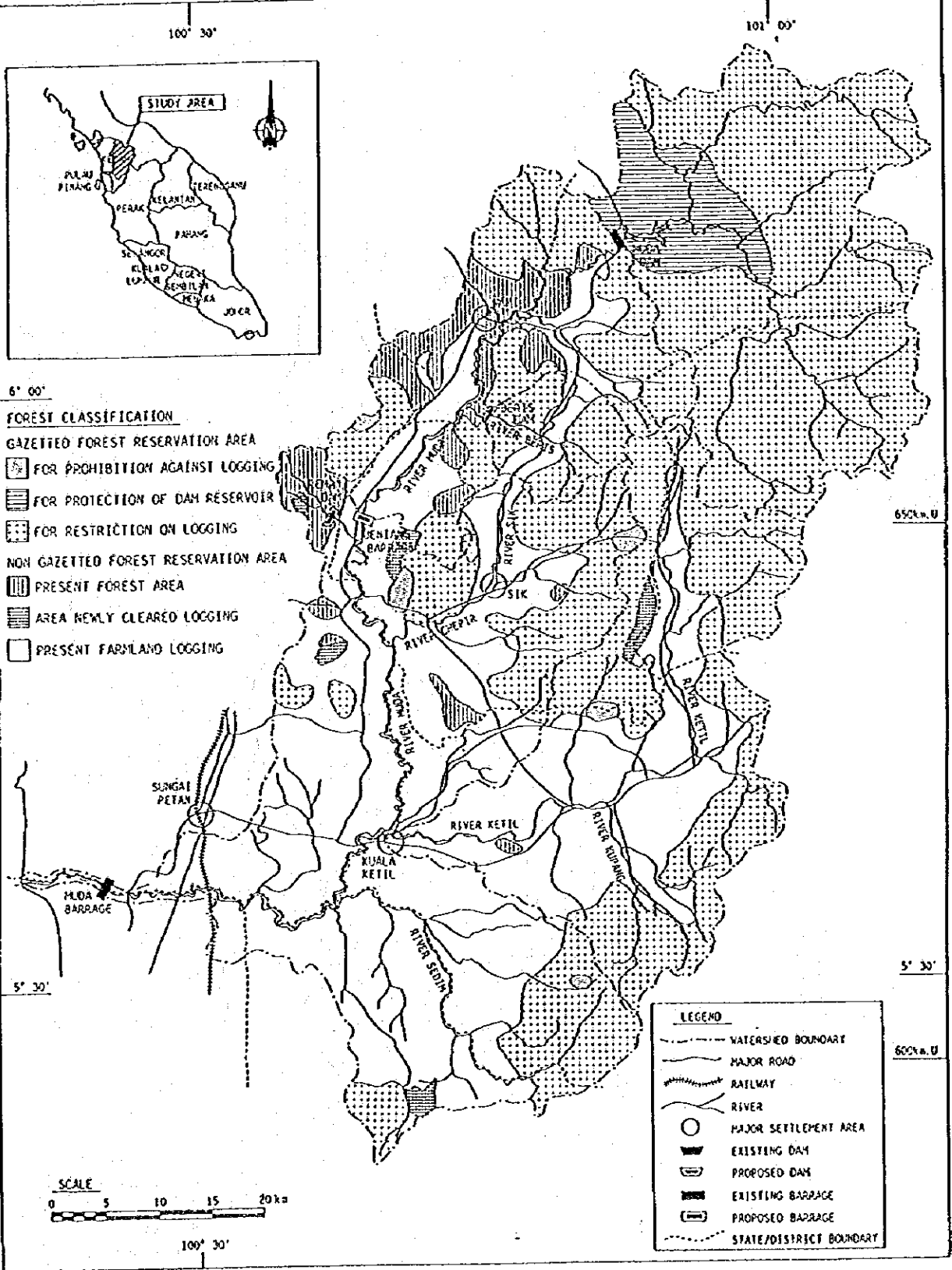


COMPREHENSIVE MANAGEMENT PLAN OF
MUDA RIVER BASIN

FIG. 5.2.1
PRESENT LAND USE IN MUDA RIVER BASIN

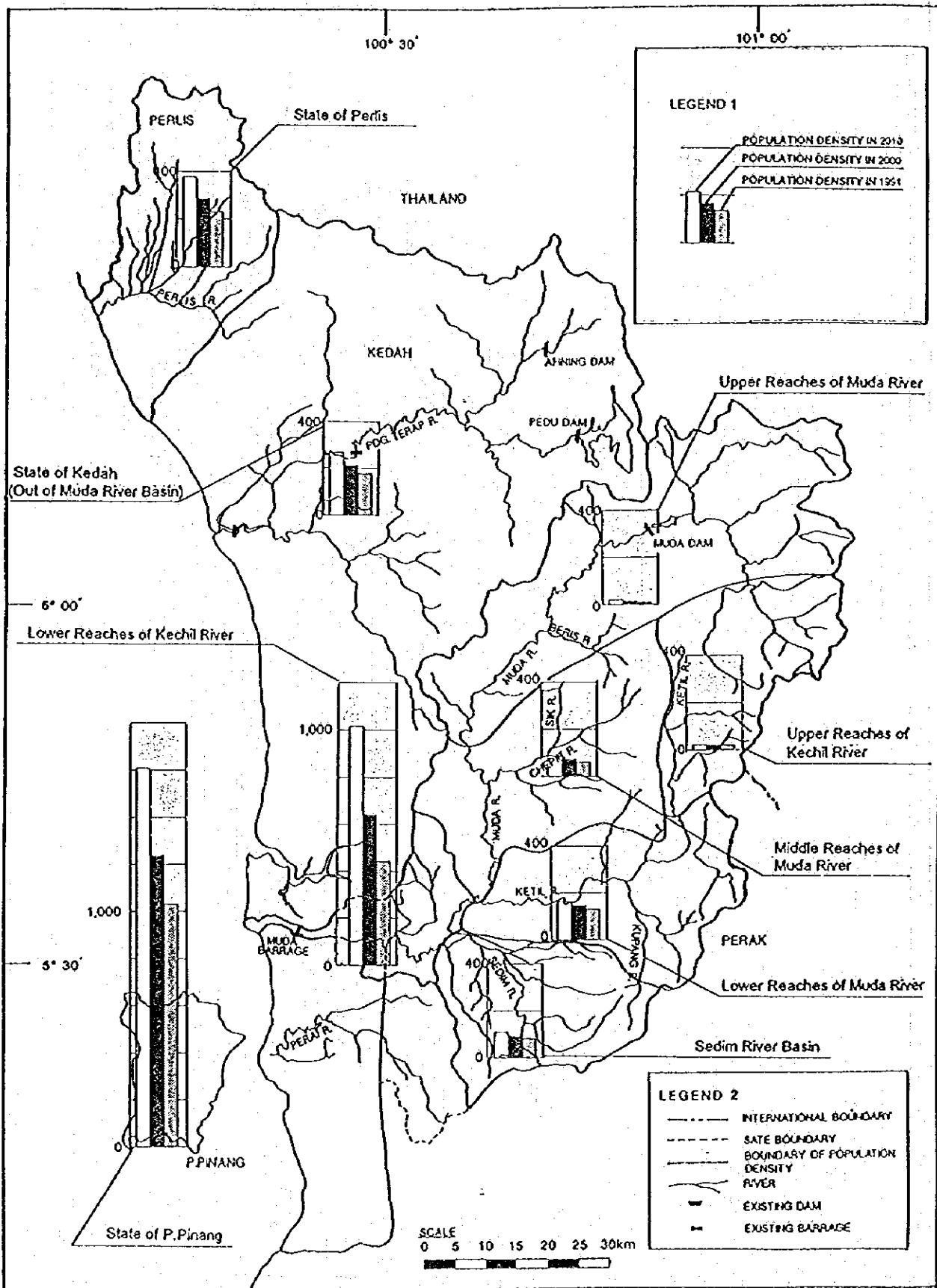
JAPAN INTERNATIONAL COOPERATION AGENCY



COMPREHENSIVE MANAGEMENT PLAN OF MUDA RIVER BASIN

FIG. 5.3.1 PRESENT FOREST AREA IN MUDA RIVER BASIN

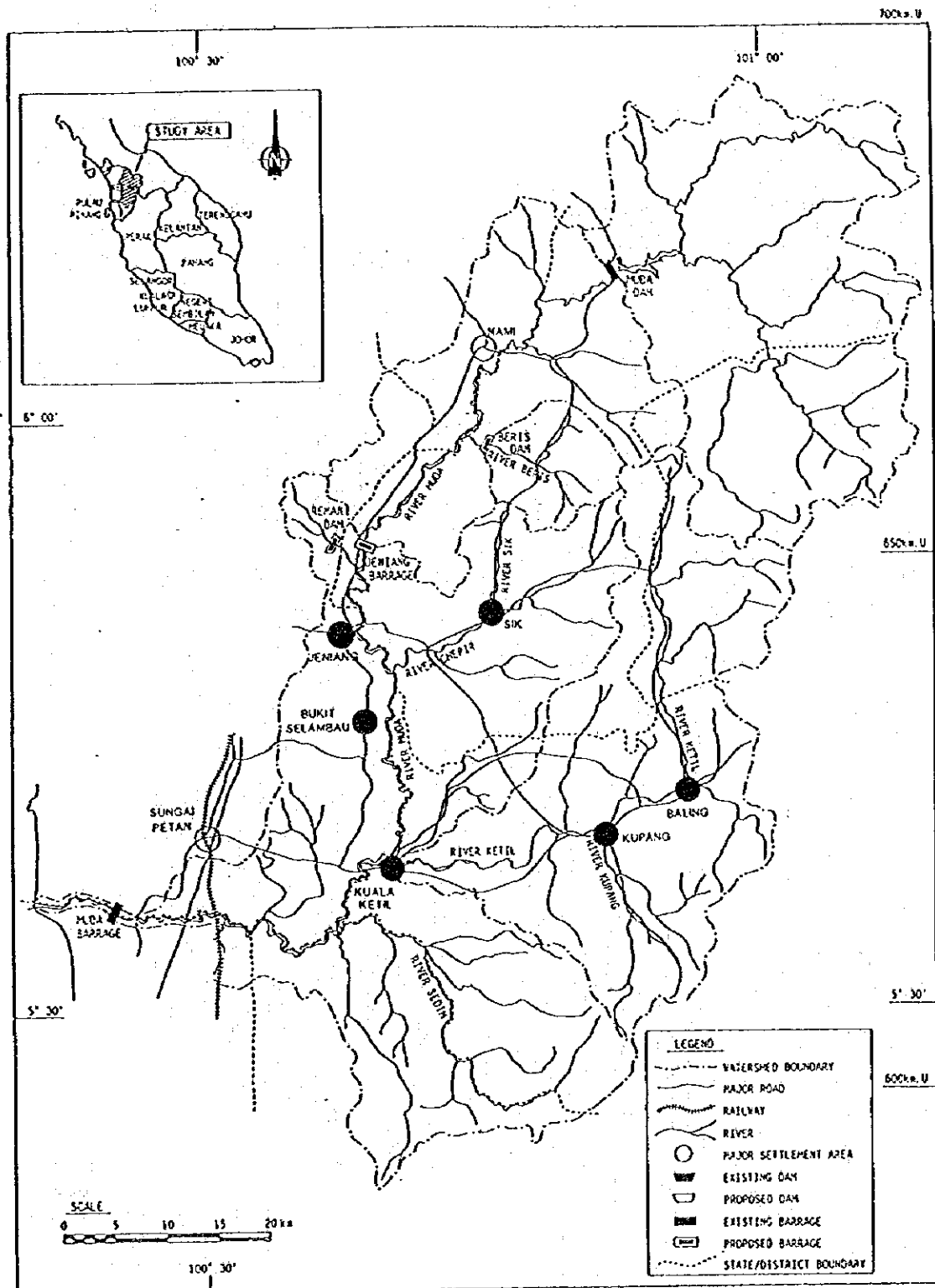
JAPAN INTERNATIONAL COOPERATION AGENCY



COMPREHENSIVE MANAGEMENT PLAN OF MUDA RIVER BASIN

FIG. 5.4.1
POPULATION DENSITY IN AND AROUND MUDA RIVER BASIN

JAPAN INTERNATIONAL COOPERATION AGENCY

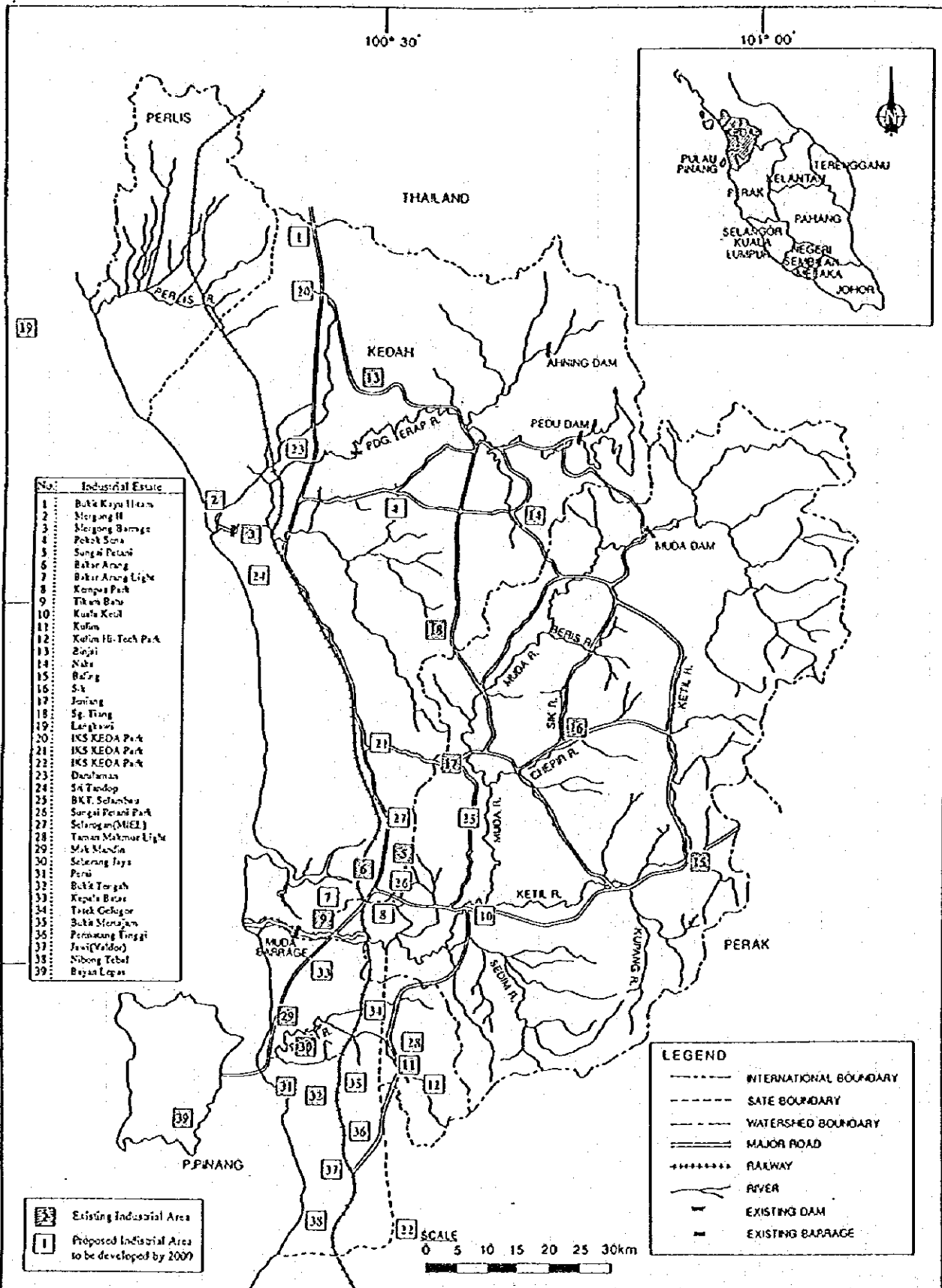


COMPREHENSIVE MANAGEMENT PLAN OF
MUDA RIVER BASIN

JAPAN INTERNATIONAL COOPERATION AGENCY

FIG. 5.5.1

PROJECTED URBAN CENTERS IN MUDA RIVER
BASIN

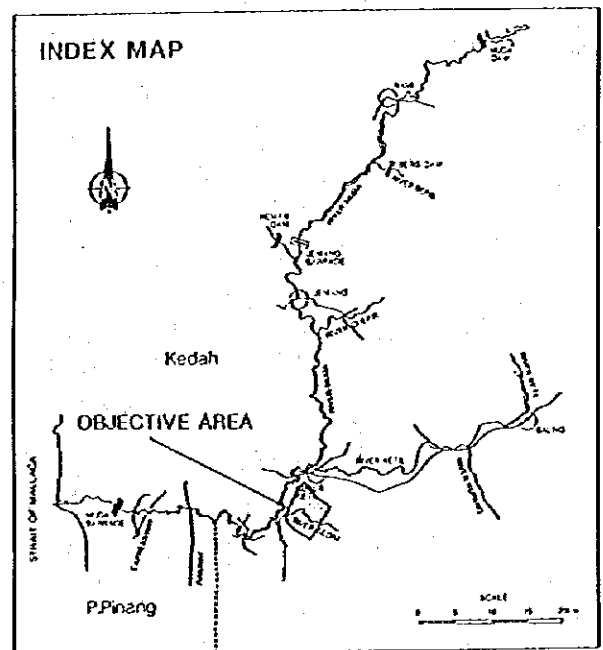
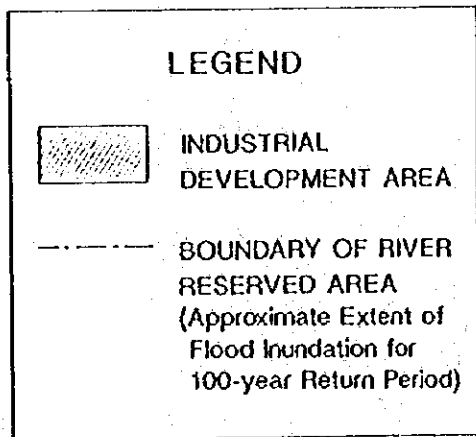
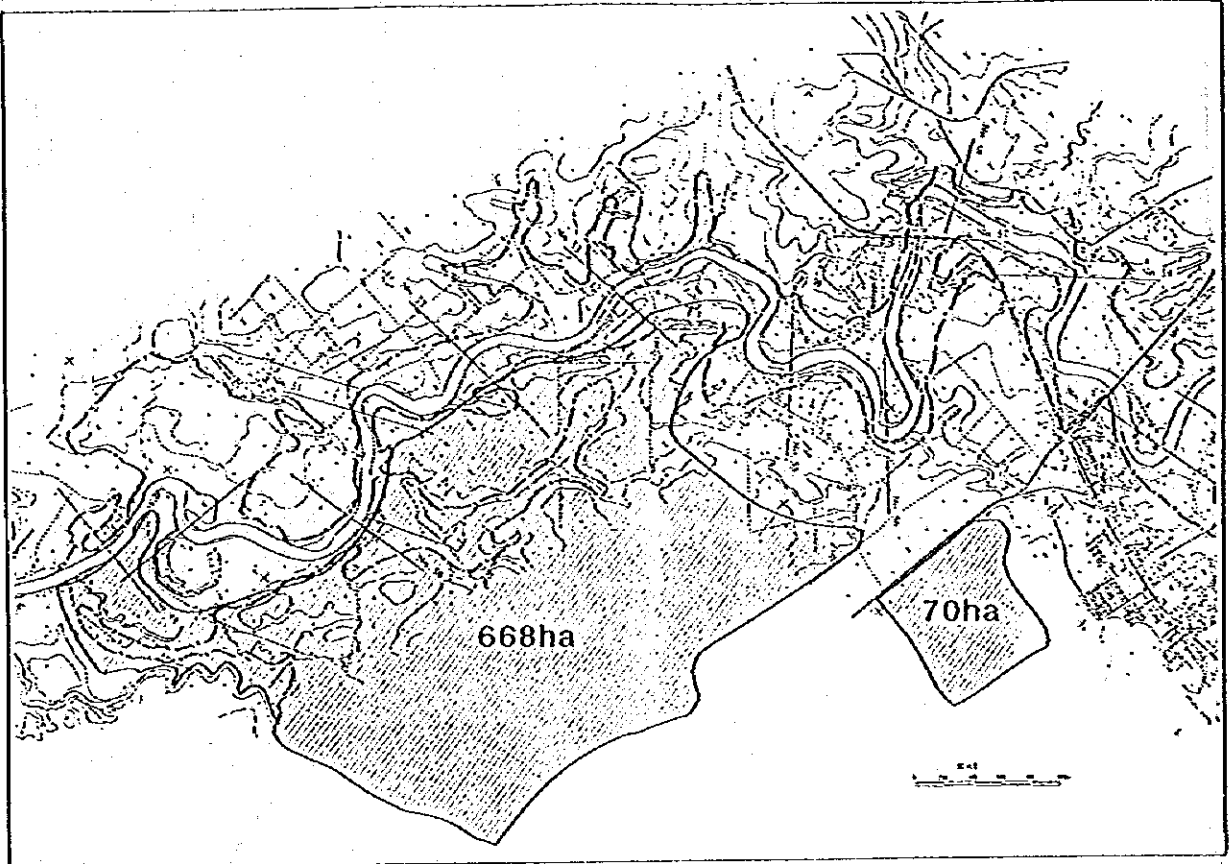


COMPREHENSIVE MANAGEMENT PLAN OF MUDA RIVER BASIN

FIG. 5.6.1

PRESENT AND PROJECTED INDUSTRIAL AREA IN 2000

JAPAN INTERNATIONAL COOPERATION AGENCY

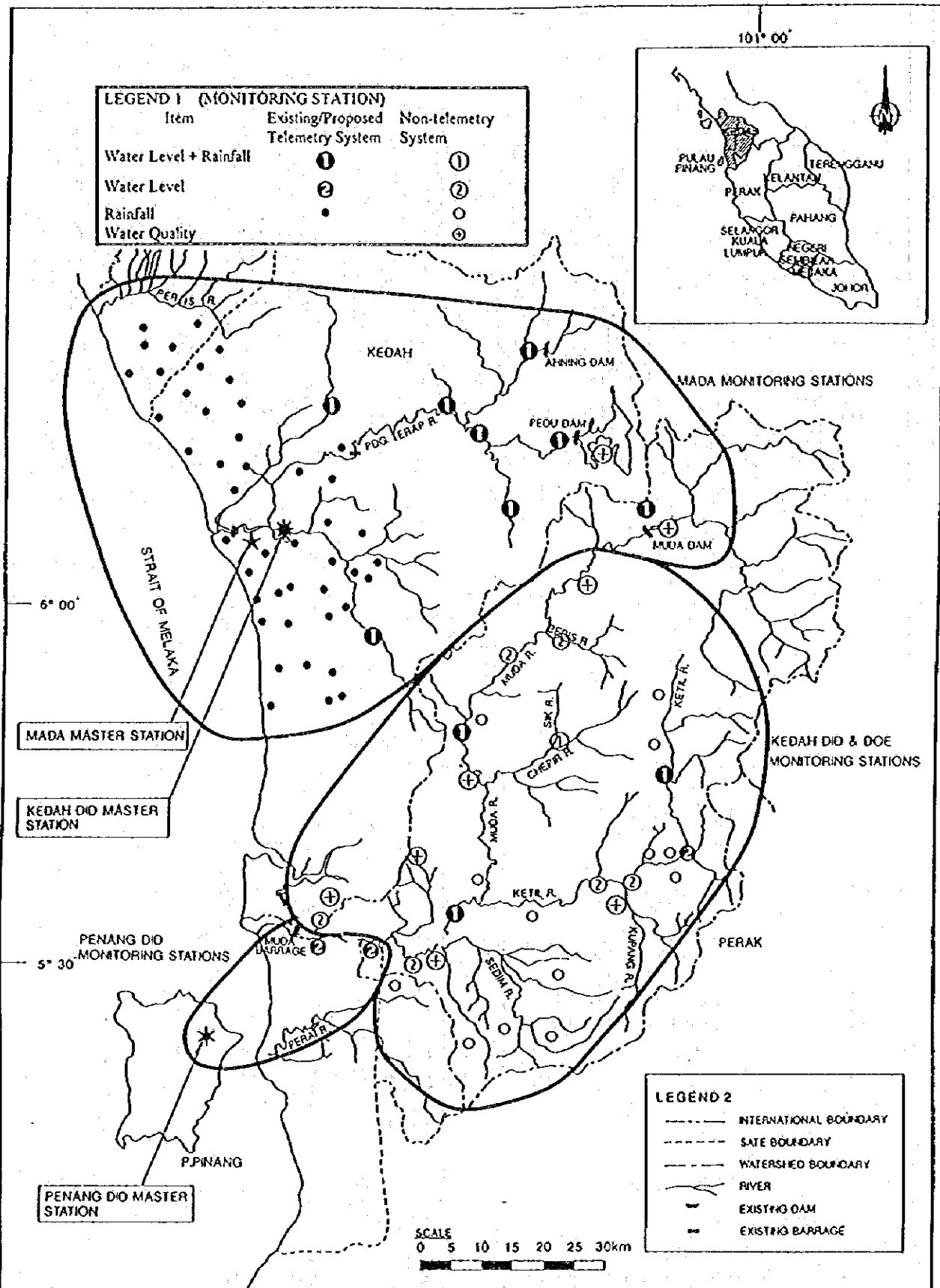


COMPREHENSIVE MANAGEMENT PLAN OF
MUDA RIVER BASIN

JAPAN INTERNATIONAL COOPERATION AGENCY

FIG. 5.6.2

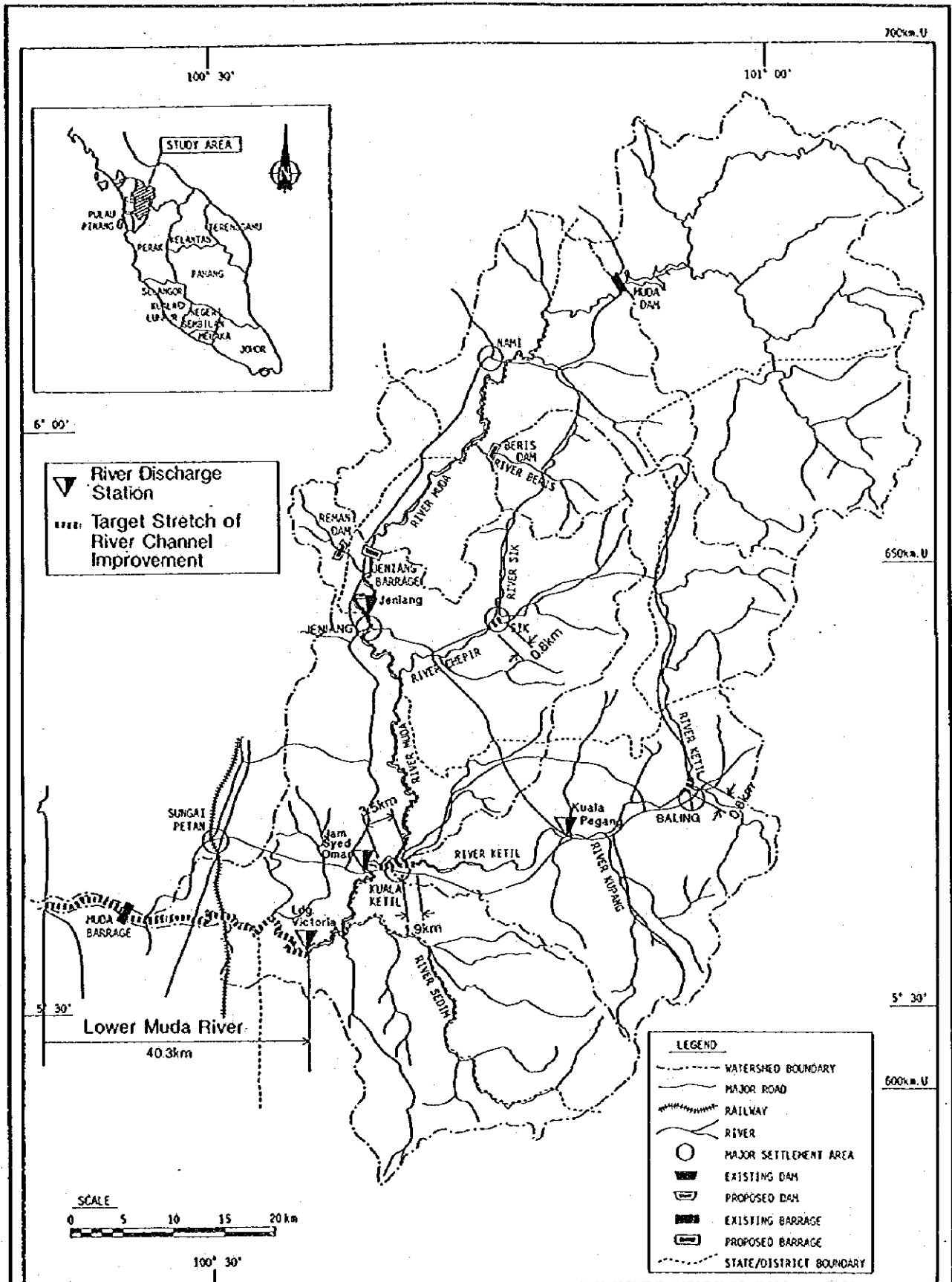
INDUSTRIAL DEVELOPMENT AREA IN KUALA
KETIL



COMPREHENSIVE MANAGEMENT PLAN OF MUDA RIVER BASIN

FIG. 5.7.1
PRESENT MONITORING SYSTEM OF MUDA RIVER AND MADA IRRIGATION AREA

JAPAN INTERNATIONAL COOPERATION AGENCY

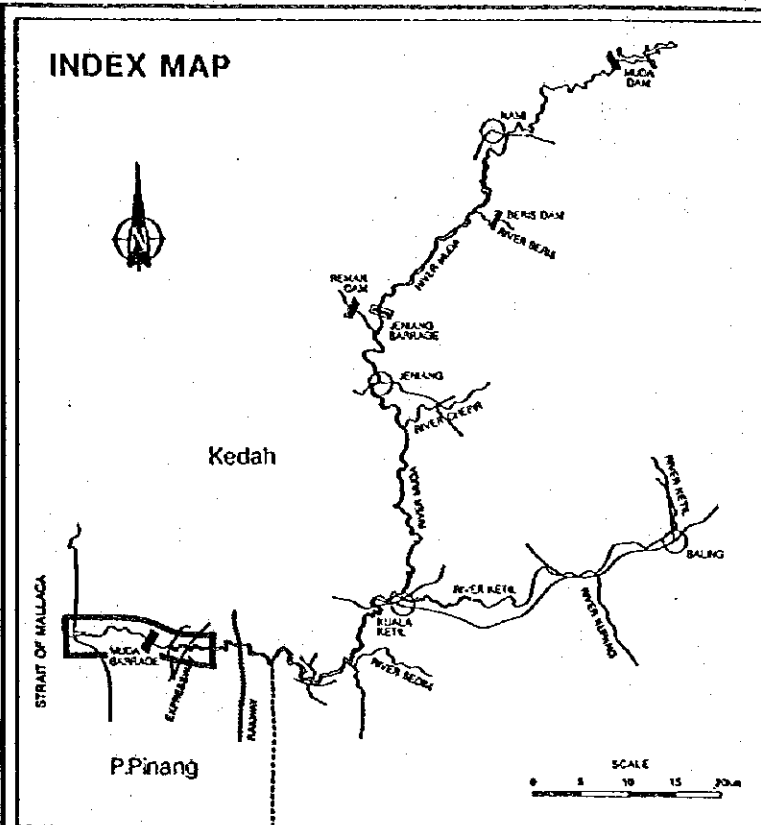


COMPREHENSIVE MANAGEMENT PLAN OF MUDA RIVER BASIN

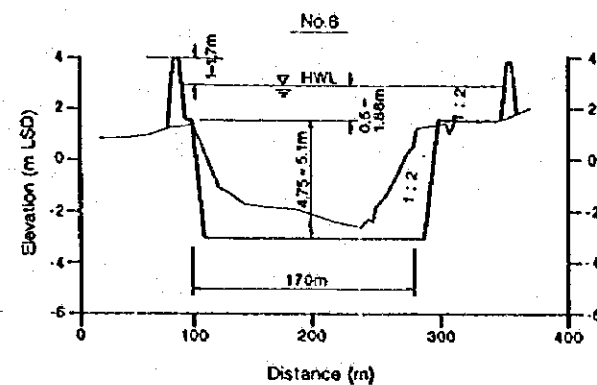
JAPAN INTERNATIONAL COOPERATION AGENCY

FIG. 6.1.1

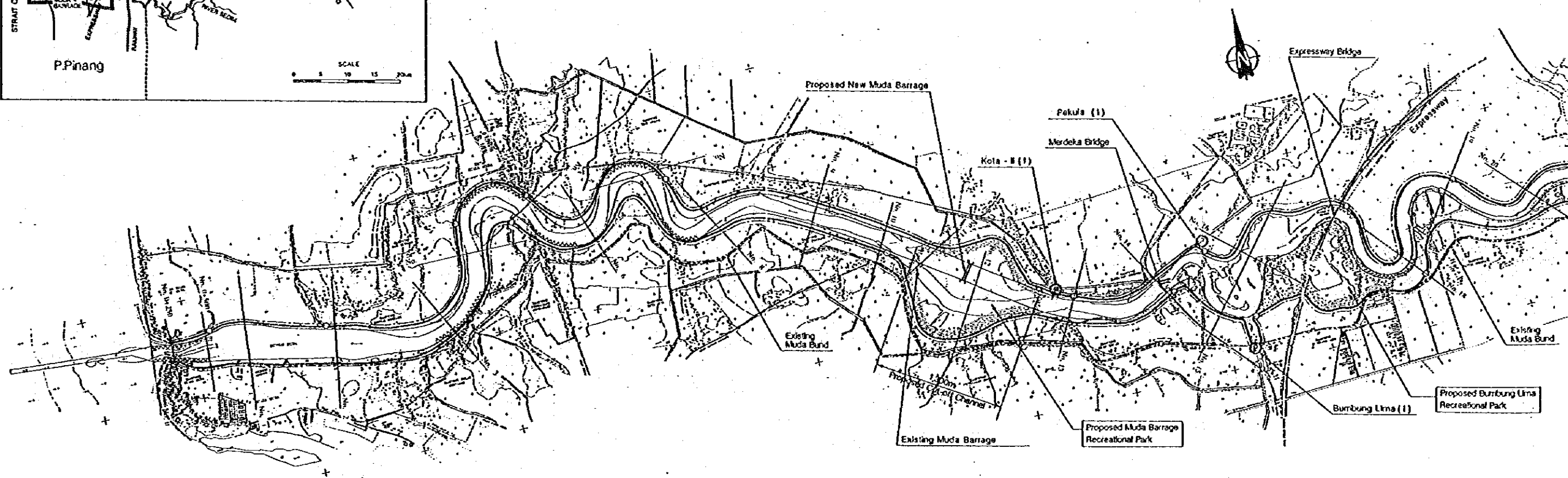
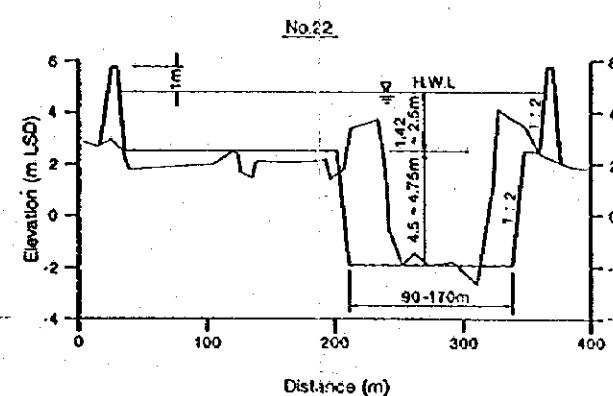
TARGET STRETCH FOR STRUCTURAL FLOOD MITIGATION PLAN



Typical Cross Section
(No.0 - No.11+300)



Typical Cross Section
(No.11+300 - No.30+55)

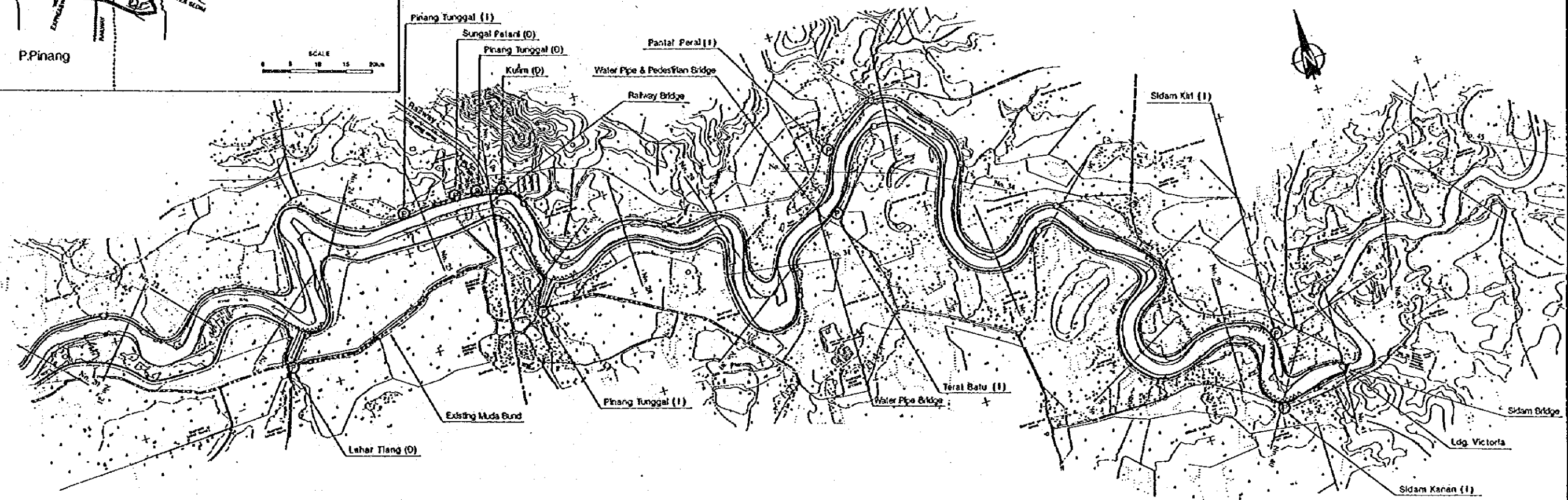
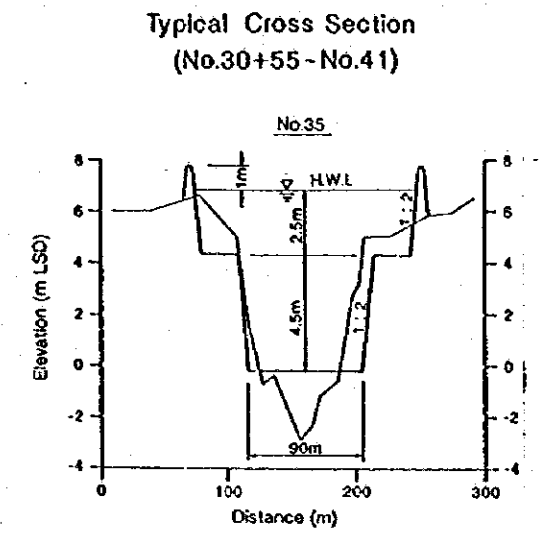
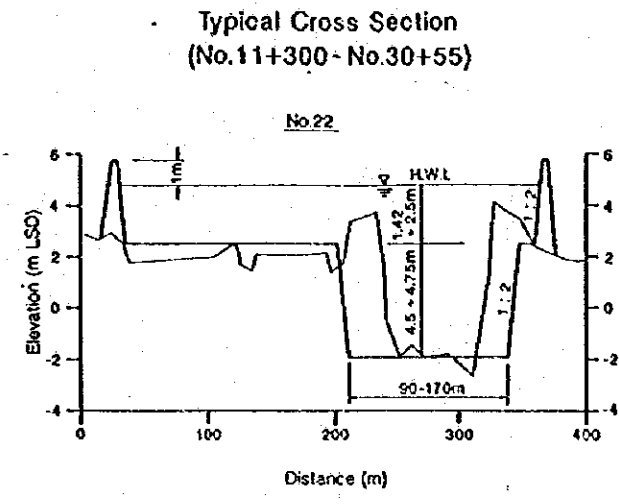
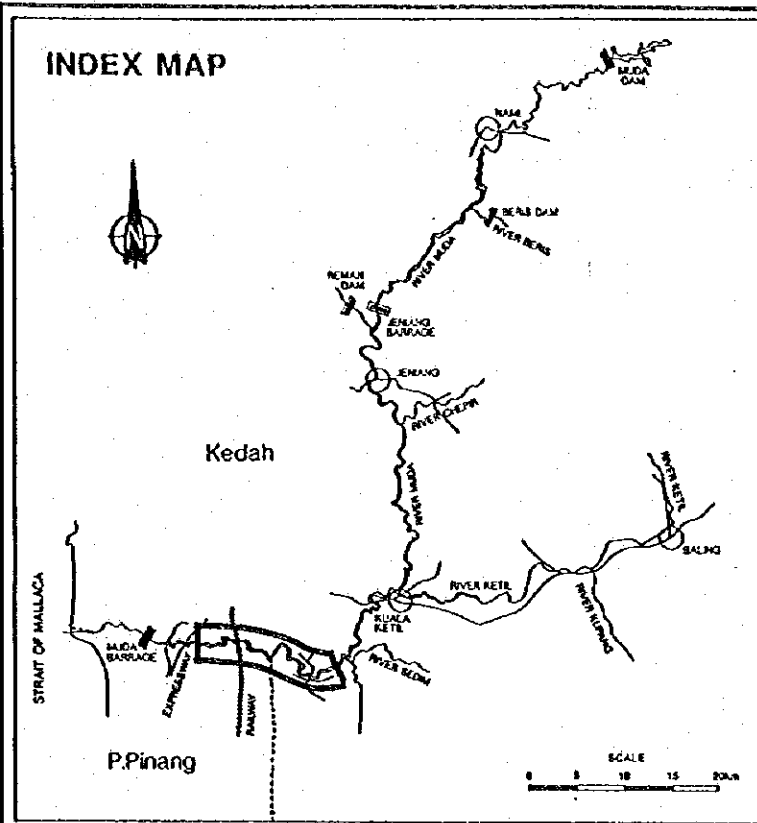


LEGEND			
	Proposed Obe		Proposed Drop
	Proposed Low Water Channel		Discharge Station
	Proposed Pavement		Proposed Sluice
	Existing Sea Obe		Pump Station
	Boundary of Proposed River Reserve Area		Irrigation Purpose
	Proposed Barrage		Domestic / Industrial Purpose



COMPREHENSIVE MANAGEMENT PLAN OF
MUDA RIVER BASIN
JAPAN INTERNATIONAL COOPERATION AGENCY

FIG. 6.1.2 (1/2)
PLAN AND TYPICAL CROSS SECTION OF
PROPOSED LOWER MUDA RIVER IMPROVEMENT

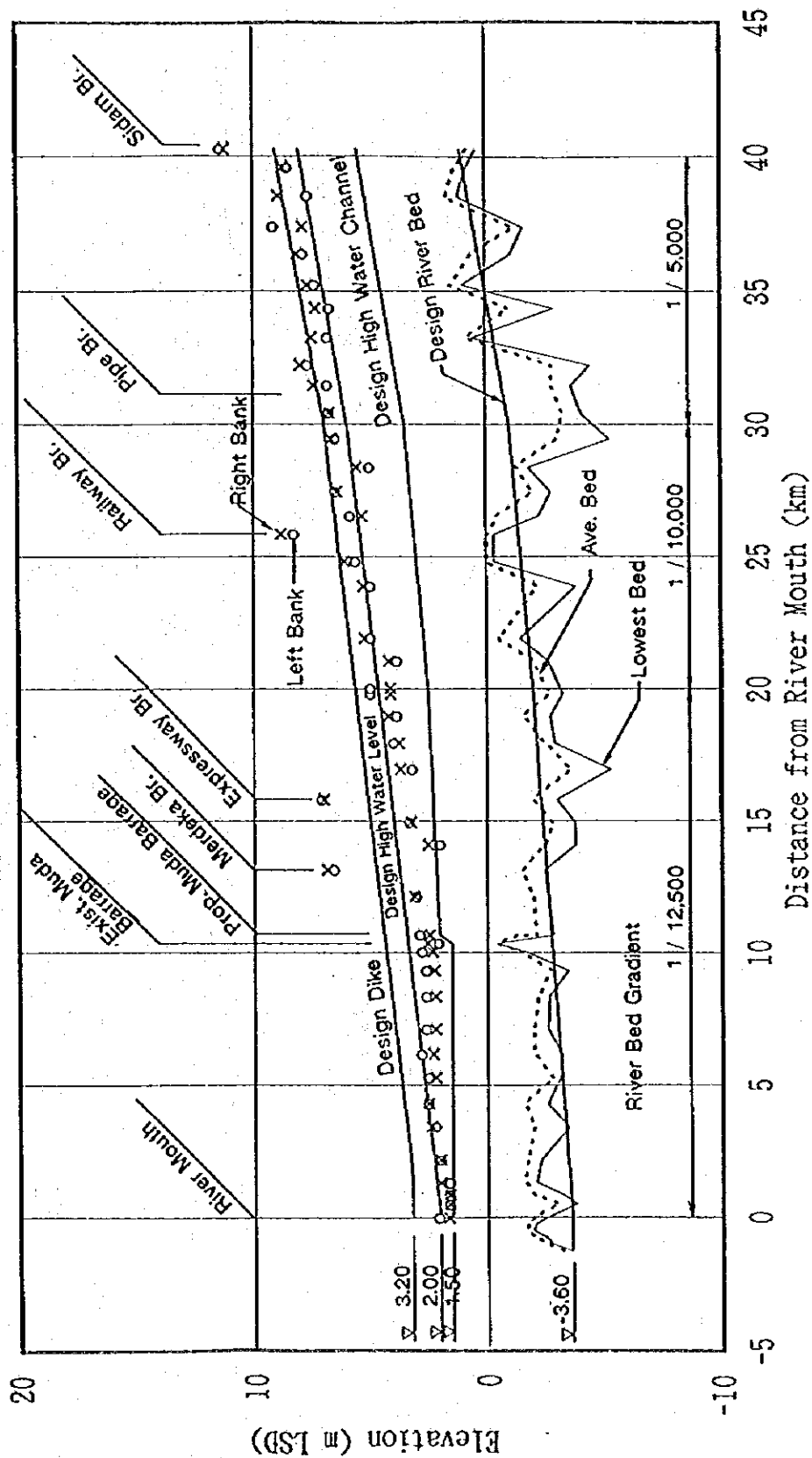


LEGEND			
—	Proposed Dike	○	Proposed Drop
---	Proposed Low Water Channel	▽	Discharge Station
▧▧▧▧	Proposed Reinforcement	◇	Proposed Slake
.....	Existing Sea Dike	⊙	Pump Station
---	Boundary of Proposed River Basin Area	(I)	Irrigation Purpose
▬	Proposed Barrage	(D)	Domestic/Industrial Purpose

COMPREHENSIVE MANAGEMENT PLAN OF MUDA RIVER BASIN
 JAPAN INTERNATIONAL COOPERATION AGENCY

FIG. 6.1.2 (2/2)
 PLAN AND TYPICAL CROSS SECTION OF PROPOSED LOWER MUDA RIVER IMPROVEMENT

Longitudinal Profile of Lower Muda River

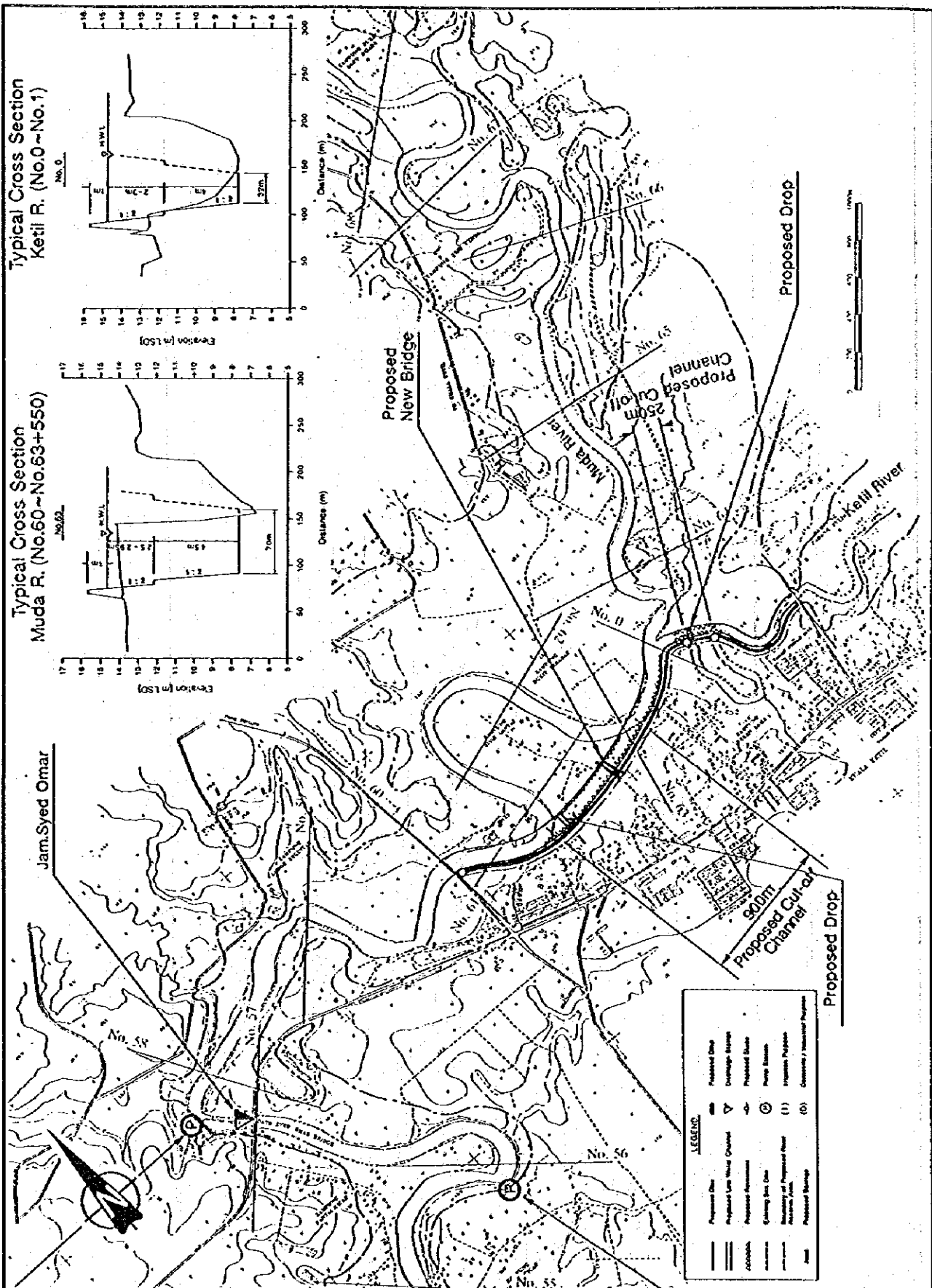


COMPREHENSIVE MANAGEMENT PLAN OF
MUDA RIVER BASIN

JAPAN INTERNATIONAL COOPERATION AGENCY

FIG. 6.1.3

LONGITUDINAL PROFILE OF PROPOSED LOWER
MUDA RIVER IMPROVEMENT



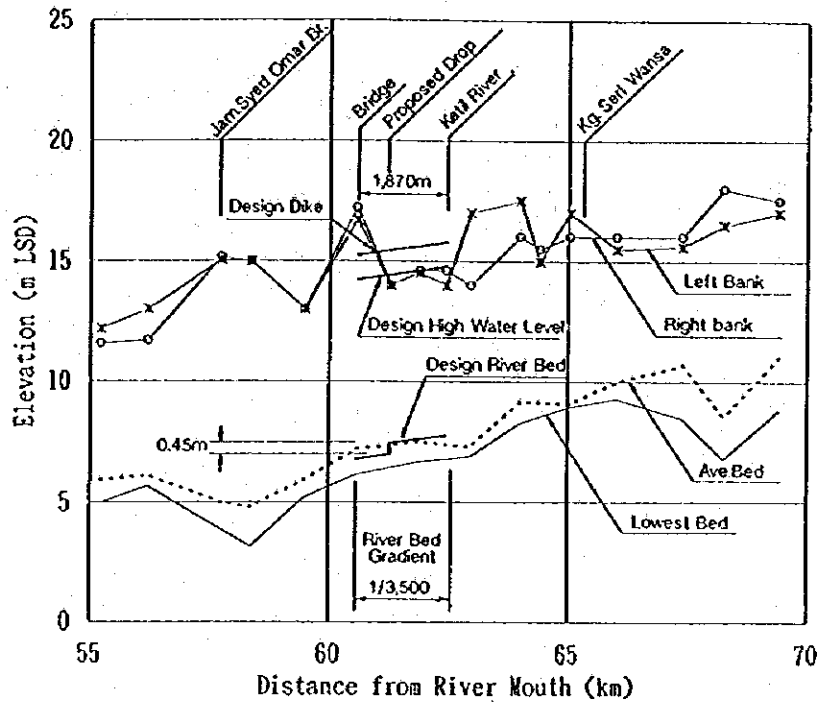
COMPREHENSIVE MANAGEMENT PLAN OF
MUDA RIVER BASIN

JAPAN INTERNATIONAL COOPERATION AGENCY

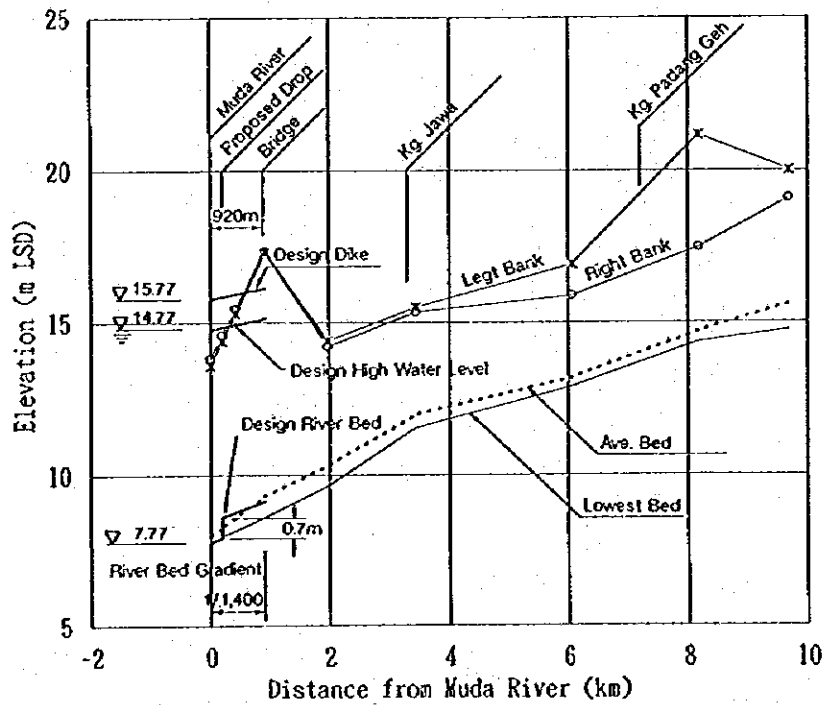
FIG. 6.1.4

PLAN AND TYPICAL CROSS SECTION OF PROPOSED
KUALA KETIL TOWN STRETCH IMPROVEMENT

Muda River



Ketil River

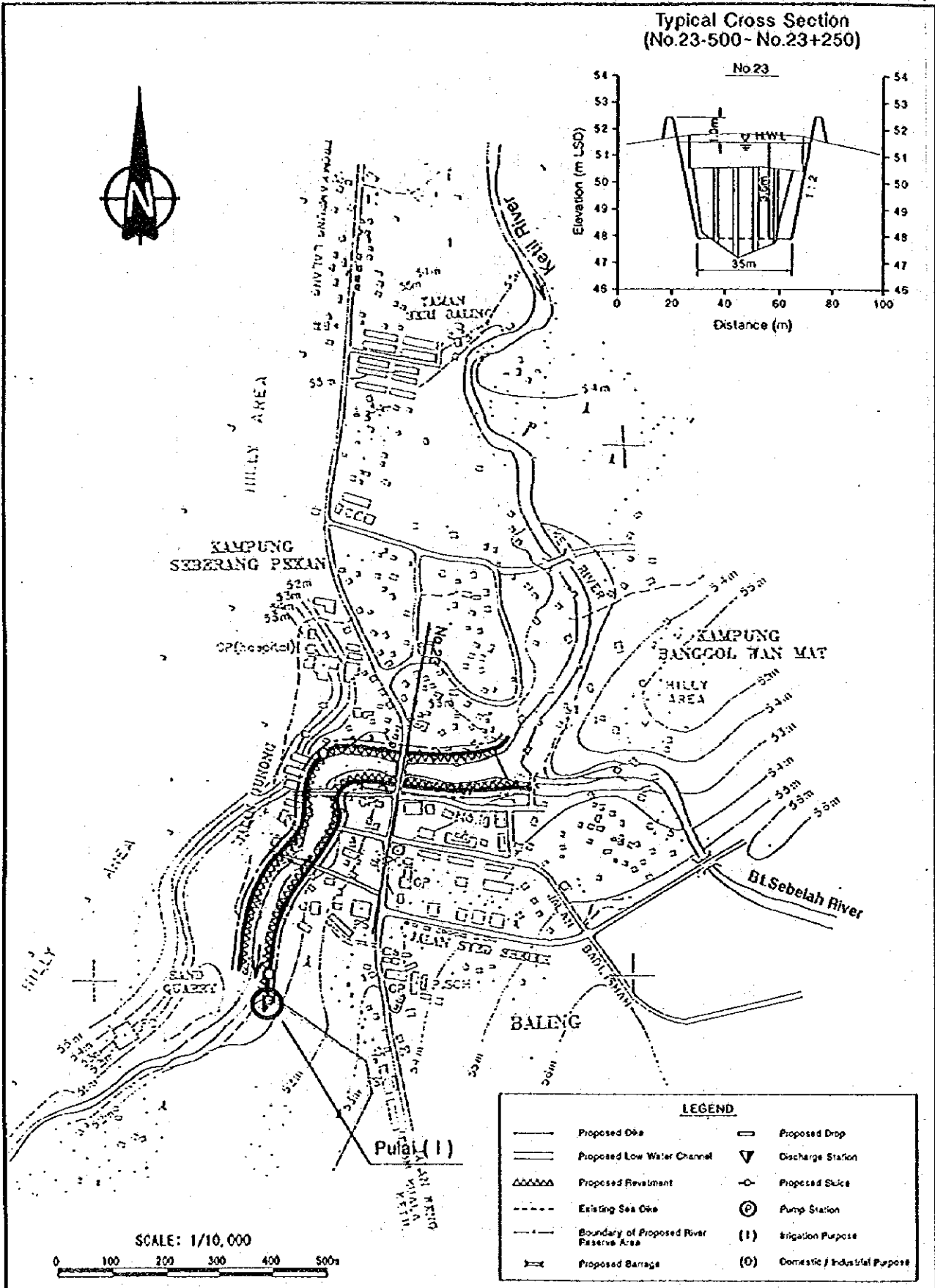


COMPREHENSIVE MANAGEMENT PLAN OF MUDA RIVER BASIN

JAPAN INTERNATIONAL COOPERATION AGENCY

FIG. 6.15

LONGITUDINAL PROFILE OF PROPOSED KUALA KETIL TOWN STRETCH IMPROVEMENT

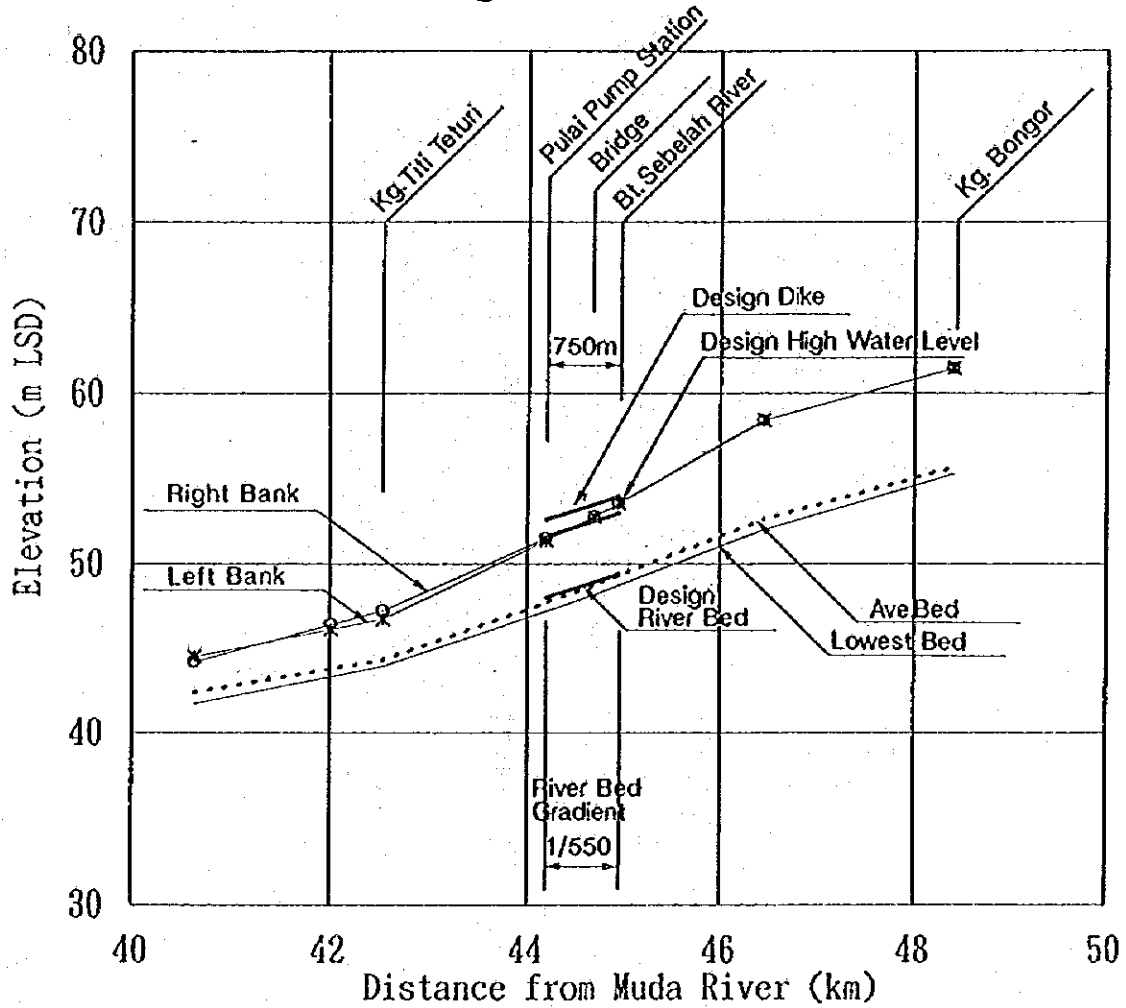


COMPREHENSIVE MANAGEMENT PLAN OF MUDA RIVER BASIN

JAPAN INTERNATIONAL COOPERATION AGENCY

FIG. 6.1.6 PLAN AND TYPICAL CROSS SECTION OF PROPOSED BALING TOWN STRETCH IMPROVEMENT

Longitudinal Profile

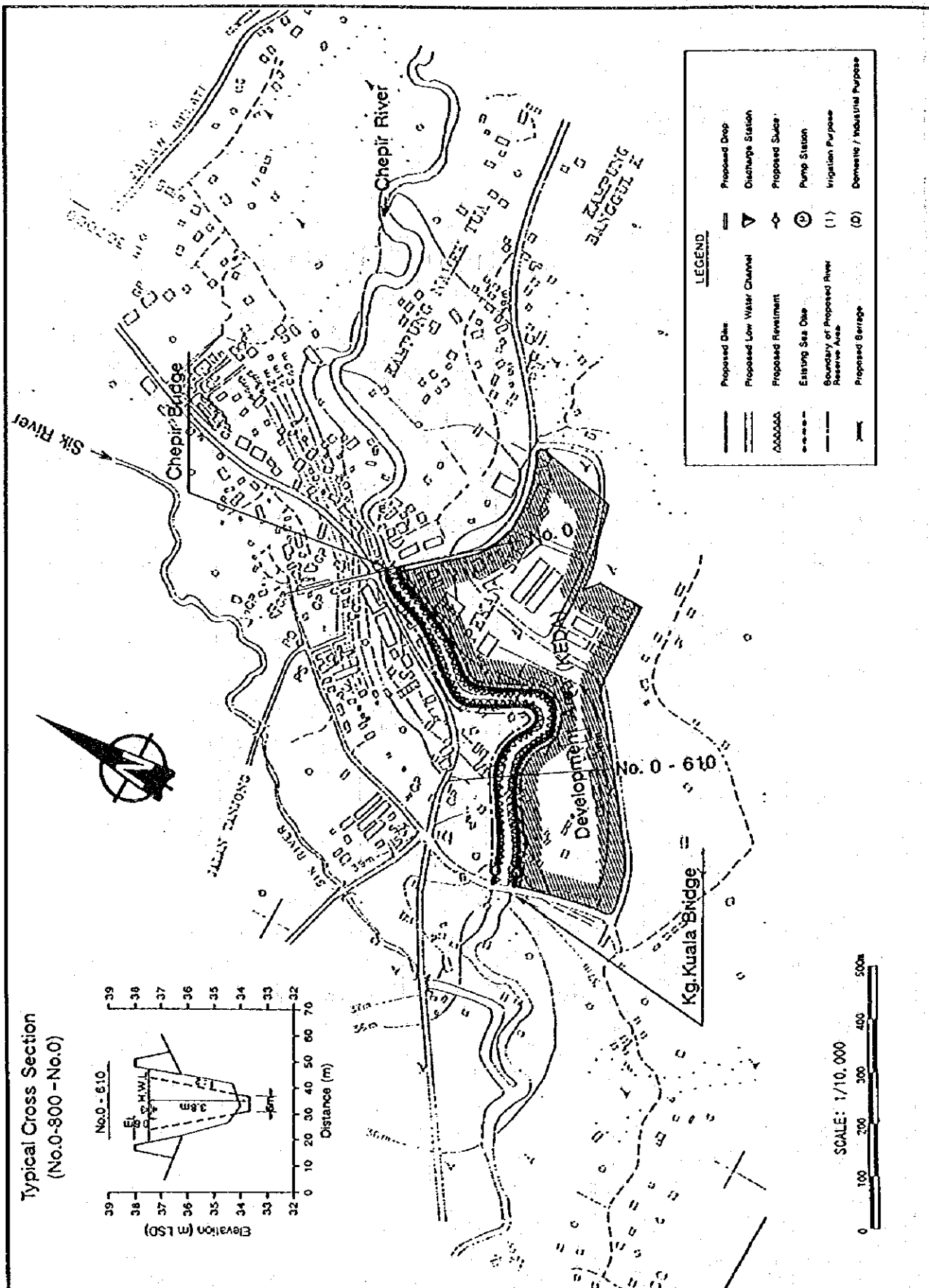


COMPREHENSIVE MANAGEMENT PLAN OF
MUDA RIVER BASIN

JAPAN INTERNATIONAL COOPERATION AGENCY

FIG. 6.1.7

LONGITUDINAL PROFILE OF PROPOSED BALING
TOWN STRETCH IMPROVEMENT

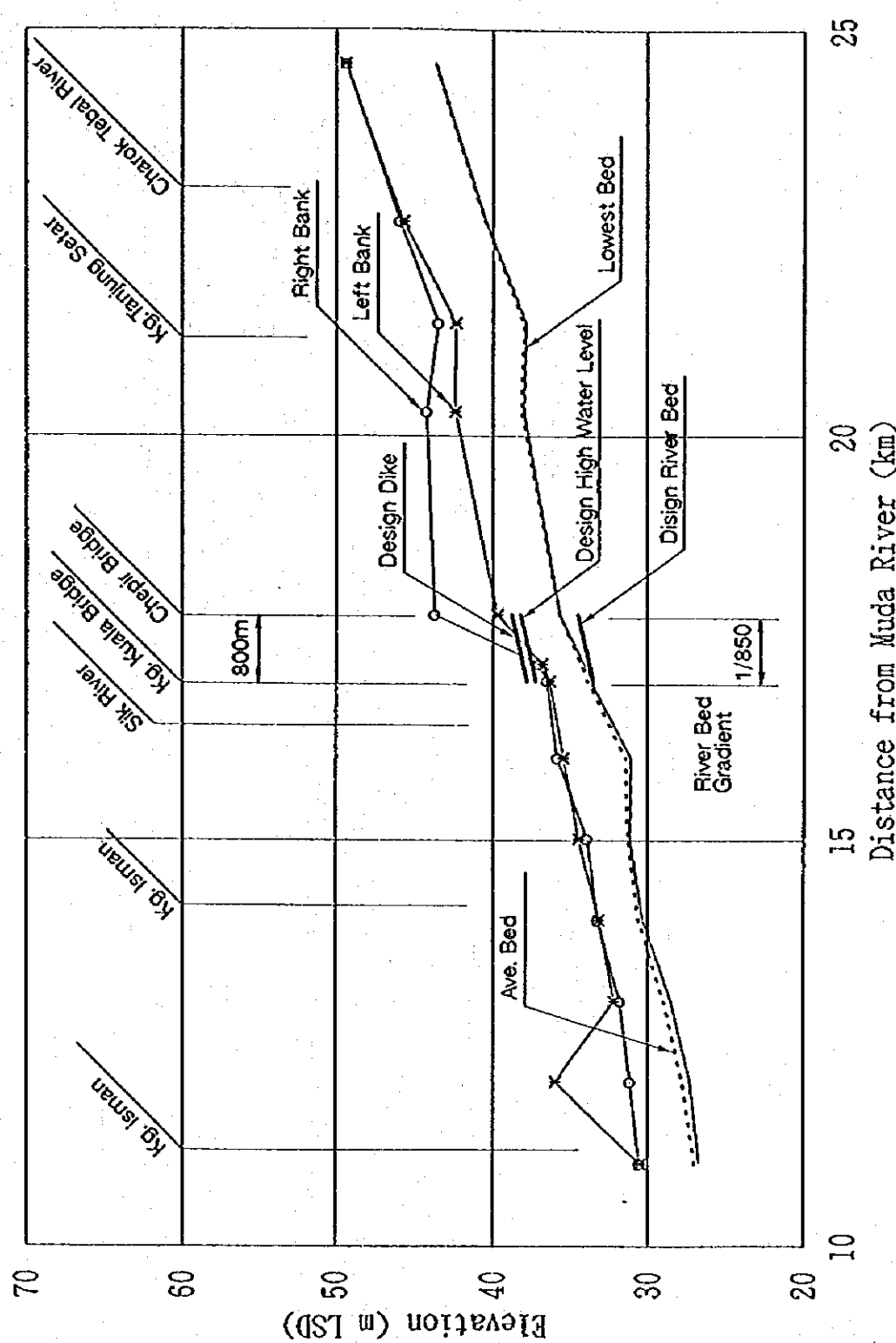


COMPREHENSIVE MANAGEMENT PLAN OF
MUDA RIVER BASIN

JAPAN INTERNATIONAL COOPERATION AGENCY

FIG. 6.1.8
PLAN AND TYPICAL CROSS SECTION OF
PROPOSED SIK TOWN STRETCH IMPROVEMENT

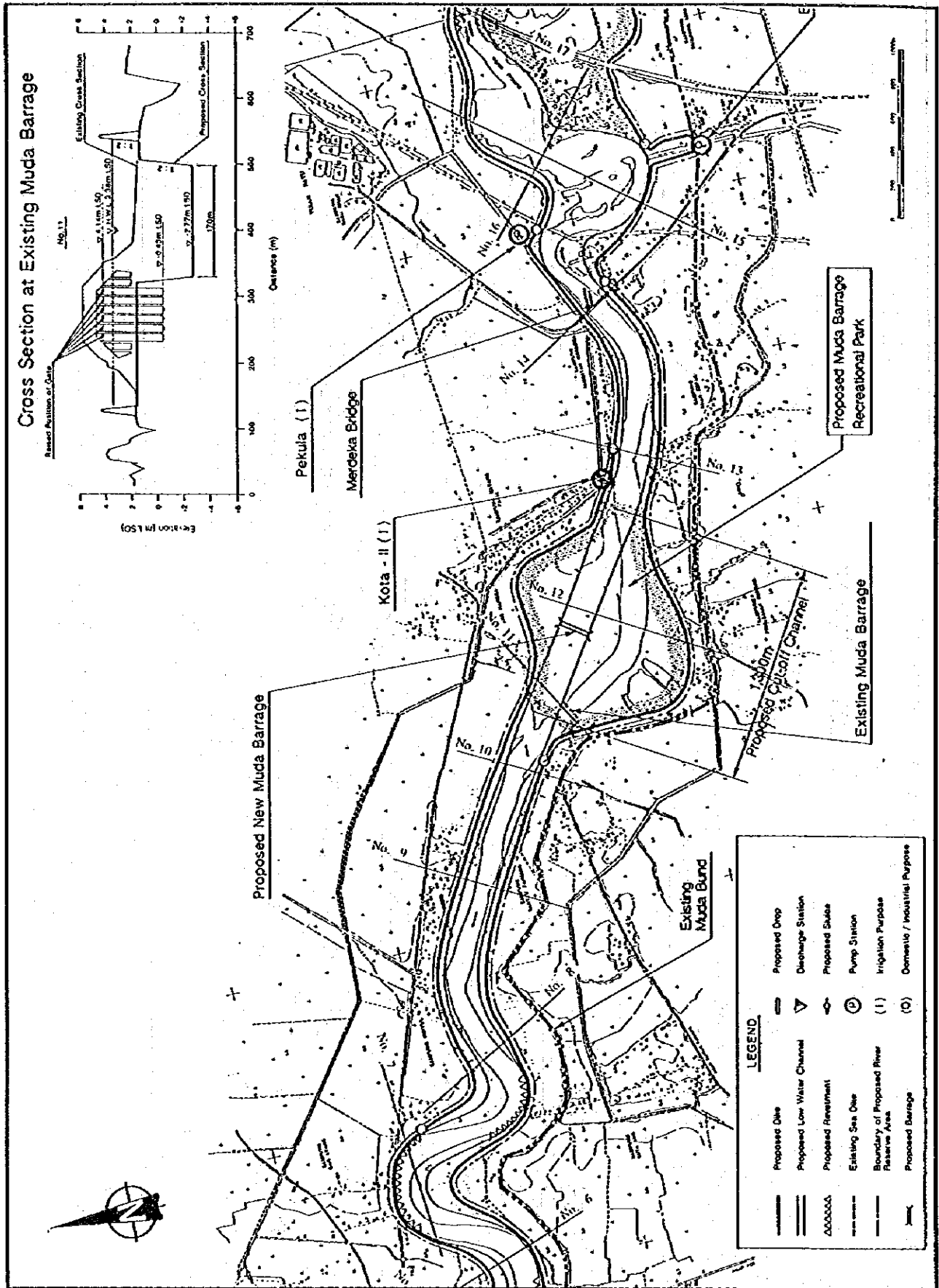
Chepir River



COMPREHENSIVE MANAGEMENT PLAN OF MUDA RIVER BASIN

JAPAN INTERNATIONAL COOPERATION AGENCY

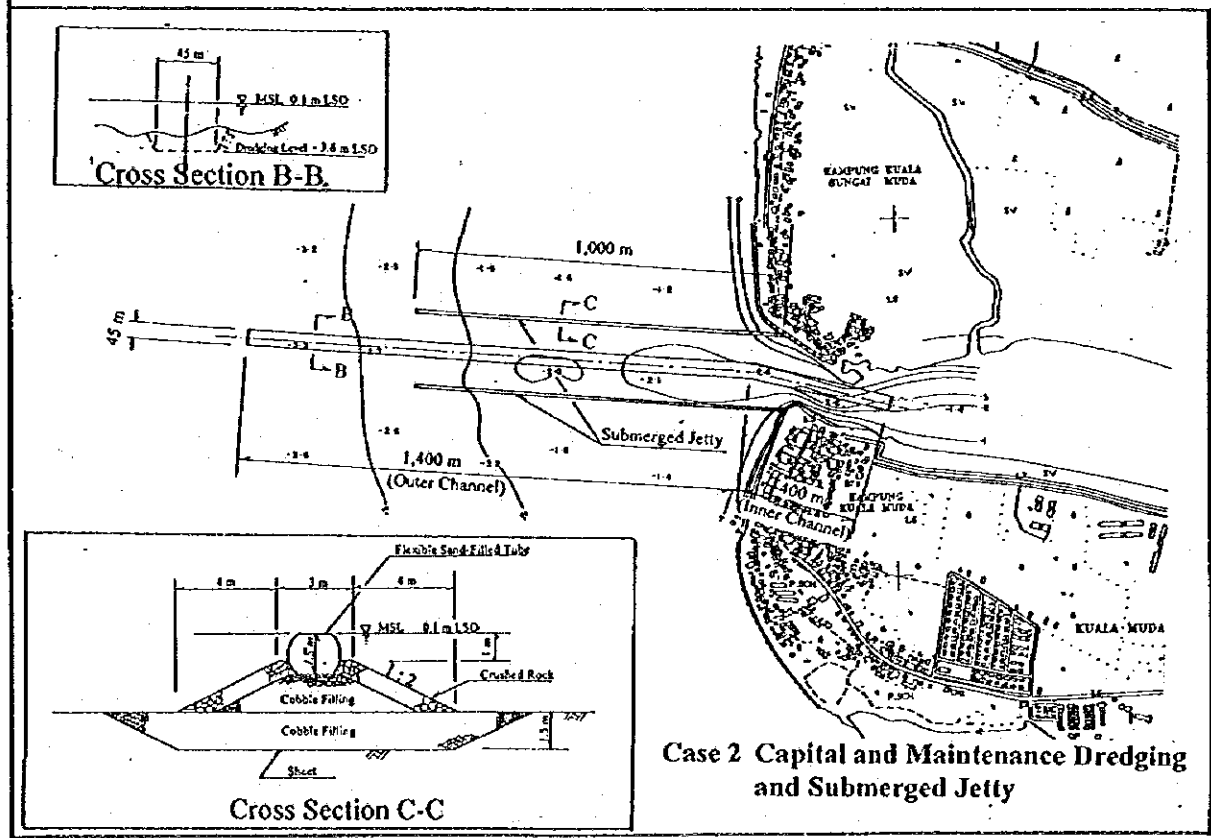
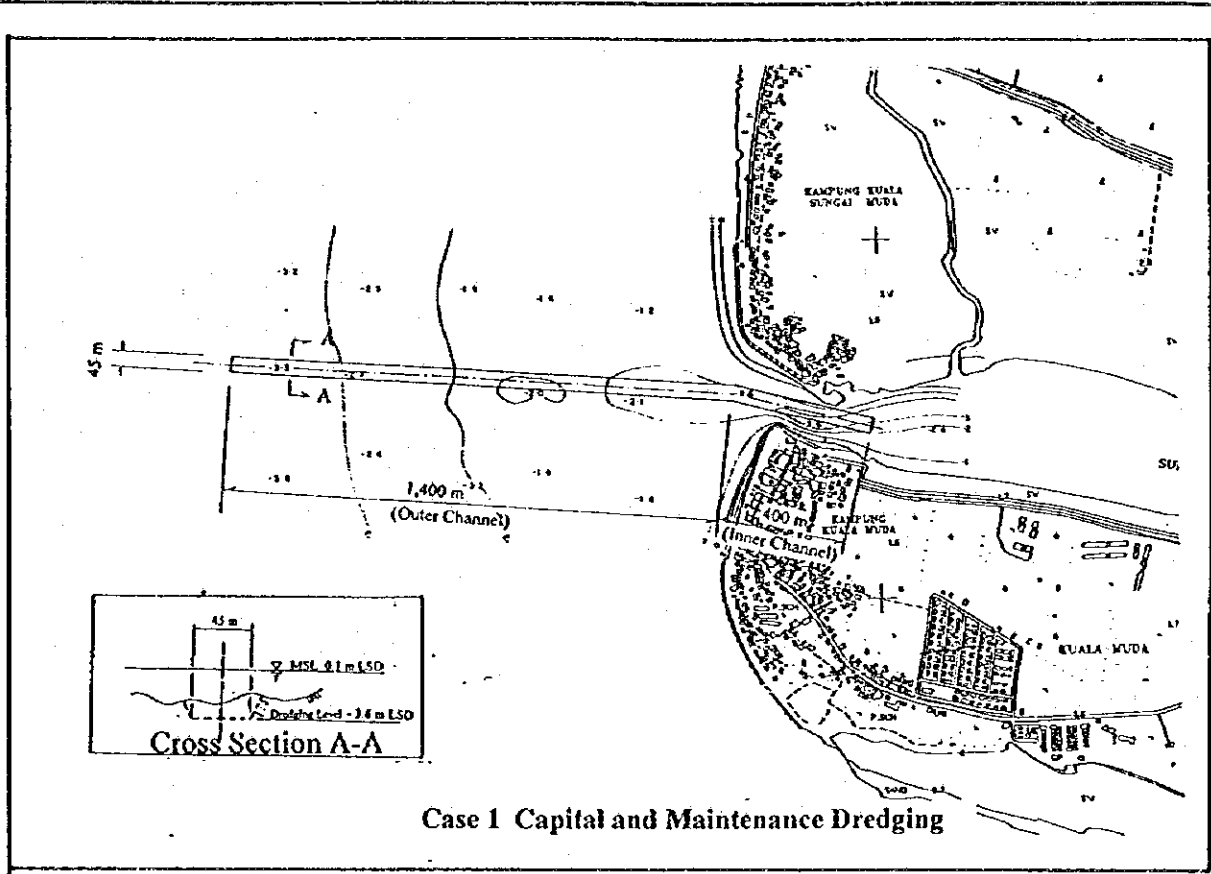
FIG. 6.1.9
LONGITUDINAL PROFILE OF PROPOSED SIK TOWN STRETCH IMPROVEMENT



COMPREHENSIVE MANAGEMENT PLAN OF
MUDA RIVER BASIN

FIG. 6.1.10
RECONSTRUCTION OF MUDA BARRAGE

JAPAN INTERNATIONAL COOPERATION AGENCY

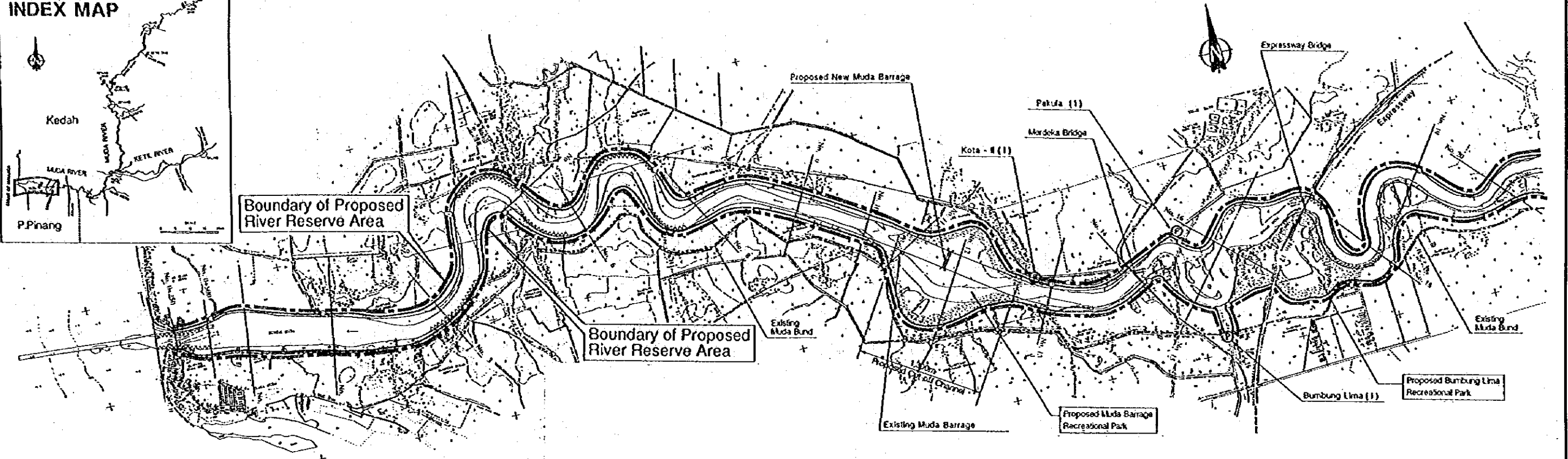
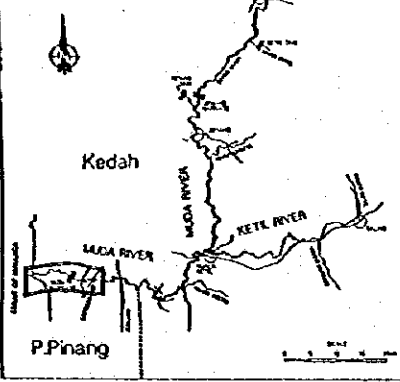


COMPREHENSIVE MANAGEMENT PLAN OF MUDA RIVER BASIN

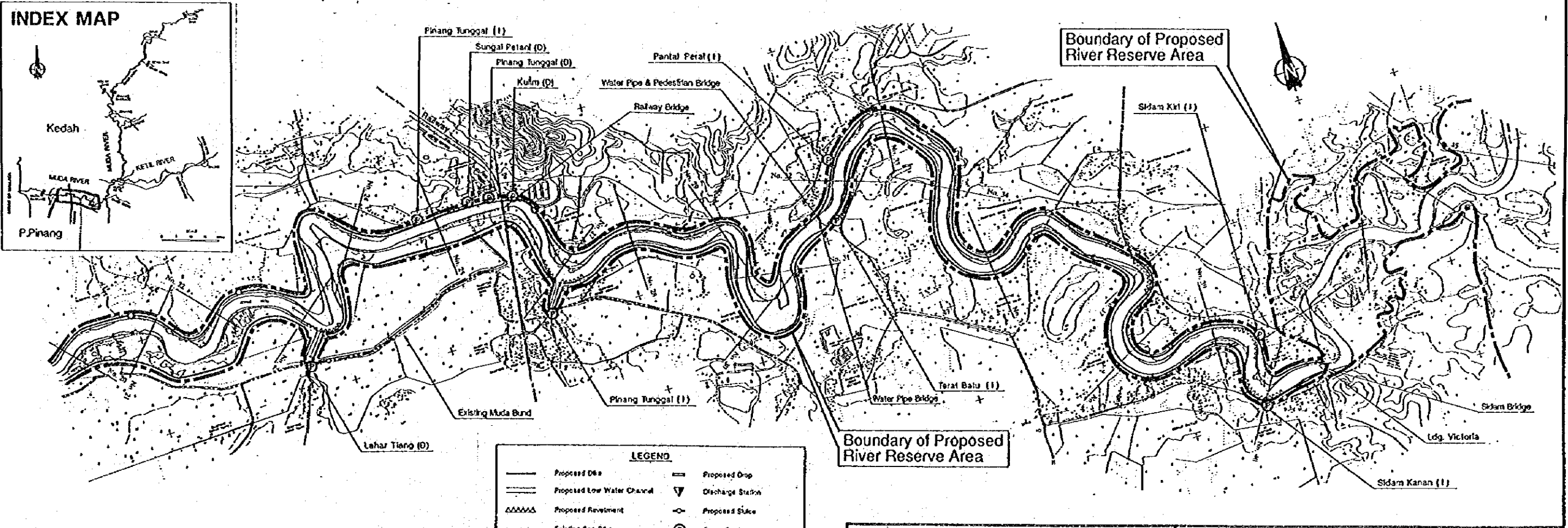
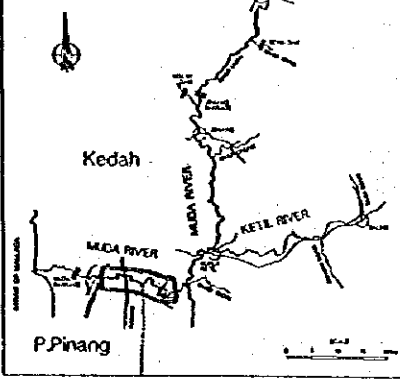
FIG. 6.1.11
ALTERNATIVE PLAN OF MUDA RIVER MOUTH IMPROVEMENT

JAPAN INTERNATIONAL COOPERATION AGENCY

INDEX MAP

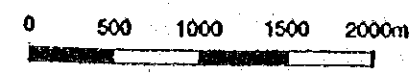


INDEX MAP



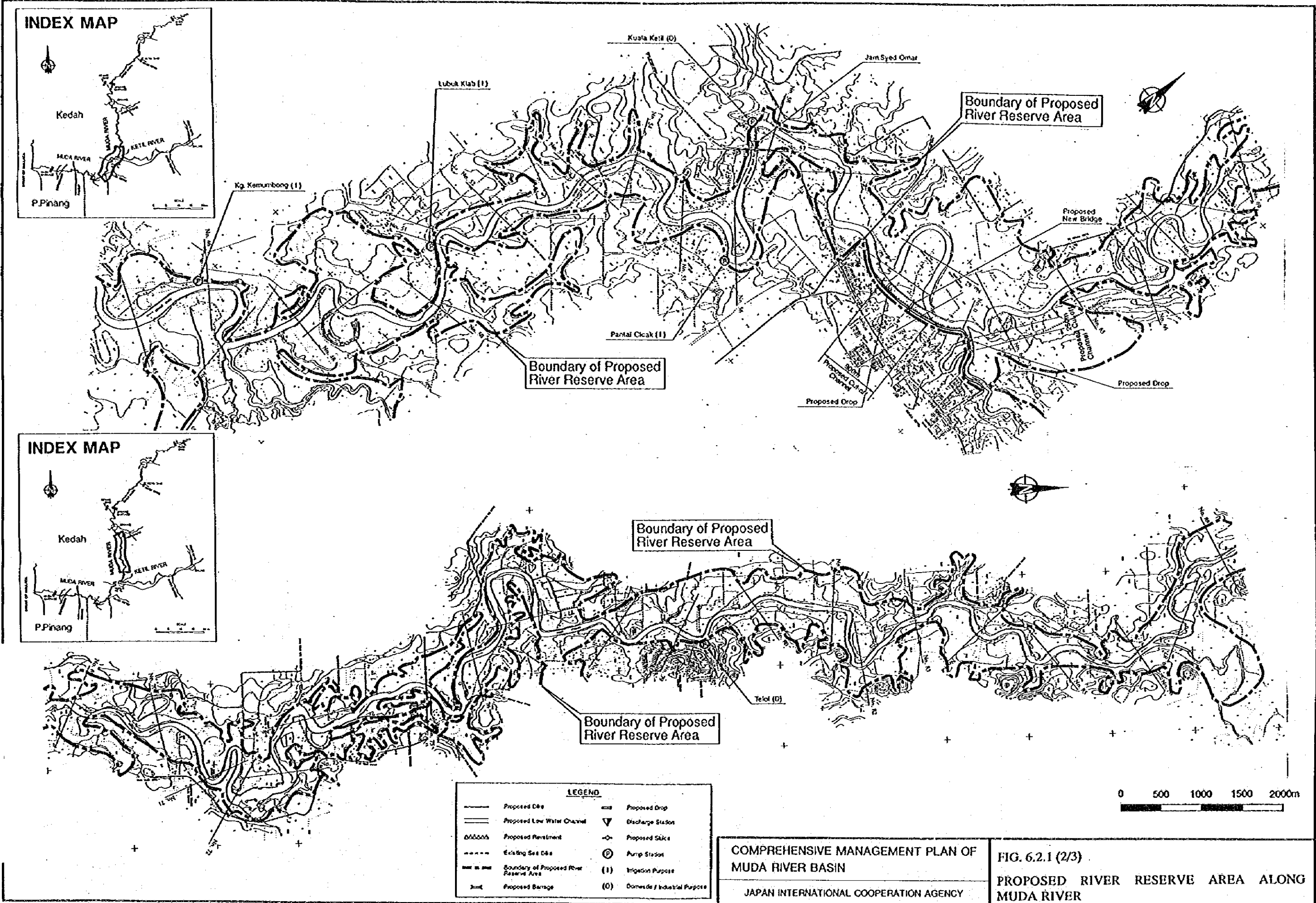
LEGEND

—	Proposed Dam	—	Proposed Drop
—	Proposed Low Water Channel	▽	Discharge Station
△△△△△	Proposed Revetment	—	Proposed Sluice
----	Existing Sea Crib	⊕	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

FIG. 6.2.1 (1/3)
PROPOSED RIVER RESERVE AREA ALONG
MUDA RIVER

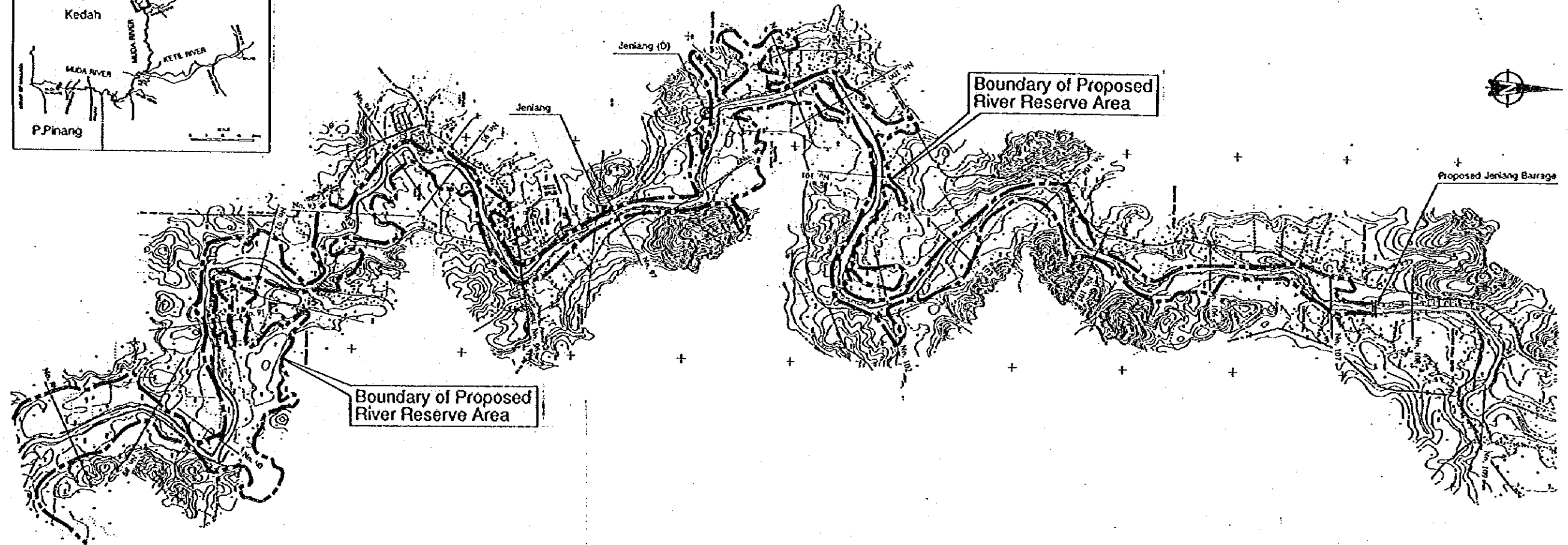
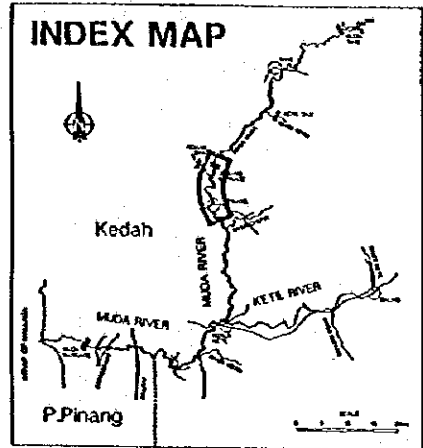


LEGEND

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

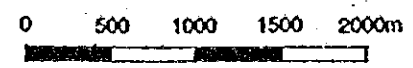
COMPREHENSIVE MANAGEMENT PLAN OF
 MUDA RIVER BASIN
 JAPAN INTERNATIONAL COOPERATION AGENCY

FIG. 6.2.1 (2/3)
 PROPOSED RIVER RESERVE AREA ALONG
 MUDA RIVER



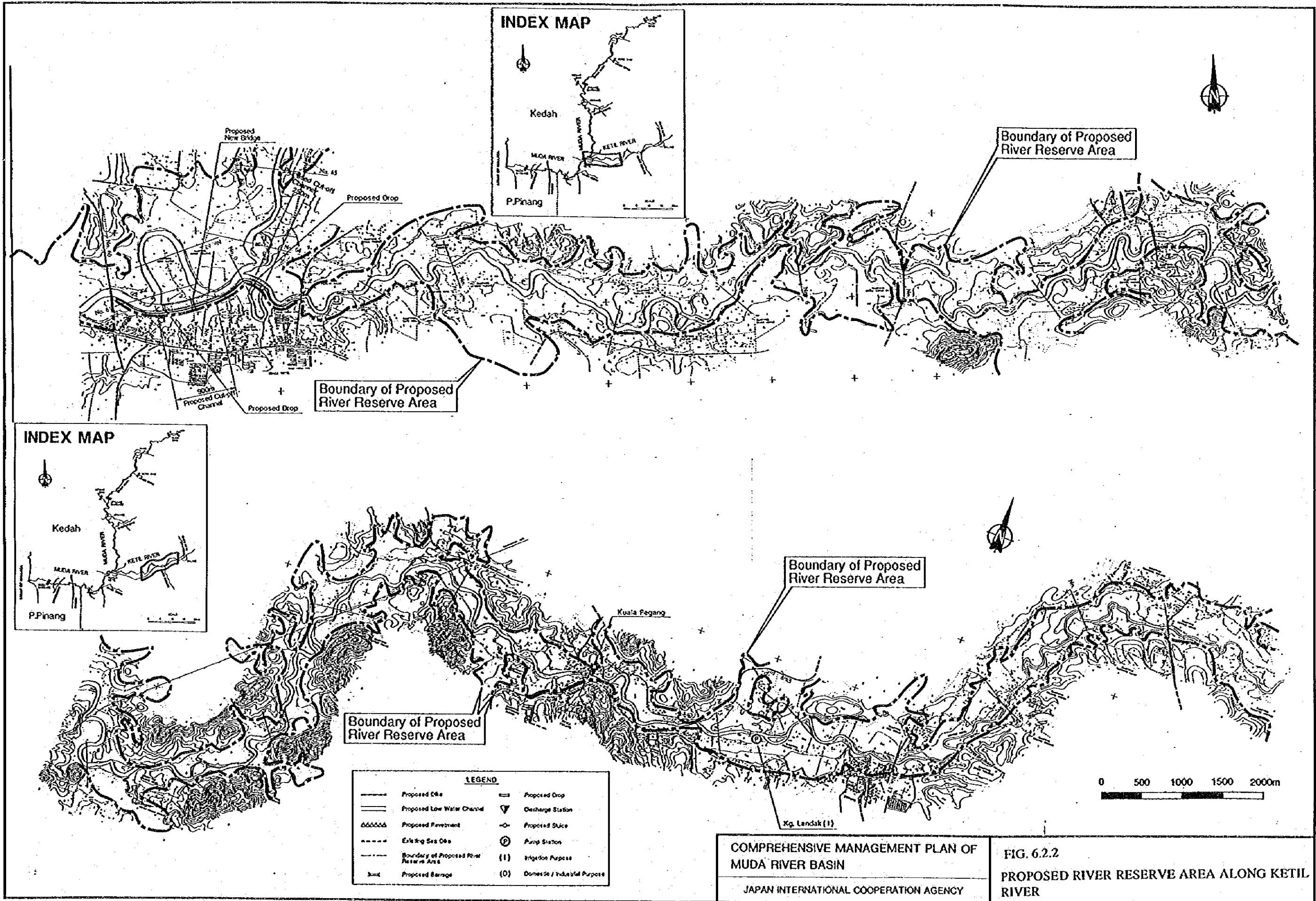
LEGEND

—	Proposed Dike	↔	Proposed Drop
—	Proposed Low Water Channel	▽	Discharge Station
⋯	Proposed Retention	⊖	Proposed Stake
- - - -	Existing Sea Dike	⊕	Pump Station
- - - -	Boundary of Proposed River Reserve Area	(I)	Irrigation Purpose
—	Proposed Barrage	(D)	Domestic / Industrial Purpose



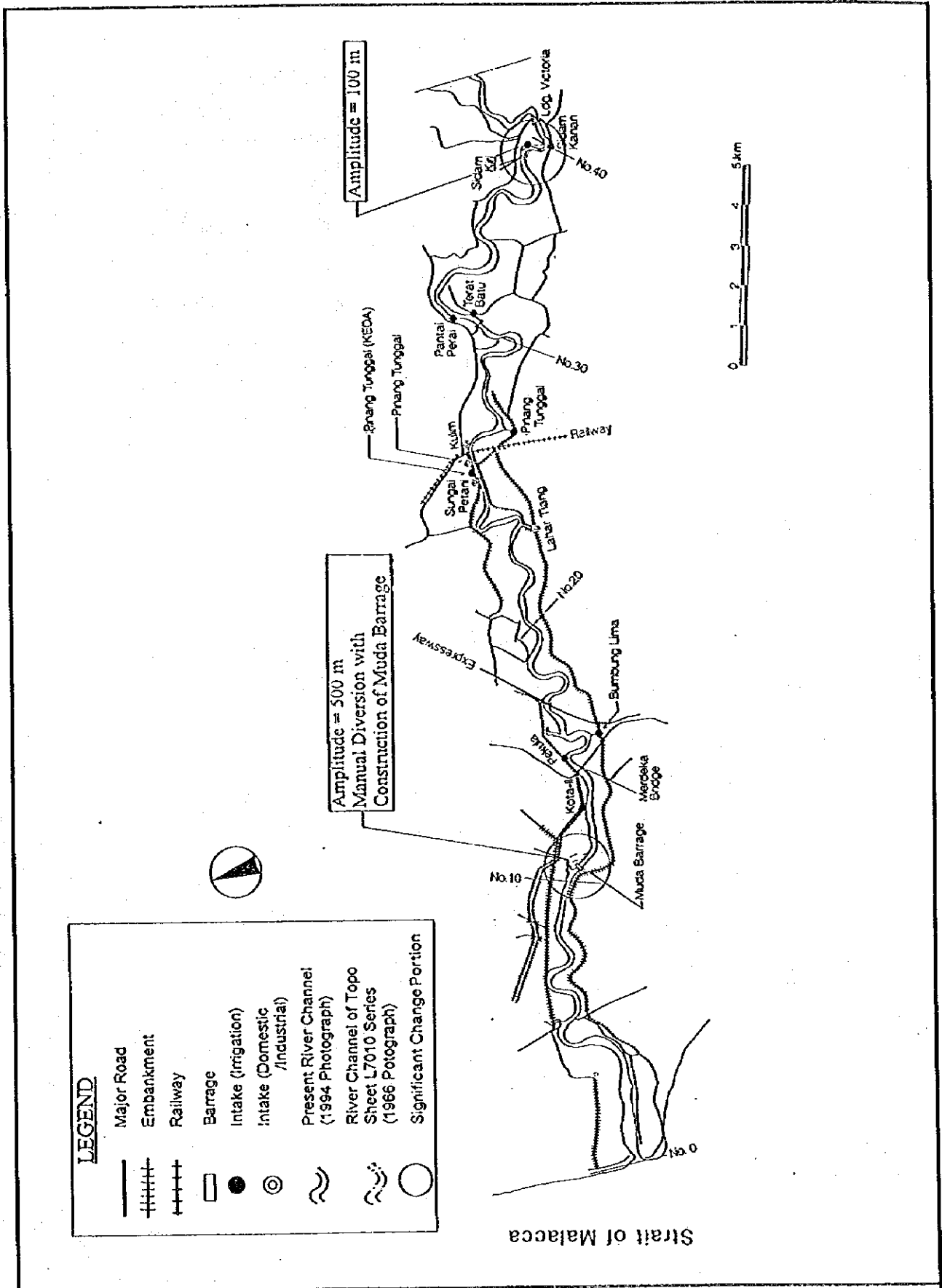
COMPREHENSIVE MANAGEMENT PLAN OF
MUDA RIVER BASIN
JAPAN INTERNATIONAL COOPERATION AGENCY

FIG. 6.2.1 (3/3)
PROPOSED RIVER RESERVE AREA ALONG
MUDA RIVER



COMPREHENSIVE MANAGEMENT PLAN OF
MUDA RIVER BASIN
JAPAN INTERNATIONAL COOPERATION AGENCY

FIG. 6.2.2
PROPOSED RIVER RESERVE AREA ALONG KETIL RIVER



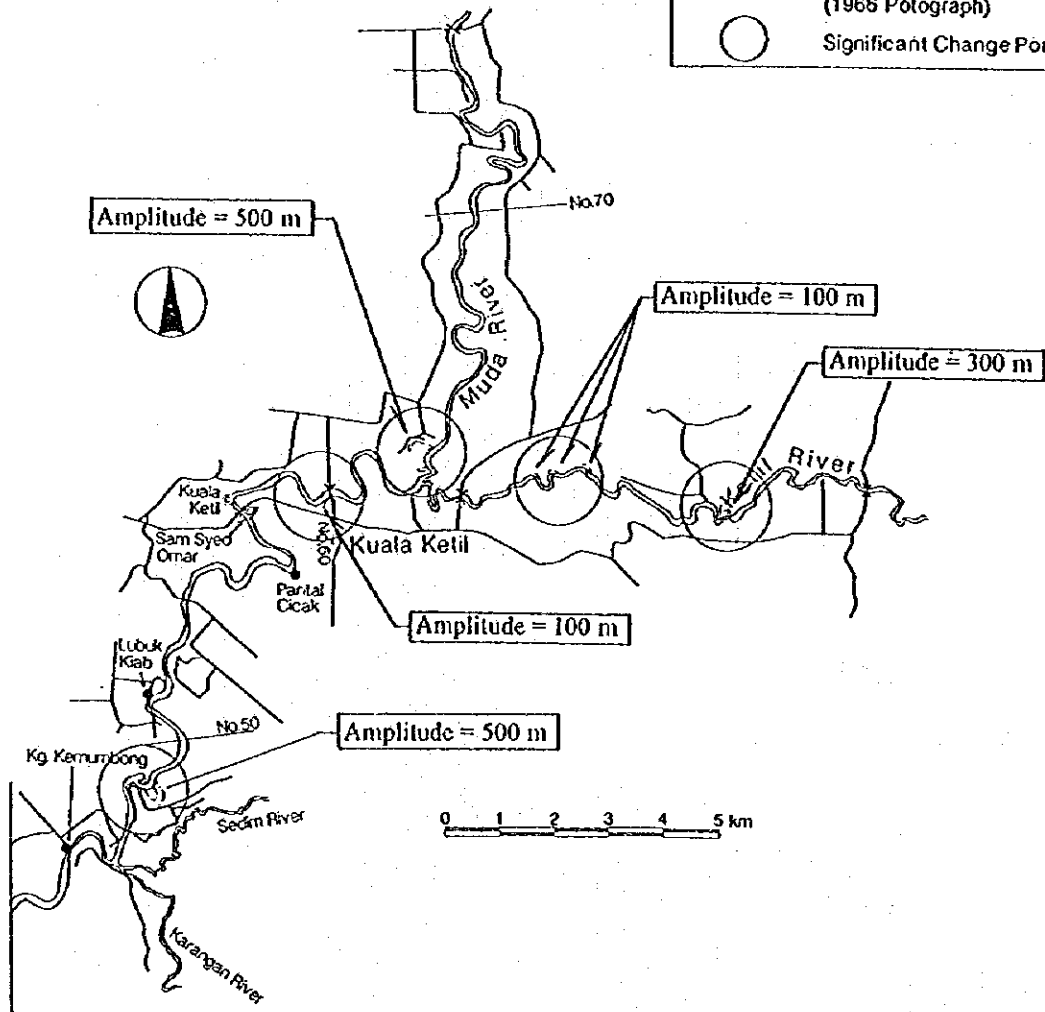
COMPREHENSIVE MANAGEMENT PLAN OF
MUDA RIVER BASIN

FIG. 6.2.3 (1/2)
LOCATION OF RIVER COURSE CHANGE

JAPAN INTERNATIONAL COOPERATION AGENCY

LEGEND

- Major Road
- ||||| Embankment
- +++++ Railway
- Barrage
- Intake (Irrigation)
- ⊙ Intake (Domestic /Industrial)
- ~ Present River Channel (1994 Photograph)
- ~ River Channel of Topo Sheet L7010 Series (1966 Photograph)
- Significant Change Portion

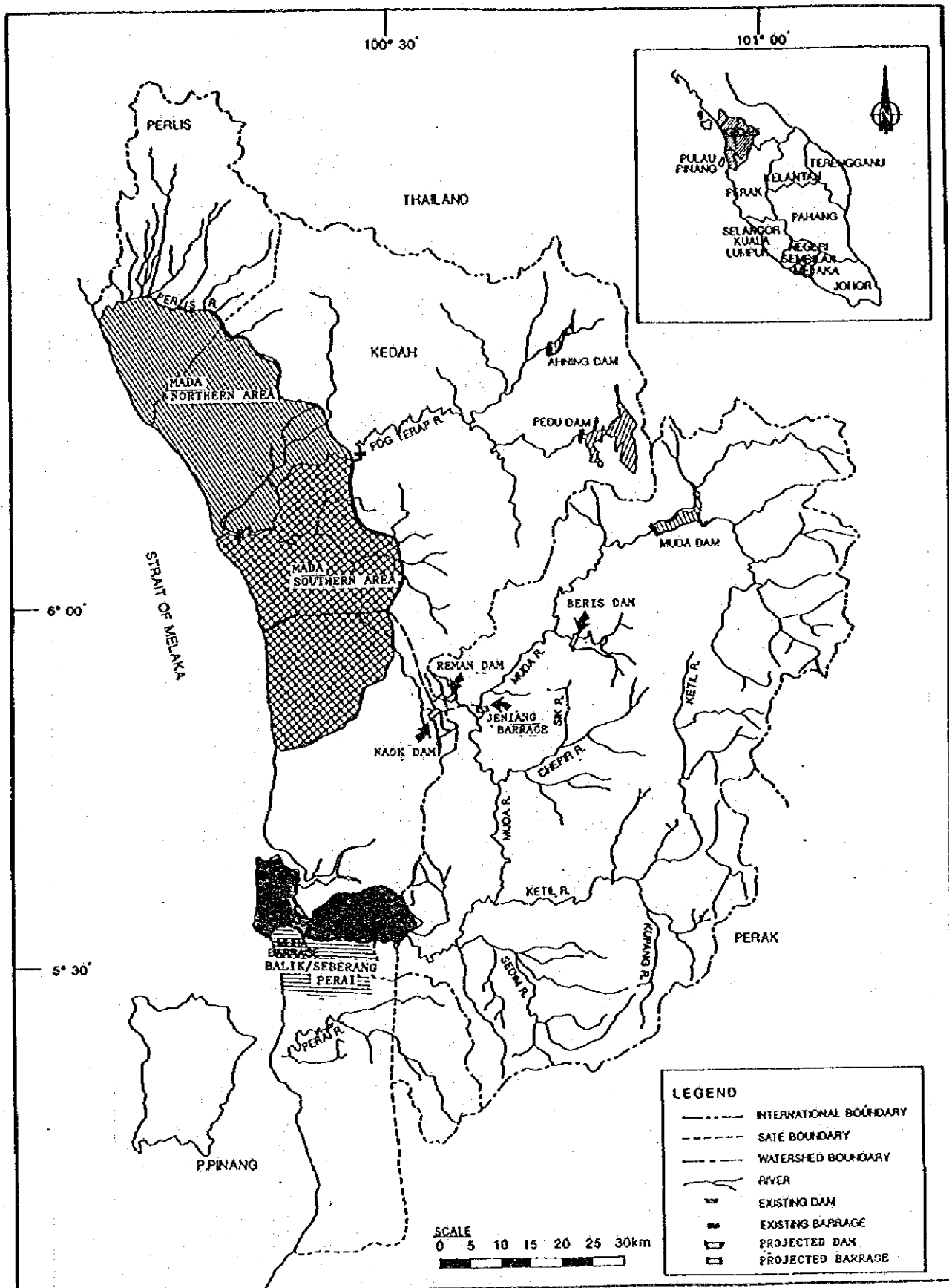


COMPREHENSIVE MANAGEMENT PLAN OF
MUDA RIVER BASIN

JAPAN INTERNATIONAL COOPERATION AGENCY

FIG. 6.2.3 (2/2)

LOCATION OF RIVER COURSE CHANGE

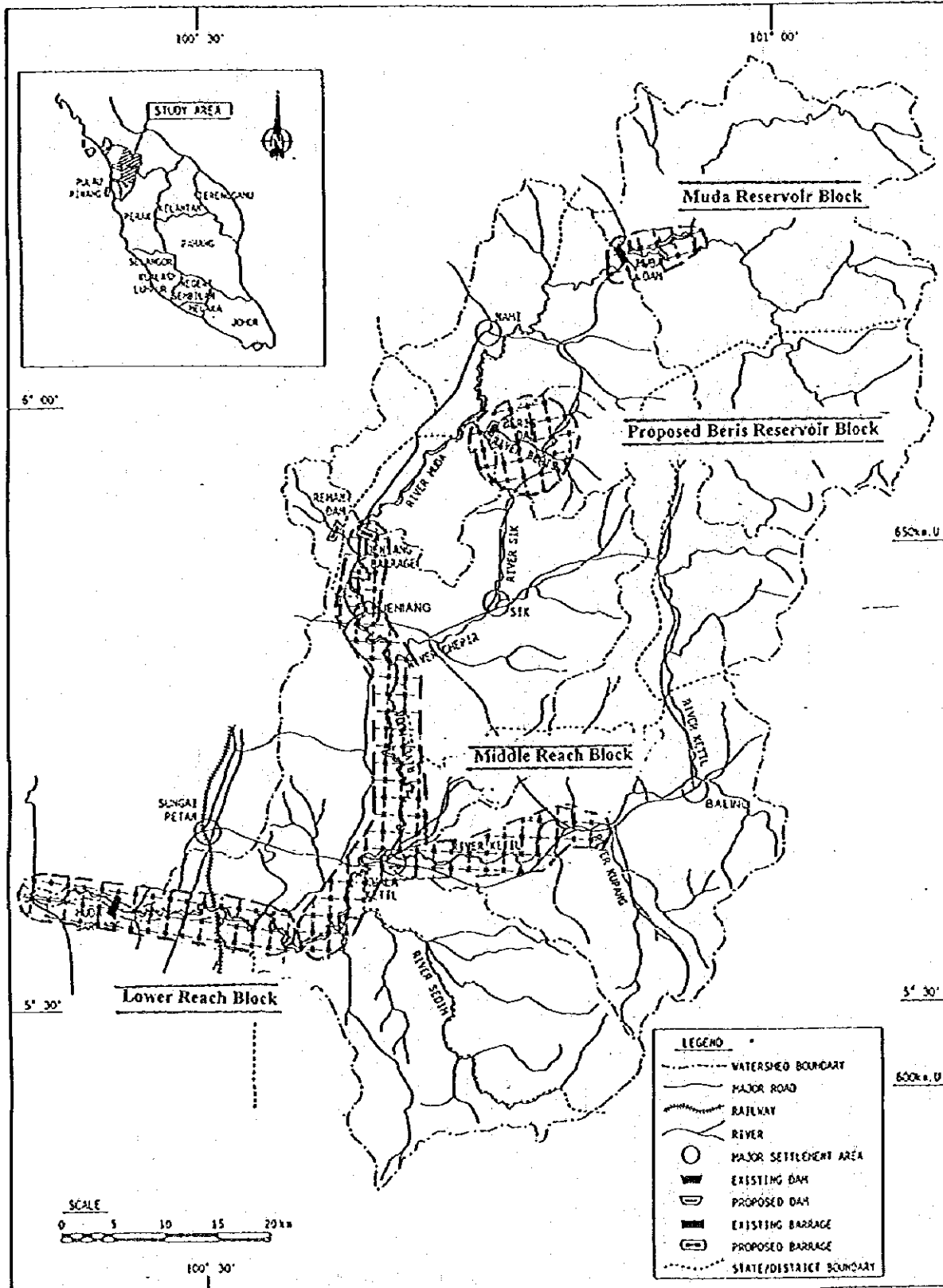


COMPREHENSIVE MANAGEMENT PLAN OF
MUDA RIVER BASIN

JAPAN INTERNATIONAL COOPERATION AGENCY

FIG. 7.2.1

EXISTING AND PROPOSED WATER RESOURCES
DEVELOPMENT FACILITIES

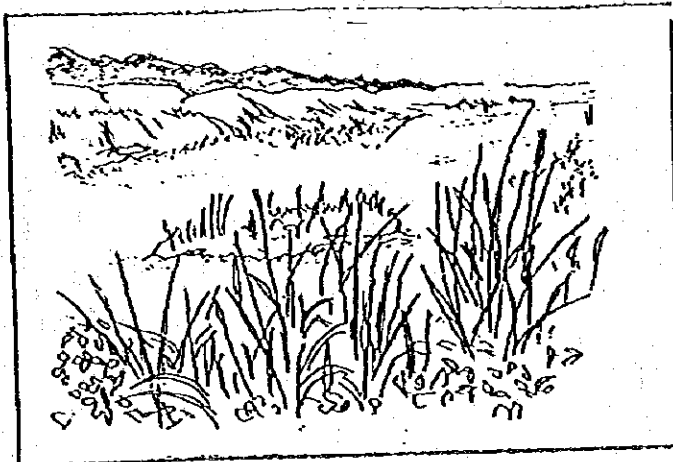


COMPREHENSIVE MANAGEMENT PLAN OF MUDA RIVER BASIN

JAPAN INTERNATIONAL COOPERATION AGENCY

FIG. 8.2.1

BLOCK DIVISION FOR RIVER CORRIDOR PLAN



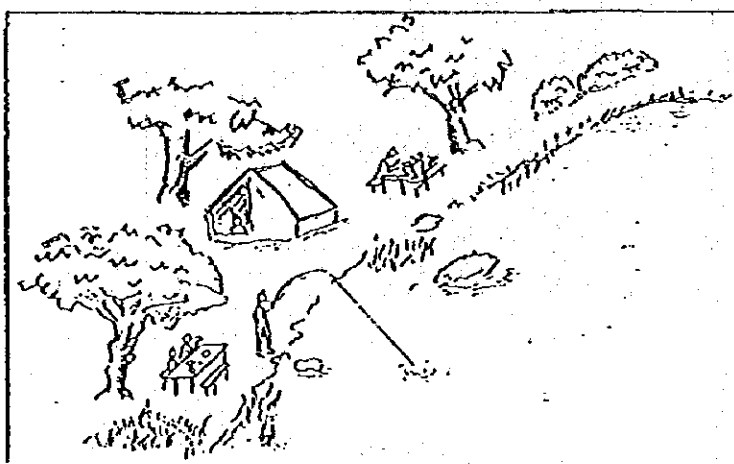
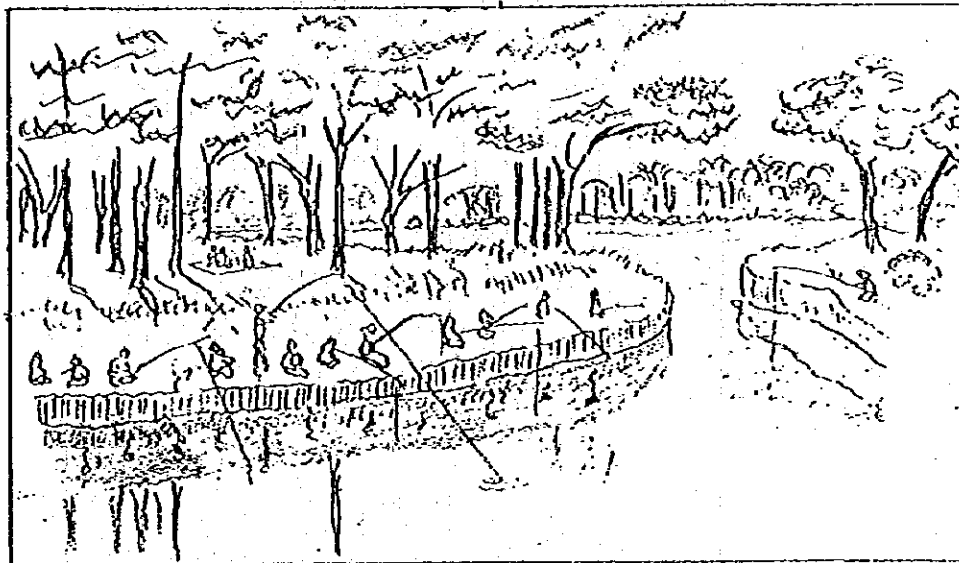
Zone type A : Natural Reserve Zone

COMPREHENSIVE MANAGEMENT PLAN OF
MUDA RIVER BASIN

JAPAN INTERNATIONAL COOPERATION AGENCY

FIG. 8.2.2

IMAGE SKETCH OF ZONE TYPE A (NATURAL
RESERVE ZONE)



Zone Type B :

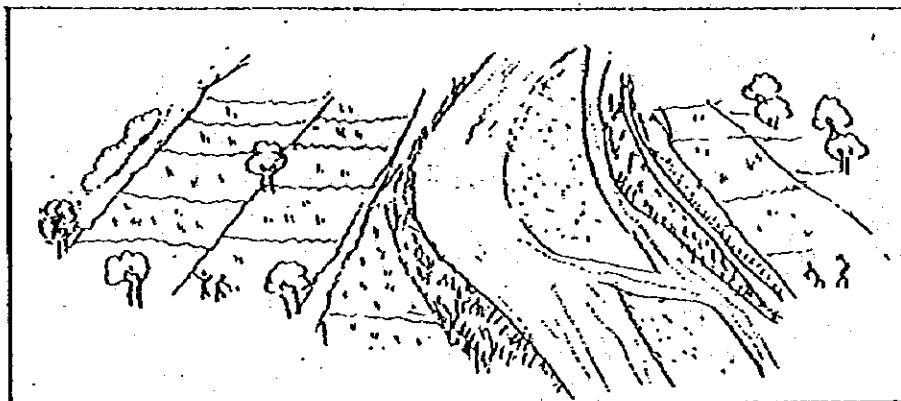
Natural Use Zone

COMPREHENSIVE MANAGEMENT PLAN OF
MUDA RIVER BASIN

JAPAN INTERNATIONAL COOPERATION AGENCY

FIG. 8.2.3

IMAGE SKETCH OF ZONE TYPE B (NATURAL USE
ZONE)



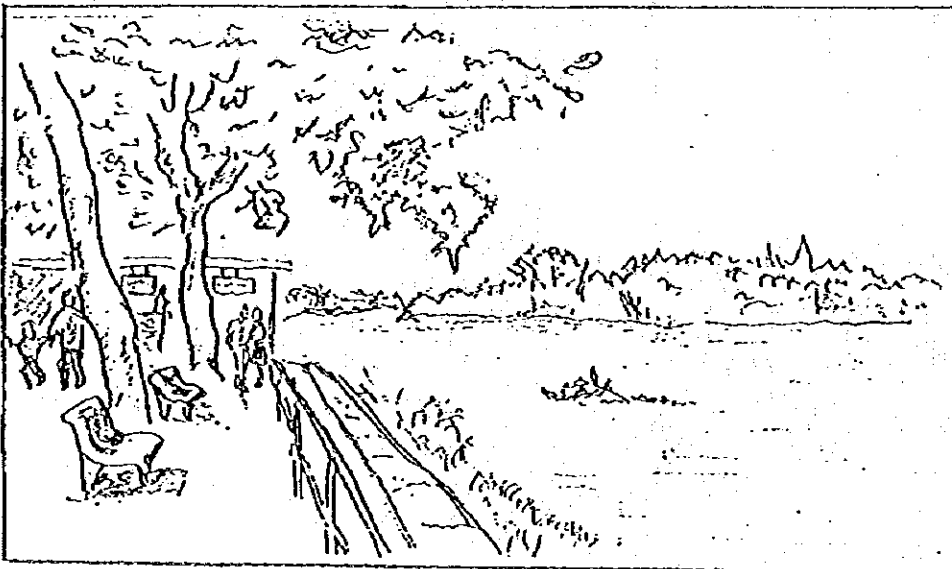
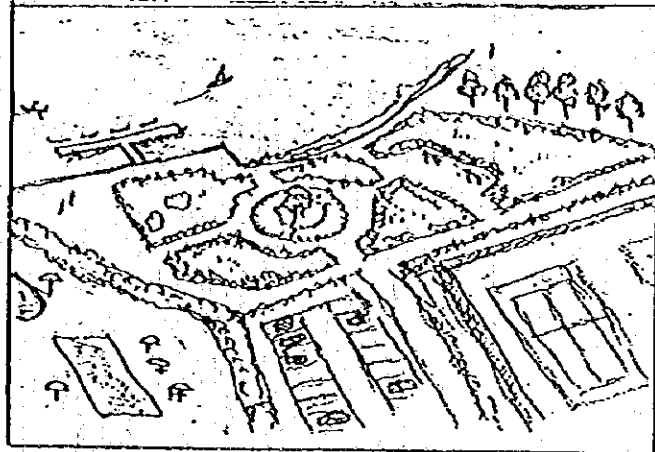
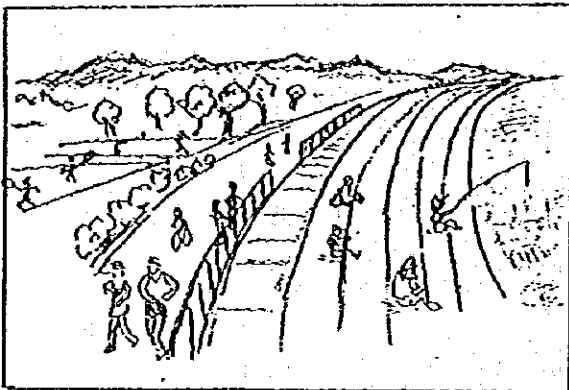
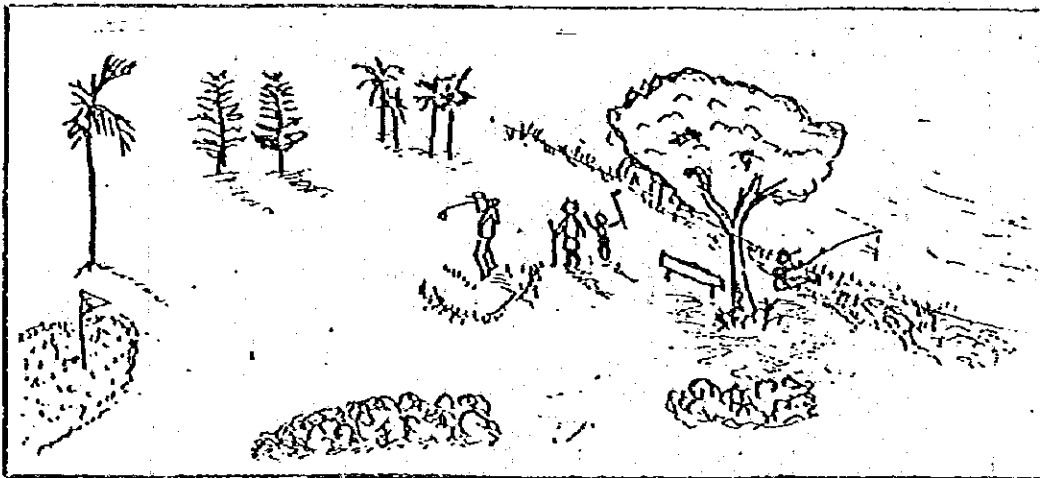
Zone Type C : Agriculture Land Zone

COMPREHENSIVE MANAGEMENT PLAN OF
MUDA RIVER BASIN

JAPAN INTERNATIONAL COOPERATION AGENCY

FIG. 8.2.4

IMAGE SKETCH OF ZONE TYPE C (AGRICULTURE
LAND ZONE)



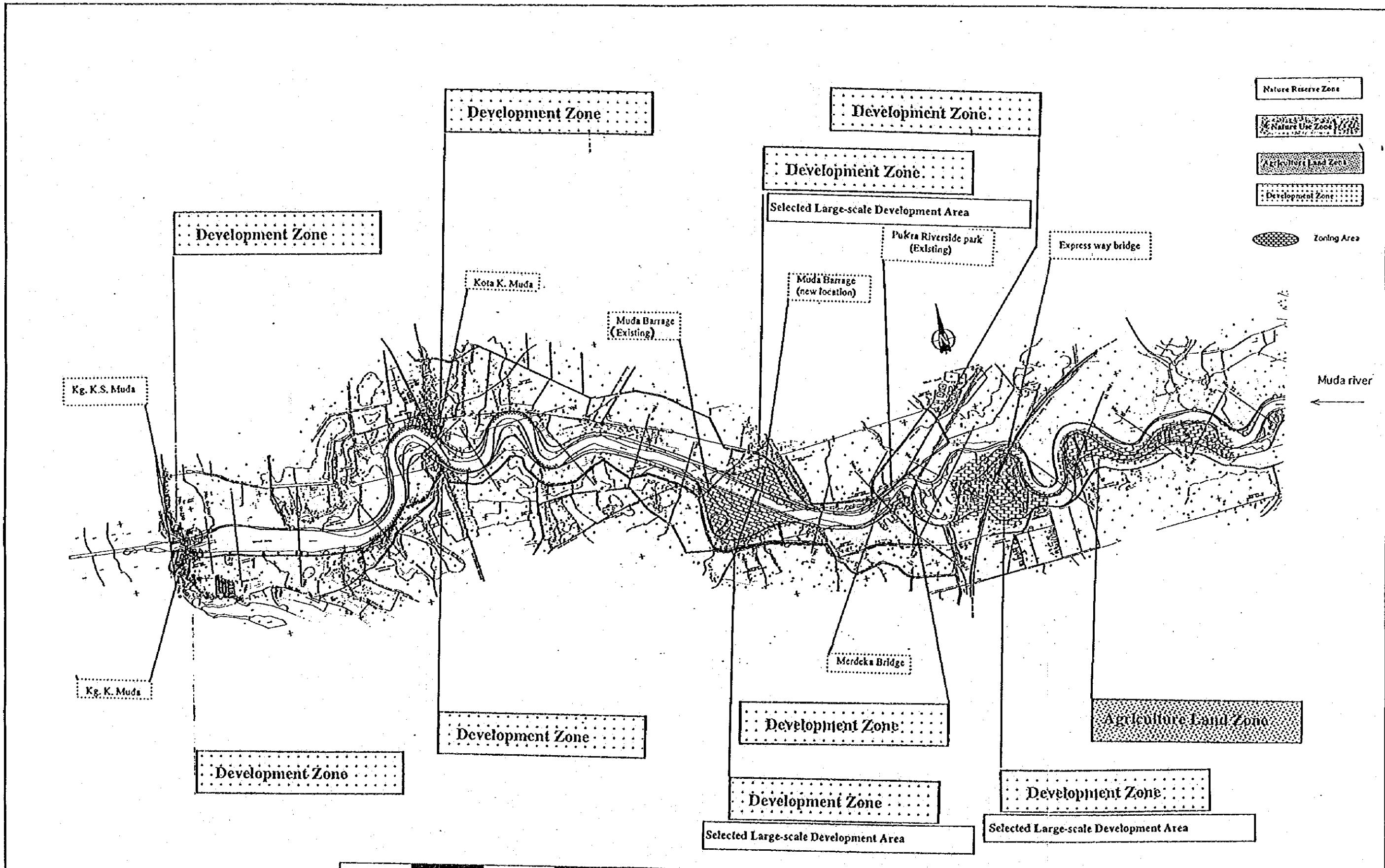
Zone Type D : Development Zone

COMPREHENSIVE MANAGEMENT PLAN OF
MUDA RIVER BASIN

JAPAN INTERNATIONAL COOPERATION AGENCY

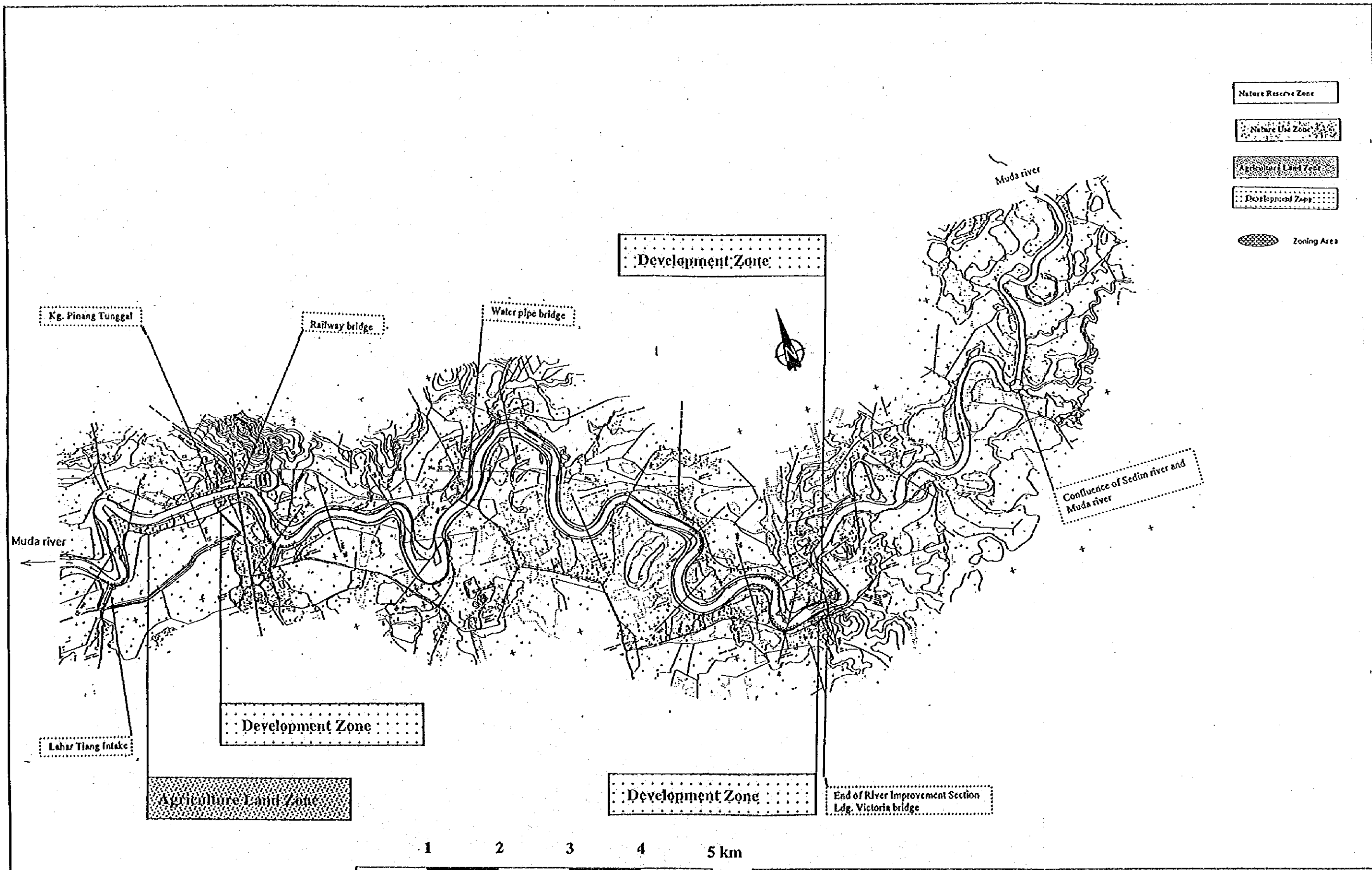
FIG. 8.2.5

IMAGE SKETCH OF ZONE TYPE D (DEVELOPMENT
ZONE)



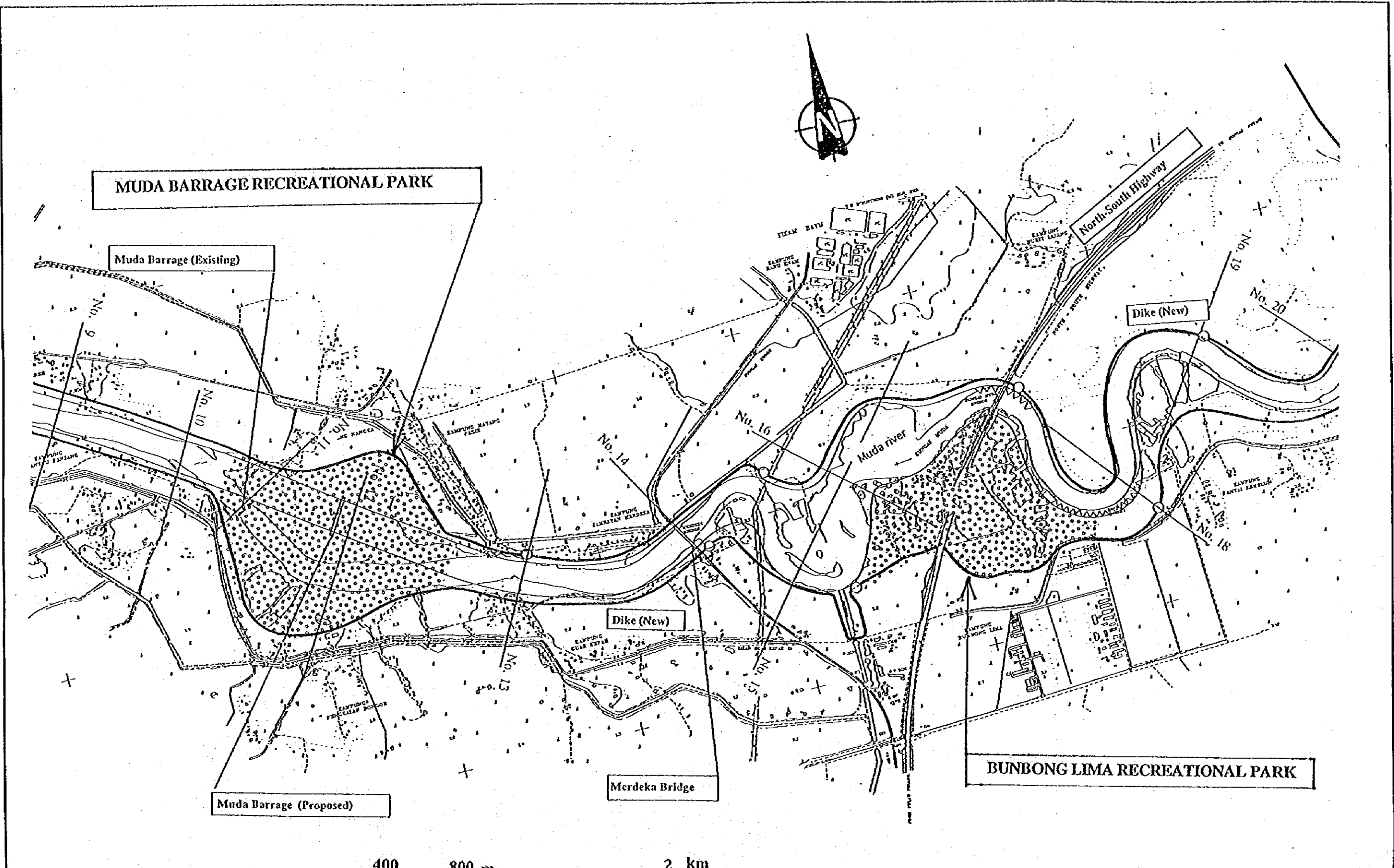
COMPREHENSIVE MANAGEMENT PLAN OF
 MUDA RIVER BASIN
 JAPAN INTERNATIONAL COOPERATION AGENCY

FIG. 8.2.6 (1/2)
 ZONING OF LOWER REACH BLOCK



COMPREHENSIVE MANAGEMENT PLAN OF
 MUDA RIVER BASIN
 JAPAN INTERNATIONAL COOPERATION AGENCY

FIG. 8.2.6 (2/2)
 ZONING OF LOWER REACH BLOCK



MUDA BARRAGE RECREATIONAL PARK

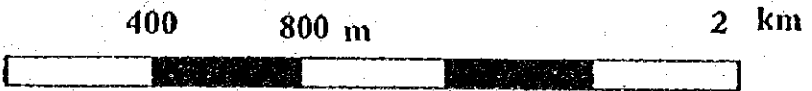
Muda Barrage (Existing)

Muda Barrage (Proposed)

Merdeka Bridge

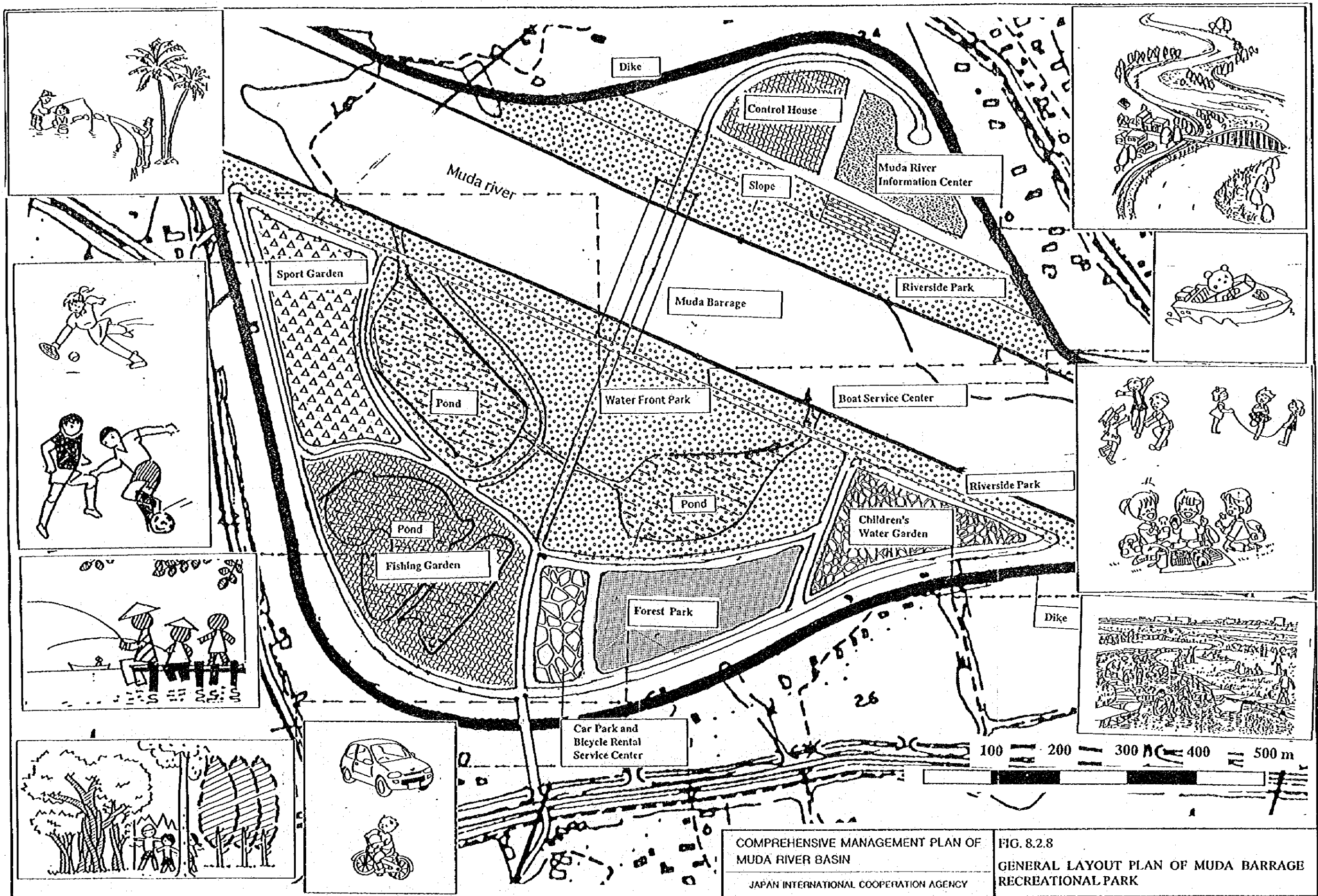
Dike (New)

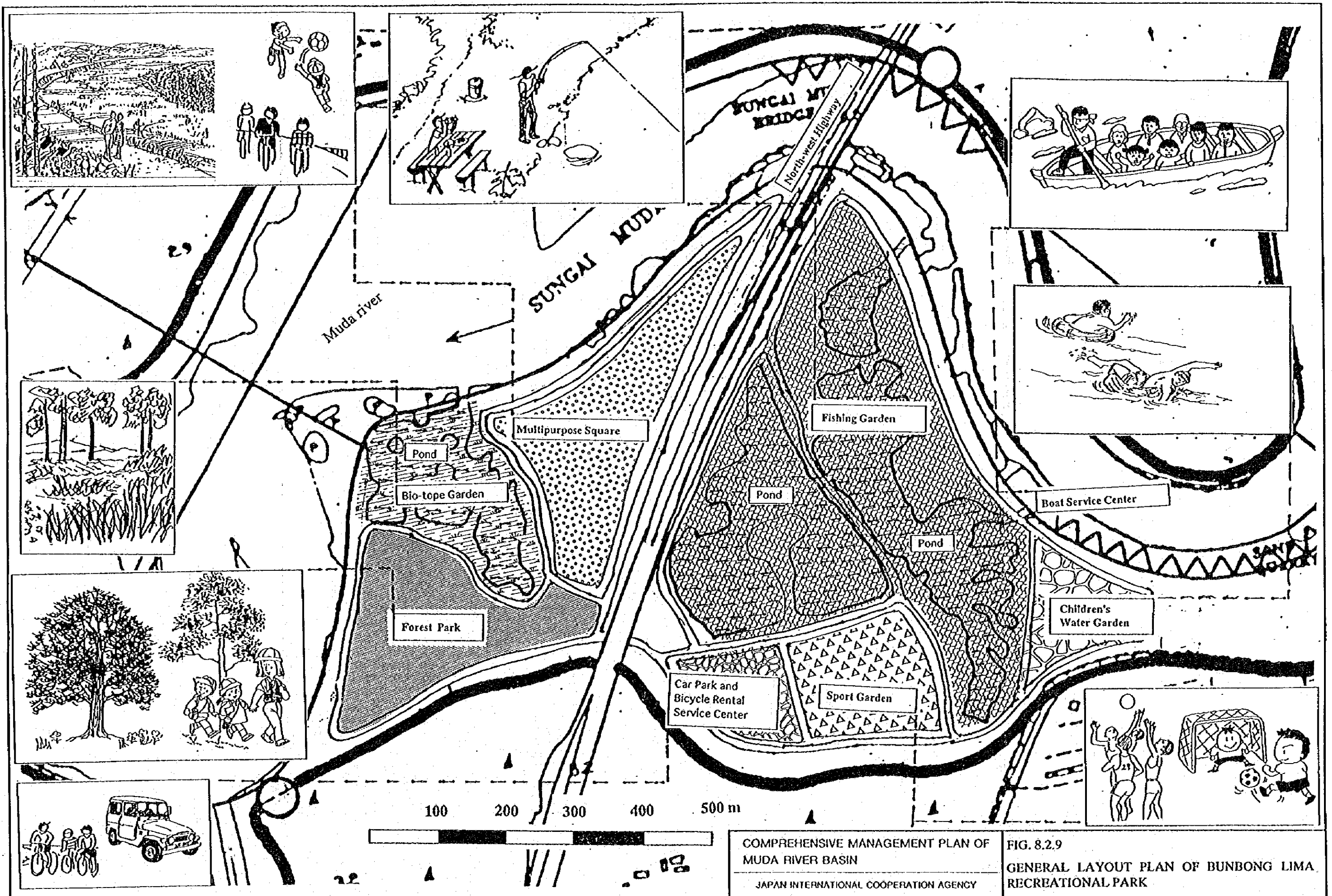
BUNBONG LIMA RECREATIONAL PARK



COMPREHENSIVE MANAGEMENT PLAN OF
MUDA RIVER BASIN
JAPAN INTERNATIONAL COOPERATION AGENCY

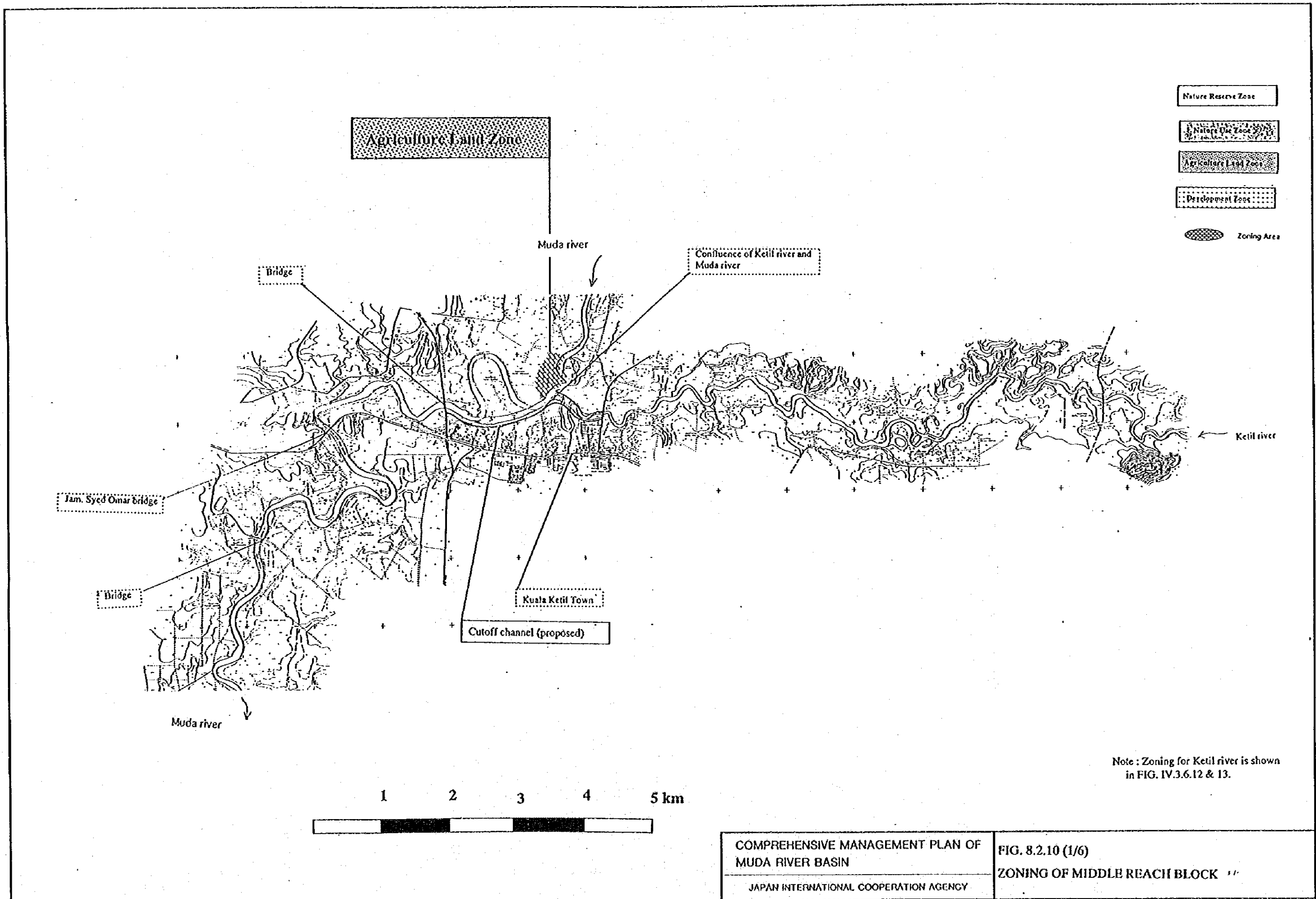
FIG. 8.2.7
GENERAL AREA MAP OF MUDA BARRAGE RECREATIONAL
PARK AND BUNBONG LIMA RECREATIONAL PARK





COMPREHENSIVE MANAGEMENT PLAN OF
MUDA RIVER BASIN
JAPAN INTERNATIONAL COOPERATION AGENCY

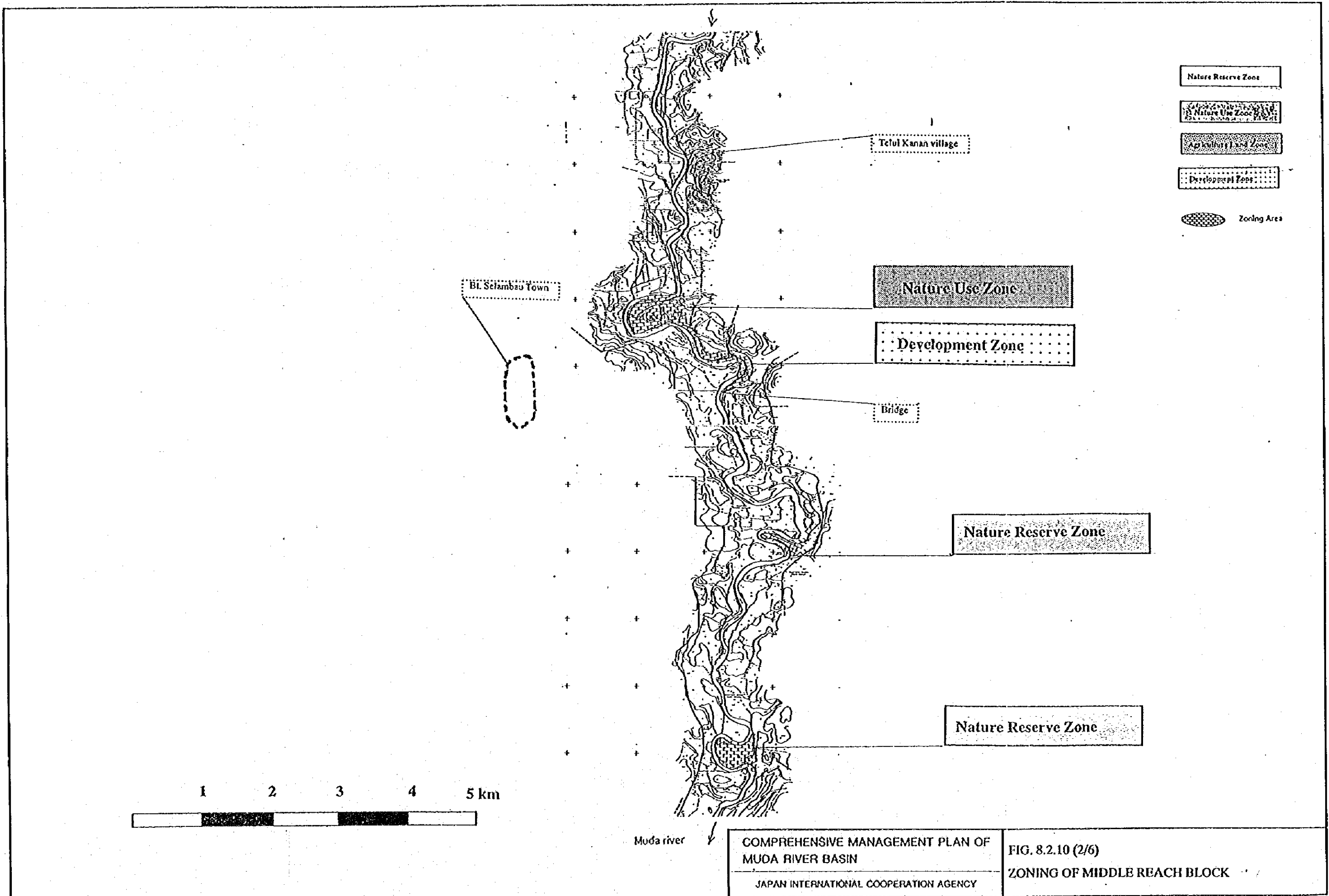
FIG. 8.2.9
GENERAL LAYOUT PLAN OF BUNBONG LIMA
RECREATIONAL PARK



Note : Zoning for Ketil river is shown in FIG. IV.3.6.12 & 13.

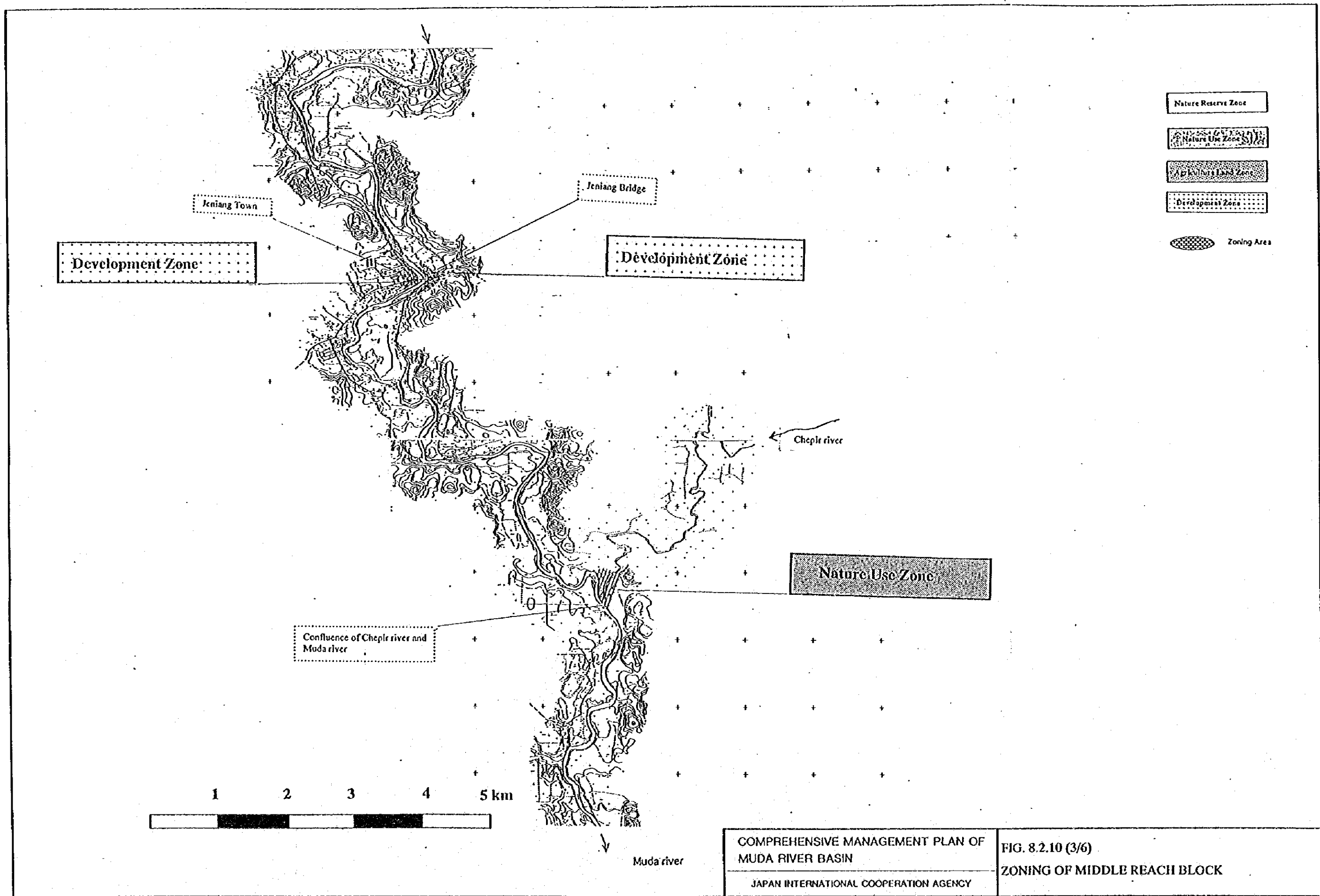
COMPREHENSIVE MANAGEMENT PLAN OF
MUDA RIVER BASIN
JAPAN INTERNATIONAL COOPERATION AGENCY

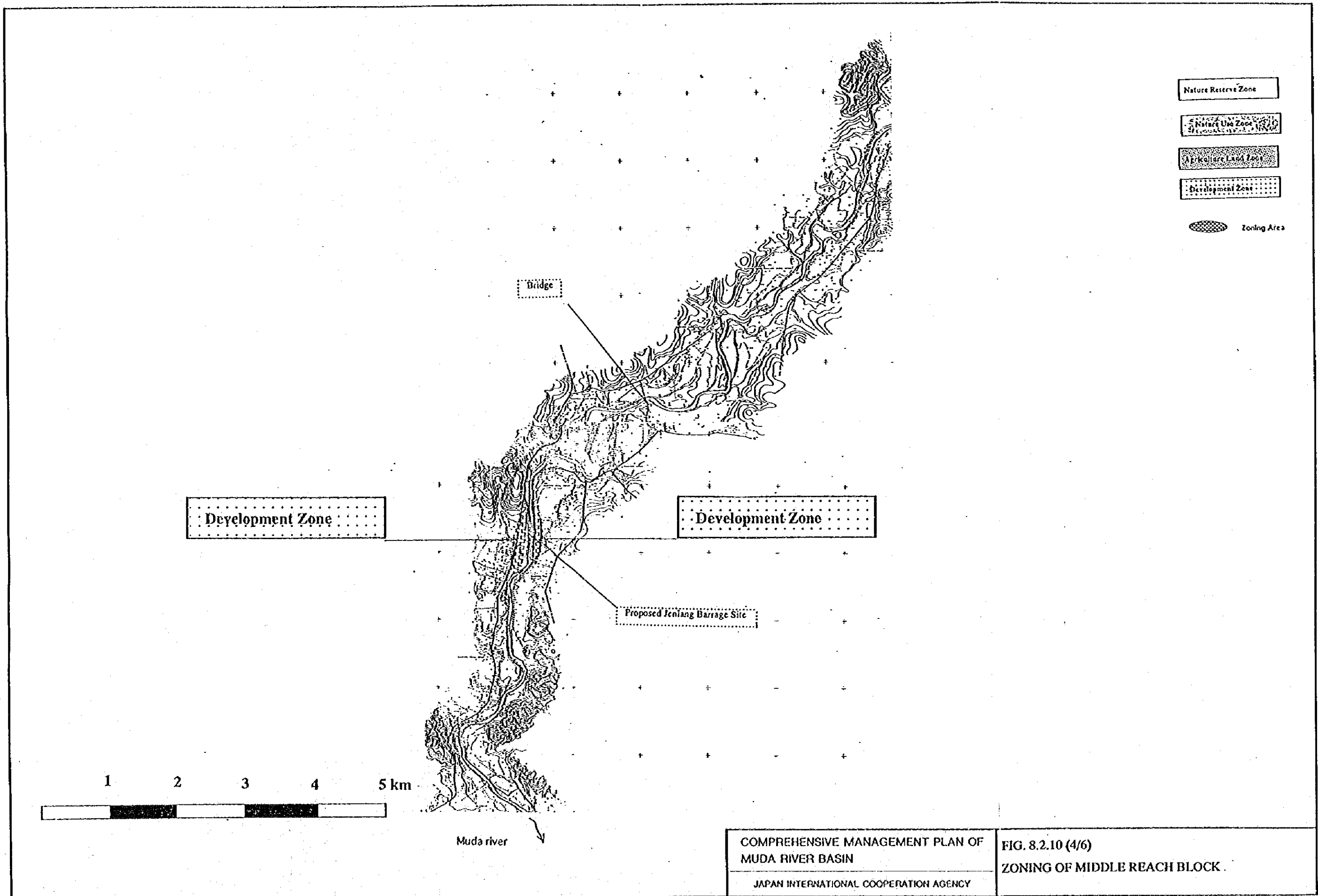
FIG. 8.2.10 (1/6)
ZONING OF MIDDLE REACH BLOCK



COMPREHENSIVE MANAGEMENT PLAN OF
 MUDA RIVER BASIN
 JAPAN INTERNATIONAL COOPERATION AGENCY

FIG. 8.2.10 (2/6)
 ZONING OF MIDDLE REACH BLOCK





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

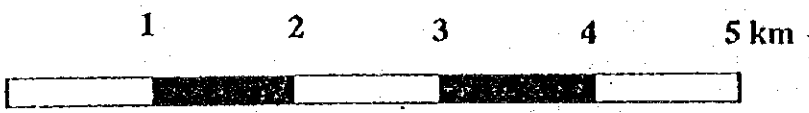
Development Zone

Development Zone

Bridge

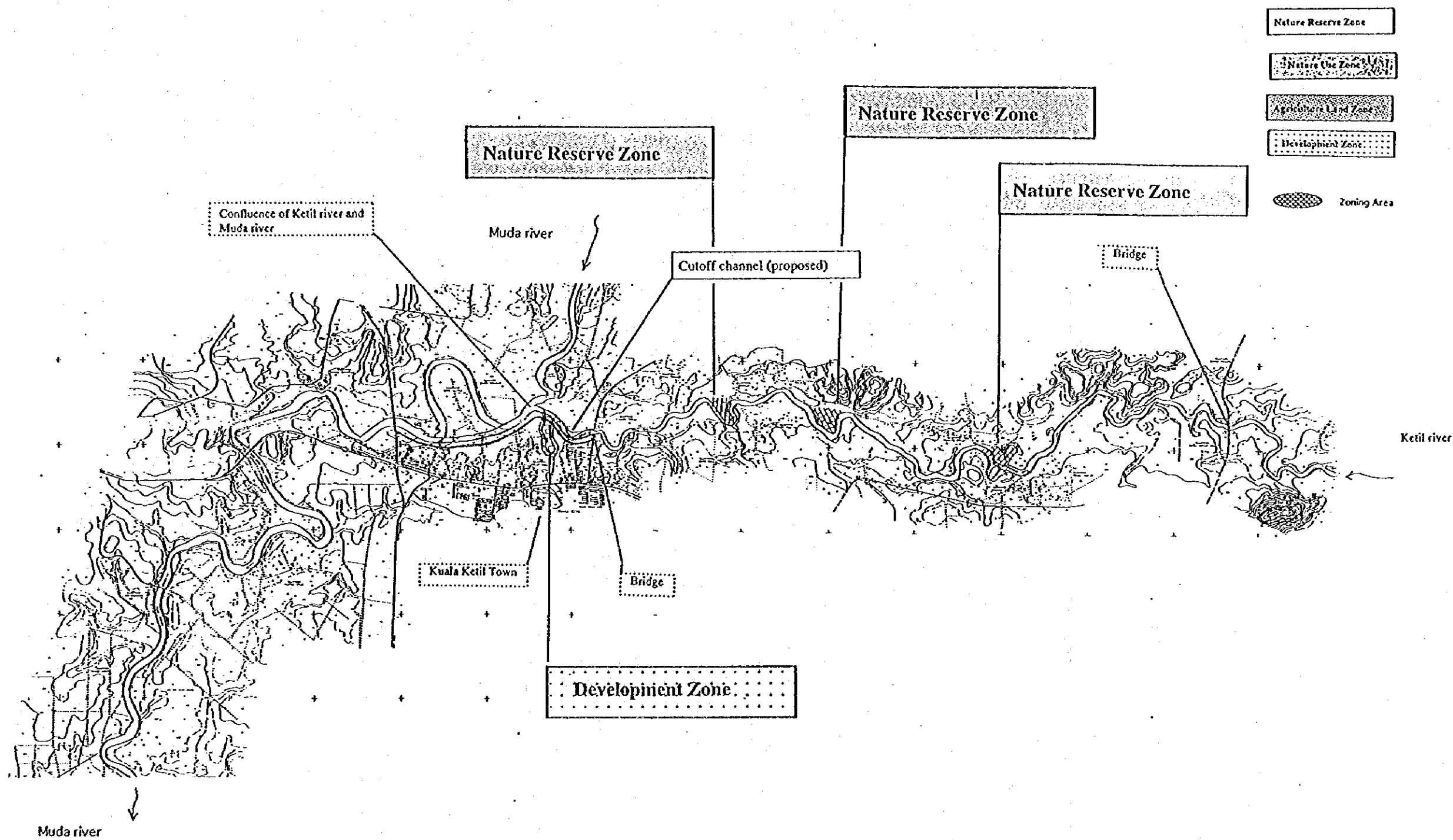
Proposed Jeniang Barrage Site

Muda river



COMPREHENSIVE MANAGEMENT PLAN OF
MUDA RIVER BASIN
JAPAN INTERNATIONAL COOPERATION AGENCY

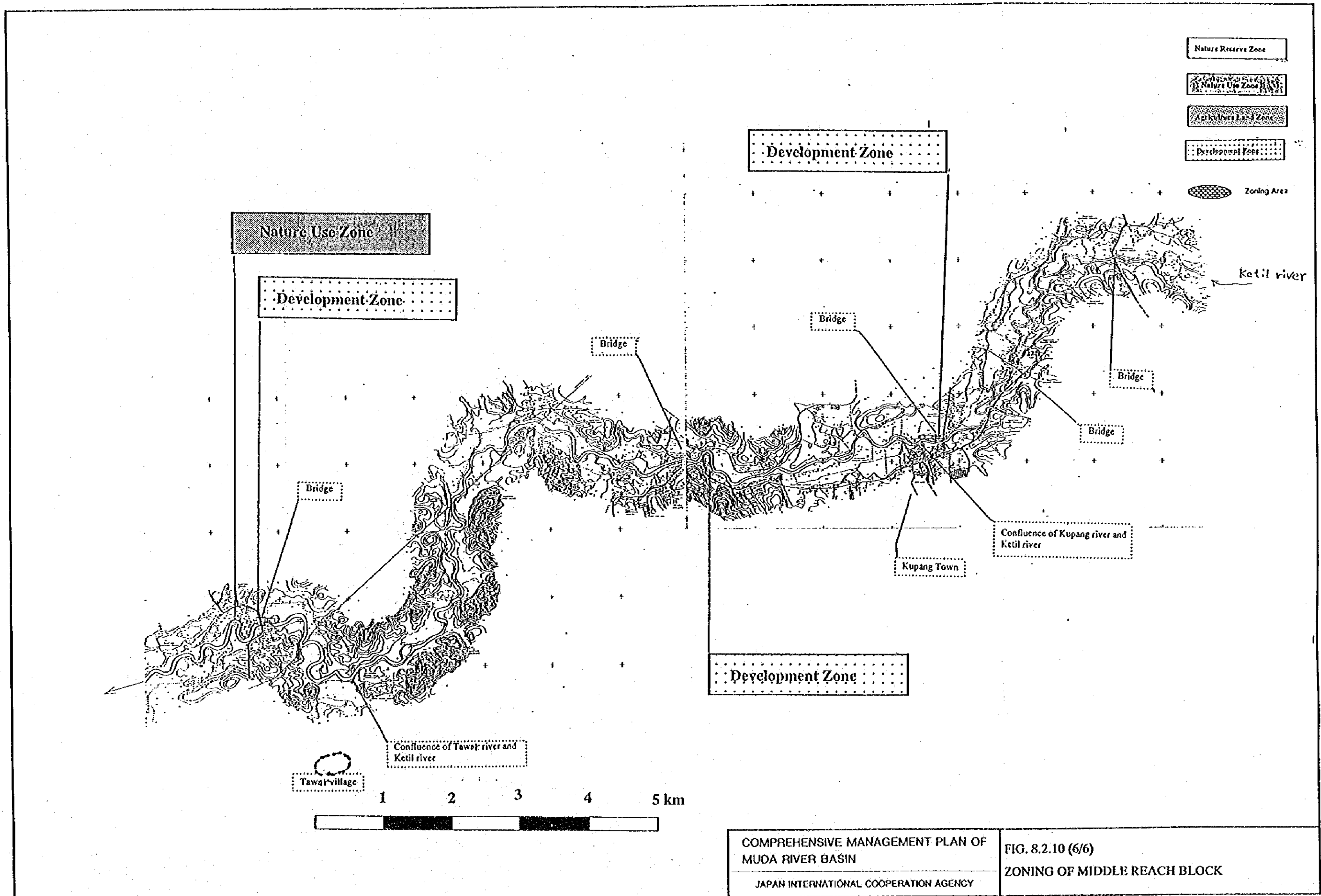
FIG. 8.2.10 (4/6)
ZONING OF MIDDLE REACH BLOCK

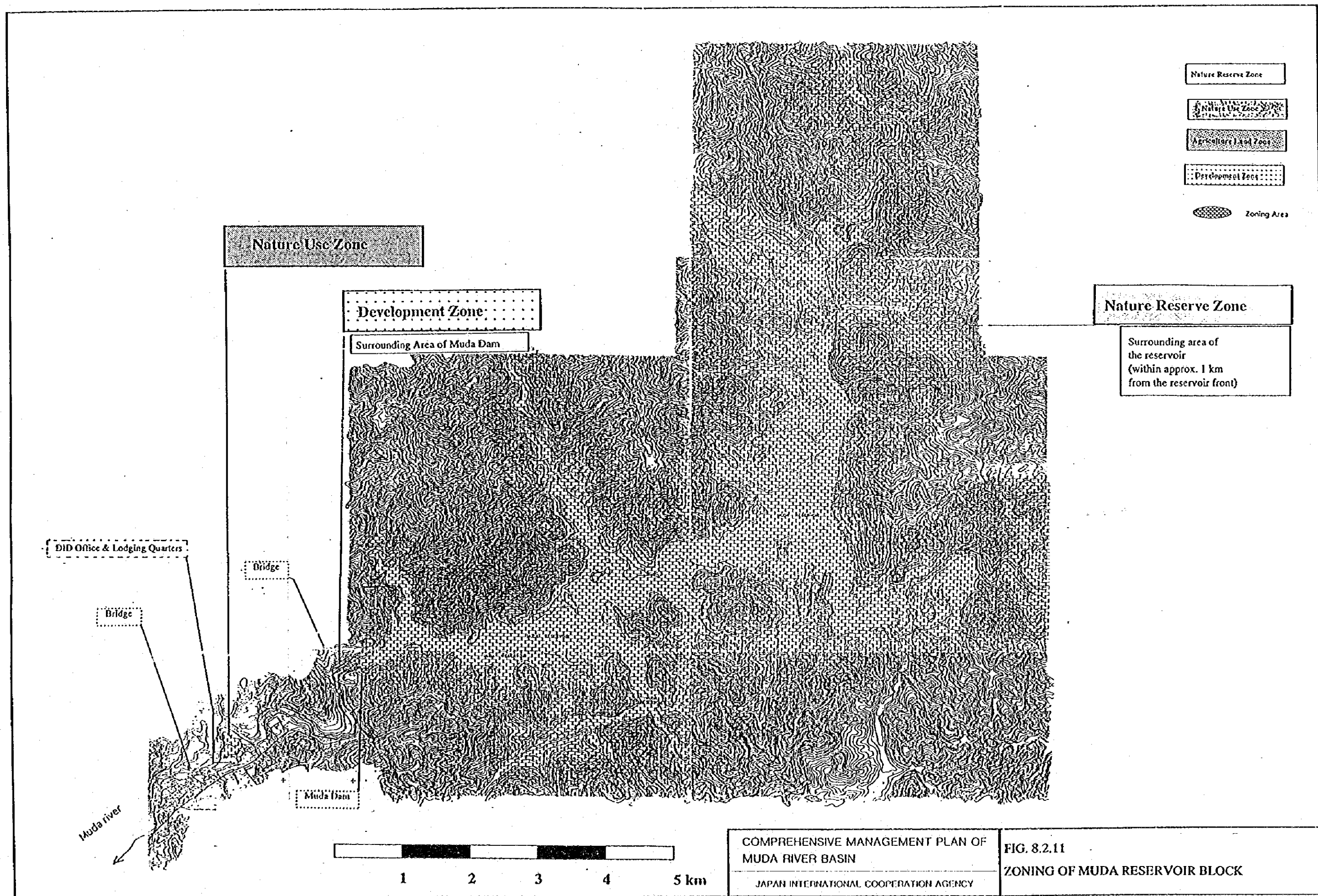


Note : Zoning for Muda river is shown in FIG. IV.3.6.8.

COMPREHENSIVE MANAGEMENT PLAN OF
MUDA RIVER BASIN
JAPAN INTERNATIONAL COOPERATION AGENCY

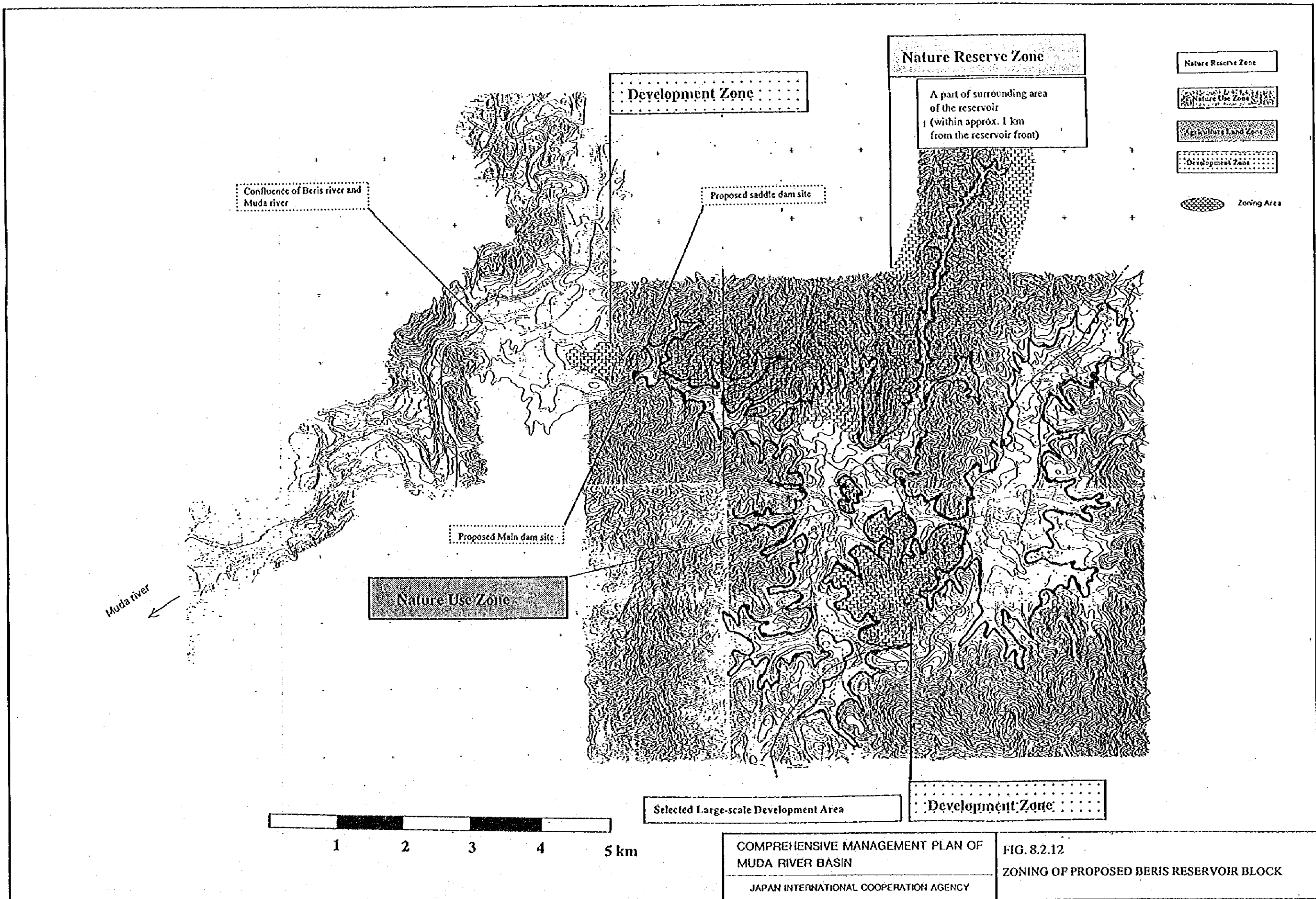
FIG. 8.2.10 (5/6)
ZONING OF MIDDLE REACH BLOCK

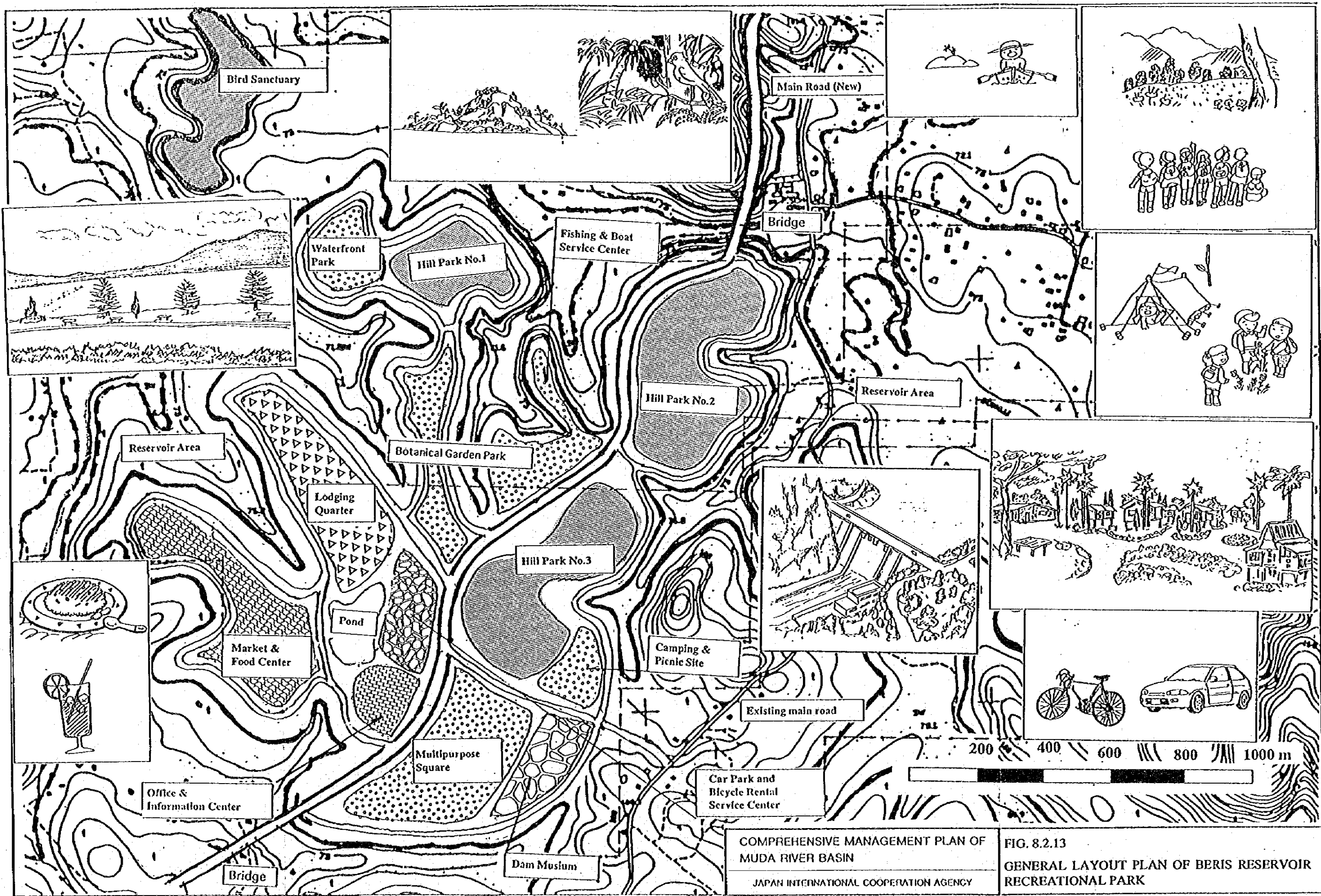




COMPREHENSIVE MANAGEMENT PLAN OF
 MUDA RIVER BASIN
 JAPAN INTERNATIONAL COOPERATION AGENCY

FIG. 8.2.11
 ZONING OF MUDA RESERVOIR BLOCK





COMPREHENSIVE MANAGEMENT PLAN OF MUDA RIVER BASIN
 JAPAN INTERNATIONAL COOPERATION AGENCY

FIG. 8.2.13
 GENERAL LAYOUT PLAN OF BERIS RESERVOIR RECREATIONAL PARK

