

B7. SELECTION OF PRIORITY PROJECTS

B7.1 Procedures for Selection

Selection of the Priority Project is discussed only for the structural measures. The non-structural measures should be performed continuously as a routine work by the managing offices in charge of flood mitigation, since these measures are not project type but rather have administrative nature.

Sub-Projects for Selection of Priority Projects: Sub-projects of the Flood Mitigation Master Plan (FM-MP) formulated in the previous Chapter were further broken down for the purpose of selection of the Priority Projects as follows:

- 1) Bone River Improvement:
 - Lower Bone River Improvement (BNI)
 - Middle Bone River Improvement (BNm)
- 2) Tamalate River Improvement with Floodway:
 - Lower Tamalate River Improvement (TMI)
 - Tamalate Floodway (TF)
- 3) Bolango River Improvement:
 - Lower Bolango River Improvement (BLl)
 - Middle Bolango River Improvement (BLm)
- 4) Biyonga River Improvement (BY)
- 5) Meluopo River Improvement (ML)
- 6) Marisa River Improvement (MR)
- 7) Alo-Pohu River Improvement (AP)
- 8) Rintenga River Improvement (RT)
- 9) Lake Limboto Management:
 - Tapodu River Improvement with Gate (TP)
 - Lake Dike (LD)
 - Sediment Trap Works in Lake Limboto (ST)

Parameters for Selection: Priority projects subject to the Feasibility Study are regarded as those to be implemented in the intensive implementation stage. The priority projects for the intensive implementation were selected considering the following parameters:

- 1) Urgency of implementation due to damages confronted (Damages)
- 2) Importance of damageable properties in the protected area (Properties)
- 3) Severity of site due to poor facilities (Facilities)
- 4) Magnitude of favorable social impacts (Benefishery)
- 5) Engineering sequence of work (Work order)

Evaluation: The above parameters were applied to each of the sub-projects mentioned above to evaluate their priority for implementation. The evaluation was made by giving marks, namely “1” for higher priority and “0” for not so high priority respectively for each evaluation parameters. The sub-project which gets higher mark as a sum of whole parameters is judged to be higher priority. Process and result of the evaluation are shown in Table B7.1.1. As a result, following six (6) sub-projects that got full marks were selected as Priority Projects for intensive implementation:

- 1) Lower Bone River Improvement
- 2) Lower Bolango River Improvement
- 3) Tapodu River Improvement with Tapodu Gate
- 4) Tamalate Floodway
- 5) Sediment Trap Works in Lake Limboto

B7.2 Priority Projects

Roles of Priority Projects: Figure B7.2.1 shows general location of the priority projects selected for the intensive implementation and subject to Feasibility Study. These projects are expected to play vital roles for the flood mitigation of the LBB basin as follows:

- 1) Flood mitigation in the urban area of Gorontalo City will be secured by implementing sub-project items 1), 2), 3) and 4);
- 2) Water level of Lake Limboto will be controlled and the drainage of retained water will be improved by implementing sub-project items 1), 2) and 3); and
- 3) Sedimentation problems of Lake Limboto will be alleviated by implementing sub-project item 5).

Non-structural Measures: In parallel with the structural measures mentioned above, watershed management and flood plain management will be implemented at several sites and villages selected for pilot projects to disseminate the activities.

- 1) Watershed management by encouraging activities such as construction of erosion control facilities, afforestation and land use control and publicity activities in the watershed areas in coordination with the Department of Forest and Plantation.
- 2) Flood plain management by encouraging and promoting Local Coping Measures and Community-based Sustainable Measures to be undertaken by the community people in the flood plain areas.

Table B7.1.1 SELECTION OF PRIORITY PROJECTS

Work code	Description of Sub-Project	Parameters for evaluation									Overall evaluation	
		① Urgency of implementation (Damage)	② Importance of protected area (Properties)	③ Site in critical condition (Facilities)	④ Favorable social impact (Benefishery)	⑤ Engineering sequence (Work order)						
BOLANGO-BONE RIVER SYSTEM												
BNI	Lower Bone River Improvement: This channel functions as the outlet of the whole LBB basin.	Frequent flooding in Gorontalo City	1	City center of Gorontalo	1	Sedimentation at river mouth. River bank relatively high	1	Port area and residents of Gorontalo City	1	No condition	1	5
BNm	Middle Bone River Improvement: The channel has relatively high capacity. Flooding and sediment problems are not currently serious.		0	Suburbs	0	Relatively high channel capacity	0	Settlements and farmlands along the river	1	No condition	1	2
TMI	Lower Tamalate River Improvement: Construction of Tamalate floodway will enhance the safety level of lower Tamalate markedly high. The lower Tamalate should be improved as a trunk drainage channel.	Safety to be enhanced by work TF	0	City center of Gorontalo	1	Flood wall installed already	0	Offices and residents of Gorontalo City	1	After the work TF	0	2
TF	Tamalate Floodway: The new floodway diverts flood water to the Bone river so as to protect Gorontalo City from flood inundation of the Tamalate. The function is definite.	Frequent flooding in Gorontalo City	1	City center of Gorontalo	1	Flood runoff from mountain basin enters directly to city center	1	Offices and residents of Gorontalo City	1	No condition	1	5
BLI	Lower Bolango River Improvement: This is an only channel to drain flood water of the middle Bolango River and Lake Limboto as well. Existing channel capacity is low. The river improvement will mitigate the flood inundation in the urban areas of Gorontalo.	Long lasting and frequent flooding in Gorontalo City	1	City center of Gorontalo	1	No continuous dike except upper portion	1	Offices and residents of Gorontalo City	1	No condition	1	5
BLm	Middle Bolango River Improvement: Improvement of this river should follow the improvement of the lower Bolango River. Existing channel capacity is relatively high provided by dikes.		0	Suburbs	0	Earth dike and bank protection installed already	0	Settlements along the river	1	After the work BLI	0	1
LAKE LIMBOTO SYSTEM												
BY	Biyonga River Improvement: The river has relatively high channel capacity provided with natural retardation areas in the upstream basin.	Flooding in Limboto town	1	Town center of Limboto	1	Relatively high channel capacity	0	Residents of Limboto town and farmlands	1	No condition	1	4
ML	Meluopo River Improvement: The beneficiary areas of this improvement are mainly farmlands.		0	farmlands	0	No major facilities	1	farmlands	0	No condition	1	2
MR	Maris River Improvement: The beneficiary areas of this improvement are mainly farmlands.		0	farmlands	0	No major facilities	1	farmlands	0	No condition	1	2
AP	Alo-Pohu River Improvement: The beneficiary areas of this improvement are mainly farmlands.	Long lasting and frequent flooding in farmland	1	farmlands	0	Channel excavated with low dikes	0	farmlands	0	No condition	1	2
RT	Rintenga River Improvement: The beneficiary areas of this improvement are mainly farmlands.		0	farmlands	0	No major facilities	1	farmlands	0	No condition	1	2
TP	Tapodu River Improvement with Tapodu Gate: The river and gate play crucial roles for the drainage and management of lake water level.	Long lasting and frequent flooding in Gorontalo city	1	Lower Bolango R. and City of Gorontalo	1	No major facilities	1	Settlement and farmlands	1	No condition	1	5
LD	Lake Dike: The beneficiary areas of the dike works are mainly farmlands in buffer zone of the lake.	Long lasting flooding mainly in farmland	0	farmlands	0	No major facilities	1	Lake side farmland and settlements	1	No condition	1	3
ST	Sediment Trap Works in Lake Limboto	Research/test works	1	Flood control Lake	1	Severe sedimentation	1	Whole area of lower Bolango R. incl. Gorontalo city	1	No condition	1	5

(Notes) Mark "1" for higher priority and "0" for not so high priority



The Study on Flood Control and Water Management in Limboto-Bolango-Bone Basin in the Republic of Indonesia
 Japan International Cooperation Agency

Figure B7.2.1
PRIORITY PROJECT
IN LIMBOTO-BOLANGO-BONE BASIN