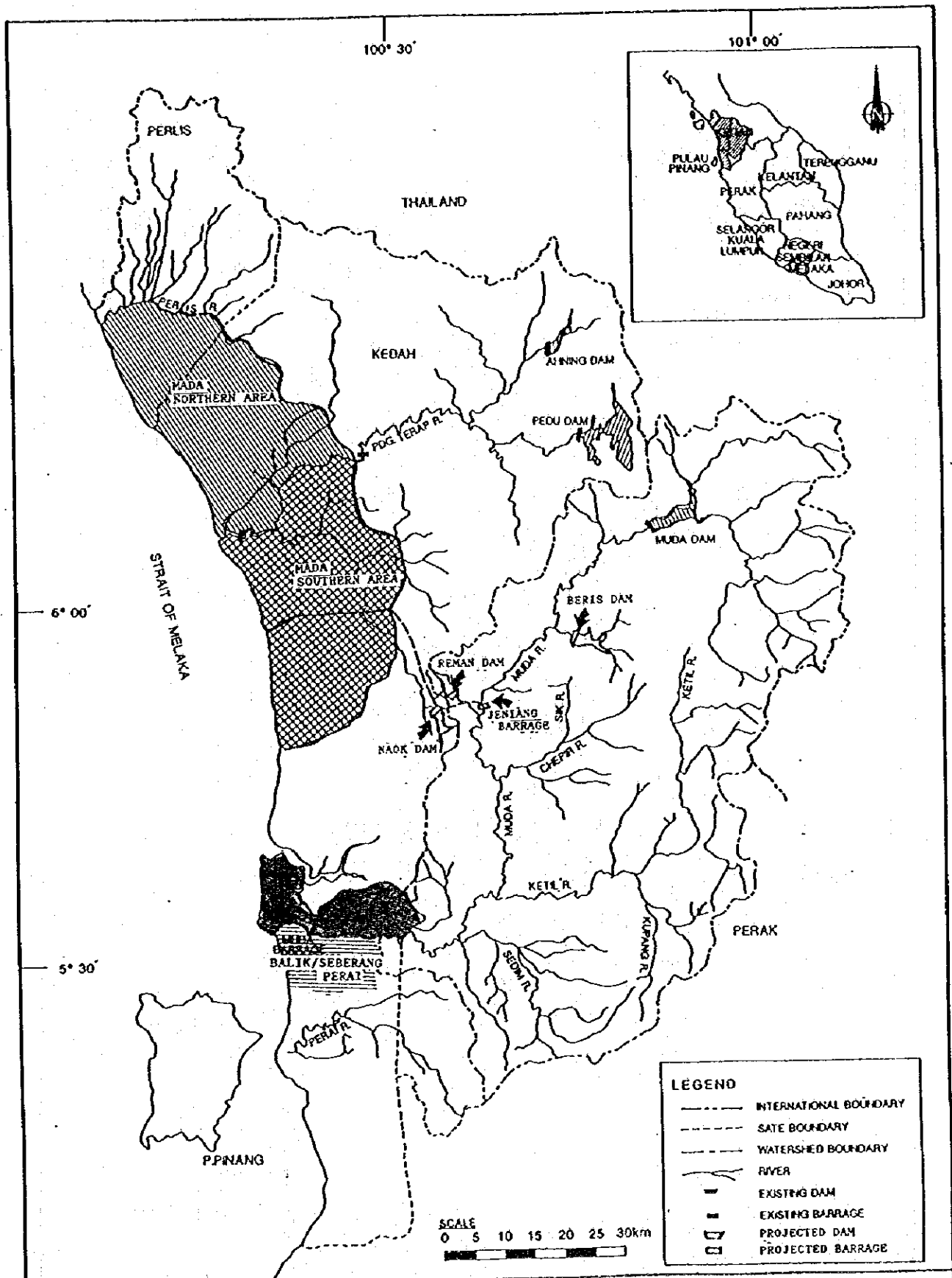
**LEGEND**

—	Proposed Dam	—	Proposed Drop
—	Proposed Low Water Channel	▽	Discharge Station
○○○○○	Proposed Reversion	◇	Proposed Sluice
-----	Existing Sea Dike	⊙	Pump Station
-----	Boundary of Proposed River Reserve Area	(I)	Irrigation Purpose
—	Proposed Barrage	(O)	Domestic / Industrial Purpose

**COMPREHENSIVE MANAGEMENT PLAN OF  
MUDA RIVER BASIN**  
JAPAN INTERNATIONAL COOPERATION AGENCY

**図 3.2.2**  
クティル川の計画河川保全区域

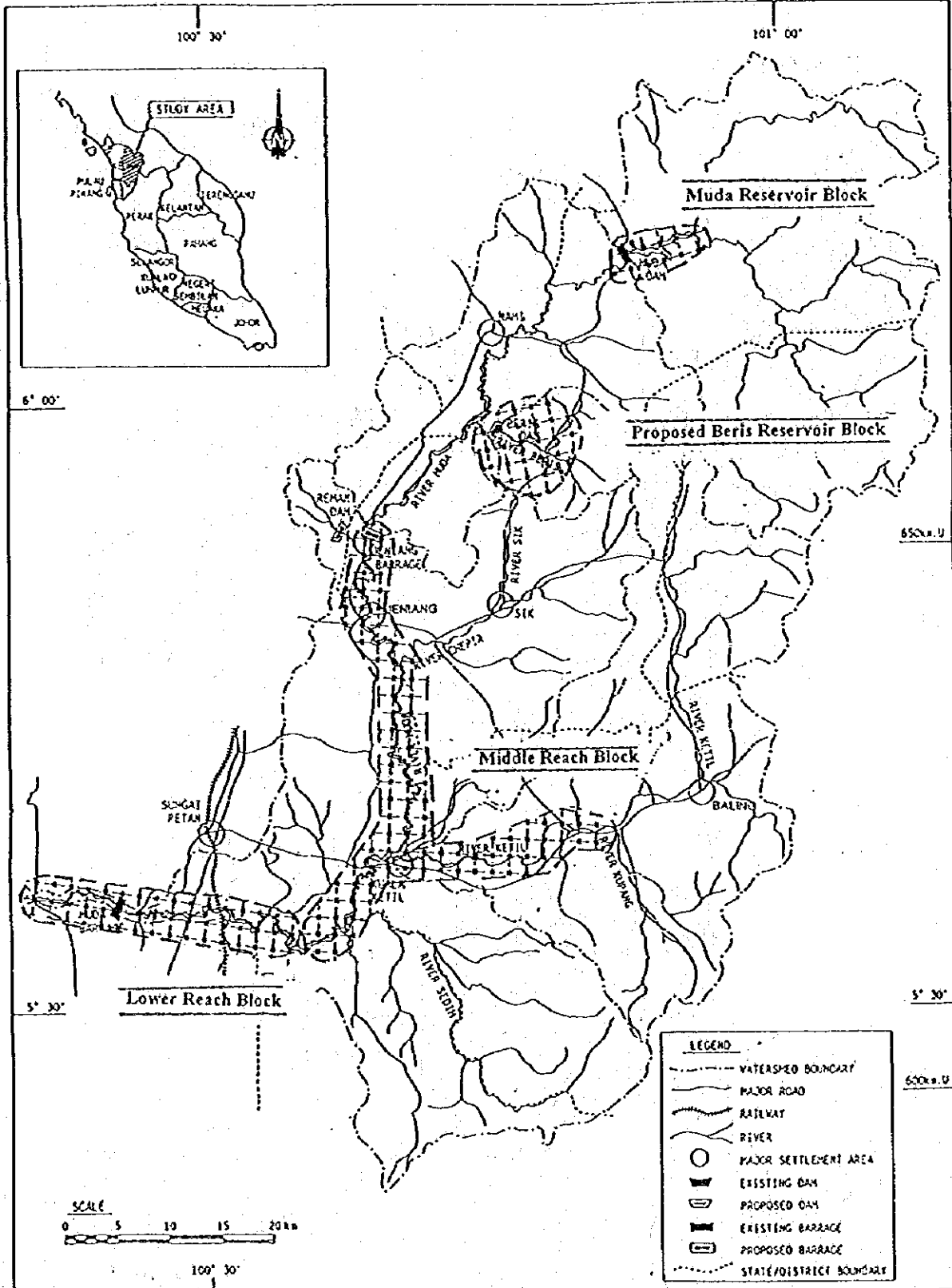




COMPREHENSIVE MANAGEMENT PLAN OF  
MUDA RIVER BASIN

図 4.2.1  
水資源開発施設

JAPAN INTERNATIONAL COOPERATION AGENCY

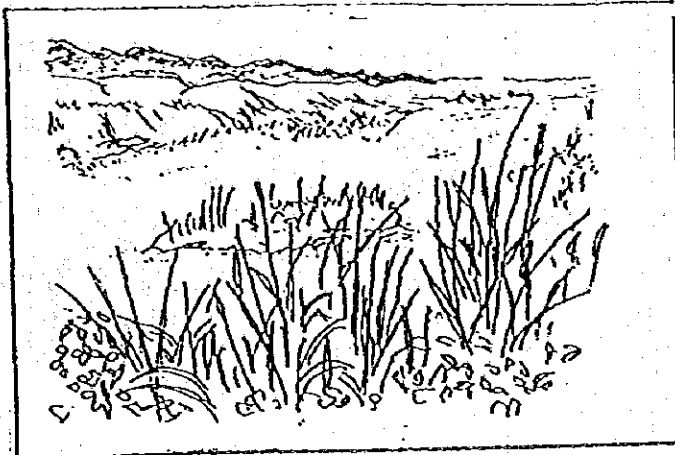


COMPREHENSIVE MANAGEMENT PLAN OF  
MUDA RIVER BASIN

JAPAN INTERNATIONAL COOPERATION AGENCY

図 5.2.1

河川空間環境整備計画のブロック区分



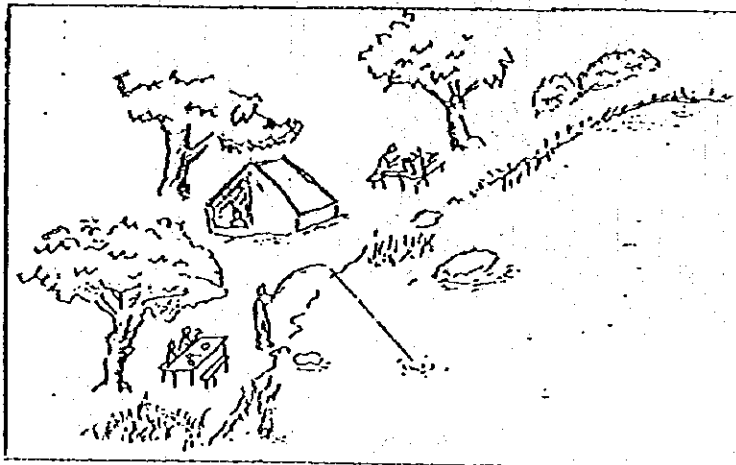
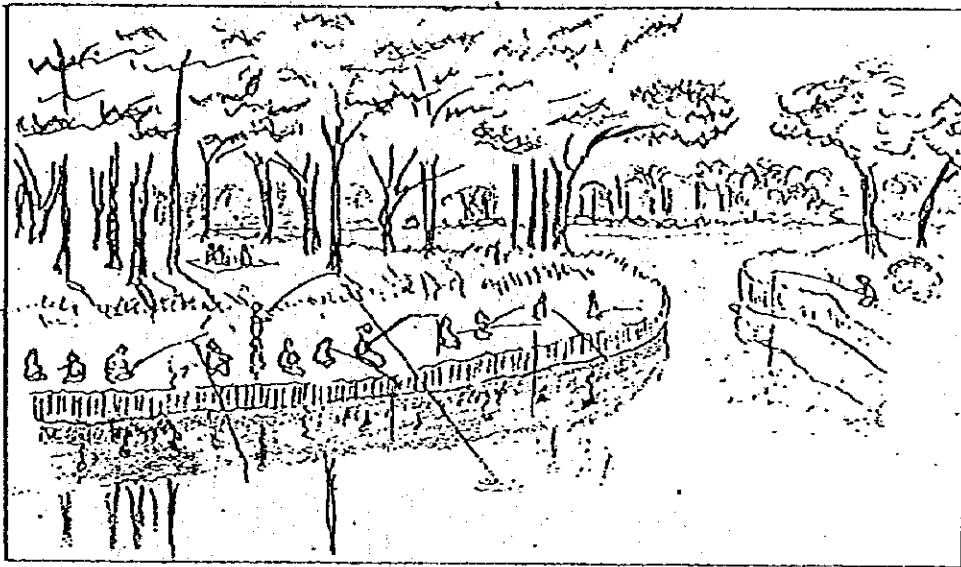
Zone type A : Natural Reserve Zone

COMPREHENSIVE MANAGEMENT PLAN OF  
MUDA RIVER BASIN

JAPAN INTERNATIONAL COOPERATION AGENCY

図 5.2.2  
自然保全ゾーンのイメージ図





Zone Type B :

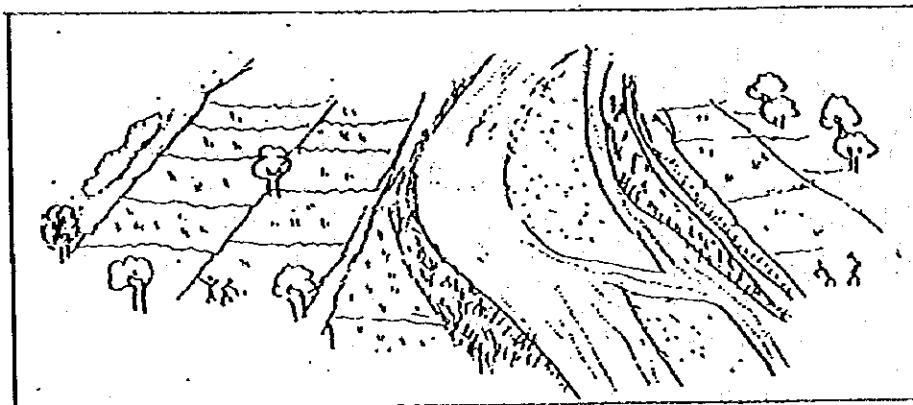
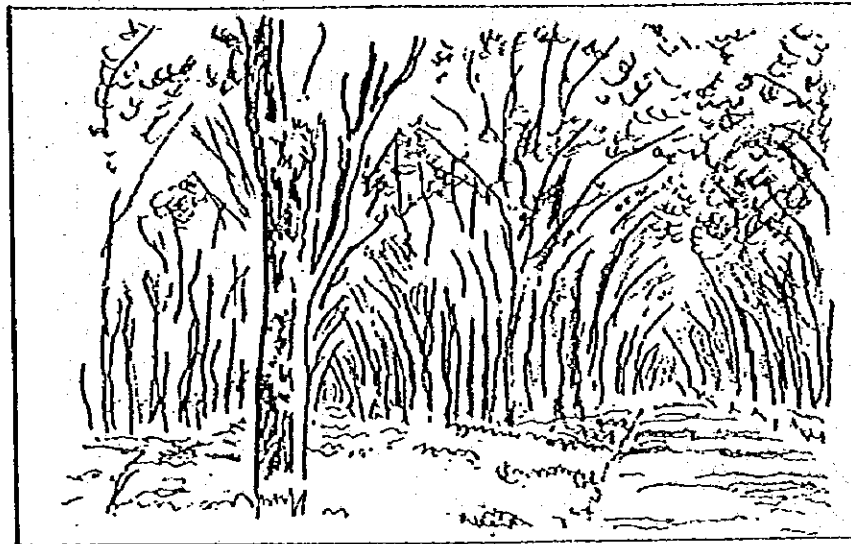
Natural Use Zone

COMPREHENSIVE MANAGEMENT PLAN OF  
MUDA RIVER BASIN

JAPAN INTERNATIONAL COOPERATION AGENCY

図 5.2.3

自然利用ゾーンのイメージ図

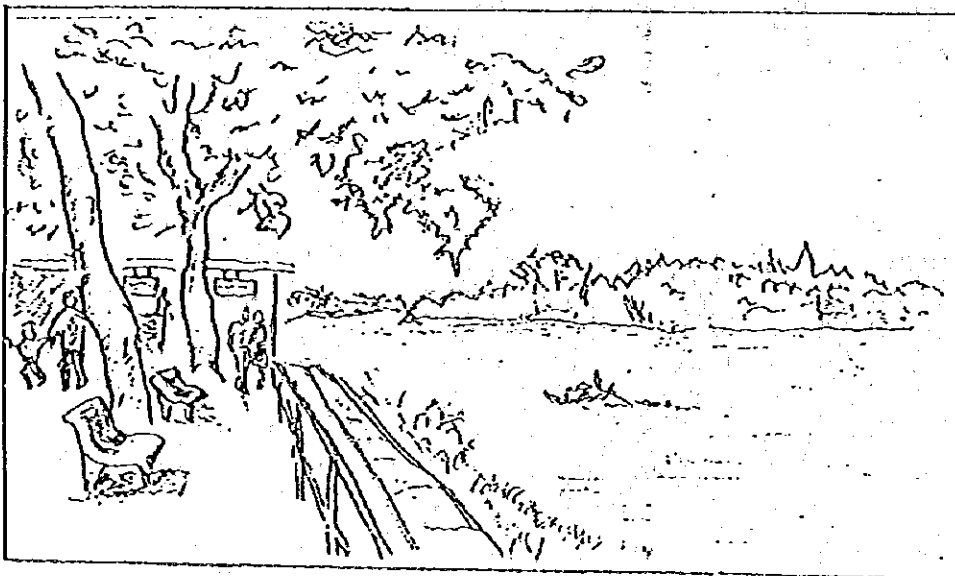
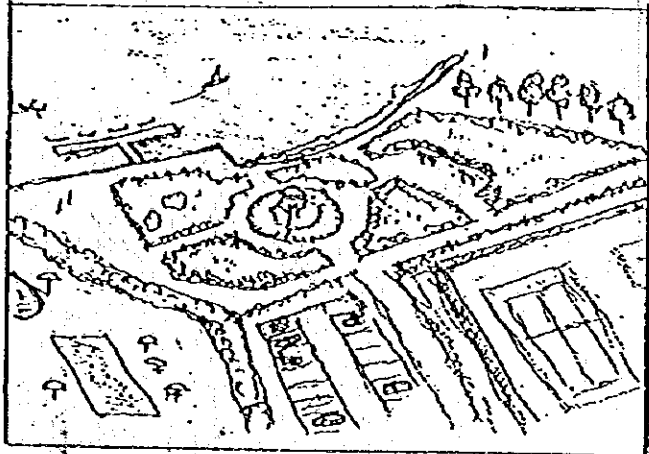
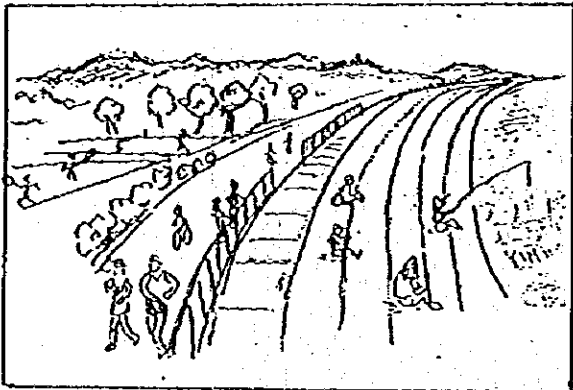
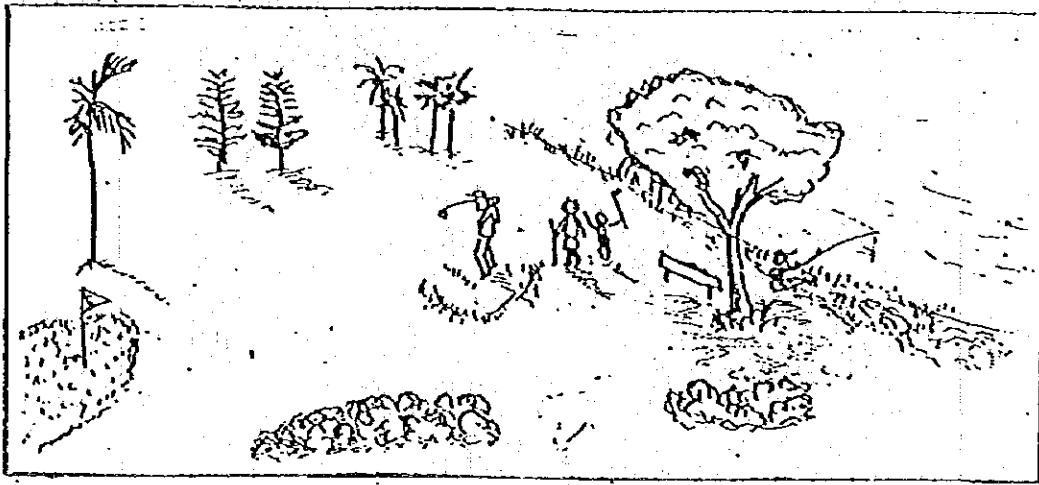


Zone Type C: Agriculture Land Zone

COMPREHENSIVE MANAGEMENT PLAN OF  
MUDA RIVER BASIN

図 5.2.4  
農地ゾーンのイメージ図

JAPAN INTERNATIONAL COOPERATION AGENCY



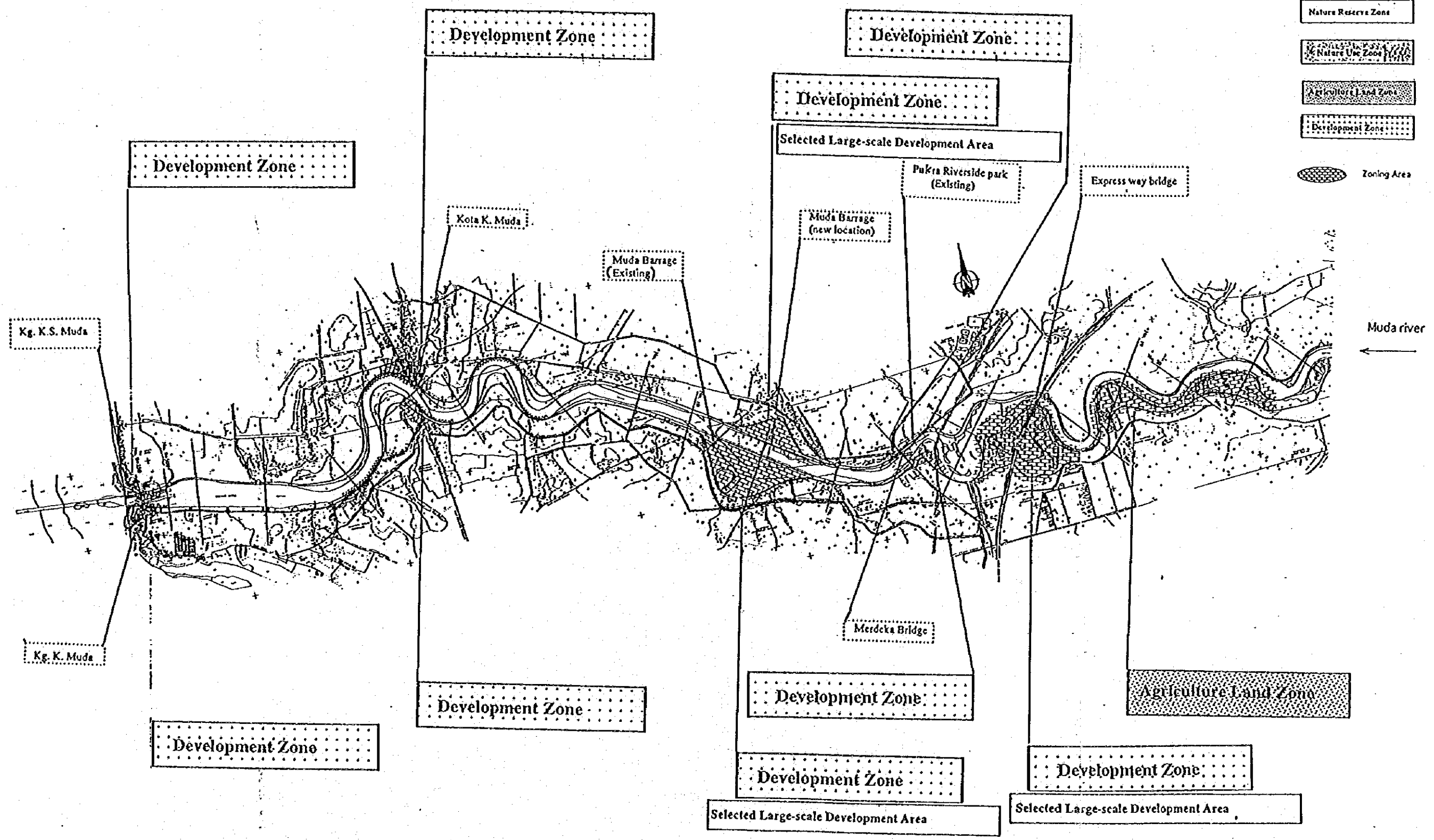
Zone Type D : Development Zone

COMPREHENSIVE MANAGEMENT PLAN OF  
MUDA RIVER BASIN

図 5.2.5  
開発ゾーンのイメージ図

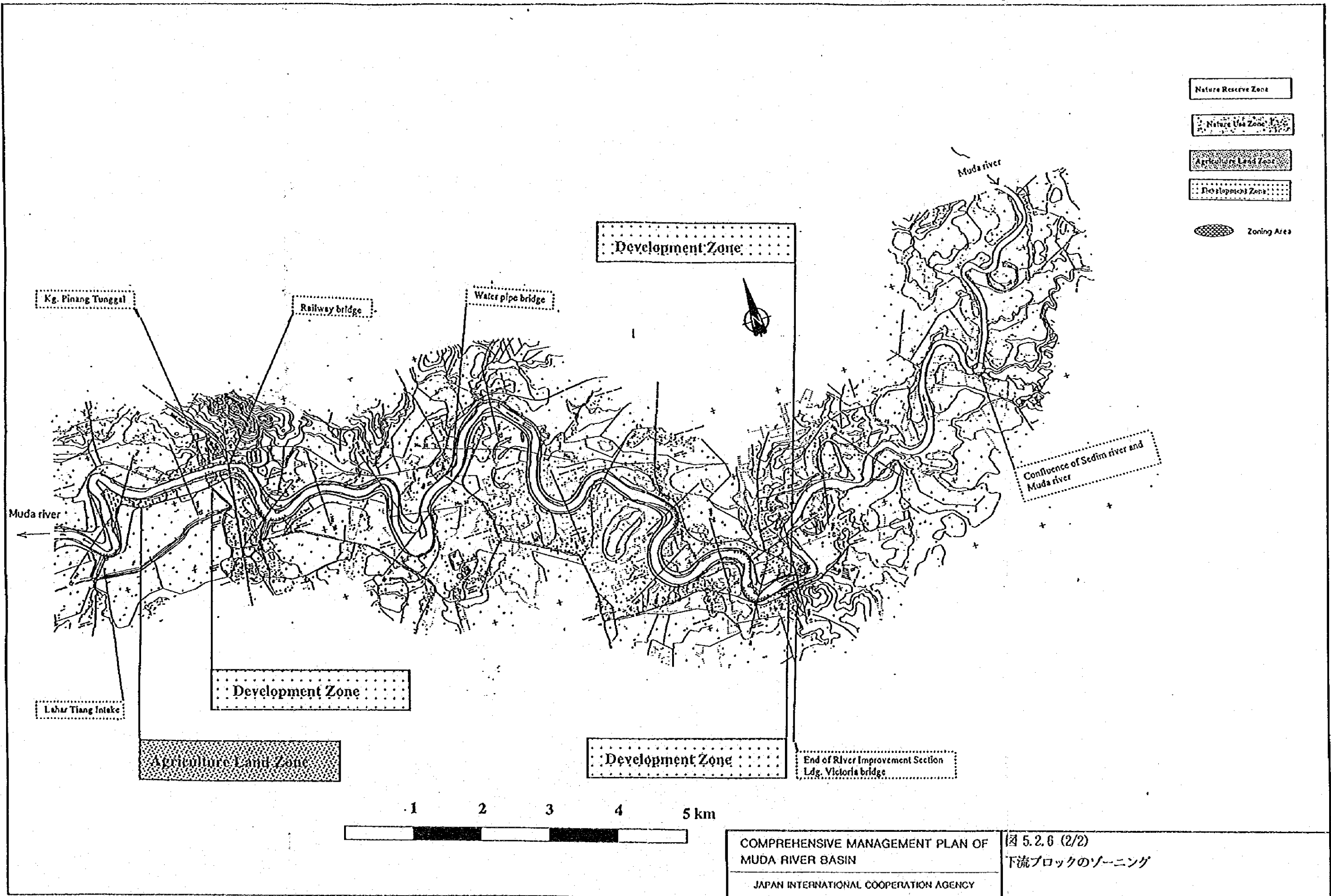
JAPAN INTERNATIONAL COOPERATION AGENCY





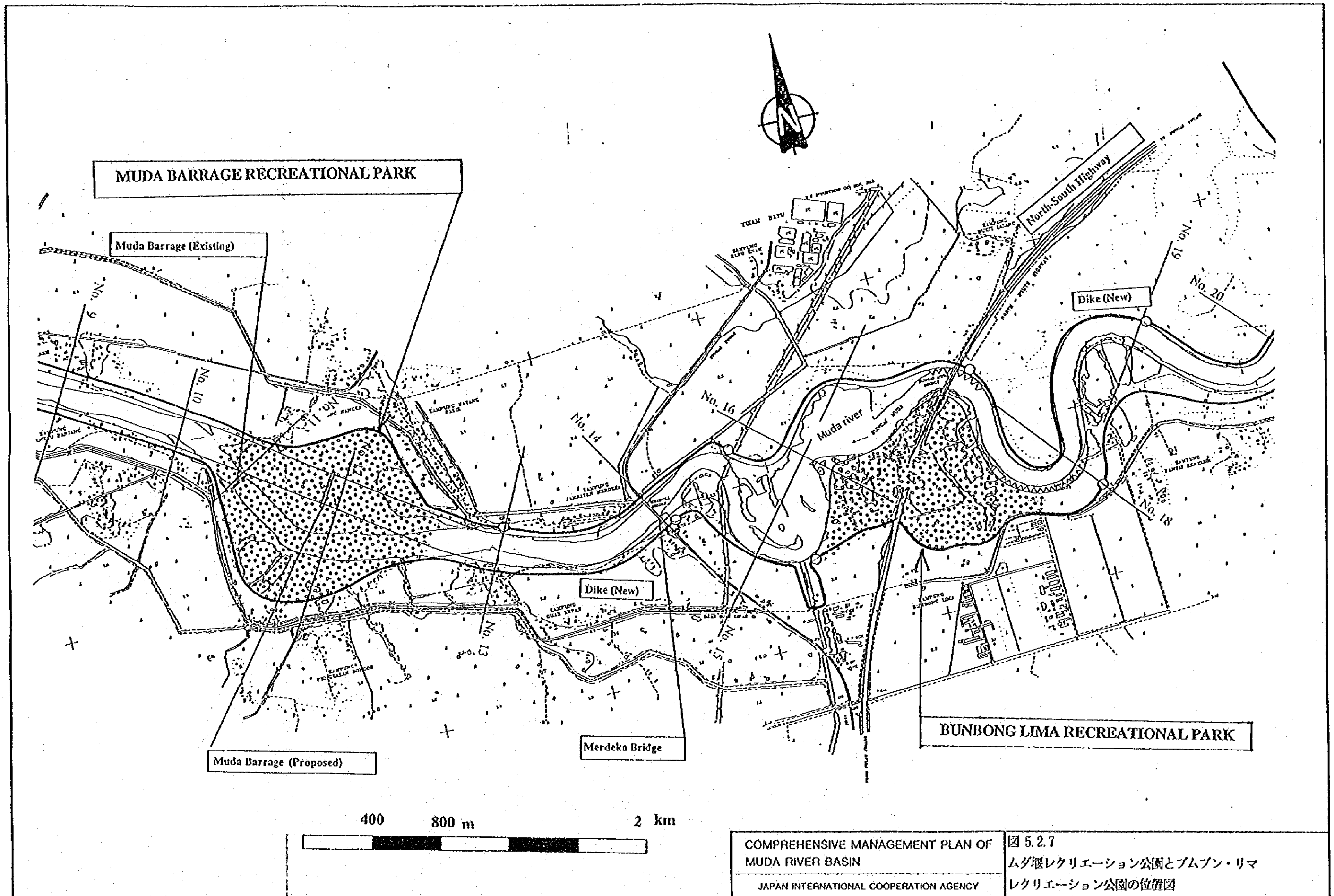
COMPREHENSIVE MANAGEMENT PLAN OF  
 MUDA RIVER BASIN  
 JAPAN INTERNATIONAL COOPERATION AGENCY

図 5.2.6 (1/2)  
 下流ブロックのゾーニング



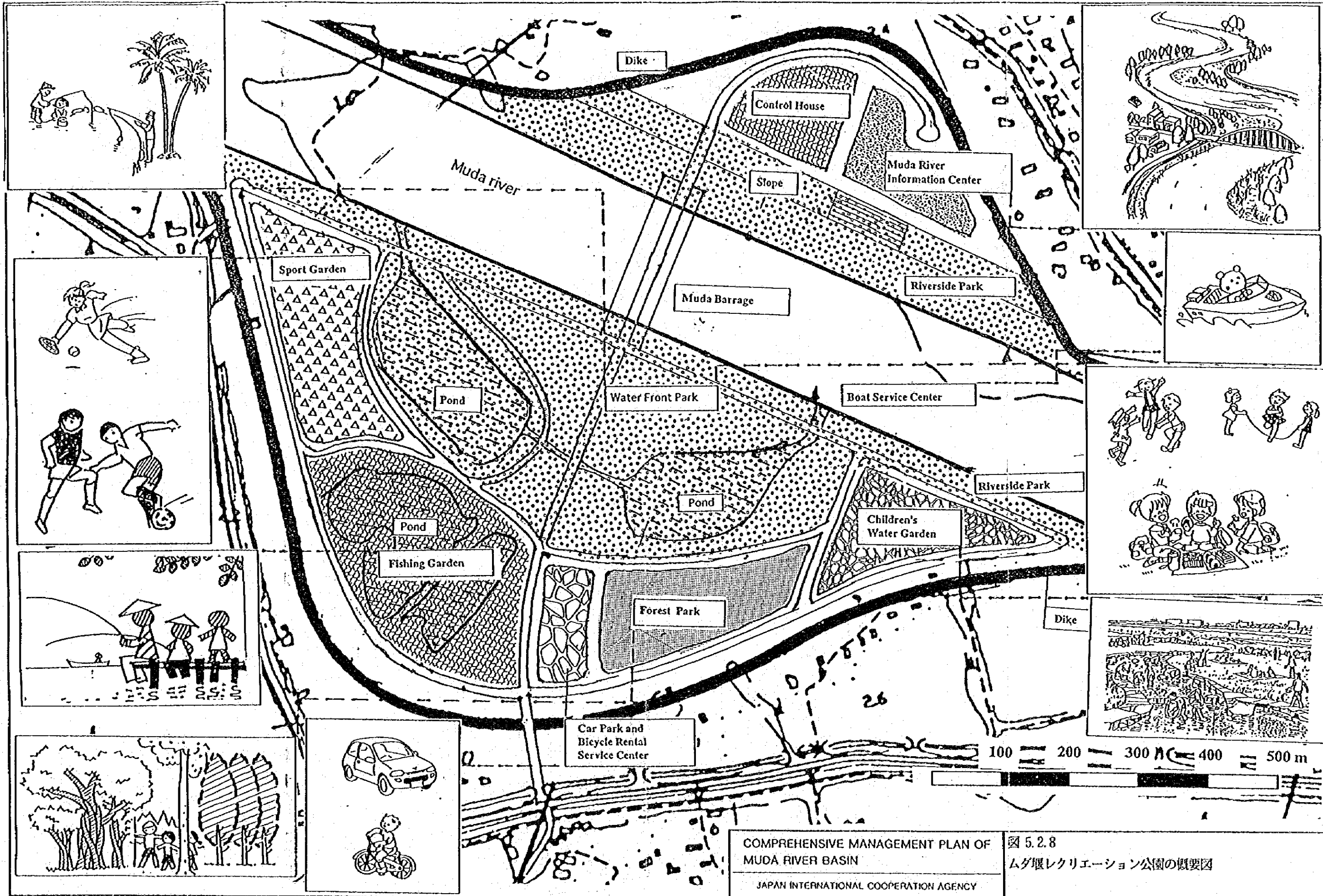
COMPREHENSIVE MANAGEMENT PLAN OF  
MUDA RIVER BASIN  
JAPAN INTERNATIONAL COOPERATION AGENCY

図 5.2.6 (2/2)  
下流ブロックのゾーニング



COMPREHENSIVE MANAGEMENT PLAN OF  
MUDA RIVER BASIN  
JAPAN INTERNATIONAL COOPERATION AGENCY

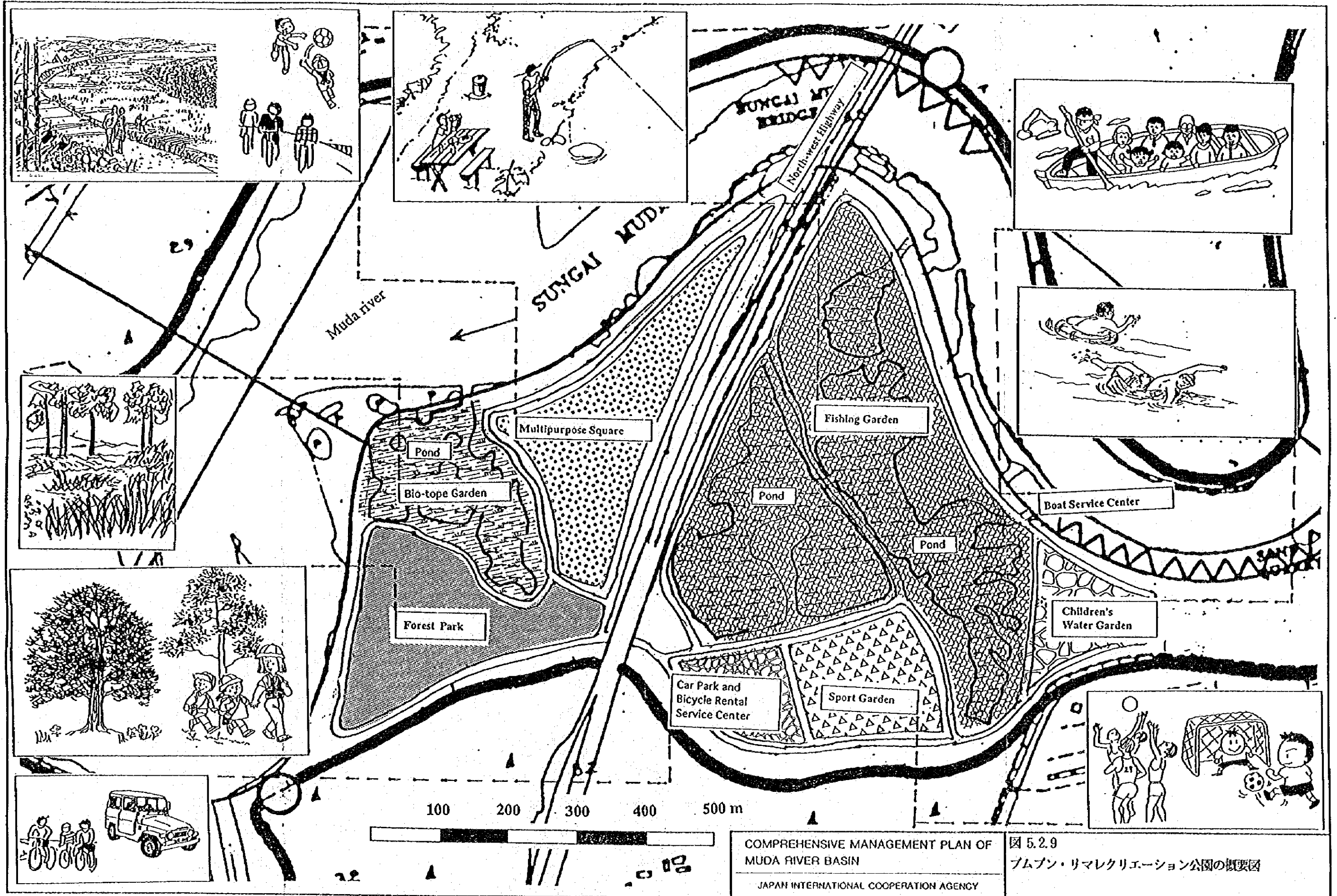
図 5.2.7  
ムダ堰レクリエーション公園とブムブン・リマ  
レクリエーション公園の位置図



COMPREHENSIVE MANAGEMENT PLAN OF  
MUDA RIVER BASIN  
JAPAN INTERNATIONAL COOPERATION AGENCY

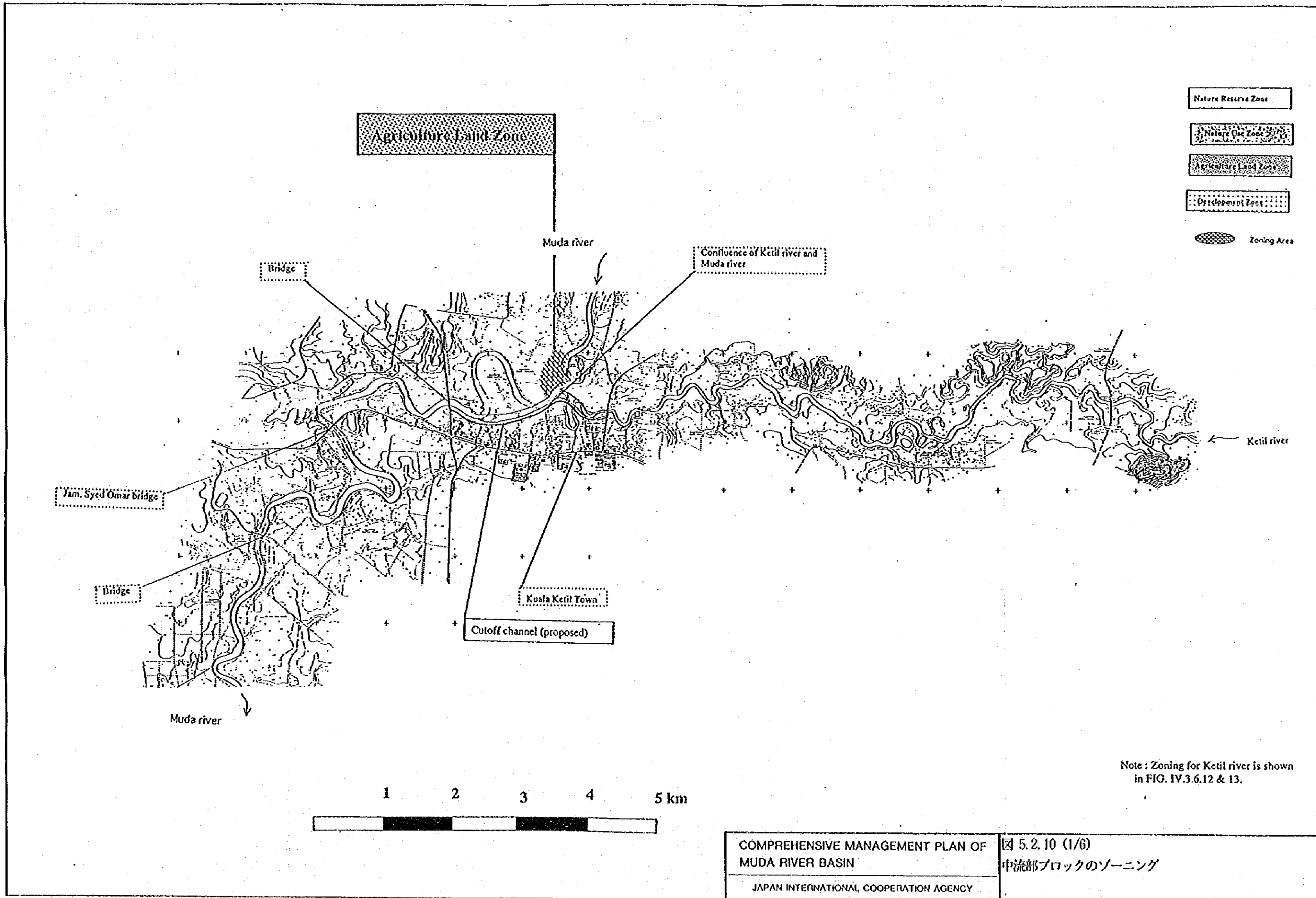
図 5.2.8  
ムダ堰レクリエーション公園の概要図

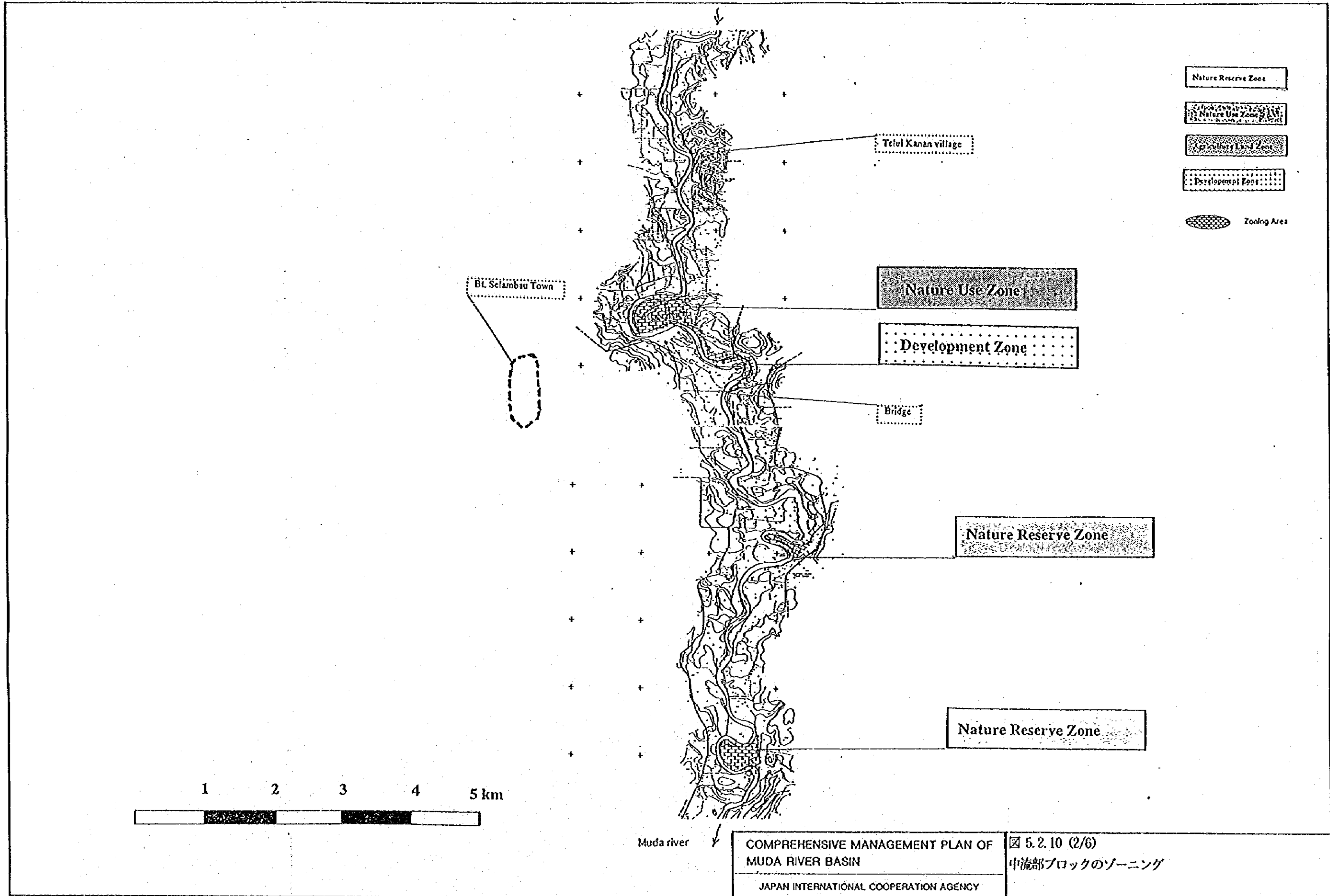




COMPREHENSIVE MANAGEMENT PLAN OF  
 MUDA RIVER BASIN  
 JAPAN INTERNATIONAL COOPERATION AGENCY

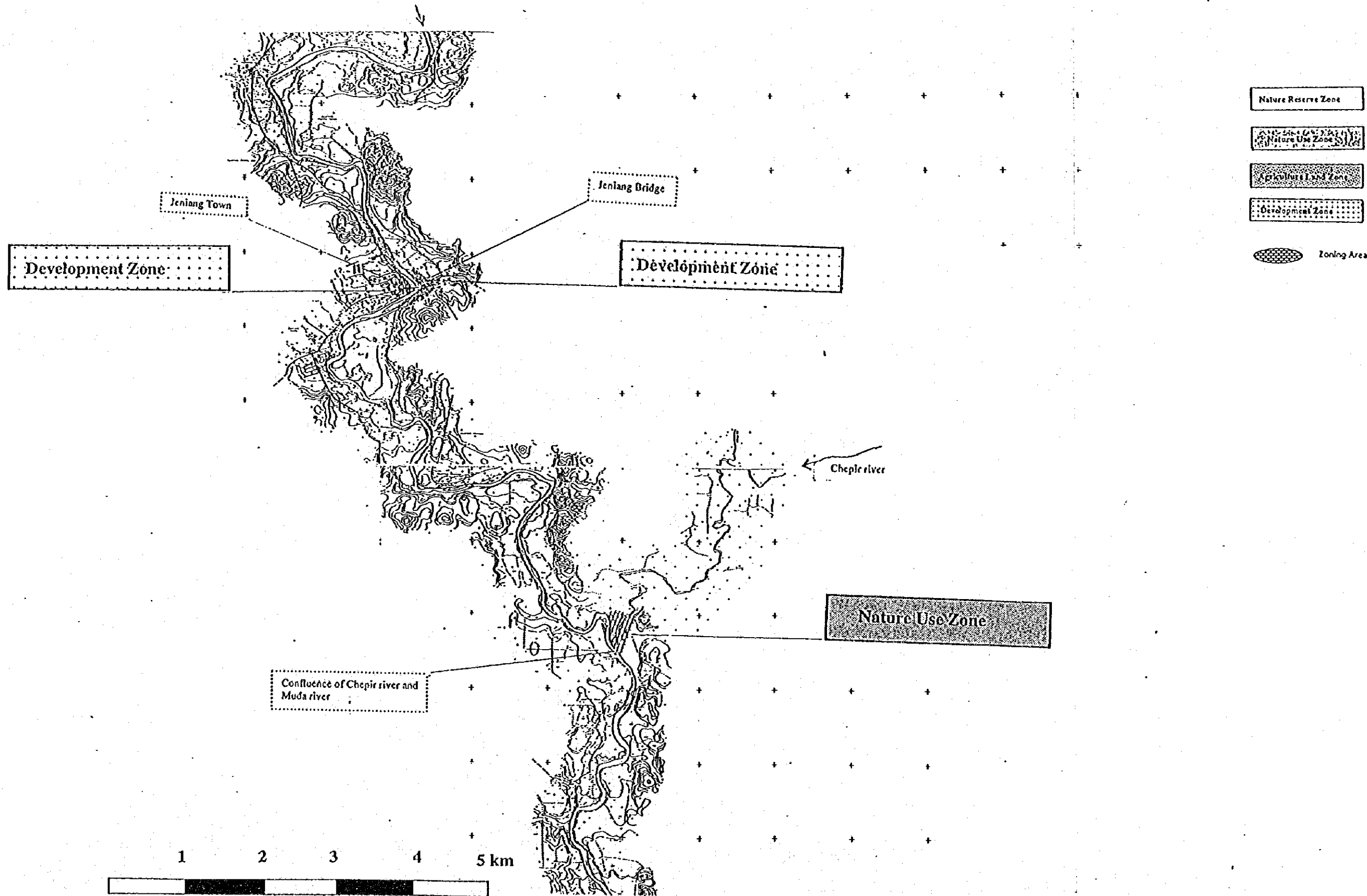
図 5.2.9  
 プムブン・リマレクリエーション公園の概要図





COMPREHENSIVE MANAGEMENT PLAN OF  
 MUDA RIVER BASIN  
 JAPAN INTERNATIONAL COOPERATION AGENCY

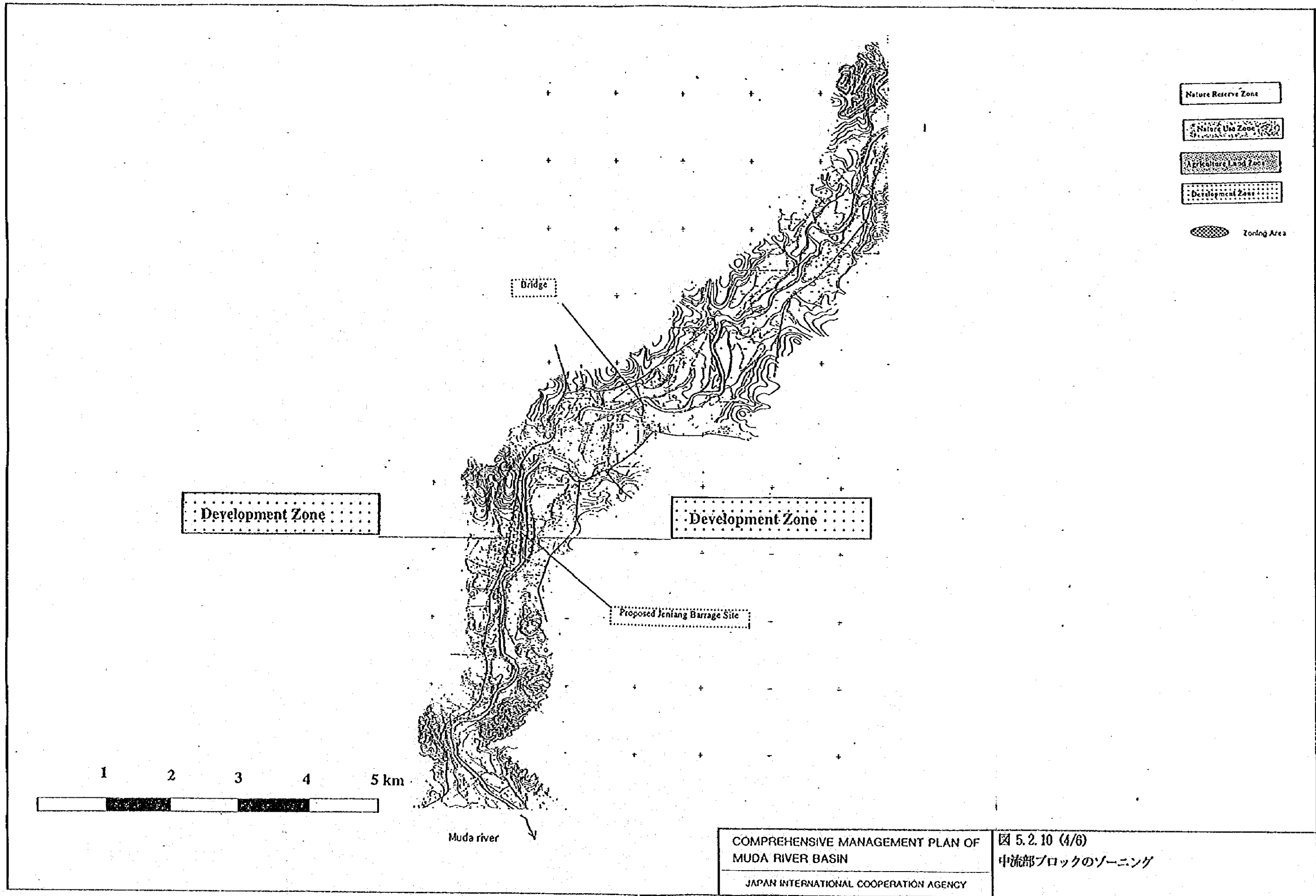
図 5.2.10 (2/6)  
 中流部ブロックのゾーニング

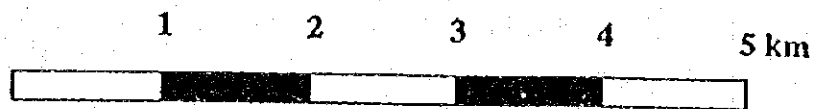
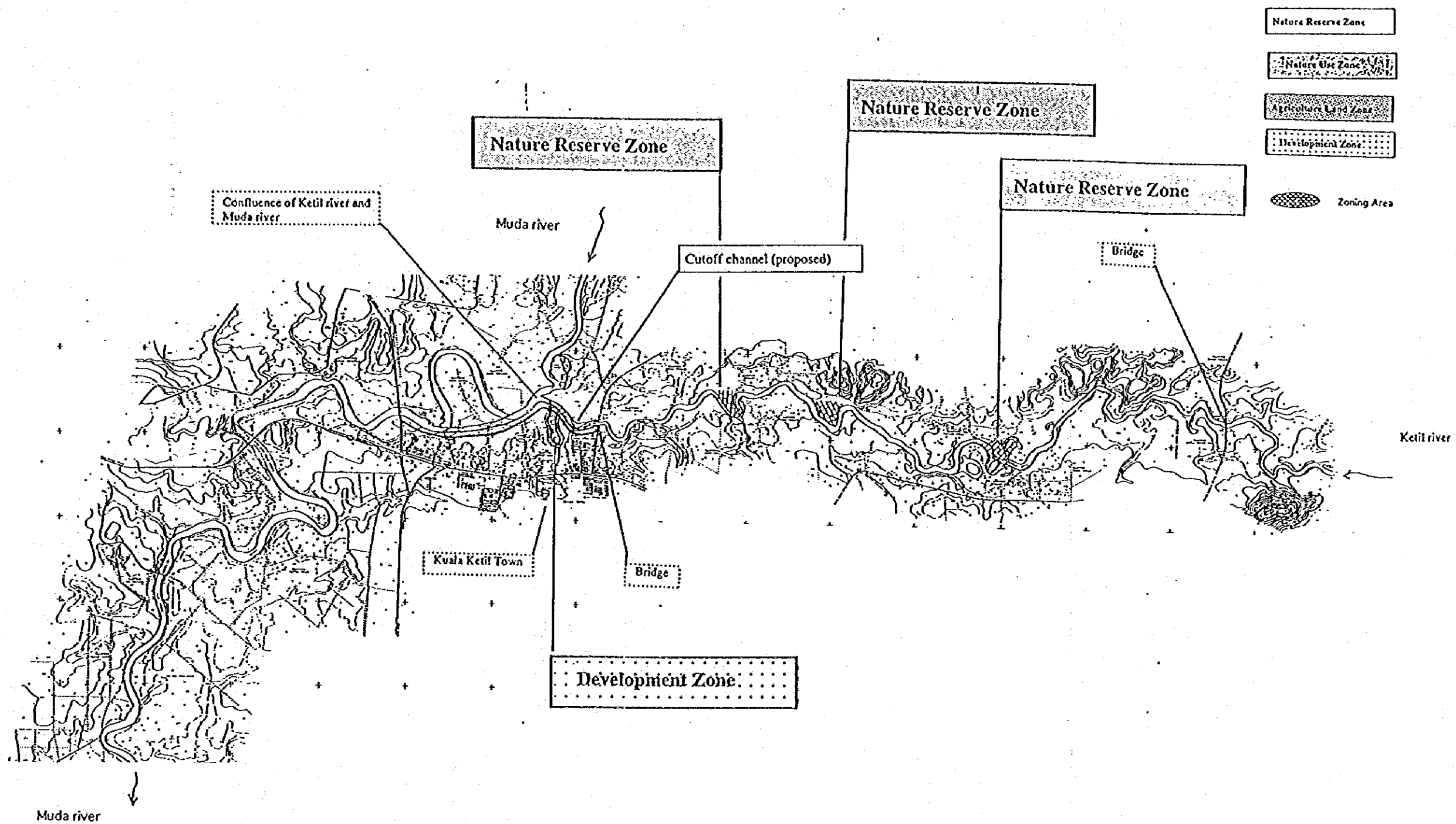


- Nature Reserve Zone
- Nature Use Zone
- Agriculture Land Zone
- Development Zone
- Zoning Area

COMPREHENSIVE MANAGEMENT PLAN OF  
 MUDA RIVER BASIN  
 JAPAN INTERNATIONAL COOPERATION AGENCY

☑ 5.2.10 (3/6)  
 中流部ブロックのゾーニング

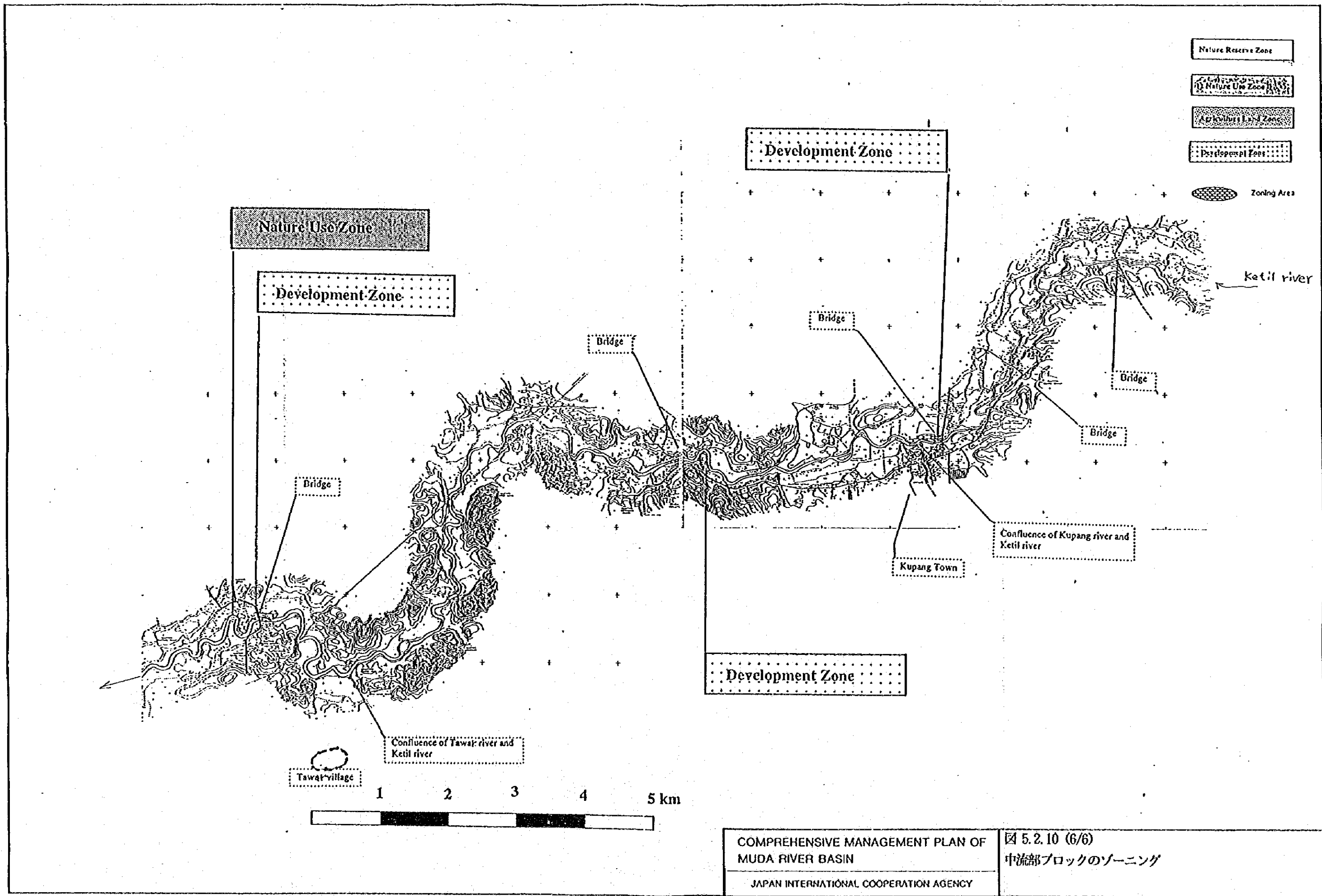


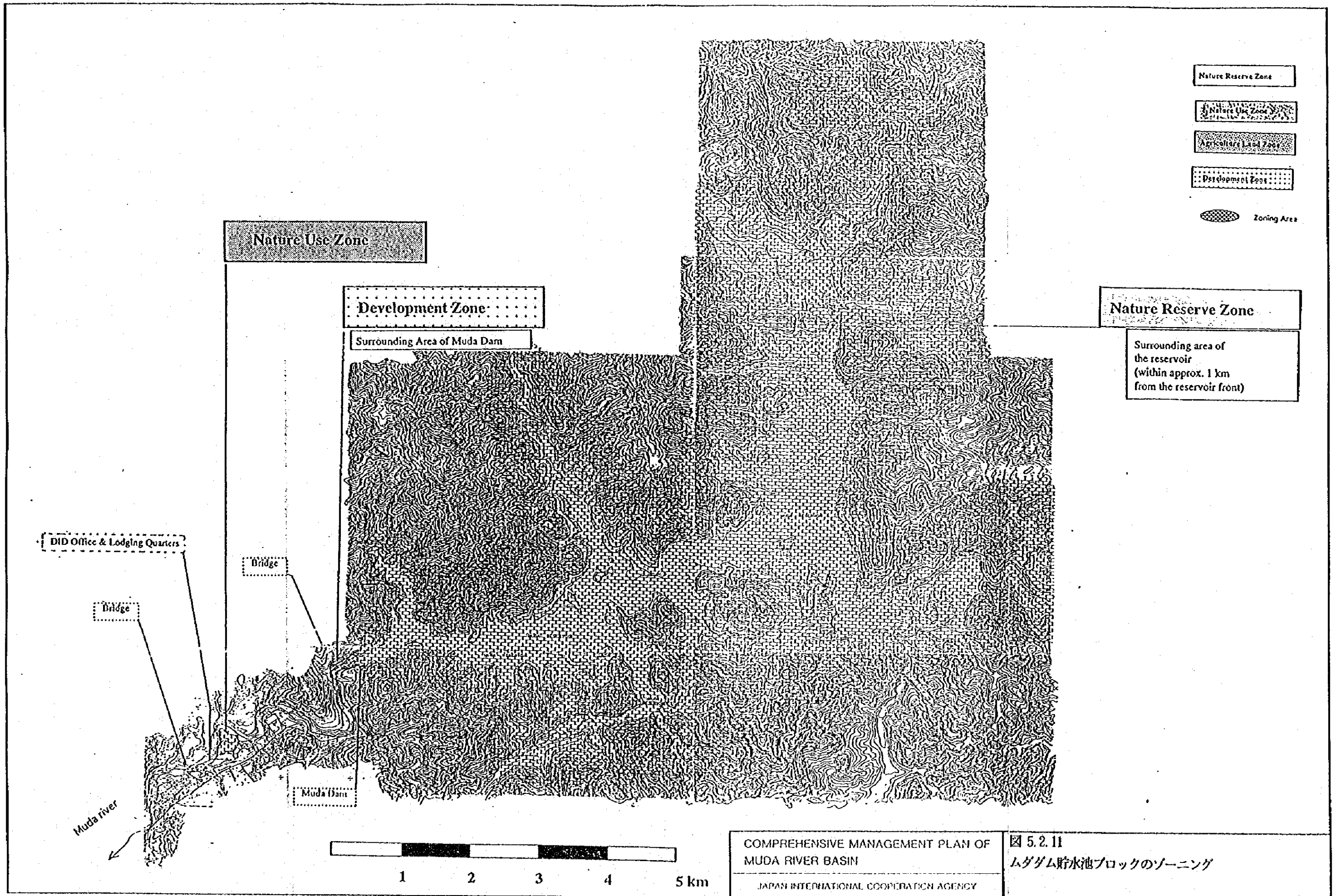


Note: Zoning for Muda river is shown in FIG. IV.3.6.8.

COMPREHENSIVE MANAGEMENT PLAN OF  
MUDA RIVER BASIN  
JAPAN INTERNATIONAL COOPERATION AGENCY

図 5.2.10 (5/6)  
中流部ブロックのゾーニング





Nature Reserve Zone

Nature Use Zone

Agriculture Land Zone

Development Zone

Zoning Area

Nature Use Zone

Development Zone

Surrounding Area of Muda Dam

Nature Reserve Zone

Surrounding area of the reservoir (within approx. 1 km from the reservoir front)

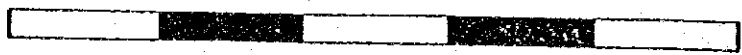
DID Office & Lodging Quarters

Bridge

Bridge

Muda river

Muda Dam

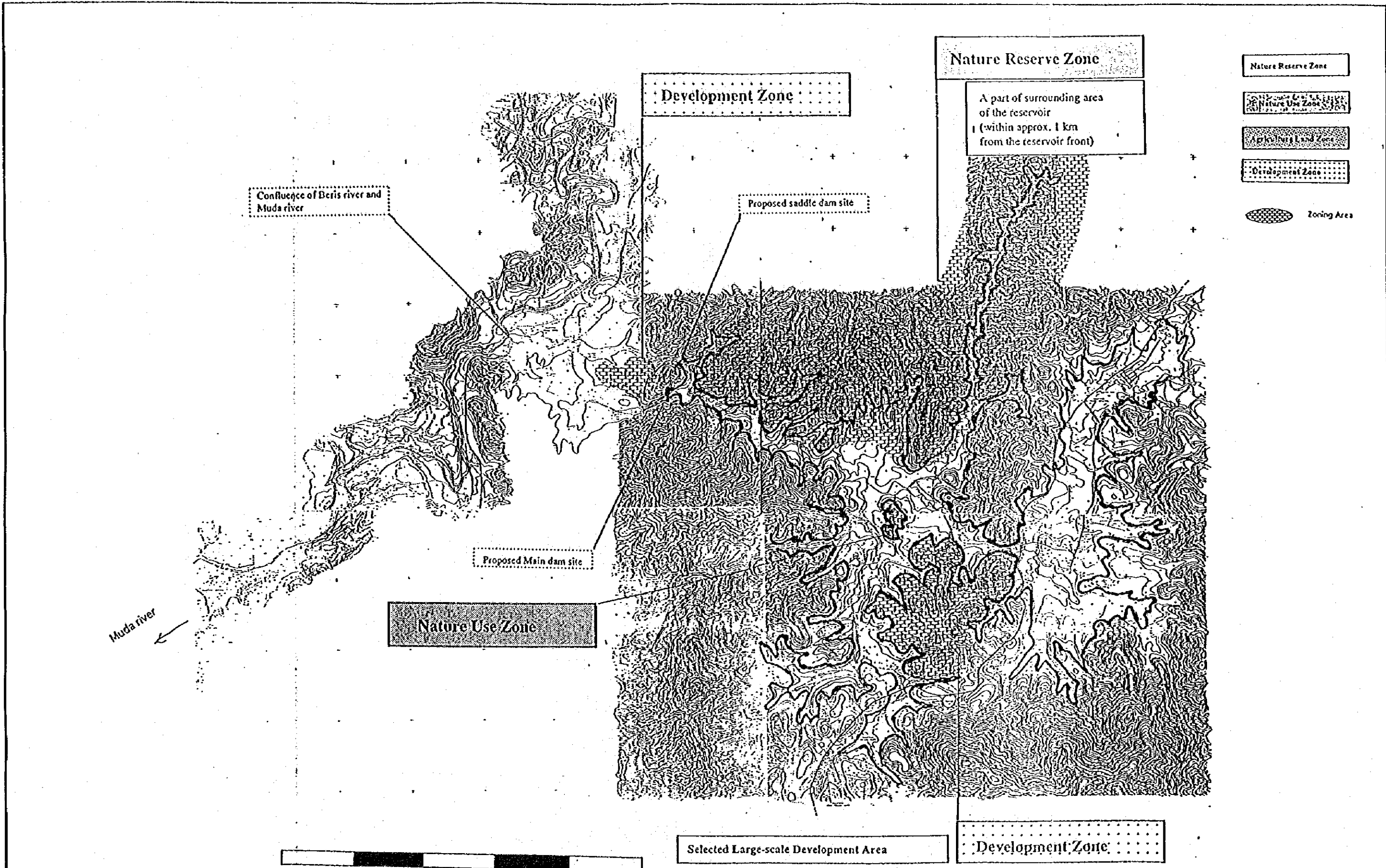


COMPREHENSIVE MANAGEMENT PLAN OF MUDA RIVER BASIN

JAPAN INTERNATIONAL COOPERATION AGENCY

図 5.2.11  
ムダダム貯水池ブロックのゾーニング





Confluence of Beris river and Muda river

Development Zone

Nature Reserve Zone

A part of surrounding area of the reservoir (within approx. 1 km from the reservoir front)

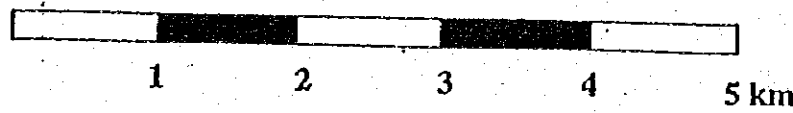
Proposed saddle dam site

Proposed Main dam site

Nature Use Zone

Muda river

- Nature Reserve Zone
- Nature Use Zone
- Agriculture Land Zone
- Development Zone
- Zoning Area

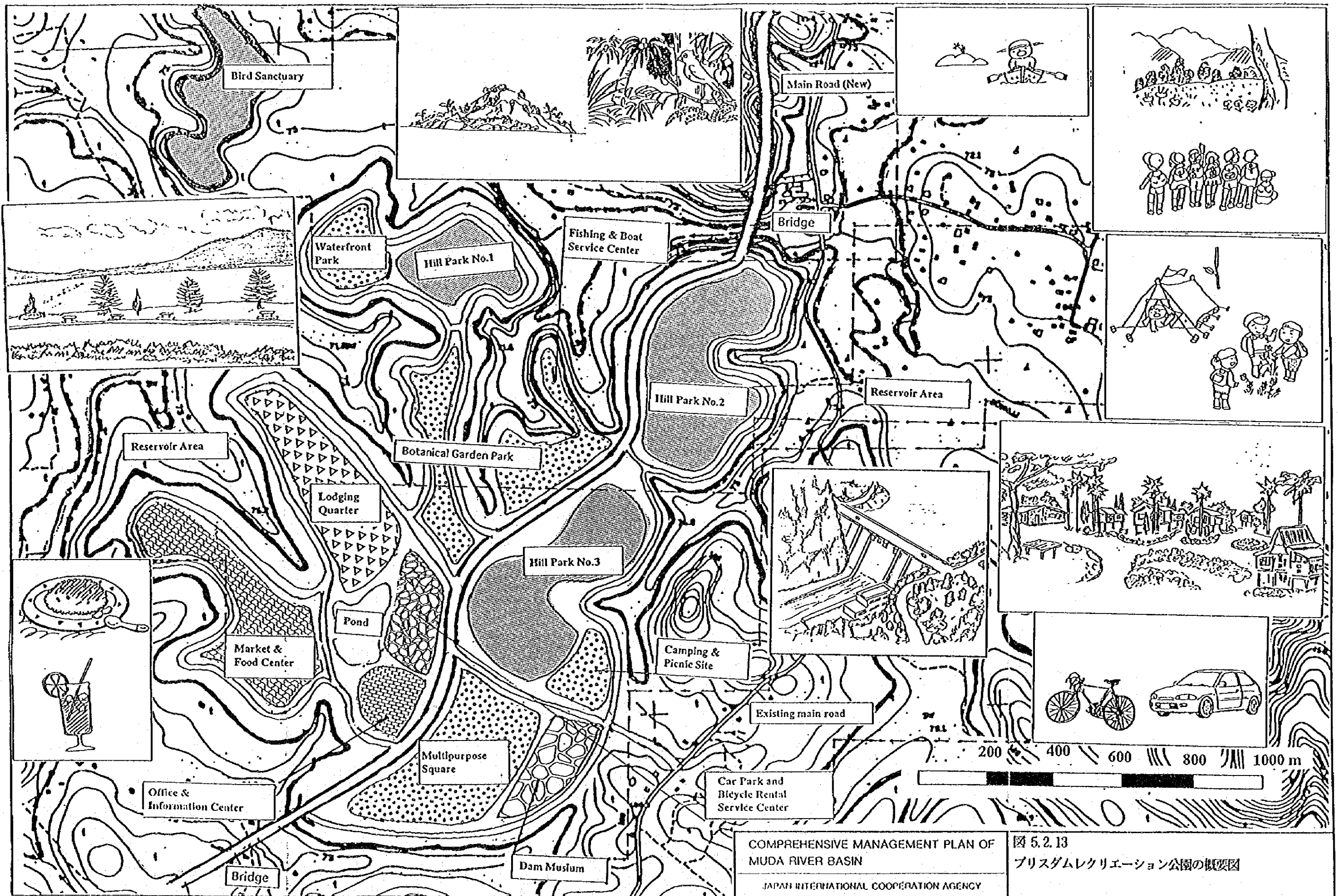


Selected Large-scale Development Area

Development Zone

COMPREHENSIVE MANAGEMENT PLAN OF MUDA RIVER BASIN  
JAPAN INTERNATIONAL COOPERATION AGENCY

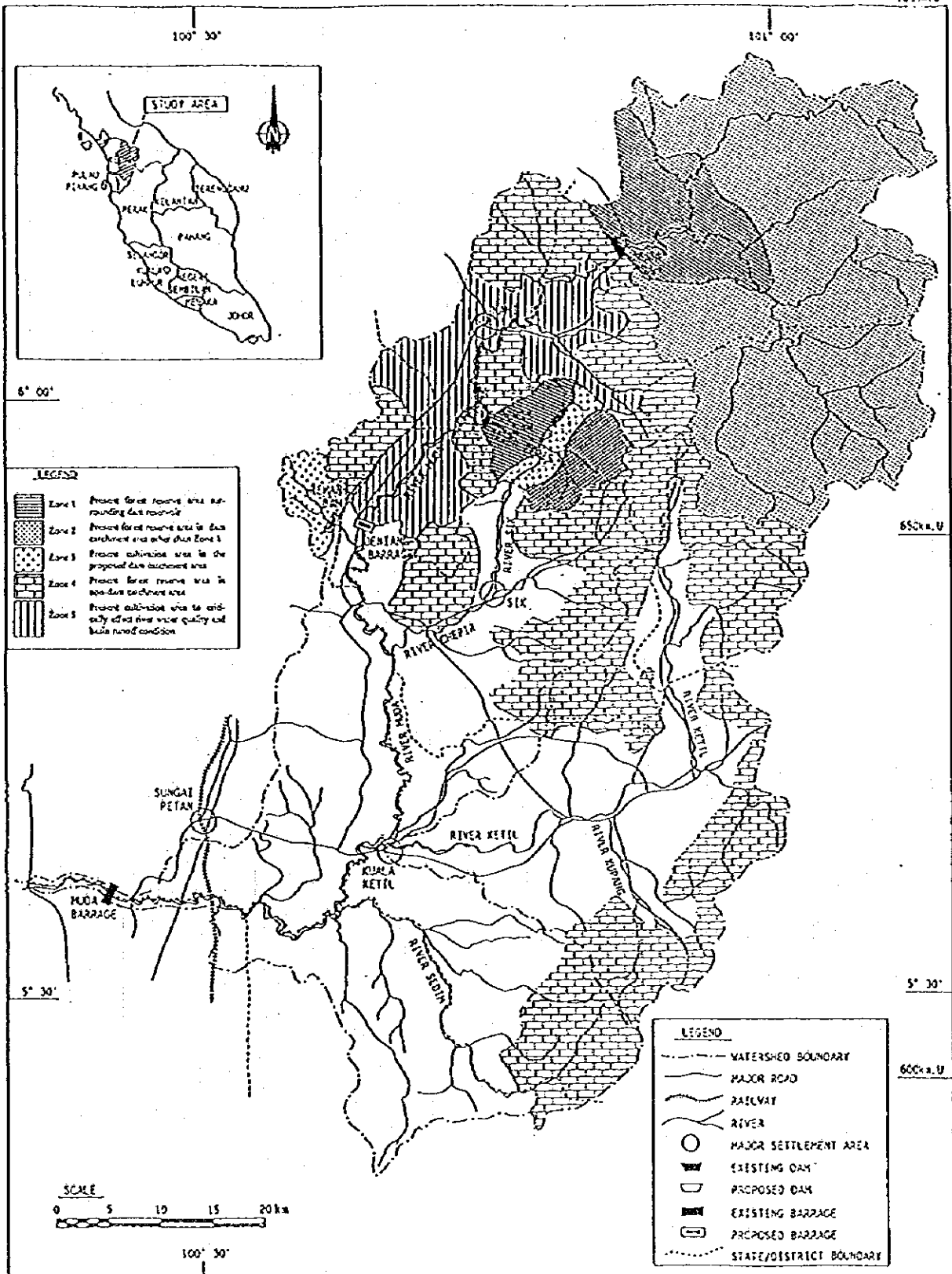
図 5.2.12  
計画プリダム貯水池ブロックのゾーニング



COMPREHENSIVE MANAGEMENT PLAN OF  
 MUDA RIVER BASIN  
 JAPAN INTERNATIONAL COOPERATION AGENCY

図 5.2.13  
 プリスダムレクリエーション公園の概要図



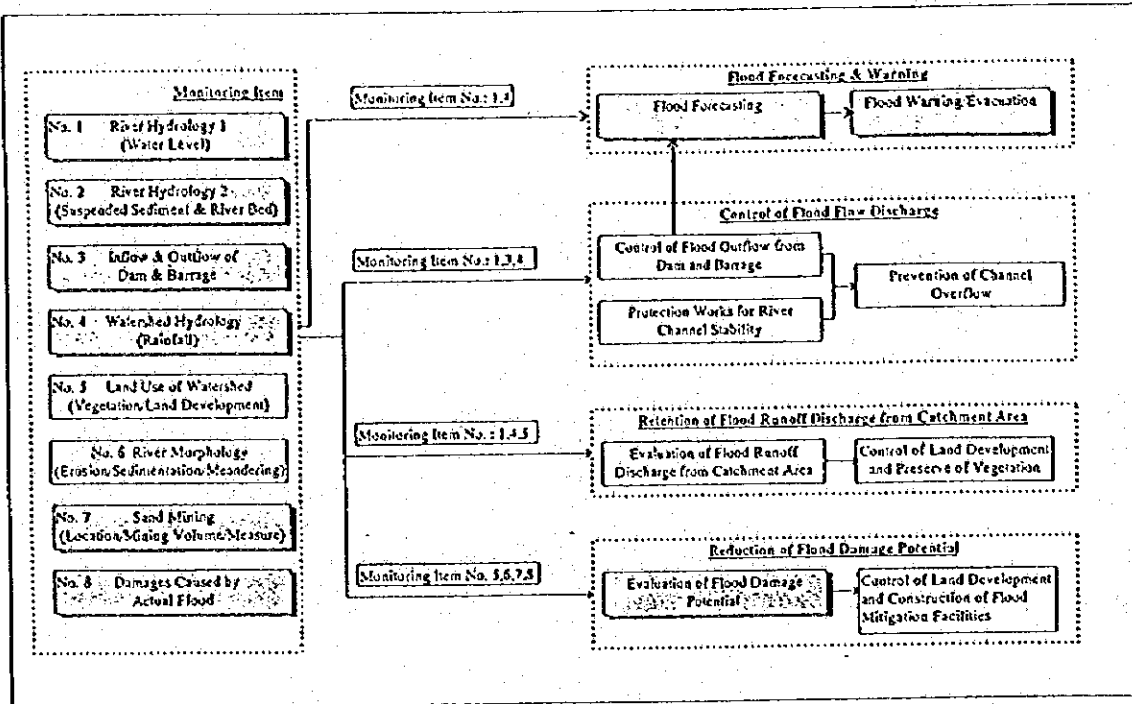


COMPREHENSIVE MANAGEMENT PLAN OF MUDA RIVER BASIN

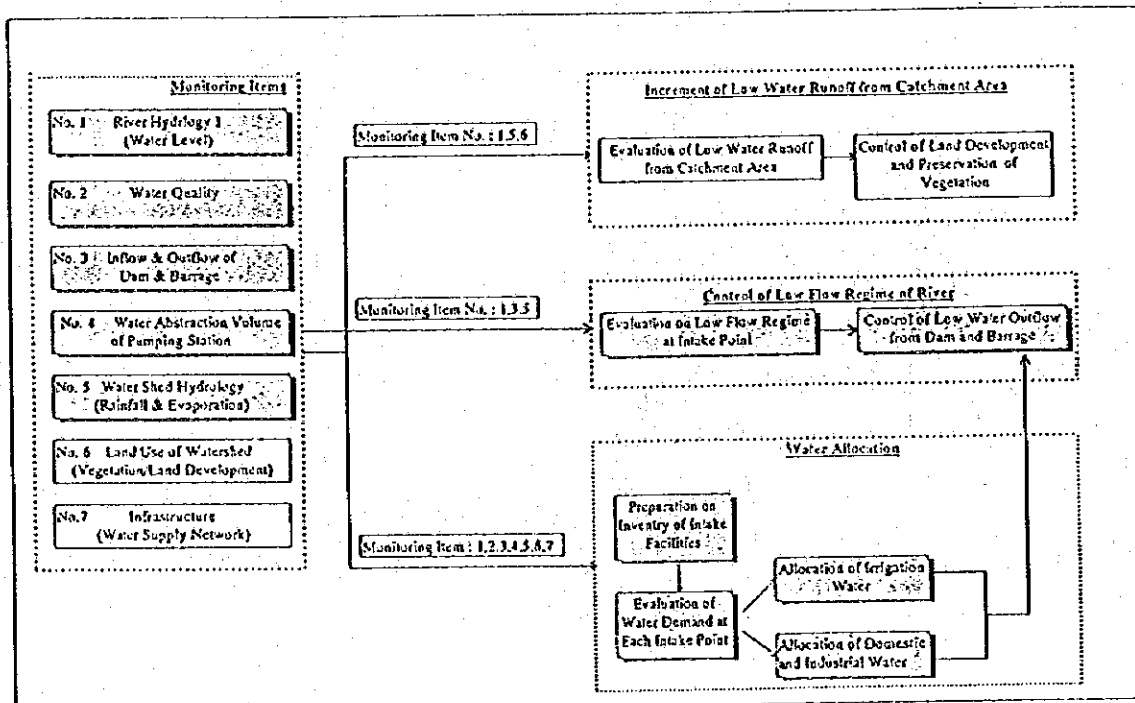
JAPAN INTERNATIONAL COOPERATION AGENCY

図 6.1.1 水資源保全地域のゾーニング

# Flood Management



# Water Resources Development Management



**Note:**

- Existing
- Real Time Activity
- Non-real Time Activity

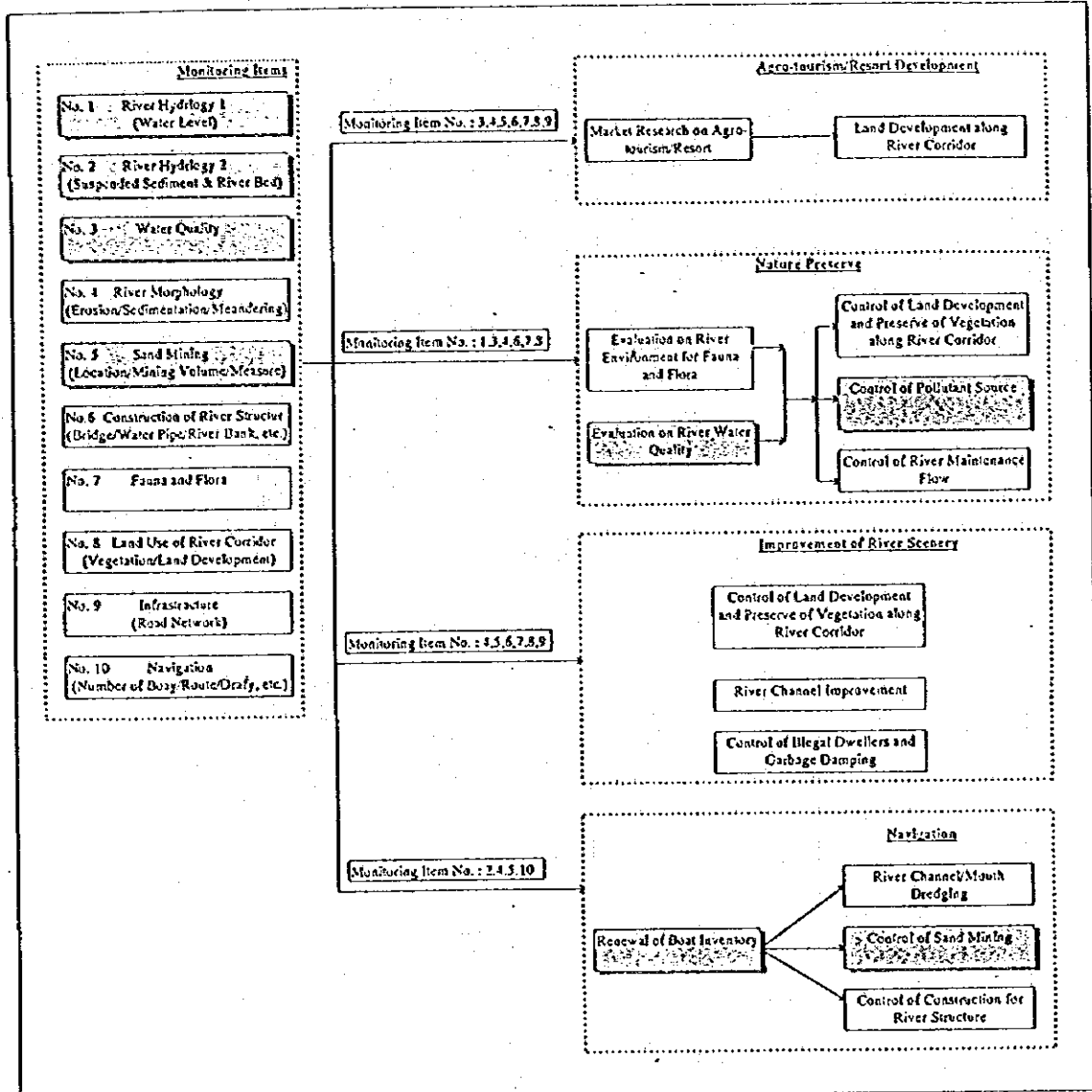
COMPREHENSIVE MANAGEMENT PLAN OF MUDA RIVER BASIN

JAPAN INTERNATIONAL COOPERATION AGENCY

図 6.2.1 (1/2)

計画モニタリングシステムの模式図

# River Environmental Management

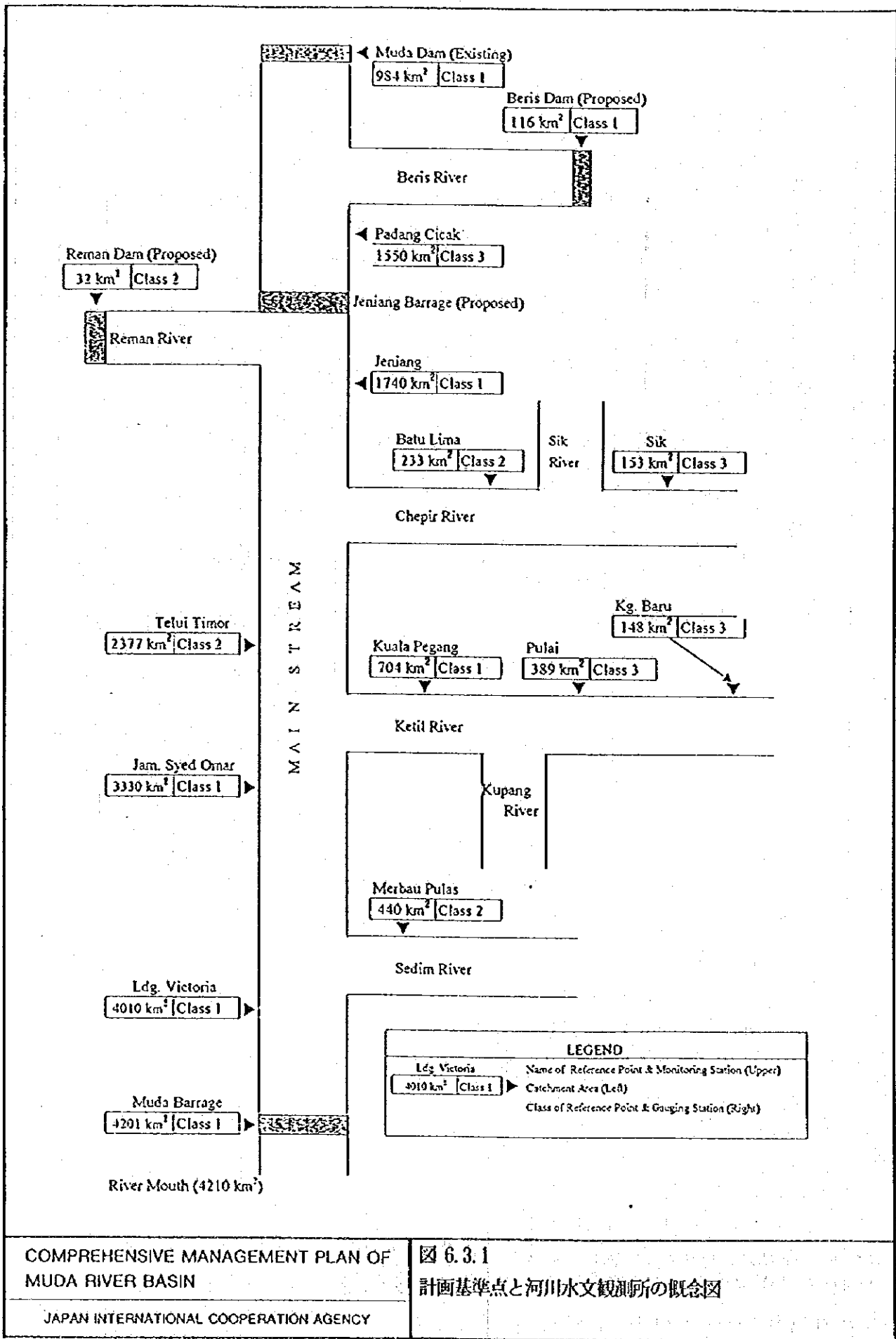


COMPREHENSIVE MANAGEMENT PLAN OF MUDA RIVER BASIN

JAPAN INTERNATIONAL COOPERATION AGENCY

図 6.2.1 (2/2)

計画モニタリングシステムの模式図

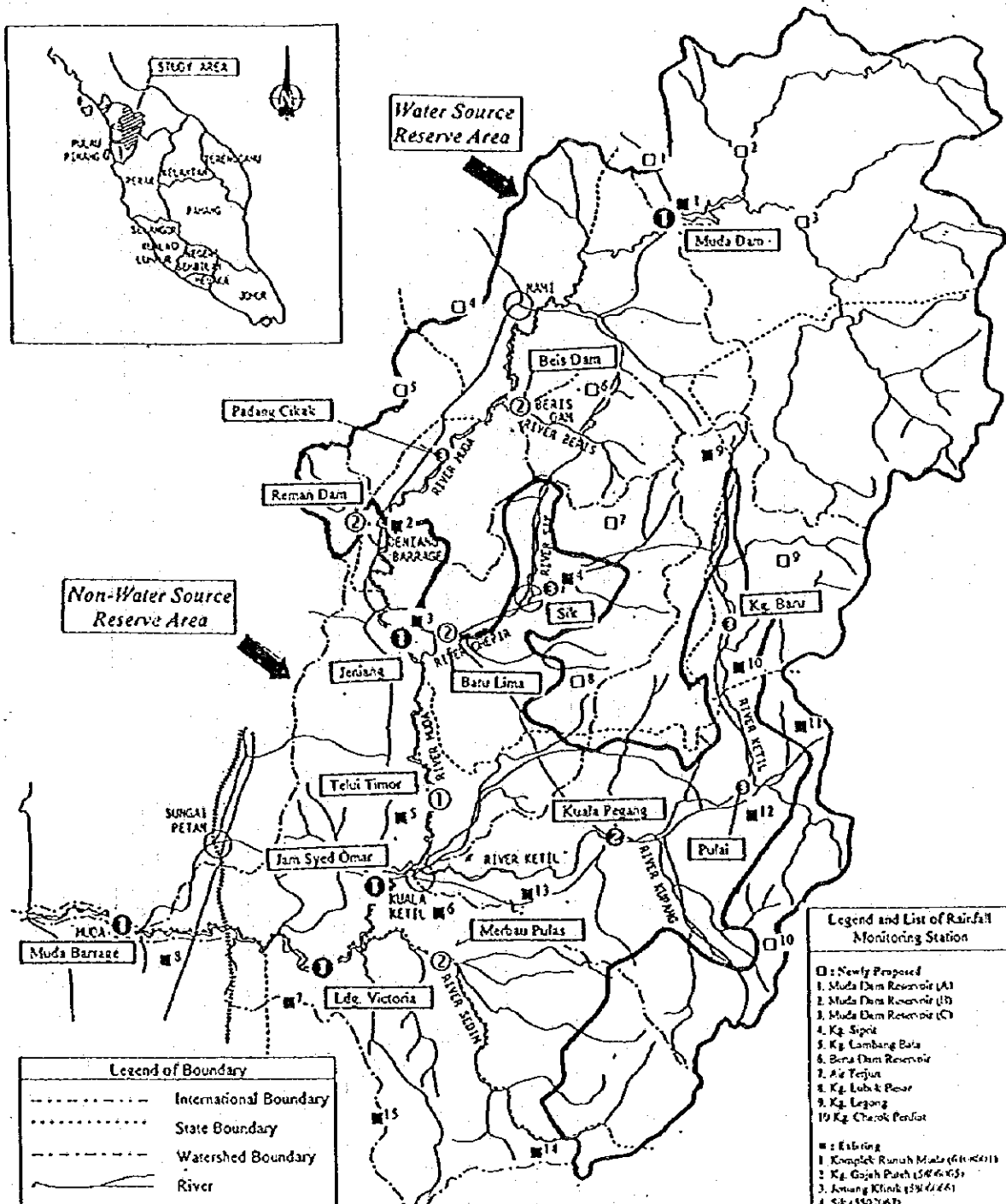
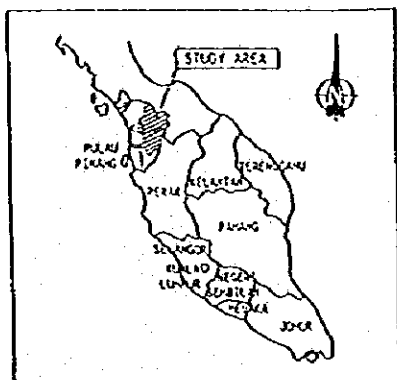


COMPREHENSIVE MANAGEMENT PLAN OF  
MUDA RIVER BASIN

JAPAN INTERNATIONAL COOPERATION AGENCY

図 6.3.1

計画基準点と河川水文観測所の概念図

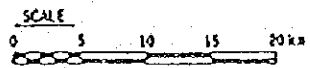


Non-Water Source Reserve Area

Water Source Reserve Area

**Legend of Boundary**

-----	International Boundary
-----	State Boundary
-----	Watershed Boundary
~~~~~	River



**Legend of Reference Point and River Hydrological Monitoring Station**

Class	Newly Proposed	Existing
1	○	⊙
2	⊖	⊕
3	⊗	⊘

**Legend and List of Rainfall Monitoring Station**

○: Newly Proposed  
 ⊙: Existing

1. Komplek Runut Mala (6104011)
2. Kg. Gajah Putih (546405)
3. Jonang Klirik (530446)
4. Sik (5597067)
5. Ladang Lubuk Seginuh (566673)
6. Ladang Bukit Karangun (556642)
7. Ladang Hewanita (550564)
8. Ladang Ben Maru (550533)
9. Batu 81 An. Baling (556601)
10. Kg. Terok (570571)
11. Hospital Baling (560927)
12. Pulau (560374)
13. Batu 27 Jln. Baling (550705)
14. Ladang Dubin (550708)
15. Kelang Baharu, Kulim (546643)

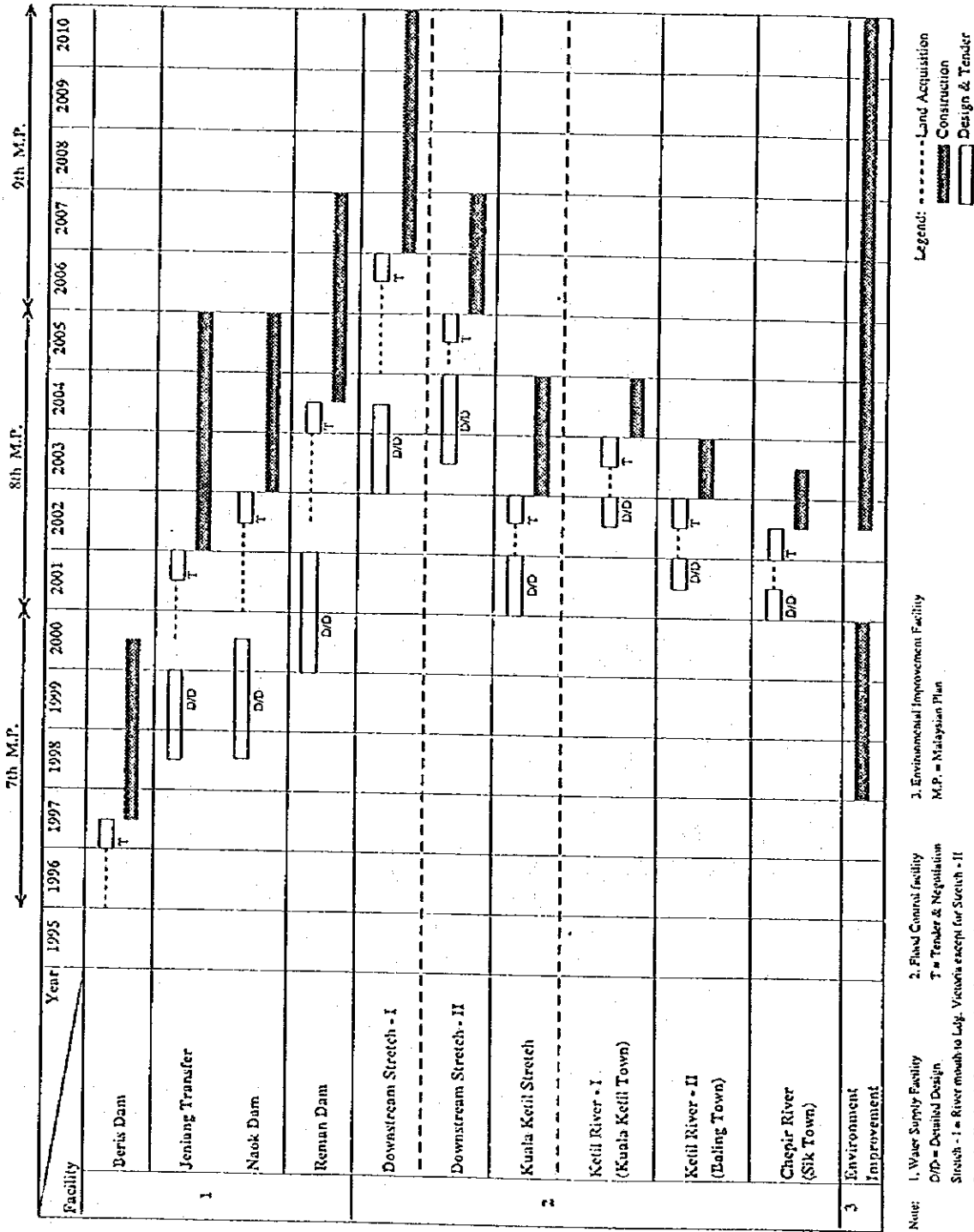
COMPREHENSIVE MANAGEMENT PLAN OF MUDA RIVER BASIN

JAPAN INTERNATIONAL COOPERATION AGENCY

図 6.3.2 計画基準点と水文観測所の位置図



# IMPLEMENTATION SCHEDULE



Note: 1. Water Supply Facility  
 2. Flood Control Facility  
 3. Environmental Improvement Facility  
 D/D = Detailed Design  
 T = Tender & Negotiation  
 M.P. = Malaysian Plan  
 Stretch - I = River mouth to Ldy. Venau except for Stretch - II  
 Stretch - II = Muda Dam and its adjacent section

Legend: - - - - - Land Acquisition  
 Construction  
 Design & Tender

COMPREHENSIVE MANAGEMENT PLAN OF  
 MUDA RIVER BASIN  
 JAPAN INTERNATIONAL COOPERATION AGENCY

図 8.1.1  
 事業実施計画

## 付属資料



ムダ川流域総合管理計画調査関係者名簿 (1/3)

ステアリング・コミッティー

名前	組織	備考
Mr. Kassim Sarbani	Economic Planning Unit	Chairman (1994年3月-1995年8月)
Mr. Md. Rosnan Sulaiman	Economic Planning Unit	Chairman (1995年8月-1995年12月)
Puan Rosmah bte Jentra	Ministry of Agriculture	
Dato Hj. Mohd. Zain Osman	Economic Planning Unit, Kedah	
Ms. Siti Balkish Shariff	Economic Planning Unit, Penang	
Mr. Aminuddin Shah Hj. Ahmad	Department of Environment, Malaysia	
Ir. The Siew Keat	Department of Irrigation and Drainage, Malaysia	Secretary (1994年3月-1994年9月)
Ir. Ahmad Fuad bin Embi	Department of Irrigation and Drainage, Malaysia	Secretary (1994年9月-1995年12月)

テクニカル・コミッティー

名前	組織	備考
Ir. The Siew Keat	Department of Irrigation and Drainage, Malaysia	Chairman (1994年3月-1994年9月)
Ir. Ahmad Fuad bin Embi	Department of Irrigation and Drainage, Malaysia	Chairman (1994年9月-1995年12月)
	連邦政府関連	
不特定	Ministry of Agriculture	
不特定	Department of Environment	
不特定	Department of Forestry	
不特定	Malaysian Fisheries Development Authority	
不特定	Department of Irrigation and Drainage, Muda Office	
	DID 本局	
不特定	River Engineering Division	
不特定	Irrigation Division	
不特定	Coastal Engineering Division	
不特定	Hydrology Division	
	ケダ州政府関連	
不特定	Muda Agriculture Development Authority	
不特定	Public Works Department	
不特定	Department of Forestry	
不特定	Department of Agriculture	
不特定	Malaysian Fisheries Development Authority	
不特定	Marine Department	
不特定	ペナン州政府関連	
不特定	Penang Water Authority	
不特定	Department of Forestry	
不特定	Department of Environment	
不特定	Department of Agriculture	
不特定	Malaysian Fisheries Development Authority	
不特定	Marine Department	

ムダ川流域総合管理計画調査関係者名簿 (2/3)

カウンターパート (D I D 本局関連)

名前	組織	備考
Ir. Chop Ai Kuang	River Engineering Division	
Mr. Ng. Kim Hoy	River Engineering Division	
Mr. Mohd. Redzuan Husim	River Engineering Division	
Mr. Abdul Razak Rashid	River Engineering Division	
Ir. Chan Chóong Cheong	Irrigation Department	
Ir. Chiew Kee Lin	Irrigation Department	
Ir. Law Kong Fook	Hydrology Division	
Ir. Chong Sun Fatt	Hydrology Division	
川崎秀明	JICA 専門家	
進藤裕之	JICA 専門家	

カウンターパート (ケダ州政府関連)

名前	組織	備考
Ir. Johon Abraham	Department of Irrigation and Drainage	
Mr. Mohd. Abdul Nasir Bidin	Department of Irrigation and Drainage, Muda Office	
Ir. Tajuddin Harun	Water Works	
Ir. Foong Kam Cheong	Muda Agricultural Department Authority	
Mr. Lee Kee Hock	Department of Irrigation and Drainage	
Mr. Khalid Ahmad	Department of Irrigation and Drainage	

カウンターパート (ペナン州政府関連)

名前	組織	備考
Mr. Kan Cheong Weng	Penang Water Authority	
Ir. Nasir Merican	Department of Irrigation and Drainage	

## ムダ川流域総合管理計画調査関係者名簿 (3/3)

## JICA作業管理委員

名前	組織	担当分野
佐合純造	建設省北陸地方建設局河川部河川調査官	総括/流域管理計画
氏家清彦	建設省河川局治水課課長補佐	組織・法制度
柳沢今朝次郎	建設省北陸地方建設局羽越工事事務所副所長	河川計画
大槻清隆	JICA	調査監理 (1994年3月-1995年3月)
田邊秀樹	JICA	調査監理 (1994年1月-1995年12月)

## JICA調査団

名前	組織	担当分野
阿部勝久	(株) 建設技術研究所	総括
乙川牧彦	(株) 建設技術研究所	副総括/流域管理計画
片山正巳	(株) 建設技術研究所	治水計画
近藤兼一郎	(株) 建設技術研究所	水文・水理
本多和彦	(株) アイ・エヌ・エー	水資源計画
岡田弘	(株) アイ・エヌ・エー	河川環境計画
山川精一	(株) アイ・エヌ・エー	施設計画/積算
大野欽一	(株) 建設技術研究所	社会経済・プロジェクト評価
Mr. Sieh Kou Chi	(株) 建設技術研究所	組織・法制度
鈴木友子	(株) 建設技術研究所	業務調整











