Annex-W:

Minutes of Meeting on Draft Final Report of the Follow-up Study, held on 10 January 2005

Memorandum on Draft Final Report of the Follow-up Study, dated on 10 January 2005

MINUTES OF MEETINGS
on
Draft Final Report
of
Follow up Study on Flood Control and Water Management in the Limboto-Bolango-Bone Basin in the Republic of Indonesia
agreed upon between
Ministry of Public Works
and
Japan International Cooperation Agency

The Japan International Cooperation Agency (hereinafter referred to as "JICA") conducted the Follow up Study on Flood Control and Water Management in the Limboto-Bolango-Bone Basin in the Republic of Indonesia. The Study team explained the results, or the contents of the Draft Final Report of the Study, and the Indonesian side essentially agreed of them.

In addition to the explanation of the Report, the Study team mentioned that it is still under consideration in Japan whether further study for the Japan's Grant Aid would be implemented or not. The attached document describes the framework and procedure in Indonesia, in case the further study is decided to be implemented.

The Study team explained the JICA's Guidelines for Environmental and Social Considerations. Indonesian side understood that it is necessary to follow the guidelines in order to proceed the Project.

Jakarta, January 10, 2005

Mr. Basuki Hadi Mulyono
Director General of Water Resources
Ministry of Public Works

Mr. Yokokura Junji
Leader of Follow-up Study Team
Japan International Cooperation Agency

ATTACHMENT

1. OBJECTIVE OF THE PROJECT

The main objective of the Project is to mitigate flood damage in the Limboto-Bolango-Bone Basin in Gorontalo Province, Republic of Indonesia.

2. PROJECT SITE

The project site is located in the Limboto-Bolango-Bone Basin in Gorontalo Province, Republic of Indonesia, as shown in Annex-1.

3. RESPONSIBLE IMPLEMENTING AGENCIES

3-1. The responsible agency will be the Ministry of Public Works (Dep. PU) or the equivalent agency that may be organized in the future.

3-2. The implementing agencies will be the Director General of Water Resources, Ministry of Public Works (DGWR, Dep. PU) or the equivalent agency that may be organized in the future and Dinas PU/Kimpraswil Gorontalo Province.

3-3. The Governor of Gorontalo Province will be responsible for coordination of the Project among the related local agencies.

4. ADMINISTRATION OF THE PROJECT

Both parties has confirmed that a reliable organization for project administration shall be established before the commencement of the Basic Design Study to be conducted by JICA, as described below and shown in Annex-2. In this connection, the Implementing Agency shall submit to JICA a letter confirming the establishment of such organization for project administration, together with references such as Memorandum, Minutes of Meeting, Notes and other references. JICA will proceed with the Basic Design Study for the Project after the submission of the said letter and references.

4-1. The Indonesian side shall organize a Steering Committee (hereinafter referred to as "SC") and a Supervisory/Technical Team (hereinafter referred to as "STT") to coordinate, guide and supervise the smooth implementation of the Project. The SC shall consist of representatives of the following agencies:

(1) SC

<Chairman>

-Director General, DGWR, Kimpraswil

<Members>

-National Development Planning Agency (Bappenas),

-Dinas PU/Kimpraswil Gorontalo Province (Propinsi Gorontalo),

-Dinas PU Gorontalo City (Kota Gorontalo),

-Dinas PU Bone Bolango District (Kabupaten Bone Bolango),

<Observer>

-Embassy of Japan

(2) STT

<Members>

-DGWR / RIWR (Research Institute of Water Resources)

-Dinas PU/Kimpraswil Gorontalo Province (Propinsi Gorontalo),

-Dinas PU Bone Bolango District (Kabupaten Bone Bolango)

4-2. The JICA Study Team has explained that promotion of watershed/basin management is also one of the critical issues. Both parties understood that the Indonesian side shall establish Balai PSDA and the Project Office, and shall allocate capable staff to these offices.

5. CONFIRMED AND UNDERSTOOD WORK ITEMS BY THE GOVERNMENT OF THE REPUBLIC OF INDONESIA

The JICA Study Team has explained the basic concepts and described the most suitable work items at this moment to achieve the objective under the Japan's Grant Aid Project, as shown in Annex-3. The Indonesian side has understood them and concurred in the following work items. JICA is to assess the further appropriateness and confirmation of the work items, and will study more details in the Basic Design Study.

(1) Improvement works of Bolango River with city drainage equipment;

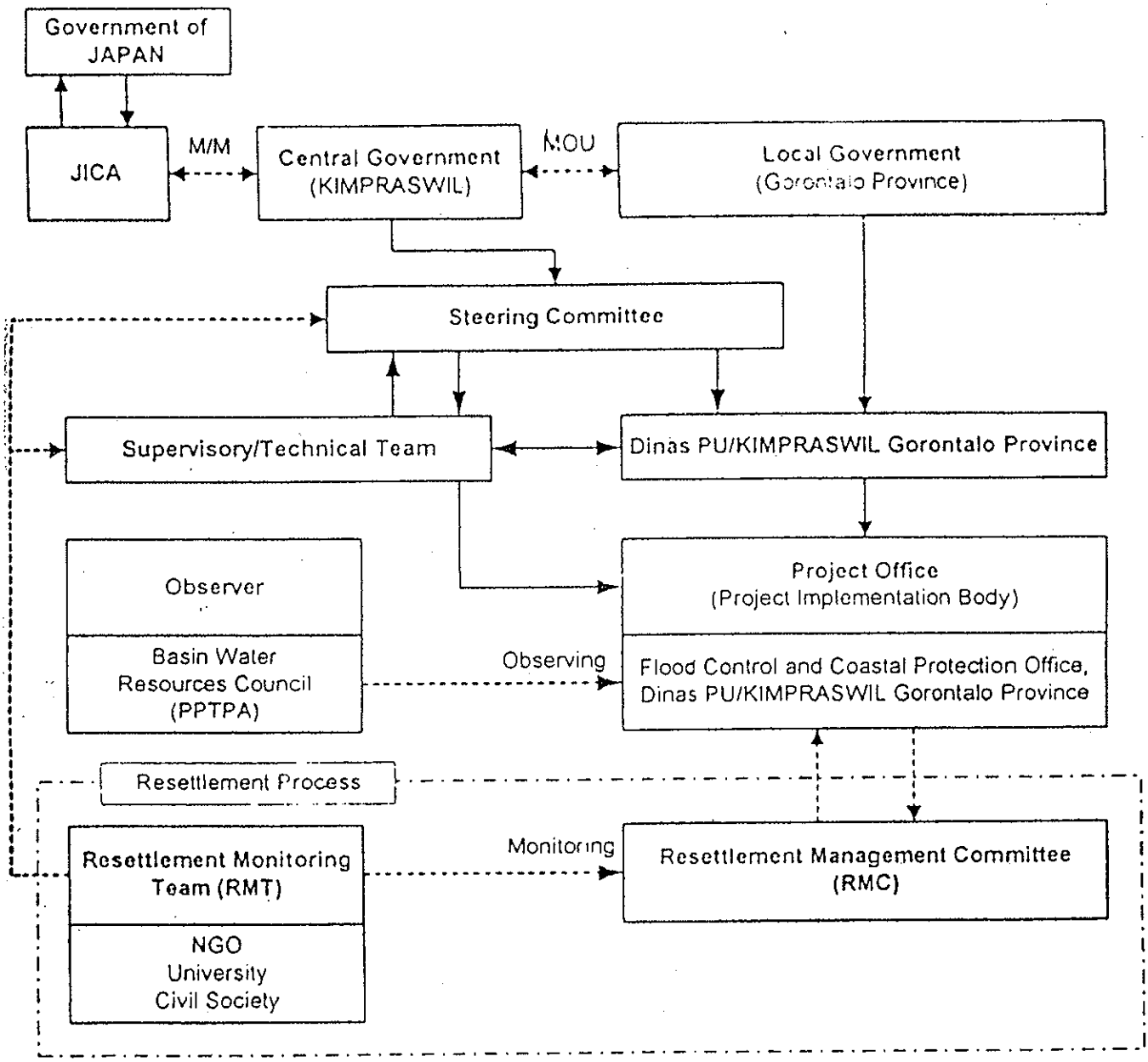
(2) Construction of Tamalate Floodway and appurtenant facilities; and

(3) Technical assistance for sustainable flood mitigation activities.

Project Area

Annex-2

Project Implementation Organization
for
The Project for Urgent Flood Mitigation in Limboto-Bolango-Bone River Basin



Note:

Member of Steering Committee
1) DGWR, KIMPRASWIL
2) Dinas PU/KIMPRASWIL Gorontalo Province
3) Dinas PU Kab. Gorontalo
4) Dinas PU Kota Gorontalo
5) BAPPENAS
6) Observer. Embassy of Japan

Member of Supervisory/Technical Team
1) DGWR / RIWR
2) Dinas PU/KIMPRASWIL Gorontalo Province
3) Dinas PU Kab. Gorontalo
4) Dinas PU Kota Gorontalo

Member of Resettlement Management Committee
1) Leader: Governor of Gorontalo Province
2) Vice Leader: Land Affairs of Gorontalo Province
Member
3) Property Tax Dep of Gorontalo Province
4) Head of Property Dep. in City and District of Gorontalo
5) Head of Agriculture Dep in City and District of Gorontalo
6) Head of Sub-District
7) Head of Village
Secretary
8) Assistant Secretary of Gorontalo Province in Administration Section
9) Head of Agricultural Section in Gorontalo Province

EXECUTIVE SUMMARY

1. INTRODUCTION

1-1. Background

Gorontalo City, located in the lower portion of the Limboto-Bolango-Bone (LBB) basin is the provincial capital of Gorontalo Province, as well as the economic and trade center of the province connecting with Central and Southern Sulawesi, Ambon, Jakarta, etc. Gorontalo Province was separated from North Sulawesi as the 32nd province of Indonesia with a population of approximately 800,000 and a total area of 12,215 km^2.

Gorontalo City, Limboto City and the areas around Lake Limboto have been suffering from frequent floods, since these areas are located on the flood plain formed by the flood flows of the rivers. The flood damage constrains the economic activities of the region. Flood damage is more serious in the southern part of Gorontalo City near the confluence of the Bone and Bolango rivers, due to its low-lying flat topography.

The Directorate General of Water Resources of the Indonesian Government (DGWR) has been executing urgent remedial measures against flooding. The Water Management Master Plan (WM-MP) for the LBB basin was formulated in December 1999 under the technical assistance of the Canadian International Development Agency (CIDA). Since flood mitigation was not a main objective of the WM-MP, concrete flood mitigation measures were not discussed at that time.

In light of this situation, the Government of Japan decided to accept the Government of Indonesia's request to conduct a study on Flood Control and Water Management in the Limboto-Bolango-Bone Basin in the Republic of Indonesia (hereinafter referred to as "the Study"). The Japan International Cooperation Agency (JICA), which is responsible for the implementation of the technical cooperation program of the Government of Japan, conducted the Study for nineteen (19) months from June 2001 to December 2002. As a result of the Study, the Master Plan of flood control in the Limboto-Bolango-Bone Basin was formulated, and priority projects were selected.

After the Study, the Government of Indonesia further requested technical cooperation for the Japanese Grant Aid Project, namely; "The Project for Urgent Flood Mitigation in Limboto–Bolango–Bone Basin in the Republic of Indonesia," and JICA dispatched the Preparatory Study Team for that Grant Aid Project in May 2003. The preparatory study suggested that some technical points regarding the Tapodu River Improvement with Gate should be clarified before the commencement of the project, because progress requires actual data, some experiments and further simulation.

Since it would take time to conduct a further study of the Tapodu River Improvement with Gate, JICA decided to modify the priority projects as an urgent plan without Tapodu River Improvement with Gate and to conduct this Follow-up Study (F/U) on Flood Control and Water Management in the Limboto-Bolango-Bone Basin in the Republic of Indonesia.

1-2. Purpose of the Follow-up Study

This Follow-up Study was to examine modification of the flood control plan as an urgent plan without the Tapodu River Improvement with Gate to make it more feasible from technical, social and environmental aspects.

1-3 Schedule of the Follow-up Study

The Follow-up Study consisted of: (1) the Field Survey in Gorontalo from the end of June to early August 2004, and (2 the Modification of the flood control plan in Japan from the middle of August to the middle of December 2004.

2. COMMENTS AND RECOMMENDATIONS OF THE PREPARATORY STUDY

In 2003, the Preparatory Study (P/S) for a Japanese Grant Aid Project, namely; "The Urgent Flood Mitigation Project in Limboto-Bolango-Bone Basin in the Republic of Indonesia," was carried out to confirm the Project's feasibility and eligibility for Japanese Grant Aid. The P/S particularly focused on the clarification of issues regarding sedimentation and the consistency of hydrological data analysis before the commencement of the Basic Design Study as mentioned below. The P/S has suggested that some technical points regarding the Tapodu Channel Improvement Works with Gate should be clarified before the commencement of the Grant Aid Project, as follows:

(1) Sedimentation in Lake Limboto

In the Master Plan and Feasibility Study (M/P and F/S), it has been estimated that sediment deposition in the lake has progressed at 1-2 million m^3/year. This means that Lake Limboto or the swampy area may dry up within one to two decades. Under such conditions, the flood control function of the Tapodu Channel with Gate would be extinct in the near future.

In this connection, the P/S had recommended a further study such as the measurement of sediment load to clarify the actual sedimentation condition of Lake Limboto.

(2) Progress of Sedimentation around Tapodu Gate

The longitudinal gradient of the riverbed of Tapodu Channel designed in the F/S has been flat. This condition might cause sediment deposition around the gate due to the large difference of flow velocity between the Lake and the Bolango River, which will ultimately force the Indonesian Government to spend more for maintenance dredging and excavation work.

In this connection, a further study involving hydraulic model testing and simulation analysis of sedimentation, as well as cost estimation, has been recommended to clarify the conditions after the completion of the Tapodu Channel with Gate.

(3) Insufficiency of Meteorological Data

Due to the insufficiency of meteorological data, a unique hyetograph regarding hydrology has been basically adopted for the whole Limboto Bolango Bone Basin under consideration of precipitation reduction at each divided catchment/basin in accordance with the relation between basin area and reduction coefficient.

Since the calculated analysis and actual floods in the hydrological analysis was not calibrated consistently, it is necessary to accumulate further basic hydrological data to obtain more accurate results.

(4) Insufficiency of Manpower

The Project is planned to be implemented on the premise that the technical cooperation regarding watershed management as well as the operation and maintenance of equipment and facilities is to be undertaken by the Government of Indonesia (the Indonesian side). However, the manpower resources of the local government are insufficient.

(5) EIA from Inland Fishery Aspect

The EIA approved in 2002 is silent about the impacts of the Project to fishery in Lake Limboto. A supplemental survey regarding adverse influences to inland fishery should therefore be executed.

(6) House Relocation

It is necessary for the Japanese side to provide assistance to the Indonesian side in providing clear information and explanation regarding the Project and the compensation to stakeholders.

3. SUMMARY OF RESULTS OF THE FOLLOW-UP STUDY

3-1. Objectives of the Follow-up Study

(1) Basic Awareness

Some technical points mentioned in the P/S have been recognized, as follows:

(a) Sedimentation in Lake Limboto

The master plan and feasibility studies (M/P and F/S) had estimated that sediment deposition in the lake is progressing at 1 to 2 million cubic meters per year (1-2 MCM/year). This means that Lake Limboto or the swampy area will dry up within one or two decades. Under such conditions, the small flood control function of the Tapodu Channel with Gate may be sustainable. In addition, sedimentation in the lake has nothing to do with the flooding condition of Gorontalo City. However, it will take a long time to confirm the above situations due to the necessity of further accumulating hydrological and sedimentation data.

(b) Flood Runoff Model in the Basin

It is not expected that short-term accumulation of hydrological data will improve the precision of the flood runoff model. On the other hand, Gorontalo City longs for an urgent flood control project because it is hit by floods annually. In such circumstances, urgent modification of the present Flood Runoff Model should be done, if possible.

(c) Progress of Sedimentation around Tapodu Gate

Works such as hydraulic model testing or detailed simulation would require cost and time to estimate sedimentation around the gate. Besides, such test or calculation will not guarantee the construction of the Tapodu Gate.

(d) Social Environmental Evaluation including Manpower and House Relocation

The P/S had acknowledged that social environmental issues could not be solved before the commencement of the Basic Design Study. However, these issues should be managed and supported as soon as possible.

(2) Basic Policy

Based on the basic awareness mentioned above, the following matters have been studied to modify the present scheme of urgent flood control for Gorontalo City:

(a) Study on the Possibility of a Flood Control Plan without Tapodu Gate

The impacts of the existing/designed Tapodu Channel Improvement with Gate and the retarding effect of Lake Limboto have been re-evaluated and the modification of the urgent flood control plan has also been studied and proposed.

(b) Study on Additional Issues

Follow-up of EIA, flood damage features, sedimentation conditions in the existing river channel, and material prices for the estimation of project cost have been grasped newly for the formulation of a suitable flood control plan. In addition, the issues to be solved regarding these matters have been clarified.

3-2. Results of the Follow-up Study

Based on the master plan and feasibility studies, the P/S and basic awareness and policy, a study has been executed in the F/U. The Japanese Grant Aid Project proposed in the F/U is as follows (See Fig. 1 to 3):

(1) The Project without Tapodu Channel Improvement Works with Gate

The F/U was executed to reconfirm and re-study the present and assumed future conditions of the Tapodu Channel Improvement Works with Gate as well as the sedimentation in Lake Limboto and the progress of sedimentation around Tapodu Gate. In the site investigation conducted in the F/U, the following additional issues were also grasped from the socio-economic, hydrological and hydraulic aspects:

(a) Adverse influence to productivity of people living around Lake Limboto;

(b) Difficulty of operation and maintenance of Tapodu Gate; and

(c) Uncertainness of procedure of the Upper Bolango River Improvement Works.

Accordingly, it is proposed that the Tapodu Channel Improvement Works and the Tapodu Gate should not be included in the Grant Aid Project because these structures need further detailed evaluation, which would require the accumulation of more accurate meteorological and sedimentation data.

(2) The Lower Bolango River Improvement Works of 270m^3/s Capacity corresponding to 5-Year Return Period

Gorontalo City and suburbs suffer from frequent flood disasters annually. Taking such circumstances into consideration, a flood control project is required and should be undertaken without delay.

The improvement plan for the Lower Bolango River has been maximized from 200m^3/s in the F/S to 270m^3/s without additional house relocation (see Fig. 11, 12 and 15). The design scale of river improvement in the Project shall be sufficient against a 5-year return period flood at minimum corresponding to the scale of the Initial Phase of the Emergency Project described in the Guidelines for Planning and Survey (DGWRD, June 1993) (refer to Table-1).

(3) The Construction of Small Pumping Stations for City Drainage

Long suspended inundations of 1 to 2 months are due to the low and hollow topography of the area along the river, the lack of outlet from inundation area to the nearest river stretch, and the interruption of drainage of inundation water by the new masonry dike.

In this connection, river improvement works such as the construction of dike, dredging and revetment will be undertaken under the Grant Aid Project, which will also include the construction of drainage main to the river, drainage sluice at the outlet of drainage main, floodwall and movable drainage pump. These works should be able to solve the long suspended inundation as well as the overflow from the bank of the city drainage channel. (See Fig. 1.)

(4) The Construction of Tamalate Floodway

The expansion of residential development to the suburbs of the city core area has adverse influences such as the increment of flood discharge and the decrease of floodwater retarding effect in the Tamalate River Basin. These conditions put a severe strain on the river channel and cause frequent floods in the city core area.

With regard to the Tamalate River, the construction of a floodway for the diversion of floodwaters from the mountain area shall be undertaken promptly to minimize the sediment load to the lower river channel. If the floodway is not promptly constructed, flooding conditions in the lower reach will get worse and, besides, it will be difficult to construct the floodway in subsequent years if the opportunity for its construction is delayed.

(5) The Project without the Lower Bone River Improvement Plan

The Lower Bone River Improvement Plan applied to the Japan Grant Aid Project consists of high dikes that might hamper the life and social activity of the city. Besides, the effectiveness of the plan has been evaluated to be low. Therefore, it is proposed not to include the plan in the Japan Grant Aid Project.

(6) Technical Assistance to Establish an Organization for Orderly and Sustainable Flood Mitigation Activities

Some river improvement works were executed by the local agencies concerned, but these have been implemented without following any integrated concept, procedure, plan or policy. For improvement of the existing conditions of both the Bolango and Tamalate rivers, the proposed plan should consist of a harmonious combination of structural and non-structural measures that could be carried out under the hard or soft component of Japanese Grant Aid.

At the Grant Aid Project stage, assistance should concentrate on sections where construction is to be carried out under the local budget. For these sections, technical guidance services and technology transfer should be provided under the soft component of Japanese Grant Aid. It is expected that the unsuitable improvement plans are to be modified under the soft component services.

4. INVESTMENT PLAN

The Investment Plan for proposed project components is summarized, as follows:

Investment Plan for Proposed Project Components

Investment	F/S	Original	Proposed in F/U
Bolango River (approx. 5km)	○ (200m^3/s)		○ (270m^3/s)
Tapodu Channel/Gate(approx. 3km)	○ (550m^3/s)		×
Lower Bone	○ (Construction of Revetment)		×
Tamalate Floodway (approx. 3km)	○ (120m^3/s)	×	○ (60-80m^3/s)
Sediment Trap in Lake Limboto	○	×	×
Drainage Pumping Station	×	×	○ (2 places in Bolango)

Note: In the Project proposed in F/U, soft components such as technical assistance are also included.
○: proposed
×: not proposed or to be deleted

5. EFFICIENCY OF THE PROJECT

The proposed project should be able mitigate flooding in the perennial flood prone area of 1,600ha in the Lower Bolango River Basin and 200ha in the Lower Tamalate River Basin. The assumed annual benefit of the project would result from the mitigation of direct damage caused by the inundation of houses or farmlands and indirect damage caused by the standstill of traffic or commerce. The amounts of annual benefit are shown below.

Annual Benefit of the Bolango River Improvement Plan (Present Condition)

Unit: Rp. Billion

Flood Scale	Assumed Flood Damage Amount			Average Benefit	Probability	Annual Benefit
	w/o Project	w/ Project	Benefit			
2-year	6.1	0	6.1	3.05	0.500	1.53
5-year	11.8	2.6	9.2	7.65	0.300	2.30
10-year	17.4	2.8	14.6	11.90	0.100	1.19
20-year	27.9	3.9	24.0	19.30	0.050	0.97
50-year	46.6	6.4	40.2	32.10	0.030	0.96
				Total		6.95

Annual Benefit of the Tamalate River Improvement Plan (Present Condition)

Unit: Rp. Billion

Flood Scale	Assumed Flood Damage Amount			Average Benefit	Probability Scale	Annual w/o Project
	w/o Project	w/ Project	Benefit			
2-year	0.6	0.2	0.4	0.20	0.500	0.10
5-year	1.7	0.3	1.4	0.90	0.300	0.27
10-year	4.0	0.5	3.5	2.45	0.100	0.25
20-year	5.2	0.6	4.6	4.05	0.050	0.20
50-year	13.8	1.7	12.1	8.35	0.030	0.25
				Total		1.07

Annual Benefit of the Drainage Improvement Plan for Lower Bolango River (Present Condition)

Unit: Rp. Billion

Flood Scale	Assumed Flood Damage Amount			Average Benefit	Probability Scale	Annual w/o Project
	w/o Project	w/ Project	Benefit			
2-year	3.6	0	3.6	1.80	0.500	0.90
5-year	9.8	8.0	1.8	2.70	0.300	0.81
10-year	9.9	8.1	1.8	1.80	0.100	0.18
20-year	9.9	8.1	1.8	1.80	0.050	0.09
50-year	9.9	8.1	1.8	1.80	0.030	0.05
				Total		2.03

The values given in the table above are amounts based on the present values and may increase due to increment of assets in future. The values regarding project evaluation such as EIRR, B/C and NPV are summarized as follows:

Project Evaluation

Target Structure (Area)	Asset Value	Annual Benefit		EIRR		B/C		NPV	
		F/S	F/U	F/S	F/U	F/S	F/U	F/S	F/U
Bolango Basin*1	present	9.95	6.95	8.3%	5.0%	0.71	0.58	-21.5	-47.5
	future	30.49	25.57	17.0%	14.6%	1.54	1.59	39.4	24.1
Tamalate Floodway	present	1.38	1.07	6.3%	4.0%	0.55	0.49	-5.8	-10.6
	future	4.76	3.80	16.2%	12.3%	1.44	1.29	5.7	0.5
Drainage Improvement	present	-	2.03	-	12.0%	-	1.25	-	0.0
	future	-	6.38	-	25.0%	-	2.90	-	17.7

*1: inclusive of Lower Bolango and Lower Bone Improvement and Tapodu Gate

The base to estimate B/C and NPV is 12%

"Future" means Assets of Year 2020

Unit: Rp. Billion, % and Ratio

6. ASSUMED PROJECT COST

The assumed project cost is tabulated below.

Assumed Project Cost

Work Item	Item	Present	F/S	Original Application	F/U
Whole Project	Target Scale	-	20-year return period flood	20-year return period flood	5-year return period flood
	Cost	-	Approx. 1.8 billion yen	Approx. 1.6 billion yen	Approx. 1.5 billion yen
Bolango River (L=Approx. 5km)	Flow Capacity	100~200m^3/s	200m^3/s	200m^3/s	270m^3/s
	Cost		Approx. 0.3 billion yen	Approx. 0.3 billion yen	Approx. 1.05 billion yen
Tapodu Channel (L=Approx. 3km) Tapodu Gate	Flow Capacity	50~100	550	550	Deleted
	Cost	-	Approx. 1.22 billion yen	Approx. 1.22 billion yen	
Lower Bone River	Cost	-	Approx. 0.03 billion yen	Approx. 0.03 billion yen	Deleted
Small-scale Drainage Pump	Cost	-	-	-	Approx. 0.2 billion yen
Tamalate Floodway (L=Approx. 3km)	Cost	-	Approx. 0.25 billion yen	-	Approx. 0.25 billion yen
Sediment Trap in Lake Limboto	Cost	-	Approx. 0.3 billion yen	-	-

7. COMMENTS ON FURTHER PROJECT STAGES (RESETTLEMENT AND OTHER AGENDA)

7-1. Social Considerations

The relevant JICA development study and the grant aid for the priority projects were requested before the enforcement of JICA's Guidelines for Environmental and Social Considerations (April 2004) and, based on this Guidelines, the project would fall under Category A. Thus it is important that the project is accepted in a socially appropriate manner and is planned with minimizing involuntary resettlement and loss of means of livelihood. The Indonesian side endeavored to fulfill the undertakings described in the Minutes of Discussions with the JICA Preparatory Study Team for Grant Aid in 2003.

(1) Viabilities of Land Expropriation

The capacity of provincial authorities to implement resettlement is limited to approximately 60 houses based on recent implementations of resettlement by provincial authorities. According to the estimation for the modified project plan avoiding and minimizing resettlement, the houses that will be affected would amount to 130 houses or maybe more, including those to be renovated and displaced. The number of potentially displaced houses will be 70 or more.

The modified project plan avoided the houses where residents had a disagreeing attitude or have expressed reservations, as indicated in the results of the attitude surveys conducted in this study. The total number of potentially affected houses will decrease by almost half of the ones estimated under the original project plan. As for land acquisition, 70 lots or maybe more are to be acquired without resettlement.

Based on the above, resettlement would be viable, while land expropriation of a whole lot has a low viability. The viabilities will finally depend on the will of the provincial authorities to implement compensation and the required assistance to fill gaps between the requirements based on relevant laws and regulations as well as the needs of the target population referring also to international good practices.

(2) Urgent Environmental and Social Consideration Issues of the Provincial Authorities

(a) To extent and/or revise the Environmental Impact Analysis (EIA)

The environmental compliance certificate based on the EIA relevant to the original plan (issued in September 2002) will expire in September 2005. The final decision depends on the provincial authorities concerned to validate this environmental compliance certificate for the modified project plan and for the terms including the implementation stage, complying with the relevant laws and regulations including draft provincial ordinances.

(b) To build general approval

The decision-making of the potentially affected people needs enough time and information on compensation plans and resettlement assistance. Thus it is recommended that the processes of public consultation meetings and of soliciting basic agreements on resettlement should be improved as to the "selection of target population," "method of consultation/meeting," "solicitation the basic agreements," and "information management."

(c) To prepare compensation and assistance

The provincial authorities are requested to firstly start with "the identification of the people directly affected by the modified project plan" and "surveys to confirm general approval of the target population." Secondly, details and accurate budget should be estimated to cover all compensation plans and

resettlement assistance for the target population including the costs that could not be estimated in the modified project plan. Finally, the provincial authorities should prepare relocation lands and houses for the displaced people except those who want only compensation money. The highest priority should be to secure each relocation site in the same Kelurahan or Desa for each displaced house. As for land acquisition of farmlands, it is necessary to obtain the general approval of such users as tenant farmers or wage earners from farming, and to obtain substitute farmlands for the users.

Further agenda of the provincial authorities is "participation of the target population in designing/planning implementation of resettlement and land expropriation" and "organizing institutional arrangement of collaborative implementation with or of sharing of the beneficiaries of the project" in order to improve the process of compensation and assistance for the directly affected people.

(3) Environmental and Social Consideration Issues of the Provincial Authorities from the Design Stage

(a) To implement environmental management and monitoring and to report their progress, and to execute the mitigation of adverse impacts

The avoidance and minimization of adverse impacts of the modified project should be considered in the design stage. Unavoidable impacts should be monitored and managed in the implementation stage.

(b) To facilitate land expropriation

The authorization of the project sites for public works should be assured and obtained by the provincial authorities before the mobilization of the "Resettlement Management Committee" and the "Resettlement Monitoring Team." The provincial authorities should also be responsible for facilitating their activities.

7-2. Other Issues

(1) Disposal Plan of Excavated Materials

The disposal site for excavation materials has not been clearly indicated in the master plan and feasibility studies (M/P and F/S). It is therefore necessary to determine these sites in the Basic Design Study Stage (B/S). An appropriate disposal site is a very important matter from cost and social environment considerations.

(2) River Improvement Plan to be expected by the People

People staying along the Bolango River in Gorontalo City live with the river and the river is part of their daily life. Therefore, some kind of access between the residential area and the river sections such as access roads and steps on the embankment are required to be included in the design of dike. It is also necessary to design appropriate facilities or structures at some portions.

On the other hand, there are a number of facilities and equipment utilizing the channel or water of the Bolango River. The design of dike should also be in harmony with these facilities and equipment and should not give any inconvenience to their utilization.

(3) River Facilities to be maintained easily by the Local Government

In the B/S, river facilities that could be maintained easily by the local government such as dike, steps and other riparian structures shall be proposed.

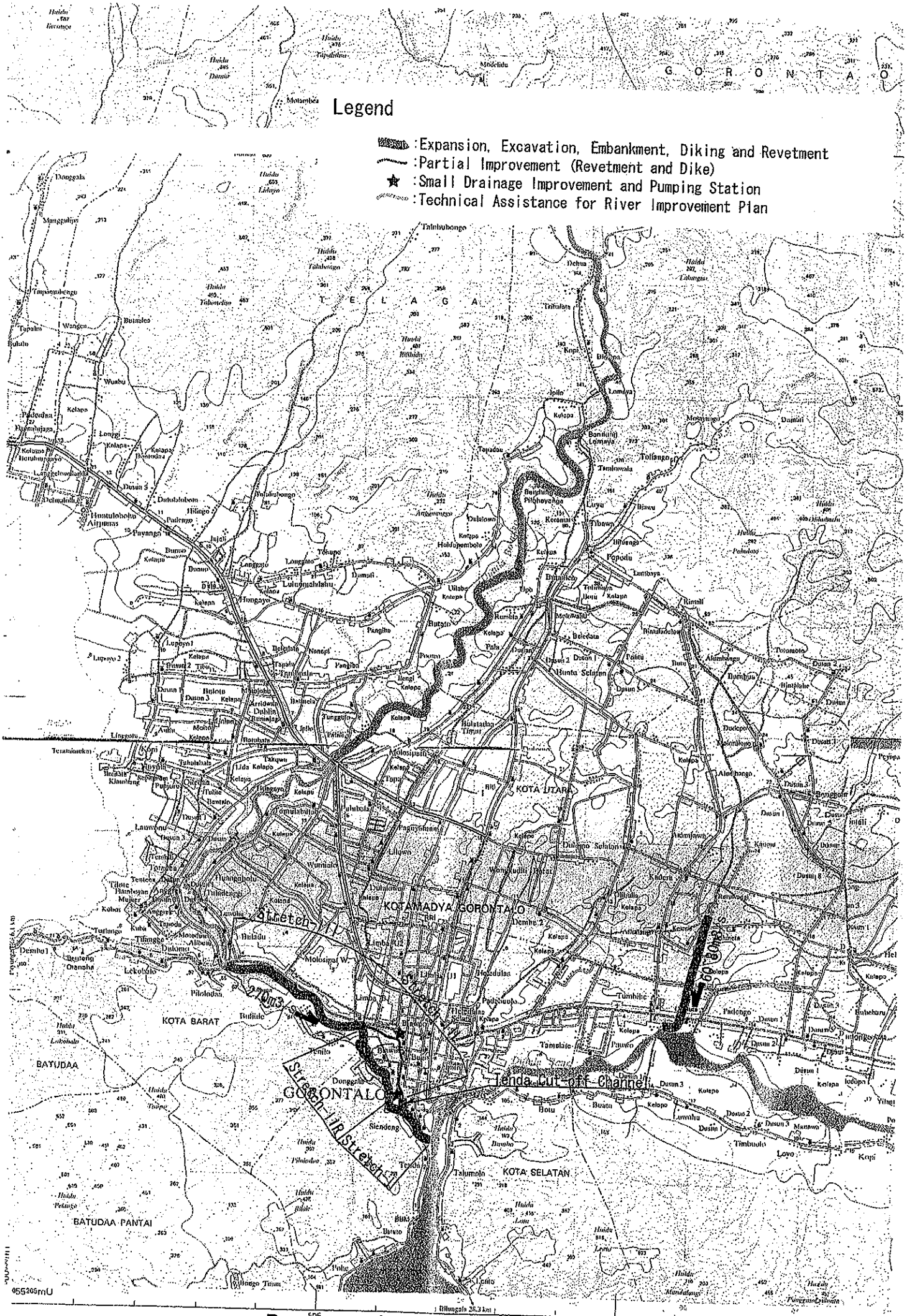


Fig-1 Proposed Improvement Plan

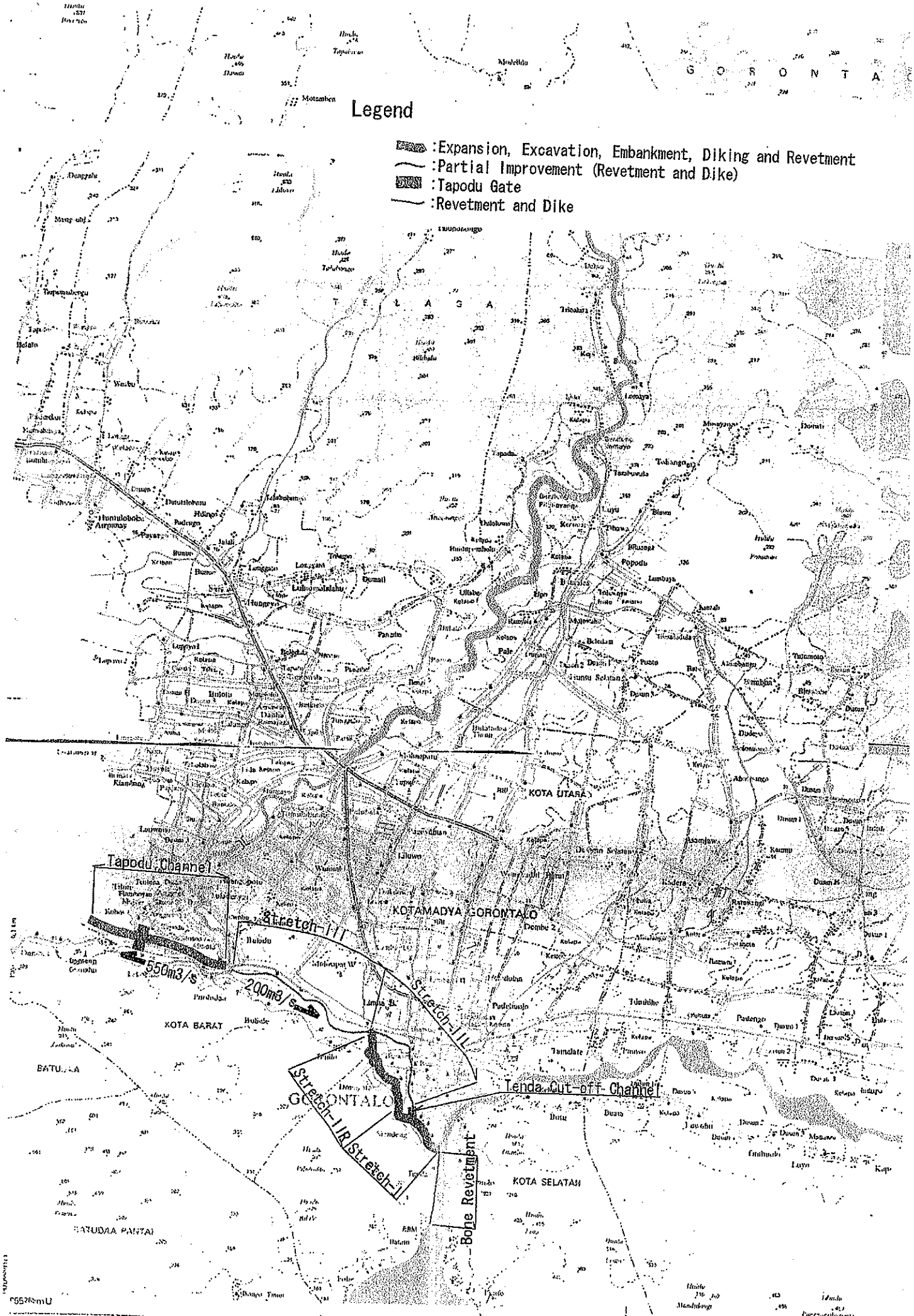


Fig-2 Proposed Improvement Plan

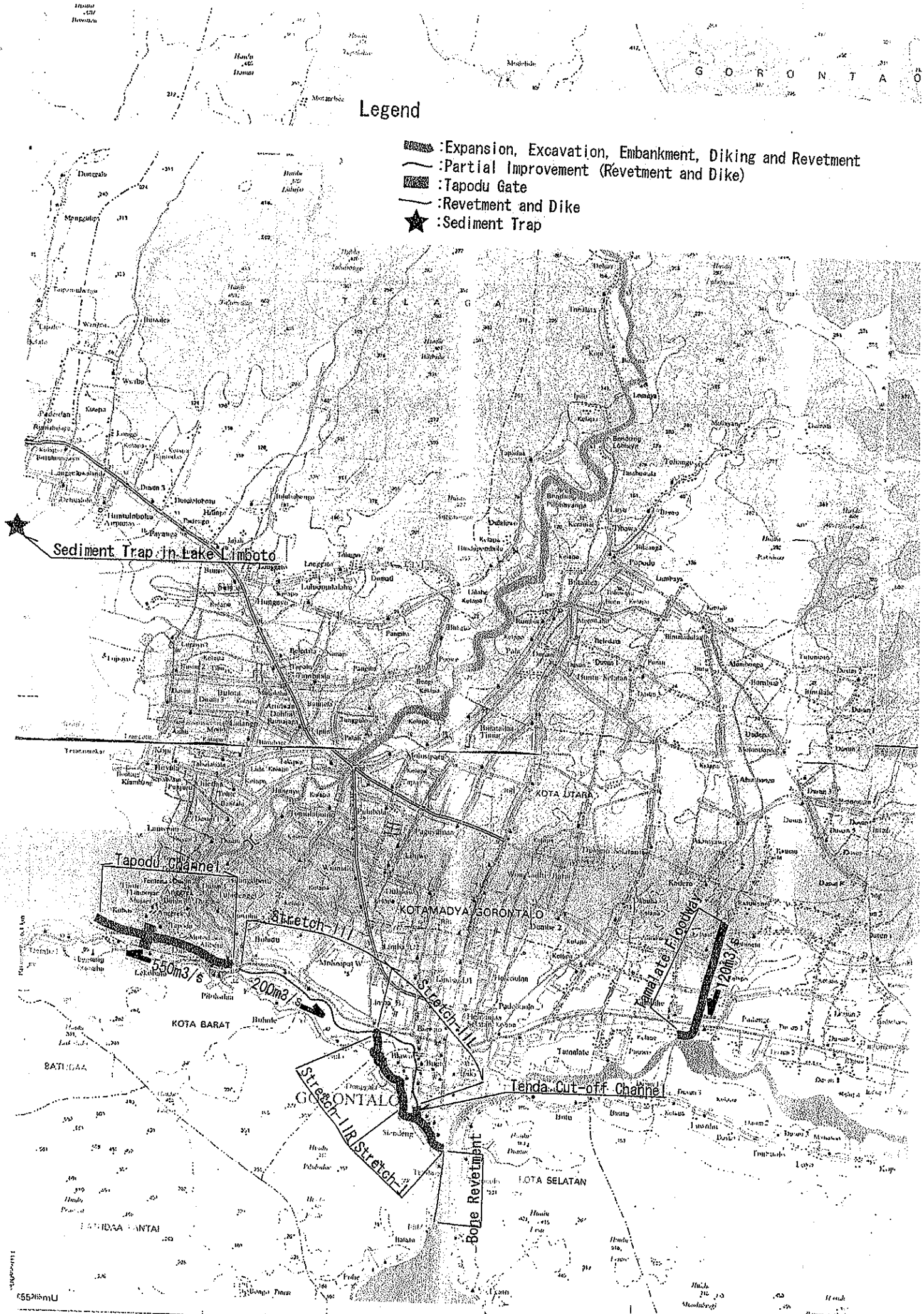


Fig-3 Proposed Improvement Plan

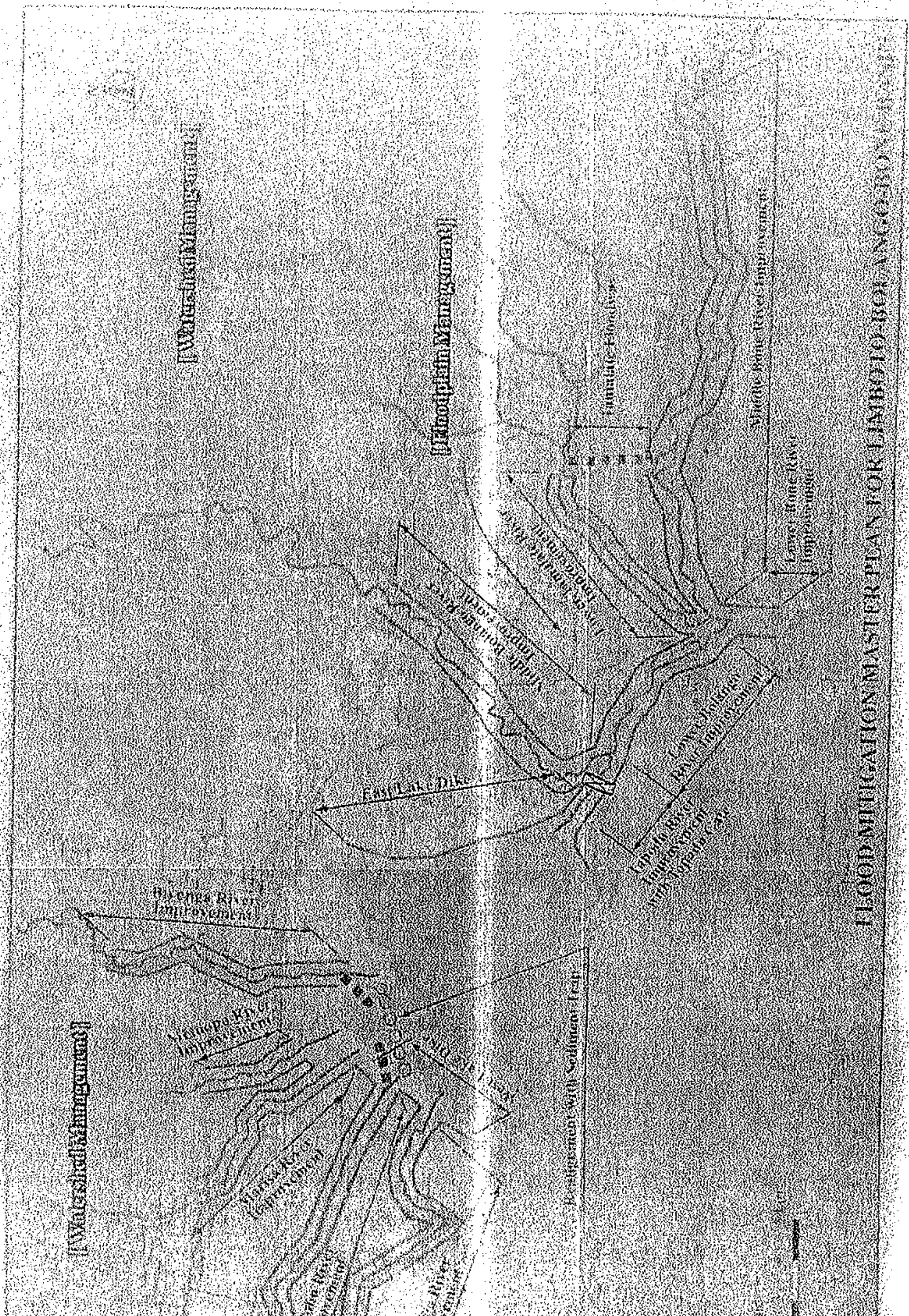


Fig-4 **Flood Mitigation Master Plan for LBB Basin by JICA**

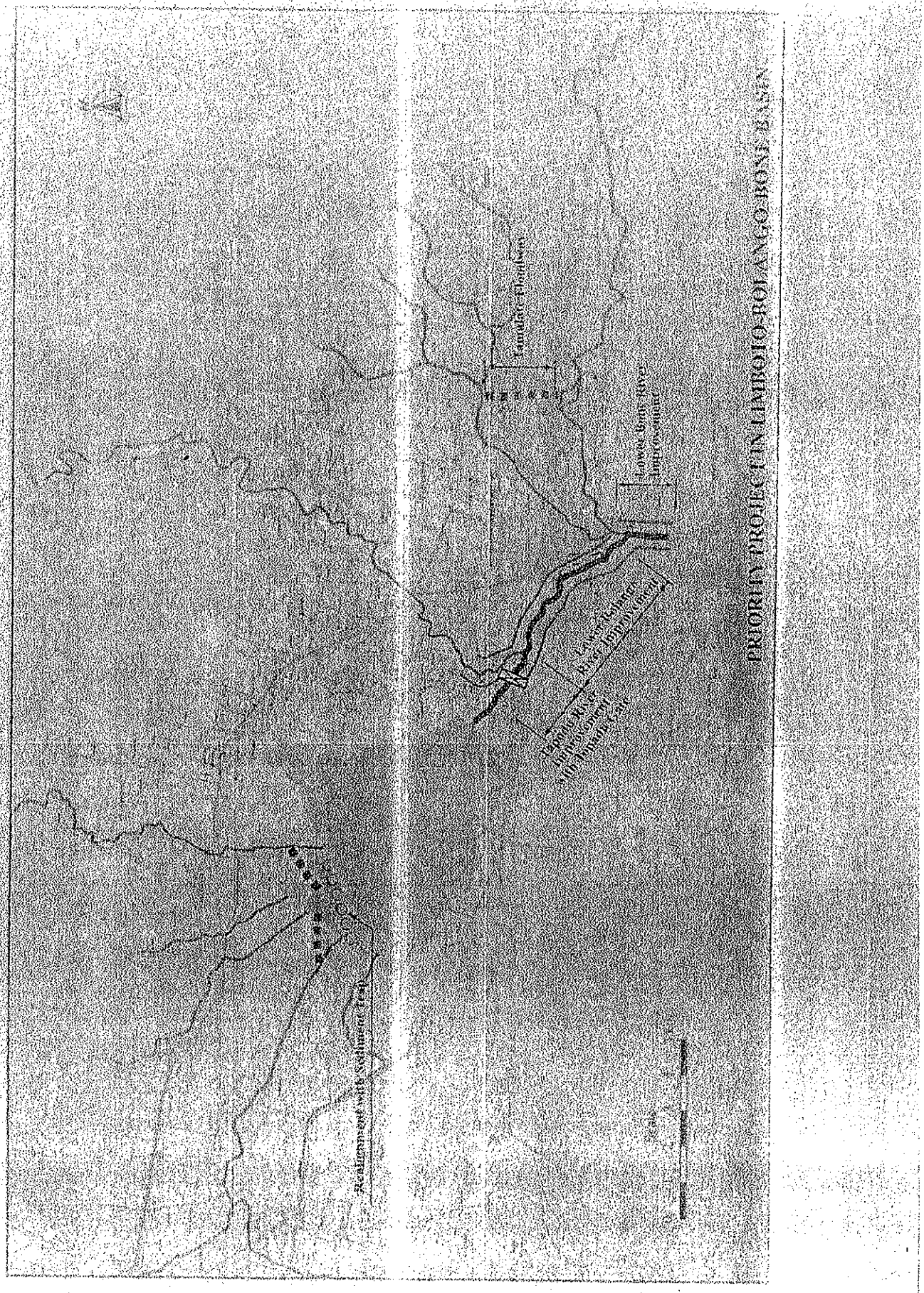


Fig-5 **Flood Mitigation Priority Project for LBB Basin by JICA**

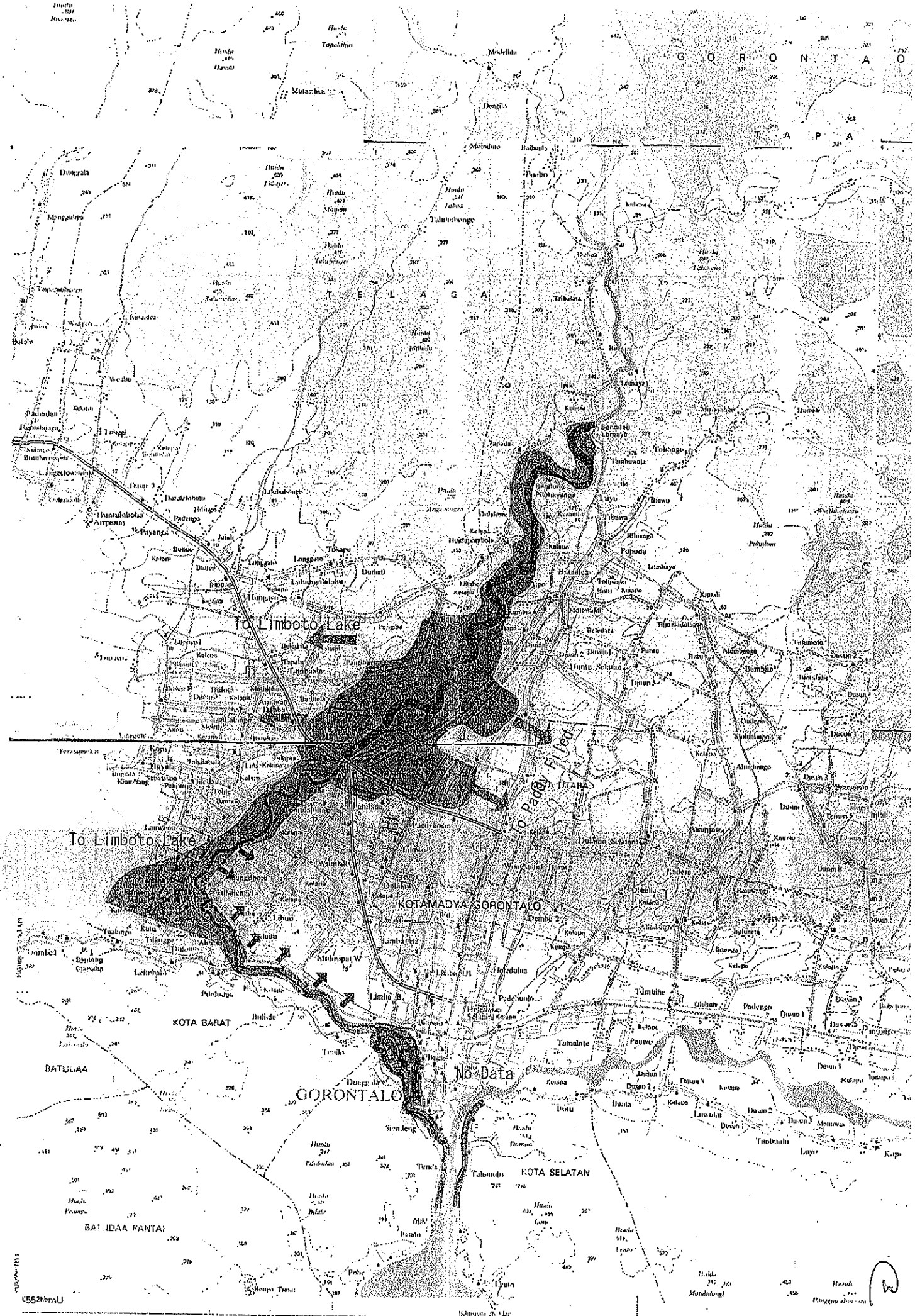


Fig-6 Assumed Flood Inundation Area in 1971

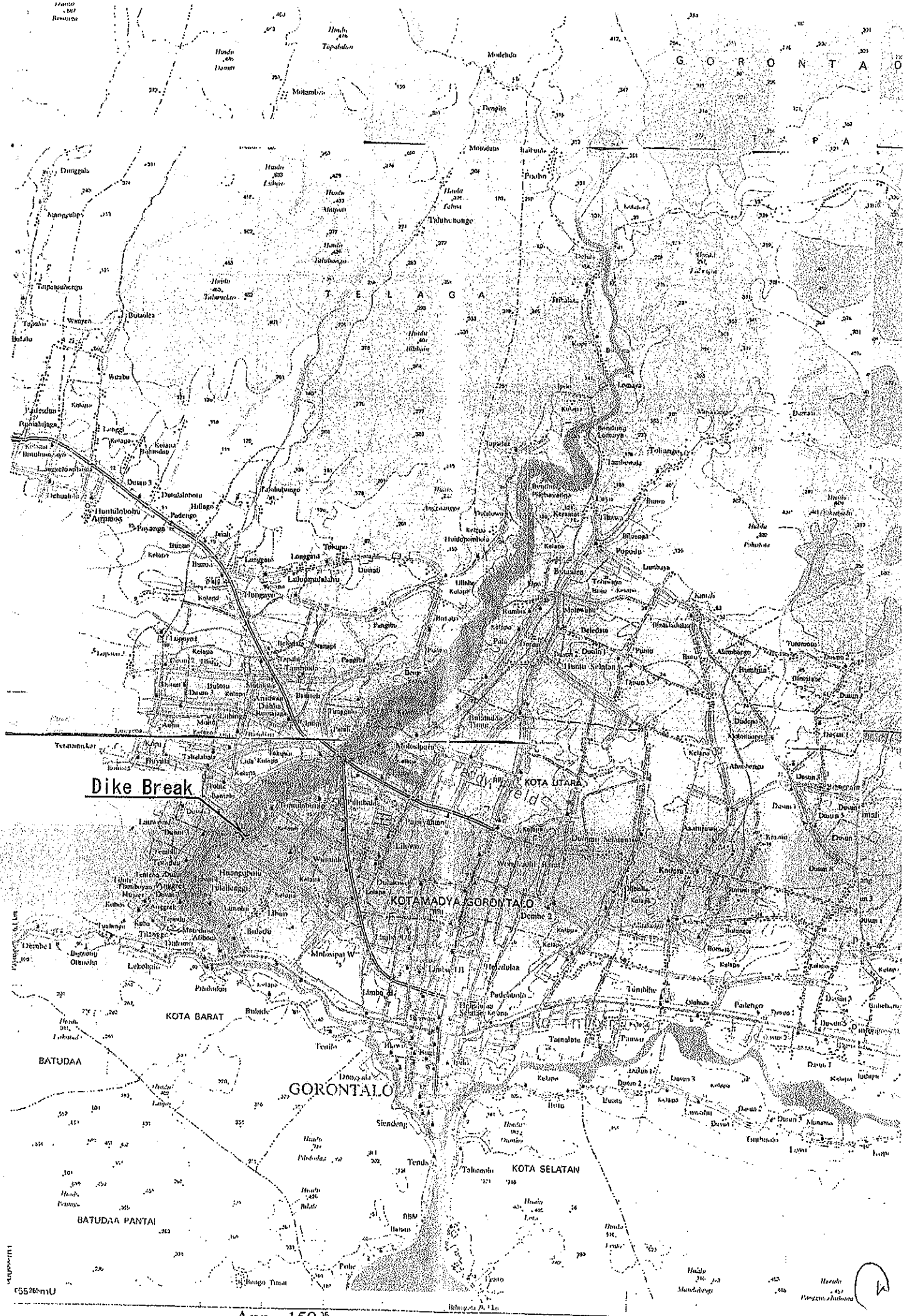


Fig-7 Assumed Flood Inundation Area in 1997

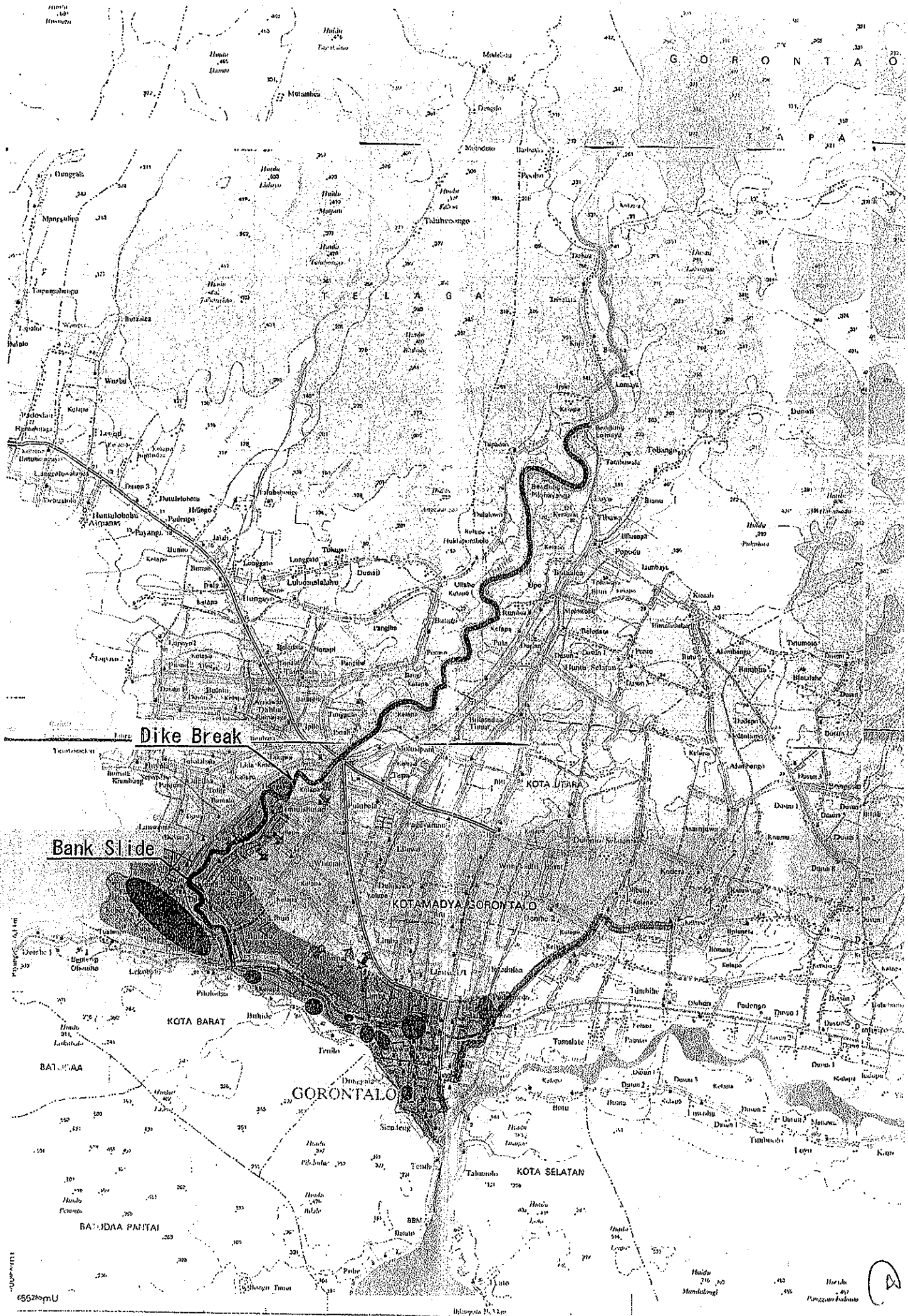


Fig-8 Assumed Flood Inundation Area in 2001

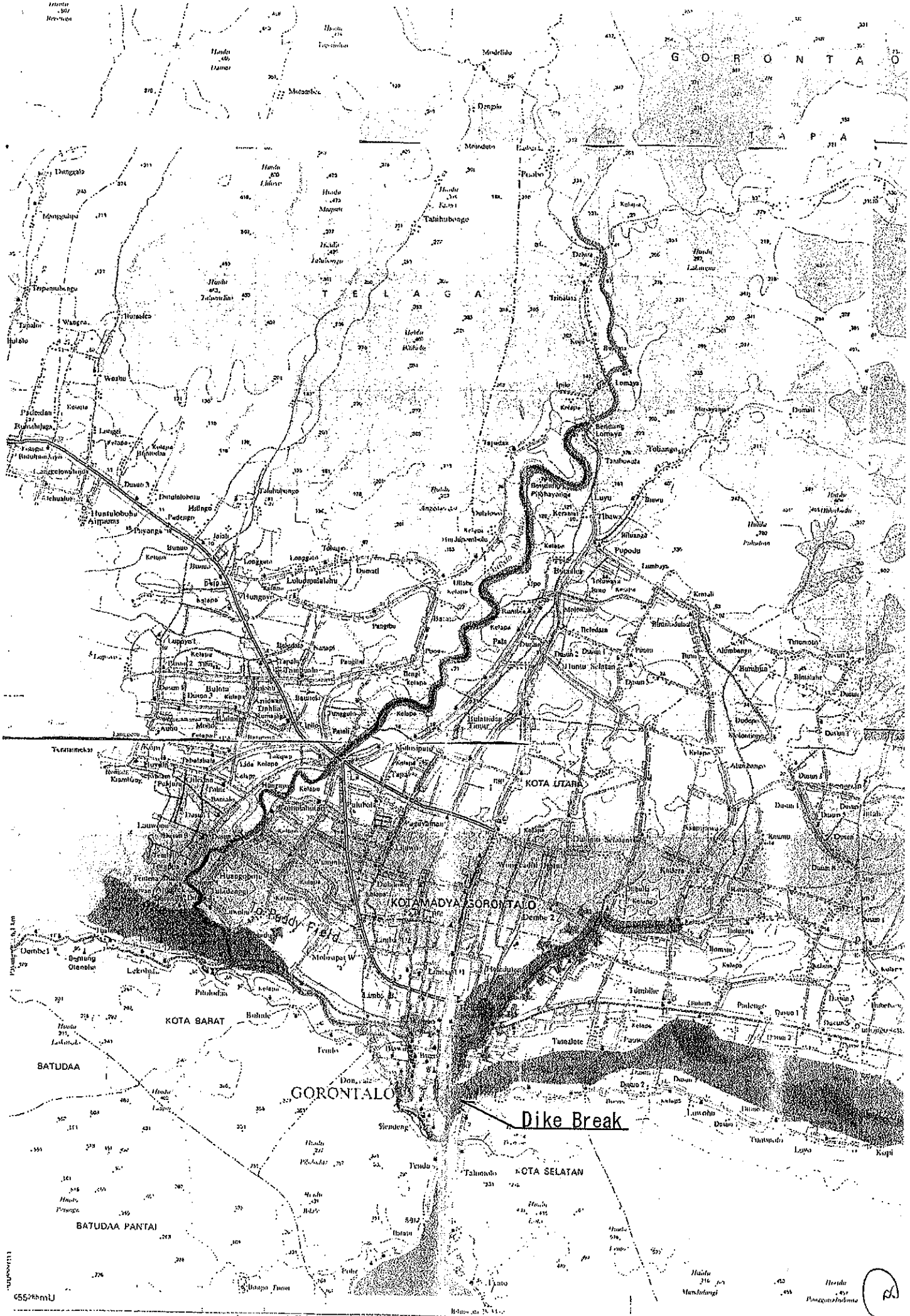


Fig-9 Assumed Flood Inundation Area in 2002

Fig-10

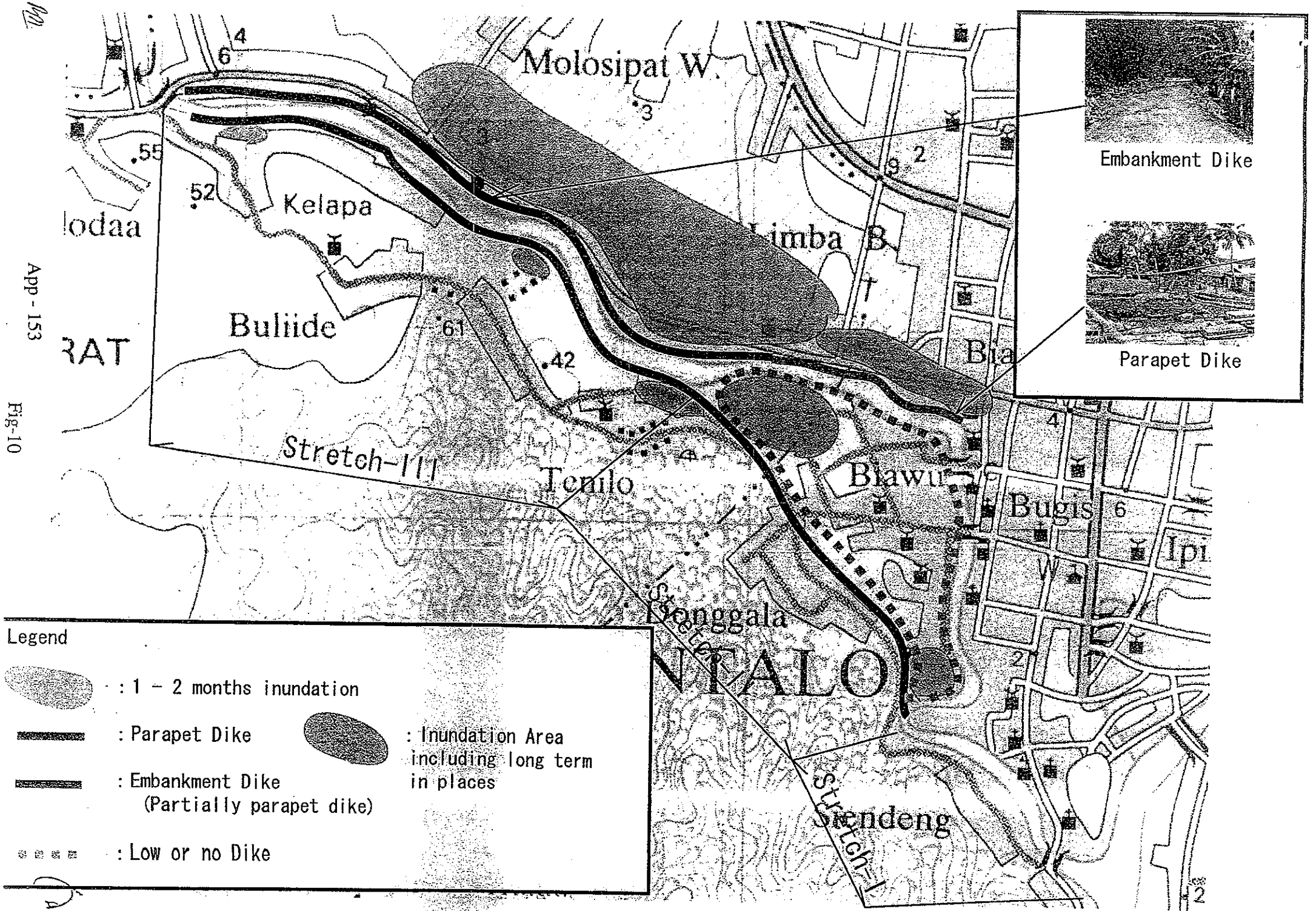

Molosipat W.
Kelapa
Buliide
Tenilo
Stretch-III
Stretch-II
Stretch-I
Embankment Dike
Parapet Dike
Legend
: 1 - 2 months inundation
: Parapet Dike
: Embankment Dike
(Partially parapet dike)
: Low or no Dike
: Inundation Area
including long term
in places

Fig-11

Non-Uniform Calculation Results of Lower Bone and Bolango River

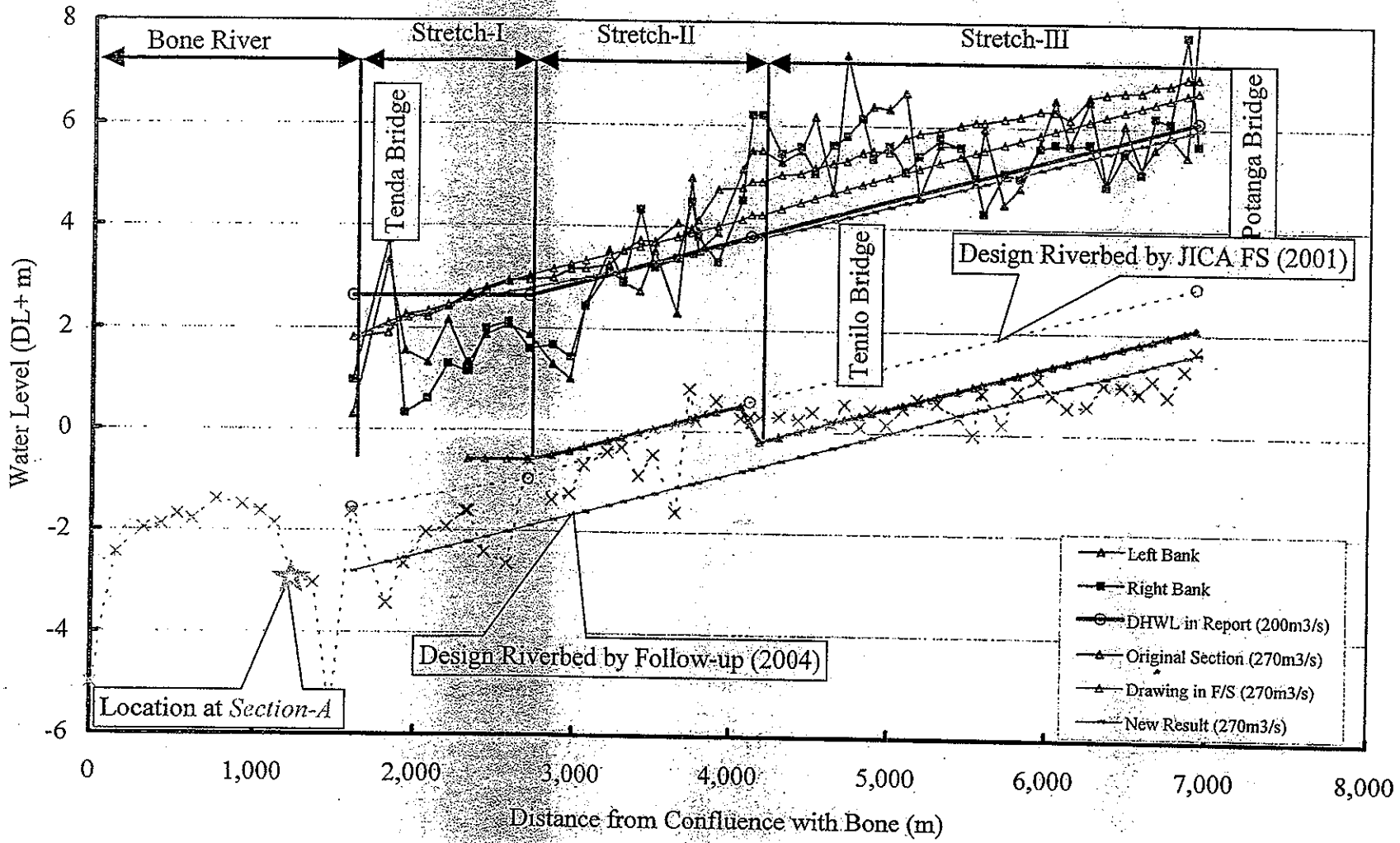
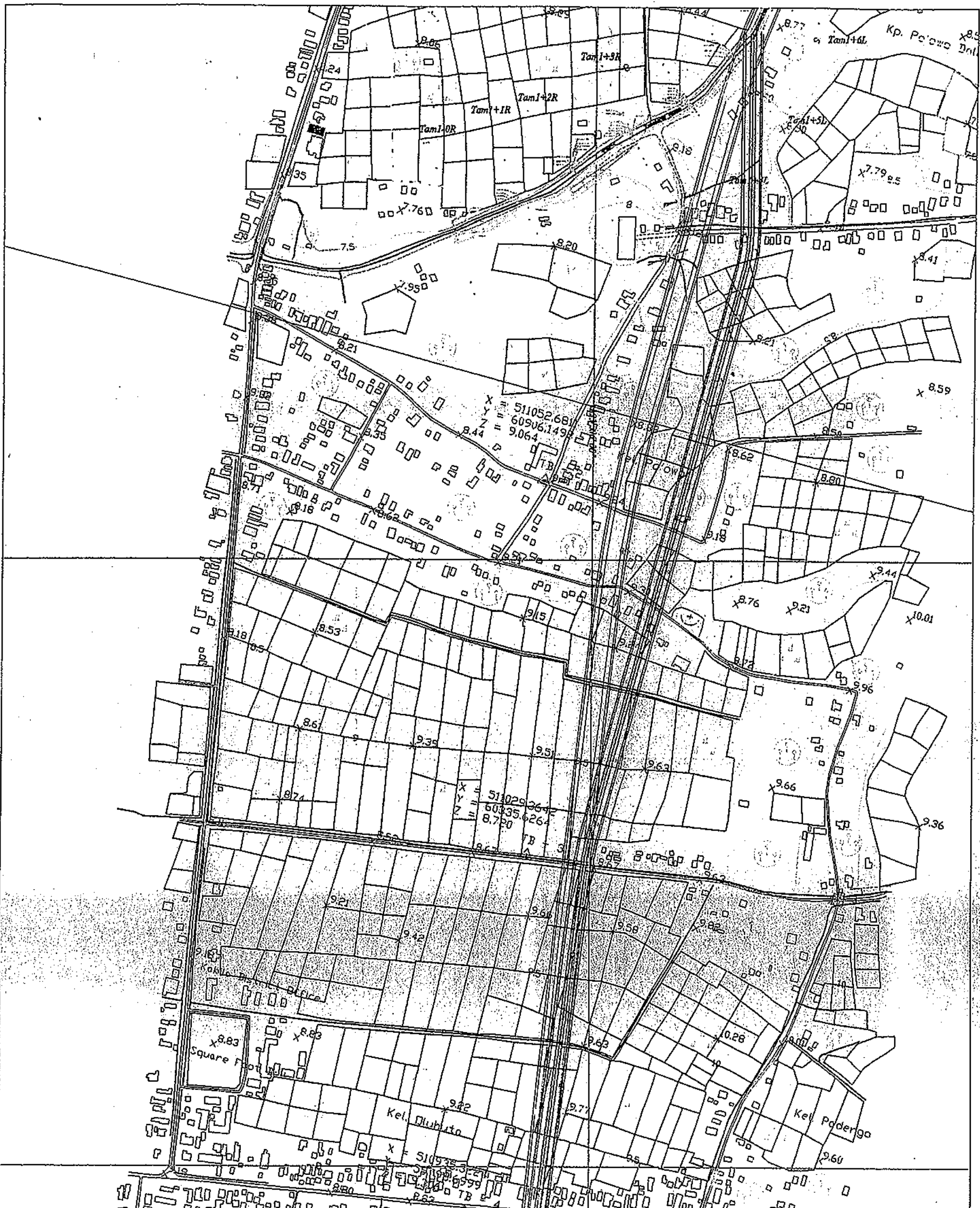


Fig-12



Alignment of Tamalate Floodway

Photo Sediment Runoff of Alo-Pohu River (Aero-photo taken on Aug. 24 2001)

【 : Area of Sediment Runoff】

【 : Flow Direction of Sediment Runoff】

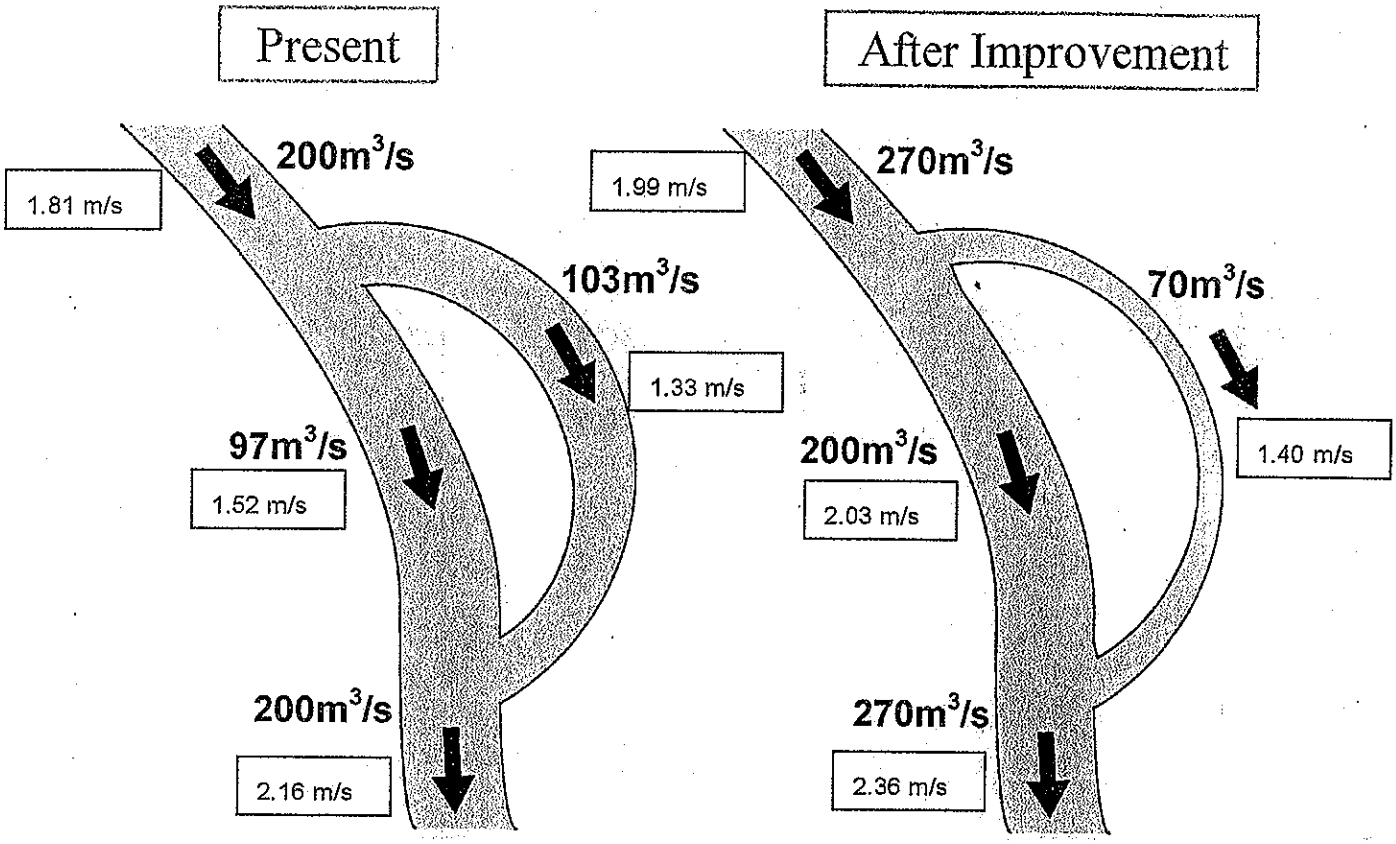
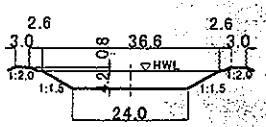
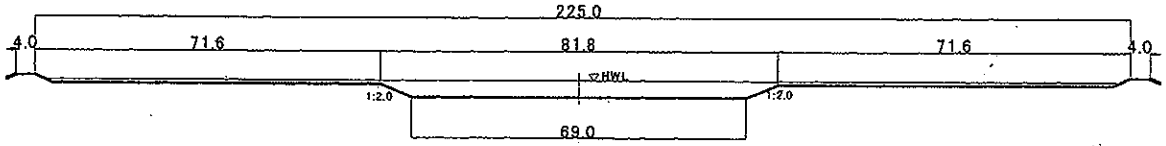

Present
After Improvement
200m3/s
1.81 m/s
103m3/s
1.33 m/s
97m3/s
1.52 m/s
200m3/s
2.16 m/s
1.99 m/s
270m3/s
70m3/s
1.40 m/s
200m3/s
2.03 m/s
270m3/s
2.36 m/s

Fig-15

Table-1 Comparative Table for Lower Bolango River Improvement Works

	Alternative-A	Alternative-B
Scale of Flood Control	5-year	20-year
Design Discharge	270m^3/s	750m^3/s
Standard Cross Section		 (quoted from M/P Study Report)
Work Volume Index		
Excavation	Approx. 300,000 m^3	Approx. 800,000m^3
Embankment/Backfill	Approx. 200,000 m^3	Approx. 200,000m^3
Direct Work Cost	Approx. 100 billion Rupiah (equivalent to 1 billion yen)	Approx. 250 billion Rupiah (equivalent to 2.5 billion yen)
No. of House Relocation	Approx. 70 units	Over 500 units
Land Acquisition	Approx. 80,000m^2	Approx. 1,000,000m^2
Project Strategy	applicable to Japanese Grant Aid Project	recommended to apply other sources

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Jakarta, January 10, 2005

Yokokura Junji

Leader of Follow-up Study Team

Japan International Cooperation Agency

Mr. Basuki Hadi Mulyono

Director General of Water Resources

Ministry of Public Works

MEMORANDUM

on

Draft Final Report

of

Follow up Study on Flood Control and Water Management

in the Limboto-Bolango-Bone Basin in the Republic of Indonesia

ENVIRONMENTAL AND SOCIAL CONSIDERATIONS

1. Overall Process of Environmental and Social Considerations

1-1. JICA's Guidelines for Environmental and Social Considerations

(1) The Indonesian side had agreed that the preparation of the Basic Design Study for the modified project (hereinafter referred to as "the Project") will be conducted in accordance with the JICA's guidelines for environmental and social considerations (2004) (hereinafter referred to as "the Guidelines").

(2) The Indonesian side had promised to prepare and submit the following documents.

(a) Modified application for Japan's Grant Aid attaching the Screening Forms, Appendix-3 of the Guidelines (see 2.5 in the Guidelines).

(b) All relevant documents containing data and information for the review of JICA's Advisory Council of Environmental and Social Considerations (see 2.4 in the Guidelines).

1-2. Responsibilities of the Executing Agency for Environmental and Social Considerations

(1) The Indonesian side had agreed that Dep.PU and Dinas PU/Kimpraswil Gorontalo Province (hereinafter referred to as "the executing agencies") will be responsible for:

(a) Environmental and social considerations;

(b) Consultations with the communities and the stakeholders relevant to and directly affected by the Project; and

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(c) Proper and transparent process of resettlement and land acquisition for the Project.

(2) Dinas PU/Kimpraswil Gorontalo Province will designate the persons to be in charge of the processes of environmental impact assessment (hereinafter referred to as "EIA") and social considerations to resettlement and land acquisition respectively.

1-3. Information Disclosure

(1) Both parties had agreed that indispensable information disclosure will be implemented by the executing agencies and in cooperation with JICA in accordance with the Guidelines.

(2) The Indonesian side will prepare and, if necessary, will make all records including transcripts of public consultations open to the public.

2. EIA Process

2-1. Another EIA

(1) The Indonesian side had agreed that the executing agencies will implement or execute another EIA (including environmental management and monitoring plans) or the relevant process to validate the Environmental Compliance Certificate so as to:

(a) Be valid for the Project Plan; and

(b) Be valid enough for long terms of execution including the implementation stage of the project.

(2) The EIA should comply with the relevant laws and regulations including the provincial ordinances, paying attention to:

(a) Authorization procedures including scoping (Ministerial Decree of Living Environment, No.40, 2000); and

(b) Information disclosure and public involvement (Decree of Head of Environmental Management Agency, No.8, 2000).

2-2. Implementation of Environmental Management and Monitoring Plans

The Indonesian side had promised to implement the environmental management and monitoring plans without delay starting from the preparations for the Project.

3. Social Considerations on Resettlement and Land Acquisition

3-1. Acceptance of Communities and Stakeholders, and General Approval of the People Directly Affected by the Project

(1) The Indonesian side had agreed that the executing agencies should confirm respectively:

(a) The acceptance of all the communities and the stakeholders relevant to the Project in order to proceed with the preparations for the Project; and

(b) The general approval (or basic agreement without consent to compensation) of the people to be directly affected by the Project regarding resettlement, land acquisition or river works.

(2) Such directly affected people shall include:

(a) Owners and users of potentially displaced houses;

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(b) Owners and users of the potentially acquired lands for the Project and the potential relocation sites; and

(c) Fishermen using the potentially affected rivers.

(3) Dinas PU/Kimpraswil Gorontalo Province will start to identify the directly affected people in the Project sites and other required sites prior to the census by the Resettlement Management Committee (RMC) in order to analyze the target population of consultations as soon as possible.

3-2. Consultations with Communities, Stakeholders and the People Directly Affected by the Project

(1) The Indonesian side had agreed that such consultations should be implemented with the participation of enough target population and impartial observers, and by the appropriate participatory meeting methods (including enough frequent/long time consultations).

(2) The consultations with the directly affected people at this stage aim at mainly:

(a) Explaining the purpose and contents of the Project Plan;

(b) The procedures of resettlement and land acquisition; and

(c) Understanding their needs,

paying attention to:

(a) Also visiting each house;

(b) Preventing any threatening acts or remarks from the authorities; and

(c) Sparing enough time before the decision-making.

3-3. Prevention of Adverse Impacts on Livelihood due to Involuntary Resettlement and Land Acquisition

(1) The Indonesian side had agreed that resettlement and land acquisition should be implemented by preventing adverse impacts on the livelihood of the directly affected people.

(2) The Resettlement Monitoring Team (RMT) should be organized as the impartial observer before proceeding with the application for the Basic Design Study.

(3) Resettlement and land acquisition should include compensations and the required assistance to fulfill the needs of the directly affected people not only complying with the relevant laws and regulations but also referring to international good practices such as those stipulated in the World Bank Operational Manual.

(4) The compensations and the required assistance should be planned and implemented with the participation of enough target population and the impartial observers even at the valuation process for houses, lands and other properties. The Indonesian side had understood the importance of involvement of the beneficiaries of the Project to assist the directly affected people and to prevent adverse social impacts of resettlement and land acquisition. The Indonesian side will report these situations periodically.

(5) The Indonesian side should formulate the Resettlement Action Plan (RAP) and the Implementation Plan of Compensation and Assistance for Resettlement and Land Acquisition (with feasible budgetary allocation initiatives supported by Government of Indonesia) in accordance with the Project Plan, the results of consultations and good practices.

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4. Necessary Documents to Proceed to the Application for Basic Design Study

The Indonesian side has been requested by the JICA Study Team to submit at least one (1) copy of the following documents in Indonesian and English languages to the JICA Indonesia Office in order to proceed with the application for Basic Design Study.

(1) EIA documents (based on Clause 1.6 in the Guidelines) relevant to the Project Plan

(a) Environmental Impact Assessment Reports, including:

- Documents showing the public announcement of the Project Plan during the EIA process; and
- Letter of authorization, and authorized scoping documents/Specifications of the EIA study

(b) Environmental management and monitoring plans

(c) Environmental compliance certificate

(2) Documents showing the process of building social acceptability (based on Clause 5, Appendix 1 in the Guidelines) for resettlement and land acquisition

(a) Documents showing that consultations have been made with the relevant communities and stakeholders, and the directly affected people, which shall include the following data and information:

- Announcement and arrangement of consultation meetings (e.g., venue, date and time, selection process of participants, used language)
- Location maps and lists of the target population
- List of members of task force (e.g., the secretariat and the authorities concerned), the impartial observers and participants
- Agenda, consultation topics and transcripts of presentation
- Transcripts of discussions and materials distributed
- Disclosure of transcripts (e.g., method and duration)
- Summary of consultation results (e.g., attitude and needs of the individual community and stakeholder group)

(b) Survey reports on general approval of the directly affected people of resettlement and land acquisition, which shall include the following information and data:

- Methodology
- Location maps and lists of the target population
- List of members of task force (e.g., the secretariat, surveyors and the impartial bystanders)
- Interview topics and transcripts of explanation
- Transcripts of interviews
- Materials distributed

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- Summary of survey results (e.g., demography and affected properties of the targets, and attitude and needs of the individual target households for relocation)

(3) Documents showing the means and progress of mitigating the adverse impacts of involuntary resettlement and land acquisition (based on Clause 6, Appendix 1 in the Guidelines)

(a) Resettlement Action Plans (RAP)

(b) Implementation Plan of Compensation and Assistance for the Resettlement and Land Acquisition

(c) Quarterly monitoring reports on public involvement and social impacts in the process of designing resettlement and land acquisition.

January 10, 2005

Yokokura Junji


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