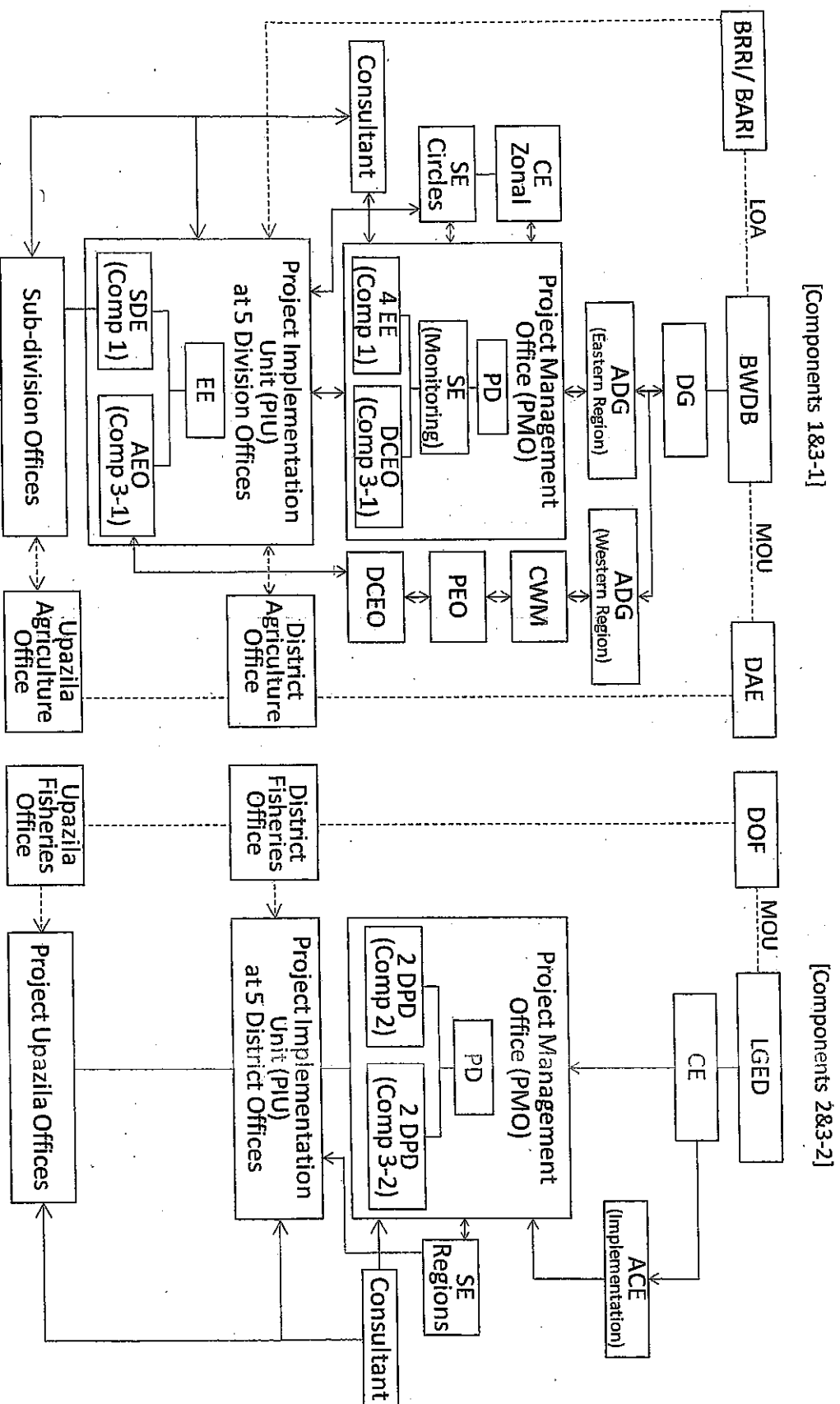


## Appendix 18-1: Project Implementation Arrangements (for each component)

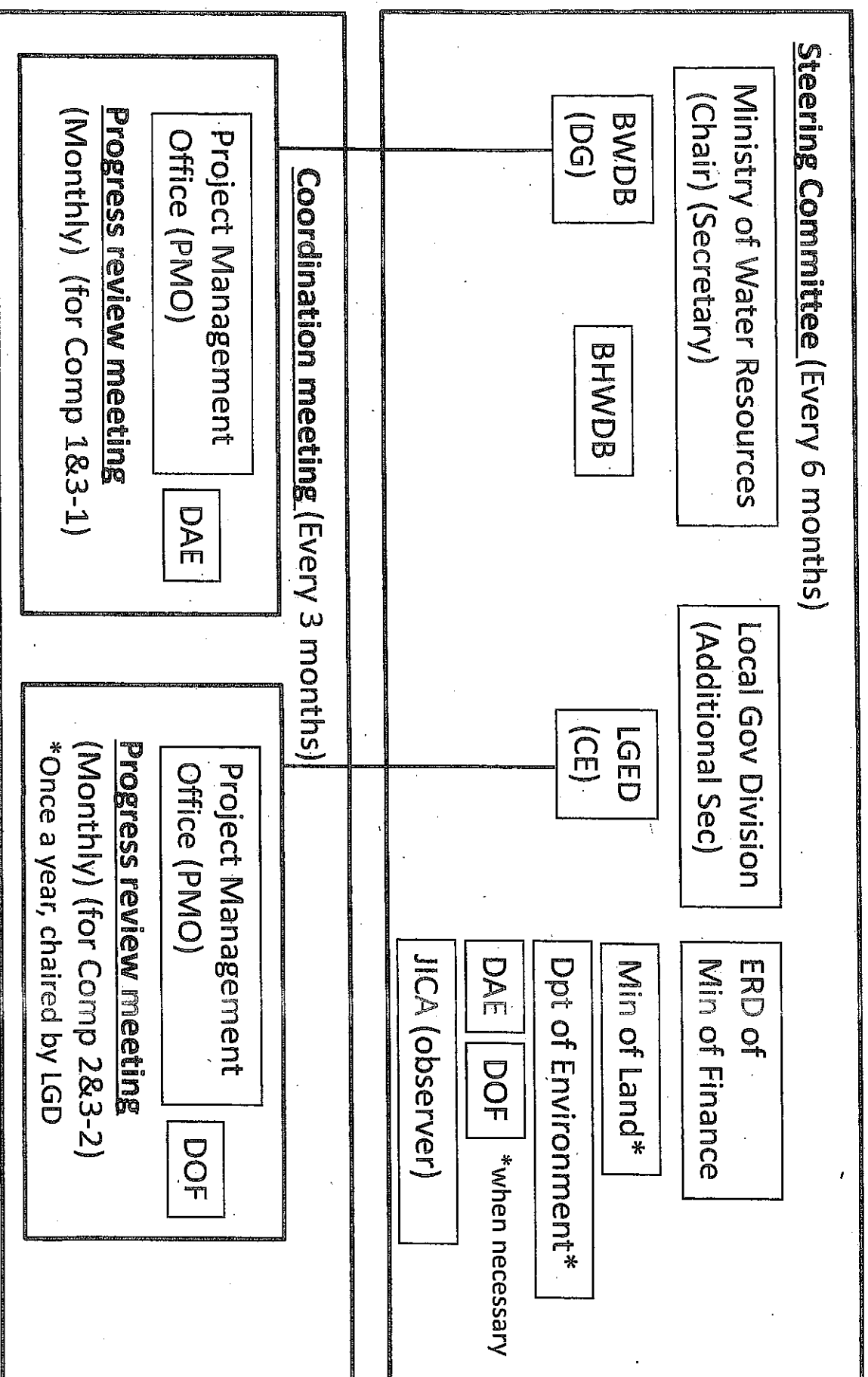


**Notes:**

DG=Director General, ADG=Additional Director General, CE=Chief Engineer, ACE=Additional Chief Engineer, SE=Superintending Engineer, CWM=Chief Water Management, PEO=Principal Extension Officer, DCEO=Deputy Chief Extension Officer, PD=Project Director, DPD=Deputy Project Director, EE=Executive Engineer, SDE=Sub-divisional Engineer, AEO=Assistant Extension Officer



Appendix 18-2: Project Implementation Arrangements (Project Coordination Mechanism)





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R100B Subdivision Office (R)				Netherlands Hill				Kilbourne Hill				R7			
Integrated for Comparison				R1 R1 R3		R14 R15 N11		R4 R5 R6 N1 N2 N3 N4 N5 N10		R5 R6 R7 N6 N7 N8		R7			
Name of Boat	Setup	Estating	Prepares	Setup	Estating	Prepares	Setup	Estating	Prepares	Setup	Estating	Prepares	Setup	Estating	Prepares
Standardized Boatset	1	0	1	1	1	1	1	1	1	0	0	1	1	1	1
STD Assistant with Tether (R10)	1	1	1	1	1	1	1	1	1	0	0	1	1	0	1
Accompany Boat	1	0	1	1	0	1	1	1	1	0	0	1	1	0	1
Subway Transportation	1	1	1	1	0	1	1	0	1	0	0	1	1	1	1
Exclusionary Processes	0	0	1	0	0	0	0	0	1	0	0	1	1	0	0
Tether	1	0	1	1	0	1	1	0	1	0	0	1	1	0	1
Speed Boat Driver	1	0	1	1	0	1	1	0	1	0	0	1	1	0	1
Sub Sea	1	1	1	1	0	1	1	0	1	0	0	1	1	0	1
Boatset Operator	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0
Knowledge of Ground	1	0	1	1	1	1	1	1	1	0	0	1	1	0	1
Knowledge of Ground	1	0	1	1	0	1	1	0	1	0	0	1	1	0	0
Boatset Operator	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Boatset	1	1	1	1	1	1	1	1	1	0	0	1	1	0	1
Boatset Operator	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	12	4	24	11	2	19	10	5	13	0	0	25	10	2	18

Sub-division of Office / SDO's		Sub-projects for Component		Sub-division Bill		R&B Sub Bill		R&B Sub Bill		Sub-division Bill		Sub-division Bill	
		R&B		R&B Sub Bill		R&B Sub Bill		R&B Sub Bill		Sub-division Bill		Sub-division Bill	
		Setup	Estimating	Perpetual	Setup	Estimating	Perpetual	Setup	Estimating	Perpetual	Setup	Estimating	Perpetual
Sub-division of Office / SDO's		1	0	1	1	1	1	1	0	1	1	0	1
R&B Assistant / Typist / SDO		1	1	1	1	1	1	1	1	1	1	1	1
Account Clerk		1	0	1	1	0	0	0	0	0	1	0	1
Secretary / Professional		1	0	1	1	0	1	1	0	1	1	0	1
Extension Operator		0	0	10	0	0	13	0	0	4	0	0	8
Printer		1	0	1	1	0	1	1	0	1	0	0	0
Speed Email Printer		1	0	1	0	0	0	0	0	0	1	1	1
MIS		2	1	2	2	1	2	1	1	2	2	1	2
Personnel Officer		1	1	1	0	0	0	0	0	0	0	0	0
Counsellor (General)		1	1	1	1	0	1	1	1	1	1	1	1
Assistant Clerk		1	1	1	0	0	0	0	0	0	0	0	0
Electrician		1	0	0	0	0	0	0	0	1	0	0	0
Designer		1	0	1	0	0	0	0	0	1	0	0	0
Personnel Officer / Assistant		1	0	1	0	0	0	0	0	0	0	0	0
Total		13	4	73	8	3	37	6	0	10	11	5	15

PMO (LGED)		Quantity		Qualifications	Full/ Part	Deputation	Recruitment		Yen
Name of Post	Quantity						Contractual	Outsourcing	Portion
Project Director	1		B.Sc. Civil Engineering	Full-time	Deputation				
Deputy Project Director	4	2	B.Sc. Civil Engineering	Full-time	Deputation				
Deputy Project Director		2	M.Sc. Fisheries/ Master in Sociology with having experience in CBPM/ Fisheries Governance	Full-time		Contractual			
Senior Assistant Engineer	2		B.Sc. Civil Engineering	Full-time	Deputation				
Community Resource Management Specialist	1		B.Sc. Fisheries/ Sociology with MBA	Full-time		Contractual			
Accounts Officer	1		Master in Finance/ Accounting	Full-time	Deputation	Contractual			
M&E Specialist*	1		Master in Economics/Statistics/ B.Sc. with MBA/ BBA & MBA/ MDS, with IT experience	Full-time		Contractual			Yen
Sub-Assistant Engineer	3	2	Diploma Civil Engineering	Full-time	Deputation				
Sub-Assistant Engineer		1	Diploma Civil Engineering	Full-time		Contractual			
Environmental Engineer/ Expert*	1		B.Sc. in Civil Engineering with M.Sc. in Environment/ B.Sc. in Environment	Full-time		Contractual			Yen
Administrative/ Human Resources Manager	1		Bachelor in any discipline with MBA	Full-time		Contractual			
Finance Expert	2		Bachelor in any discipline	Full-time		Contractual			
Office Assistant cum Computer Operator	2		Bachelor in any discipline	Full-time		Contractual			
Driver	3		J.S.C.	Full-time				Outsourcing	
Office Helper	2		J.S.C.	Full-time				Outsourcing	
Guard	1		J.S.C.	Full-time				Outsourcing	
Total	25								

Appendix 20: Detailed project implementation arrangements for LGED

**LCED PUU (District) Offices**

Name of Post	Qualifications	Neerakom PU	Kishore- gang PU	Habiganj PU	Brahman- baria PU*1.	Sunamganj PU
Executive Engineer	B.Sc. Civil Engineering	1	1	1	1	1
District Project Coordinator	B.Sc. in Civil Engineering/ B.Sc. in Fisheries	1	1	1	1	1
Sub-Assistant Engineer (Structure)	Diploma in Civil Engineering	1	1	1	1	1
Sub-Assistant Engineer (Fisheries)	Diploma in Civil Engineering	1	1	1	1	1
District Training Coordinator	Master's in any Discipline	1	1	1	1	1
Community Infrastucture Coordination Expert*	B.Sc. Civil Engineering	1	1	1	1	1
Community Resource Management Coordination Expert*	B.Sc. in Fisheries/ Bachelor in any discipline with CBPM experience	1	1	1	1	1
District Male Officer	Master in Economics/ Statistics/ MBA/ MDS	1	1	1	1	1
Accountant	Bachelor in Finance/ Accounting	1	1	1	1	1
Computer Operator cum Office Assistant	Bachelor in any Discipline	1	1	1	1	1
Driver	J.S.C.	1	1	1	1	1
Boat Driver	J.S.C.	1	1	1	1	1
Office Helper	J.S.C.	1	1	1	1	1
Guard	J.S.C.	1	1	1	1	1
Total		14	14	14	14	14

Recruitment				Yen Portion
Full/Part	Deputation	Contractual	Outsourcing	
Part	Deputation	Contractual		
Full	Deputation (structure)	Contractual (fisheries)		
Full	Deputation	Contractual		
Full		Contractual		
Full	Deputation			Yen
Full		Contractual		Yen
Full		Contractual		
Full	Deputation			
Full		Contractual		
Full			Outsourcing	
Full			Outsourcing	
Full			Outsourcing	
Full			Outsourcing	



LGED Project Upazila Offices (PUOs) - See separate sheet of PUOs for details

Name of Post	Qualifications	No. of PUOs					Full/Part	Recruitment		
		Norokona 9 PUOs*1	Kashmarganj 12 PUOs	Habiganj 4 PUOs	B. Baria 1 PUO*1	Sunamganj 7 PUOs*1		Deputation	Contractual	Outsourcing
Upazila Engineer	B.Sc. Civil Engineering	9	12	4	1	7	Part	Deputation		
Sub-Assistant Engineer	Diploma in Civil Engineering	9	12	4	1	7	Full	Deputation (structure)	Contractual (fisheries)	
SMS Fisheries*2	B.Sc. Fisheries/ Zoology	9	12	4	1	7	Full		Contractual	
Work Assistant	H.S.C.	9	12	4	1	7	Full	Deputation	Contractual	
ICS Organizer	Bachelor in any discipline	9	12	4	1	7	Full		Contractual	
Social Organizer (Fisheries)	Bachelor in any discipline	9	12	4	1	7	Full		Contractual	
Surveyor	Diploma in Engineering	9	12	4	1	7	Full	Deputation		
Guard	J.S.C.	9	12	4	1	7	Full			Outsourcing
Office Helper	J.S.C.	9	12	4	1	7	Full			Outsourcing
Total		81	108	36	9	63				

Notes: \*1-Staff of Brahmanbaria PU and some PUOs in Noorokona, Brahmanbaria and Sunamganj will be re-arranged after identification of component 3-2 sub-projects.

\*2: SMS=subject matter specialist

LGED Project Upazila Offices (P.U.Os)

Name of Post	Upazila									Total
	Alimna	Bhatila	Kashgan	Karnalband	Kosjan	Madan	Mohangan	Nekhon Sdr	Purbudinis	
Upazila Engineer	1	1	1	1	1	1	1	1	1	9
Sub-Assistant Engineer	1	1	1	1	1	1	1	1	1	9
SMIS Fisheries-1	1	1	1	1	1	1	1	1	1	9
Work Assistant	1	1	1	1	1	1	1	1	1	9
LCS Operator	1	1	1	1	1	1	1	1	1	9
Special Organizer (Fisheries)	1	1	1	1	1	1	1	1	1	9
Surveyor	1	1	1	1	1	1	1	1	1	9
Guard	1	1	1	1	1	1	1	1	1	9
Office Helper	1	1	1	1	1	1	1	1	1	9
Total	9	9	9	9	9	9	9	9	9	81

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*1 SMIS-Subject matter specialist													
Name of Post	Upazila												Total
	Assagan	Bahpur	Hosainpur	Jina	Kanungui	Katuli	Kishoreganj Sdr	Kulmbar	Mahmura	Naki	Pekanda	Turti	
Upazila Engineer	1	1	1	1	1	1	1	1	1	1	1	1	12
Sub-Assistant Engineer	1	1	1	1	1	1	1	1	1	1	1	1	12
SMIS Fisheries-1	1	1	1	1	1	1	1	1	1	1	1	1	12
Work Assistant	1	1	1	1	1	1	1	1	1	1	1	1	12
LCS Operator	1	1	1	1	1	1	1	1	1	1	1	1	12
Special Organizer (Fisheries)	1	1	1	1	1	1	1	1	1	1	1	1	12
Surveyor	1	1	1	1	1	1	1	1	1	1	1	1	12
Guard	1	1	1	1	1	1	1	1	1	1	1	1	12
Office Helper	1	1	1	1	1	1	1	1	1	1	1	1	12
Total	9	9	9	9	9	9	9	9	9	9	9	9	108

Name of Post	Upazila				Total
	Assagan	Bahpur	Hosainpur	Jina	
Upazila Engineer	1	1	1	1	4
Sub-Assistant Engineer	1	1	1	1	4
SMIS Fisheries-1	1	1	1	1	4
Work Assistant	1	1	1	1	4
LCS Operator	1	1	1	1	4
Special Organizer (Fisheries)	1	1	1	1	4
Surveyor	1	1	1	1	4
Guard	1	1	1	1	4
Office Helper	1	1	1	1	4
Total	9	9	9	9	36

Name of Post	Upazila				Total
	Assagan	Bahpur	Hosainpur	Jina	
Upazila Engineer	1	1	1	1	4
Sub-Assistant Engineer	1	1	1	1	4
SMIS Fisheries-1	1	1	1	1	4
Work Assistant	1	1	1	1	4
LCS Operator	1	1	1	1	4
Special Organizer (Fisheries)	1	1	1	1	4
Surveyor	1	1	1	1	4
Guard	1	1	1	1	4
Office Helper	1	1	1	1	4
Total	9	9	9	9	36

Name of Post	Upazila				Total
	Assagan	Bahpur	Hosainpur	Jina	
Upazila Engineer	1	1	1	1	4
Sub-Assistant Engineer	1	1	1	1	4
SMIS Fisheries-1	1	1	1	1	4
Work Assistant	1	1	1	1	4
LCS Operator	1	1	1	1	4
Special Organizer (Fisheries)	1	1	1	1	4
Surveyor	1	1	1	1	4
Guard	1	1	1	1	4
Office Helper	1	1	1	1	4
Total	9	9	9	9	36

Note:  
Staff of P.U.O in Banachangpur will be re-arranged after identification of component 3,2 sub-projects

Note:  
Staff of P.U.O in Chhatak will be re-arranged after identification of component 3,2 sub-projects

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## Appendix 22: Formulation of Water Management Organization

In principle, WMOs should be formed before the preparation of O&M plan for each subproject in order to incorporate their opinions into the plan. Normally, an O&M plan is prepared during the F/S and D/D stages. However, the time that elapses before commencement of O&M works would be too long for some late-started subprojects if WMOs are formed at the D/D stage. To avoid the passage of excessive time, it is desirable to form WMOs at the C/S stage. Accordingly, O&M plan for each subproject will be prepared at the D/D stage and should be updated with WMO's views taken into account after the formation of WMOs at the C/S stage.

The WMOs shall be basically formed and maintained in accordance with Guidelines for Participatory Water Management (GPWM). The details are as follows:

### Method of Formation:

- WMOs shall be formed before the tendering process at the construction stage of each subproject. In this regard, the formation of WMOs is one of the preconditions to proceed to the tendering process.
- The formation process of WMOs will be facilitated by BWDB. The office of Chief Water Management is responsible for WMO matters at national level. AEOs at division level and BOs at sub-division level shall be in charge of WMO matters including the formation process and monitoring works after the completion of subprojects.
- Basically there will be two tiers of WMO for each subproject, namely WMO at the lowest level and WMA at the apex level.
- WMO will be formed for each smallest hydrological unit or social unit (para/village) of the subprojects. WMA will be formed when the number of WMO in a subproject is more than one.
- The number of WMO and WMA to be formed for 29 subprojects were estimated in accordance with GPWM and modified based on discussion with BWDB as shown in Table 7.4.6. Although the final decision will be made by BWDB and stakeholders at the formation process, basically 100 WMOs and 22 WMAs will be formed for the 29 subprojects.
- The number of membership of one WMO will be determined depending on the number of stakeholders in a subproject.
- Membership to WMO will be open to women and men belonging to households of farmers, fishermen, small traders, craftsmen, boatmen, aquaculturists, landless people, destitute women, project affected person, etc., within the subproject area who are influenced directly or indirectly and positively or negatively from the subproject and they will be treated as general members of WMO. In case a conflict between different groups such as farmers and fishermen is expected, it is desirable to incorporate both parties as members of WMO.
- Basically, the 12-member Executive Committee (EC) of each WMO (including the 30% women representatives) is formed by nominating and electing the members by the participating general members of that particular locality. The EC has one president, one vice president, one secretary, one joint secretary, one treasurer and seven other members.

- The membership of WMA is composed of representatives from respective WMGs in consideration of their coordinating function between WMGs.
- The farmers group and fisheries group to be formed in Components 3-1 and 3-2, respectively, as well as the existing regulator committees, shall be invited as candidate WMO members, though the members will be finally determined by BWDB and stakeholders at the formation process.
- It is essential that WMO is registered with the Department of Cooperatives and bylaws are drawn up for each WMO. The bylaws will be prepared by WMOs with the help of Deputy Chief Extension Officer and some Extension Overseers to be recruited under the Project.

#### Implementation Method of Activities:

- **Mobilization of WMOs**  
The WMO members will be trained about O&M activities including the roles and responsibilities, organizational operation, technical O&M works and awareness activities in the course of the formation process, training program and internal study meeting.
- **Communication with BWDB**  
The AEOs and EOS of BWDB shall be in charge of WMO matters at field level. WMO members shall report their activities to BWDB through EOS every month and will contact the EOS if any special situations arise.
- **Decision making and consensus building within WMOs**  
A president will be elected by the WMO members. The elected president will chair the discussion among the WMO members. The AEOs and EOS will facilitate the consensus building of WMO in case WMO's internal discussion has not settled the problem by themselves.
- **Monitoring method of activities:**  
A monitoring form for WMO's activities shall be prepared at the D/D stage when O&M plan for each subproject is prepared. WMO will report their O&M activities, issues encountered, solution to the issues, conditions of structures, etc., every month to EOS. The brief report should be forwarded to the AEOs and EOS through EOS every month. Then, a summary of monitoring should be reported to zonal CEs quarterly.

## Appendix 23: TOR of Internal Audit

### Outline

1. A chartered accountant firm will be hired for internal audit of the concerned project, apart from external audit by the Auditor General. The firm will carry out internal audit once a year during the project implementation. The internal audit report should be submitted within 9 months after the end of the fiscal year to the head of the executing agency with a copy to JICA.

### Objectives

2. The objective of the independent internal audit is (a) to review adequacy of internal control environment and system and tools, their compliance and effectiveness, (b) to assure that all funds are used for the project purposes, properly accounted for and provide value for money, and (c) assure that the organization's risks are being adequately managed and that controls are operated as intended, advising on improvements as needed.
3. The internal audit should cover all transactions related to the Project, covering assets and all sources and application of funds. The following aspects would be included:

- Verification of all funds used in accordance with the conditions of the Loan Agreement and relevant other agreements with JICA
- Confirmation on whether procurement and expenditure is duly authorized by competent authority without any irregularities
- Verification of the appropriateness and accuracy of claims by contractors
- Verification of financial statement against the entries in the primary books of account in conjunction with records and vouchers, contracts, purchase orders and other original documents
- Adequacy and effectiveness of accounting, financial and operational controls
- Level of compliance with established policies, plans and procedures
- Methods of remedying weak controls or creating them where there are none
- Verification of assets and liabilities relevant to the Project
- Integrity of the computerized system and effectiveness of the controls over security and operation of the computerized system





Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
1 Permits and Explanation	(1) EIA and Environmental Permits	(a) Have EIA reports been already prepared in official process? (b) Have EIA reports been approved by authorities of the host country's government? (c) Have EIA reports been unconditionally approved? If conditions are imposed on the approval of EIA reports, are the conditions satisfied? (d) In addition to the above approvals, have other required environmental permits been obtained from the appropriate regulatory authorities of the host country's government?	(a) N (b) N (c) N (d) Y	(a) Official process should be conducted by implementing agencies after the JICA survey based on the sample EIA prepared during JICA survey. (b) -same- (c) -same- (d) Related to EIA process, the proponent should obtain "certificate of no objection for the project" from local government.
	(2) Explanation to the Local Stakeholders	(a) Have contents of the project and the potential impacts been adequately explained to the Local stakeholders based on appropriate procedures, including information disclosure? Is understanding obtained from the Local stakeholders? (b) Have the comment from the stakeholders (such as local residents) been reflected to the project design?	(a) Y (b) Y	(a) At the process in Haor Master Plan, range of the stake holder meeting were held. And 2 public consultation meetings at haor level are under implementation in the JICA preparatory survey. (b) The Master Plan was prepared in participatory way consulting local residents. Also, result of the PCM in the JICA preparatory survey will be shared among the implementation agencies.
	(3) Examination of Alternatives	(a) Have alternative plans of the project been examined with social and environmental considerations?	(a) Y	(a) With/Without project are compared.
2 Pollution Control	(1) Water Quality	(a) Is there a possibility that changes in river flow downstream (mainly water level drawdown) due to the project will cause areas that do not comply with the country's ambient water quality standards?	(a) N	(a) At the subproject selection process in the data collection survey, the water flow was studied and it does not affect the water flow in the area.
	(2) Wastes	(a) In the case of that large volumes of excavated/dredged materials are generated, are the excavated/dredged materials properly treated and disposed of in accordance with the country's standards?	(a) Y	(a) The detail plan is not available at the moment. But the soil excavation/spoiled material treatment should be conducted proper way not causing serious erosion.
	(3) Subsidence	(a) Is there a possibility that the excavation of waterways will cause groundwater level drawdown or subsidence? Are adequate measures taken, if necessary?	(a) N	(a) The excavation will be only existing water way to remove sediment from the upper stream, as dredging and it will not affect ground water flow seriously.
3 Natural Environment	(1) Protected Areas	(a) Is the project site located in protected areas designated by the country's laws or international treaties and conventions? Is there a possibility that the project will affect the protected areas?	(a) N	(a) There is no protected area in the proposed area.
	(2) Ecosystem	(a) Does the project site encompass primeval forests, tropical rain forests, ecologically valuable habitats (e.g., coral reefs, mangroves, or tidal flats)? (b) Does the project site encompass the protected habitats of endangered species designated by the country's laws or international treaties and conventions? (c) If significant ecological impacts are anticipated, are adequate protection measures taken to reduce the impacts on the ecosystem? (d) Is there a possibility that hydrologic changes, such as reduction of the river flow, and seawater intrusion up the river will adversely affect downstream aquatic organisms, animals, vegetation, and ecosystems? (e) Is there a possibility that the changes in water flows due to the project will adversely affect aquatic environments in the river? Are adequate measures taken to reduce the impacts on aquatic environments, such as aquatic organisms?	(a) N (b) N (c) N (d) N (e) N	(a) No any primeval forests, tropical rain forests, ecologically valuable habitats may be involved because the new embankment are planned to construct submergible embankment on farm land and rehabilitation works are planned improvement of existing embankment in seasonal flood area in haor. (b) No any protected habitats of endangered species may be involved because the plan only focus on the improvement of existing structures or new ones on farm land. (c) No significant ecological impacts are anticipated. (d) No any large destruction of the ecosystem, because water-gates will be installed at current natural flow at embankment. (e) No large impact is expected to the natural environment. At the subproject selection process in the data collection survey, the water flow was studied and it does not affect the water flow in the area.

Environmental Checklist: 11. River and Sand Erosion Control (2)

Appendix 24-1

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
3 Natural Environment	(3) Hydrology	(a) Is there a possibility that hydrologic changes due to the project will adversely affect surface water and groundwater flows?	(a) N	(a) At the subproject selection process in the data collection survey, the water flow was studied and it does not affect the water flow in the area.
	(4) Topography and Geology	(a) Is there a possibility that excavation of rivers and channels will cause a large-scale alteration of the topographic features and geologic structures in the surrounding areas?	(a) N	(a) No large topographic change is anticipated.
		(a) Is involuntary resettlement caused by project implementation? If involuntary resettlement is caused, are efforts made to minimize the impacts caused by the resettlement?	(a) N (b) Y	(a) No resettlement is anticipated because all the land areas acquired are paddy fields.
		(b) Is adequate explanation on compensation and resettlement assistance given to affected people prior to resettlement?	(c) Y (d) Y	(b) If any resettlement occurs, proper explanation on compensation will be provided to affected people as part of RAP preparation.
4 Social Environment		(c) Is the resettlement plan, including compensation with full replacement costs, restoration of livelihoods and living standards developed based on socioeconomic studies on resettlement?	(e) Y (f) Y (g) Y	(c) A Resettlement and Compensation Framework (RCF) is prepared which calls for full replacement compensation and ensure the current livelihood.
		(d) Is the compensations going to be paid prior to the resettlement?	(h) Y (i) Y	(d) If resettlement occurs, RCF calls for compensation payment prior to resettlement.
		(e) Is the compensation policies prepared in document?	(j) Y	(e) RCF is prepared
	(1) Resettlement	(f) Does the resettlement plan pay particular attention to vulnerable groups or people, including women, children, the elderly, people below the poverty line, ethnic minorities, and indigenous peoples?		(f) Yes, RCF pays proper attention to vulnerable groups.
		(g) Are agreements with the affected people obtained prior to resettlement?		(g) If resettlement occurs, RCF calls for agreements with the affected people prior to resettlement.
		(h) Is the organizational framework established to properly implement resettlement? Are the capacity and budget secured to implement the plan?		(h) An implementation framework including budgetary arrangement is proposed under RCF.
		(i) Are any plans developed to monitor the impacts of resettlement?		(i) Monitoring arrangements (both external and internal) are proposed under RCF.
		(j) Is the grievance redress mechanism established?		(j) Grievance Redress Mechanisms is proposed under RCF.
		(a) Is there a possibility that the project will adversely affect the living conditions of inhabitants? Are adequate measures considered to reduce the impacts, if necessary?	(a) N (b) N (c) N	(a) After the embankment construction, living condition is expected to improve.
	(2) Living and Livelihood	(b) Is there a possibility that the amount of water (e.g., surface water, groundwater) used by the project will adversely affect the downstream fisheries and other water uses?		(b) No additional water use is planned.
		(c) Is there a possibility that water-borne or water-related diseases (e.g., schistosomiasis, malaria, filariasis) will be introduced?		(c) Not expected.
	(3) Heritage	(a) Is there a possibility that the project will damage the local archeological, historical, cultural, and religious heritage? Are adequate measures considered to protect these sites in accordance with the country's laws?	(a) N	(a) Not expected.
	(4) Landscape	(a) Is there a possibility that the project will adversely affect the local landscape? Are necessary measures taken?	(a) N	(a) Not expected.

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
4 Social Environment	(5) Ethnic Minorities and Indigenous Peoples	(a) Are considerations given to reduce impacts on the culture and lifestyle of ethnic minorities and indigenous peoples? (b) Are all of the rights of ethnic minorities and indigenous peoples in relation to land and resources to be respected?	(a) Y (b) N/A	(a) Not applicable. (b) Not applicable.
	(6) Working Conditions	(a) Is the project proponent not violating any laws and ordinances associated with the working conditions of the country which the project proponent should observe in the project? (b) Are tangible safety considerations in place for individuals involved in the project, such as the installation of safety equipment which prevents industrial accidents, and management of hazardous materials? (c) Are intangible measures being planned and implemented for individuals involved in the project, such as the establishment of a safety and health program, and safety training (including traffic safety and public health) for workers etc.? (d) Are appropriate measures taken to ensure that security guards involved in the project not to violate safety of other individuals involved, or local residents?	(a) Y (b) Y (c) Y (d) Y	(a) Proper safeguard will be included in the Contractors bid. (b) Proper safeguard will be included in the Contractors bid. (c) Proper safeguard will be included in the Contractors bid. (d) Proper safeguard will be included in the Contractors bid.
5 Others	(1) Impacts during Construction	(a) Are adequate measures considered to reduce impacts during construction (e.g., noise, vibrations, turbid water, dust, exhaust gases, and wastes)? (b) If construction activities adversely affect the natural environment (ecosystem), are adequate measures considered to reduce impacts? (c) If construction activities adversely affect the social environment, are adequate measures considered to reduce impacts?	(a) Y (b) Y (c) Y	(a) Management Plan should be developed based on the environmental study. (b) Some pollution may occur during the construction phase. Adequate measures will be taken to reduce impacts. (c) Adequate compensation will be considered within the Resettlement Frame Work.
	(2) Monitoring	(a) Does the proponent develop and implement monitoring program for the environmental items that are considered to have potential impacts? (b) What are the items, methods and frequencies of the monitoring program? (c) Does the proponent establish an adequate monitoring framework (organization, personnel, equipment, and adequate budget to sustain the monitoring framework)? (d) Are any regulatory requirements pertaining to the monitoring report system identified, such as the format and frequency of reports from the proponent to the regulatory authorities?	(a) Y (b) Y (c) Y (d) N	(a) The proponent should follow the management plan prepared in the preliminary EIA. (b) As shown in the monitoring form. (c) The adequate monitoring plan will be developed based on the preliminary EIA result conducted under preparatory survey. (d) No particular regulation has been identified.

Environmental Checklist: 11. River and Sand Erosion Control (4)

Appendix 24-1

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
	Reference to Checklist of Other Sectors	(a) Where necessary, pertinent items described in the Forestry checklist should also be checked.	(a) N	(a) Not related to forestry but project involves other activities besides embankment construction such as rural infrastructure, agriculture and fishery. (Separate check lists are prepared)
6 Note	Note on Using Environmental Checklist	(a) If necessary, the impacts to transboundary or global issues should be confirmed (e.g., the project includes factors that may cause problems, such as transboundary waste treatment, acid rain, destruction of the ozone layer, or global warming).	(a) N/A	(a) No any particular involvement.

- 1) Regarding the term "Country's Standards" mentioned in the above table, in the event that environmental standards in the country where the project is located diverge significantly from international standards, appropriate environmental considerations are required to be made.  
In cases where local environmental regulations are yet to be established in some areas, considerations should be made based on comparisons with appropriate standards of other countries (including Japan's experience).
- 2) Environmental checklist provides general environmental items to be checked. It may be necessary to add or delete an item taking into account the characteristics of the project and the particular circumstances of the country and locality in which the project is located.

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
1 Permits and Explanation	(1) EIA and Environmental Permits	(a) Have EIA reports been already prepared in official process? (b) Have EIA reports been approved by authorities of the host country's government? (c) Have EIA reports been unconditionally approved? If conditions are imposed on the approval of EIA reports, are the conditions satisfied? (d) In addition to the above approvals, have other required environmental permits been obtained from the appropriate regulatory authorities of the host country's government?	(a) N (b) N (c) N (d) Y	(a) Official process should be conducted by implementing agencies after the JICA preparatory survey based on the sample EIA prepared during JICA survey. (b) -same- (c) -same- (d) Related to EIA process, the proponent should obtain "certificate of no objection for the project" from local government.
	(2) Explanation to the Local Stakeholders	(a) Have contents of the project and the potential impacts been adequately explained to the Local stakeholders based on appropriate procedures, including information disclosure? Is understanding obtained from the Local stakeholders? (b) Have the comment from the stakeholders (such as local residents) been reflected to the project design?	(a) Y (b) Y	(a) At the process in Haor Master Plan, range of the stake holder meeting were held. And 2 public consultation meetings at haor level are under implementation in the JICA preparatory survey. (b) The Master Plan was prepared in participatory way consulting local residents. Also, result of the PCM in the JICA preparatory survey will be shared among the implementation agencies.
	(3) Examination of Alternatives	(a) Have alternative plans of the project been examined with social and environmental considerations?	(a) Y	(a) With/Without project are compared.
	(1) Air Quality	(a) Is there a possibility that air pollutants emitted from the project related sources, such as vehicles traffic will affect ambient air quality? Does ambient air quality comply with the country's air quality standards? Are any mitigating measures taken? (b) Where industrial areas already exist near the route, is there a possibility that the project will make air pollution worse?	(a) N (b) N	(a) The plan basically contains improvement of existing road condition in the rural condition based on the request of residents. No any additional pollutant emission is predicted. (b) The road improvement is for improving local environment to enhance connectivity between communities and not related to the large scale development at the time.
2 Pollution Control	(2) Water Quality	(a) Is there a possibility that soil runoff from the bare lands resulting from earthmoving activities, such as cutting and filling will cause water quality degradation in downstream water areas? (b) Is there a possibility that surface runoff from roads will contaminate water sources, such as groundwater? (c) Do effluents from various facilities, such as parking areas/service areas comply with the country's effluent standards and ambient water quality standards? Is there a possibility that the effluents will cause areas not to comply with the country's ambient water quality standards?	(a) Y (b) N (c) Y	(a) Some soil erosion may be occurred on the road slope during flood season. Also, during construction, some water turbidity may increase. (b) The construction site is located in the seasonal flood area. No particular water source are anticipated to be contaminated. (c) Some pollution may occur from the market facilities locally but expected to be within the quality standard.
	(3) Wastes	(a) Are wastes generated from the project facilities, such as parking areas/service areas, properly treated and disposed of in accordance with the country's regulations?	(a) Y	(a) Wastes from markets need to be properly treated and disposed.
	(4) Noise and Vibration	(a) Do noise and vibrations from the vehicle and train traffic comply with the country's standards?	(a) Y	(a) Some increase in noise and vibrations can be expected from increased traffic but no significant impact is expected.

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
3 Natural Environment	(1) Protected Areas	(a) Is the project site located in protected areas designated by the country's laws or international treaties and conventions? Is there a possibility that the project will affect the protected areas? (a) Does the project site encompass primeval forests, tropical rain forests, ecologically valuable habitats (e.g., coral reefs, mangroves, or tidal flats)? (b) Does the project site encompass the protected habitats of endangered species designated by the country's laws or international treaties and conventions? (c) If significant ecological impacts are anticipated, are adequate protection measures taken to reduce the impacts on the ecosystem? (d) Are adequate protection measures taken to prevent impacts, such as disruption of migration routes, habitat fragmentation, and traffic accident of wildlife and livestock? (e) Is there a possibility that installation of roads will cause impacts, such as destruction of forest, poaching, desertification, reduction in wetland areas, and disturbance of ecosystems due to introduction of exotic (non-native invasive) species and pests? Are adequate measures for preventing such impacts considered? (f) In cases the project site is located at undeveloped areas, is there a possibility that the new development will result in extensive loss of natural environments?	(a) N (b) N (c) Y (d) Y (e) N (f) N	(a) No any protected areas are found within the currently proposed project Areas. (a) No any primeval forests, tropical rain forests, ecologically valuable habitats may be involved because the plan only focus on the improvement of existing road. (b) No any protected habitats of endangered species may be involved because the plan only focus on the improvement of existing road. (c) Not particular habitats for endangered species have been identified. (d) The road should be designed not to disturb the current natural flow. (e) No any large destruction of the ecosystem, because the plan only focus on the improvement of existing road. (f) Because the plan only focus on the improvement of existing road, no large impact is expected to the natural environment.
	(2) Ecosystem			
	(3) Hydrology	(a) Is there a possibility that alteration of topographic features and installation of structures, such as tunnels will adversely affect surface water and groundwater flows?	(a) N	(a) Hydrological impact was studied for the screening of the project site within the flood control management at data collection survey.
	(4) Topography and Geology	(a) Is there any soft ground on the route that may cause slope failures or landslides? Are adequate measures considered to prevent slope failures or landslides, where needed? (b) Is there a possibility that civil works, such as cutting and filling will cause slope failures or landslides? Are adequate measures considered to prevent slope failures or landslides? (c) Is there a possibility that soil runoff will result from cut and fill areas, waste soil disposal sites, and borrow sites? Are adequate measures taken to prevent soil runoff?	(a) N (b) N (c) N	(a) No information available. However, the area is generally flood area not requires high embankment. (b) The area is flood low land and may not cause serious land failure. (c) Adequate measures should be taken.

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
4 Social Environment	(1) Resettlement	<p>(a) Is involuntary resettlement caused by project implementation? If involuntary resettlement is caused, are efforts made to minimize the impacts caused by the resettlement?</p> <p>(b) Is adequate explanation on compensation and resettlement assistance given to affected people prior to resettlement?</p> <p>(c) Is the resettlement plan, including compensation with full replacement costs, restoration of livelihoods and living standards developed based on socioeconomic studies on resettlement?</p> <p>(d) Are the compensations going to be paid prior to the resettlement?</p> <p>(e) Are the compensation policies prepared in document?</p> <p>(f) Does the resettlement plan pay particular attention to vulnerable groups or people, including women, children, the elderly, people below the poverty line, ethnic minorities, and indigenous peoples?</p> <p>(g) Are agreements with the affected people obtained prior to resettlement?</p> <p>(h) Is the organizational framework established to properly implement resettlement? Are the capacity and budget secured to implement the plan?</p> <p>(i) Are any plans developed to monitor the impacts of resettlement?</p> <p>(j) Is the grievance redress mechanism established?</p>	<p>(a) Y</p> <p>(b) Y</p> <p>(c) Y</p> <p>(d) Y</p> <p>(e) Y</p> <p>(f) Y</p> <p>(g) Y</p> <p>(h) Y</p> <p>(i) Y</p> <p>(j) Y</p>	<p>(a) 確認中</p> <p>(b) If any resettlement occurs, proper explanation on compensation will be provided to affected people as part of RAP preparation.</p> <p>(c) A Resettlement and Compensation Framework (RCF) is under preparation which calls for full replacement compensation and ensure the current livelihood.</p> <p>(d) If resettlement occurs, the under preparation RCF calls for compensation payment prior to resettlement.</p> <p>(e) A RCF is now under preparation.</p> <p>(f) Yes, the under preparation RCF pays proper attention to vulnerable groups.</p> <p>(g) If resettlement occurs, the under preparation RCF calls for agreements with the affected people prior to resettlement.</p> <p>(h) An implementation framework including budgetary arrangement is proposed under the proposed RCF.</p> <p>(i) Monitoring arrangements (both external and internal) are proposed under RCF.</p> <p>(j) Grievance Redress Mechanisms is proposed under RCF.</p>
	(2) Living and Livelihood	<p>(a) Where roads are newly installed, is there a possibility that the project will affect the existing means of transportation and the associated workers? Is there a possibility that the project will cause significant impacts, such as extensive alteration of existing land uses, changes in sources of livelihood, or unemployment? Are adequate measures considered for preventing these impacts?</p> <p>(b) Is there any possibility that the project will adversely affect the living conditions of the inhabitants other than the target population? Are adequate measures considered to reduce the impacts, if necessary?</p> <p>(c) Is there any possibility that diseases, including infectious diseases, such as HIV will be brought due to immigration of workers associated with the project? Are adequate considerations given to public health, if necessary?</p> <p>(d) Is there any possibility that the project will adversely affect road traffic in the surrounding areas (e.g., increase of traffic congestion and traffic accidents)?</p> <p>(e) Is there any possibility that roads will impede the movement of inhabitants?</p> <p>(f) Is there any possibility that structures associated with roads (such as bridges) will cause a sun shading and radio interference?</p>	<p>(a) N</p> <p>(b) N</p> <p>(c) N</p> <p>(d) N</p> <p>(e) N</p> <p>(f) N</p>	<p>(a) Only rehabilitation and upgrade of small scale.</p> <p>(b) No adverse impact is anticipated for the inhabitants.</p> <p>(c) Proper measures will be planned during the construction.</p> <p>(d) Not expected.</p> <p>(e) Not expected.</p> <p>(f) Not expected.</p>

Environmental Checklist: 7. Roads (4)			
Category	Environmental Item	Main Check Items	Yes: Y No: N
4 Social Environment	(3) Heritage	(a) Is there a possibility that the project will damage the local archeological, historical, cultural, and religious heritage? Are adequate measures considered to protect these sites in accordance with the country's laws?	(a) N
	(4) Landscape	(a) Is there a possibility that the project will adversely affect the local landscape? Are necessary measures taken?	(a) N
	(5) Ethnic Minorities and Indigenous Peoples	(a) Are considerations given to reduce impacts on the culture and lifestyle of ethnic minorities and indigenous peoples? (b) Are all of the rights of ethnic minorities and indigenous peoples in relation to land and resources to be respected?	(a) N/A (b) N/A
	(6) Working Conditions	(a) Is the project proponent not violating any laws and ordinances associated with the working conditions of the country which the project proponent should observe in the project? (b) Are tangible safety considerations in place for individuals involved in the project, such as the installation of safety equipment which prevents industrial accidents, and management of hazardous materials? (c) Are intangible measures being planned and implemented for individuals involved in the project, such as the establishment of a safety and health program, and safety training (including traffic safety and public health) for workers etc.? (d) Are appropriate measures being taken to ensure that security guards involved in the project not to violate safety of other individuals involved, or local residents?	(a) Y (b) Y (c) N/A (d) N/A
	(1) Impacts during Construction	(a) Are adequate measures considered to reduce impacts during construction (e.g., noise, vibrations, turbid water, dust, exhaust gases, and wastes)? (b) If construction activities adversely affect the natural environment (ecosystem), are adequate measures considered to reduce impacts? (c) If construction activities adversely affect the social environment, are adequate measures considered to reduce impacts?	(a) Y (b) Y (c) Y
	(2) Monitoring	(a) Does the proponent develop and implement monitoring program for the environmental items that are considered to have potential impacts? (b) What are the items, methods and frequencies of the monitoring program? (c) Does the proponent establish an adequate monitoring framework (organization, personnel, equipment, and adequate budget to sustain the monitoring framework)? (d) Are any regulatory requirements pertaining to the monitoring report system identified, such as the format and frequency of reports from the proponent to the regulatory authorities?	(a) Y (b) Y (c) Y (d) N
5 Others			

Confirmation of Environmental Considerations  
(Reasons, Mitigation Measures)

(a) Not expected.

(a) Not expected.

(a) Not applicable.  
(b) Not applicable.(a) Proper safeguard will be included in the Contractors bid.  
(b) Proper safeguard will be included in the Contractors bid.  
(c) Scale of construction at each location is rather small.  
(d) Scale of construction at each location is rather small.(a) The impact should be minimized using available way even the project scales are small.  
(b) The construction may involve local resident who are relying on the natural resources. But no big impact is anticipated because of the scale of the project.  
(c) Adequate compensation are considered for the land as most large impact for the society. But no big impact is anticipated because of the scale of the project.(a) The proponent should follow the management plan prepared in the preliminary EIA.  
(b) As shown in the monitoring form.  
(c) The proponent should develop the adequate monitoring plan based on the preliminary EIA result conducted under preparatory survey.  
(d) No particular regulation has been identified.



Environmental Checklist: 7. Roads (5)

Appendix 24-2

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
6 Note	Reference to Checklist of Other Sectors	(a) Where necessary, pertinent items described in the Forestry Projects checklist should also be checked (e.g., projects including large areas of deforestation). (b) Where necessary, pertinent items described in the Power Transmission and Distribution Lines checklist should also be checked (e.g., projects including installation of power transmission lines and/or electric distribution facilities).	(a) N (b) N	(a) No any particular involvement. (b) No any particular involvement.
	Note on Using Environmental Checklist	(a) If necessary, the impacts to transboundary or global issues should be confirmed, if necessary (e.g., the project includes factors that may cause problems, such as transboundary waste treatment, acid rain, destruction of the ozone layer, or global warming).	(a) N/A	(a) The road development here is only focusing the local transport improvement in the seasonal wet area, Haor in Bangladesh. No particular impacts on the transboundary issues are involved.

- 1) Regarding the term "Country's Standards" mentioned in the above table, in the event that environmental standards in the country where the project is located diverge significantly from international standards, appropriate environmental considerations are required to be made.  
In cases where local environmental regulations are yet to be established in some areas, considerations should be made based on comparisons with appropriate standards of other countries (including Japan's experience).
- 2) Environmental checklist provides general environmental items to be checked. It may be necessary to add or delete an item taking into account the characteristics of the project and the particular circumstances of the country and locality in which it is located.

