

Annex 18

Need for large bridges on project roads

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Table A18-1 Need for large bridges on UZR

Ranking	Ranking Score	District	Upazila	Road Code	Road Name	Total Length (km)	Large bridges required		Comments
							No.	Span (m)	
Large bridges definitely required on 69 selected UZR roads									
74	0.4479	MYMENSINGH	HALUAGHAT	361242003	R&H (Nagla)-Goatola GC via Shakuai GC (Haluaghat part).	17.50	1	150	Actual span measured on site
83	0.4114	SHERPUR	SHERPUR-S	389882010	Lasmanpur RHD - Nandina GC Road via. Gugurakandi UP	10.45	1	120	Actual span measured on site
41	0.5218	DINAJPUR	BIRAMPUR	127102005	Tatakpur RHD-Madhala GC (Janipur) via Munnapara River ghat & Jotjoyram	3.60	1	100	Actual span measured on site
Large bridges definitely required on remaining 30 UZR which meet the selection criteria and are economically viable, but have not been selected (this information is included only in case there are any changes in the selection of UZR during subsequent project processing)									
86	0.4016	TANGAIL	BASAIL	393092003	Kanchanpur GC (Dhongpara)-Gorai-Shakhipur R&H (Patharghata) Road.	6.10	1	200	Actual span measured on site
91	0.3894	TANGAIL	DELDUAR	393232007	Parthrail Up office to Lowhati GCC Road	14.70	1	105	Actual span measured on site
65	0.4763	DINAJPUR	KAHAROL	127562008	Purba Sadipur ten mail RHD-Mutunihat GC Rd.	4.54	1	140	Actual span measured on site

Table A18-2 Need for large bridges on UNR

Ranking	Ranking Score	EIRR	District	Upazila	Road Code	Road Name	Total Length (km)	Large bridges required		Comments
								No.	Span (m)	
Large bridges definitely required on 47 selected UNR roads										
47	0.5268	20.08%	LALMONIRHAT	PATGRAM	152703005	Patgram UP-Varverirhat Via Kawamarihat & Kalirhat.	11.85	1	198	Span is from LGED Inventory data
Large bridge that may be required on remaining 58 UNR which meet the selection criteria and are economically viable, but have not been selected (this information is included only in case there are any changes in the selection of UNR during subsequent project processing)										
72	0.4827	18.96%	KISHOREGANJ	AUSTAGRAM	348023002	Kastul UPoffice-Nikli GC Rd.	5.42	1	100	Source of information is LGED district - needs checking

Annex 19

Proposed anti-corruption measures

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1 Introduction

Possibilities for corruption lie in the procurement and financial management process in the implementation of any project. Thus, during the implementation of the upcoming NRRDLGIP, the following measures will be taken to prevent corruption and minimize damage from it if it occurs.

2 Specific measures

(1) Special training course

Prior to the bidding process of the NRRDLGIP, a three-day special training course on procurement procedures and financial management will be held for about 150 officials from the LGED and 54 people from Pourashavas. This course will be held in seven batches. The course will be organized again a few times from September 2013.

(2) Pre-bid meeting

Procuring entities will alert bidders in a pre-bid meeting on the consequences of corrupt and similar behaviors, i.e., collusion, coercion, fraud and corruption. The Project Management Office (PMO) will inform all the Project Implementation Office (PIO) and Project Implementation Unit (PIU) field offices of the code of ethics in conformity with the (Bangladesh) Public Procurement Regulations 2008 (PPR-2008). In the meeting, the bidders will also be taught how to prepare bids correctly.

(3) Bid Opening Committee

Now the Bid Opening Committee (BOC) is functioning in each District and Upazila to open bids in public. For improved transparency, the BOC will be reformed with the participation of representatives from the LGED and consultants.

(4) Sending of BOM, BOC, readout bid price and 'copy bid' to PMO

On the day of bid opening, as per the Implementation Guidelines issued by the LGED, photocopies of the following documents will be sent to the Project Director's Office either by fax, post, or a special messenger: Bid Opening Minutes (BOM), Bid Opening Checklist (BOC), Readout Bid Prices, and bids submitted by the bidders. If necessary, the PMO will send the copies of the BOM, BOC, and Readout Bid Prices to JICA as well.

(5) Bid Evaluation Committee

The Bid Evaluation Committee (BEC) has been formed as per PPR-2008 in the District and Upazila levels and is functioning in each District and Upazila to evaluate bids in accordance with the Procurement Guidelines and PPR-2008. The BEC is headed by the LGED engineer, and includes two external members (i.e., engineers and officers from RHD, BWDB and other departments) who are not under the control of the LGED. In addition, a consultant representative (AE) will be a member of the BEC.

(6) Bid evaluation, timelines and award of contract

In accordance with the procurement approval process of the Government of Bangladesh (GOB), bid evaluation reports will include a certificate of impartiality and will be submitted directly to the contract approving authority following the stipulated deadlines. The LGED will work especially hard to ensure award of contract in the initial period of bid/proposal validity so that no extension of validity is required.

JICA may not finance contracts which are not awarded within the first extended period of bid validity. The LGED will closely monitor the status of bid validity and submit a quarterly report to JICA on the timeliness of the bid/proposal evaluation and approval in accordance with PPR-2008.

(7) Delegation of decision-making authority

The LGED has delegated part of its decision making authority to the field level. For a package up to an estimated cost of BDT 40 million, the Executive Engineers (XENs) of the Districts have authority in bid evaluation, contract awarding, and contract administration.

[It is recommended that LGED and JICA discuss whether this action is to be included in the action plan, because this action has been already taken by LGED.]

(8) Action against corrupt and unethical practices by bidders

If collusion is found or established by such indications as same handwriting, identical unit prices in BOQs, consecutive serial numbers in bank guarantees for Bid Security, then the procuring entities (LGED field offices) will initiate actions including debarring contractors from bidding as appropriate in accordance with PPR-2008 and the JICA Guidelines. If any firm is debarred, the list of debarred firms will appear in the websites of the CPTU and the LGED, and the debarment notice will be circulated to all LGED field offices as a lesson to discourage corrupt or unethical behavior. The LGED will always share the debarred firms list with JICA.

(9) Action against corrupt and unethical practices by GOB staff

If a possible corrupt or unethical practice is detected, the LGED will thoroughly investigate it. If involvement of GOB officials is established, the LGED will take a departmental or disciplinary action against those concerned, in accordance with the service rules of the GOB. The procurement officials and the bidders shall strictly observe the Code of Conduct for Procurement Officials and the Code of Ethics for Bidders issued by the CPTU. Any breach of the Code of Conduct for Procurement Officials will lead to initiation of proceeding under the Government Servants (Discipline and Appeal) Rule 1985. A summary of the disciplinary action taken by the authority will be published in the annual report of the LGED.

(10) Low competition among bidders and high price of bids

The case(s) of low competition (not solely based on the number of bidders) coupled with high-priced bids will be reviewed by the LGED. The review and decision in this regard would be made from such aspects as qualification criteria (too stringent?), the contract size (too small or too large?), location and accessibility of the site, and capacity of the local contractors (for smaller and less attractive contracts). If necessary, the LGED may change the scope of work. If local bidders' capacity is very low, a contract package may be divided into small pieces to create a competitive environment.

(11) Measures to reduce coercive practices

If an allegation of coercive practices resulting in low competition is received, the LGED will look into the matter and take appropriate measures. Observations of the LGED will be shared with JICA, along with the evaluation reports. The LGED may seek assistance from law enforcement agencies to provide adequate security for bidders during the bid submission.

(12) Filing and record-keeping

The procuring entities (LGED field offices etc.) will preserve all records and documents regarding their procurement in accordance with PPR-2008, and make them available on request for audit, investigation, or review by the GOB or JICA.

(13) Liquidated damages

The LGED will enforce imposition of liquidated damages (LD) for delayed contract implementation in accordance with the conditions of the contract.

(14) Delayed payment

The LGED will develop mechanisms to avoid delayed payments. A payment monitoring checklist will be developed to ensure timely payment to the recipient.

(15) Procurement plan

The procurement plan of the NRRDLGIP will be published in the LGED website and updated twice a year.

(16) Procurement processing information to CPTU

The LGED will provide the CPTU with information on the LGED's public procurement processing activities as per PPR-2008. The LGED HQ will enter all information related to procurement monitoring into the database software. The LGED HQ will transmit the information to the CPTU online or offline so that the CPTU can incorporate it into the CPTU's central MIS database. Quarterly reports will be generated for monitoring the procurement performance of the LGED. These reports will be shared with JICA.

(17) Publication of award of contract

Within two weeks of contract awarding, the LGED and the CPTU will post the following information on their websites: identity of contract package; date of advertisement; number of bids sold; number of submitted bids; number of valid bids; name of the winning bidder and the price it offered; date of notification of award; date of contract signing; proposed completion date of contract; and brief description of the contract awarded.

(18) Complaint mechanism

The LGED will enforce a complaint handling mechanism in accordance with PPR-2008 including submission and disposal of complaints within the timeline stipulated therein. In the Chief Engineer's Office, PMO-NRRDLGIP and in the District XEN's Offices, the LGED will introduce a complaint box. In the pre-bid meeting, bidders will be informed of their right to complain.

(19) Monitoring and oversight function by PMO

With all of its field offices, the PMO will monitor compliance with the actions 1 to 18 above in the following ways: review the cases on corrupt and similar practices; review contract management issues (i.e., LDs, delayed payments); prepare reports on monitoring of contracts; and submit quarterly reports to the office of the Chief Engineer of the LGED and share them with JICA.

(20) Monitoring and oversight function by LGD and LGED

Both the Local Government Division (LGD) and the LGED HQ have formed a number of inspection teams that now regularly visit the work sites under various projects of LGD/LGED. Moreover, the LGD holds the ADP progress review meeting every month to discuss utilization of funds, physical progress, quality control issues and procurement issues of various projects under this division. Usually those meetings are chaired by the Secretary of the LGD and attended by, among others, the representatives from the Planning Commission, ERD, and IMED. Sometimes the Honorable Minister also reviews the progress. Apart from the above measures, the LGED plans some additional measures for the long term.

[This is not a specific measure under NRRDLGIP. It is recommended that the LGED and JICA discuss whether this should be included in this action plan.]

(21) E-procurement

In order to minimize collusive and coercive bidding practices, the LGED has started e-procurement in collaboration with the CPTU on a pilot basis in a few projects. If this undertaking indicates that e-procurement is desirable and feasible, then the NRRDLGIP will introduce e-procurement in its procurement process with the help of the LGED whose IT infrastructure is one of the best in the Bangladesh government agencies.

(22) Formulation of monitoring formats

Before starting procurement and during implementation of the NRRDLGIP, monitoring formats for transparent and corruption-free administration will be formulated in consultation with JICA and consultants while learning from and adopting the advantages of GOB regulations and the JICA Guidelines.

3 Anti-corruption monitoring sheet

The proposed anti-corruption monitoring sheet is attached below as an example for consideration of LGED and JICA. This monitoring sheet will be prepared and reported under the following three steps in each project year:

- 1) At the start of each project year, the PMO will elaborate the details of respective actions in the anti-corruption action plan (column 1), and set the timing to take those actions in the project year (column 2).
- 2) At the end of each quarter, the PMO will assess the current status of those actions (column 3), and identify next steps to be taken (column 4).
- 3) The PMO will attach the anti-corruption monitoring sheet to Quarterly Progress Monitoring Report submitted to JICA.

Attachment 1 Anti-corruption monitoring sheet (draft)

Specific measures and actions		Timing of actions	Current status	Next steps
1	Special training course: Prior to the bidding process of the NRRDLGIP, a three-day special training course on procurement procedures and financial management will be held for about 150 officials from the LGED and 54 people from Pourashavas. This course will be held in seven batches. The course will be organized again a few times from September 2013.			
2	Pre-bid meeting: Procuring entities will alert bidders in a pre-bid meeting on the consequences of corrupt and similar behaviors, i.e., collusion, coercion, fraud and corruption. The Project Management Office (PMO) will inform all the Project Implementation Office (PIO) and Project Implementation Unit (PIU) field offices of the code of ethics in conformity with the (Bangladesh) Public Procurement Regulations 2008 (PPR-2008). In the meeting, the bidders will also be taught how to prepare bids correctly.			
3	Bid Opening Committee: Now the Bid Opening Committee (BOC) is functioning in each District and Upazila to open bids in public. For improved transparency, the BOC will be reformed with the participation of representatives from the LGED and consultants.			
4	Sending of BOM, BOC, readout bid price and 'copy bid' to PMO: On the day of bid opening, as per the Implementation Guidelines issued by the LGED, photocopies of the following documents will be sent to the Project Director's Office either by fax, post, or a special messenger: Bid Opening Minutes (BOM), Bid Opening Checklist (BOC), Readout Bid Prices, and bids submitted by the bidders. If necessary, the PMO will send the copies of the BOM, BOC, and Readout Bid Prices to JICA as well.			

Specific measures and actions		Timing of actions	Current status	Next steps
5	Bid Evaluation Committee: The Bid Evaluation Committee (BEC) has been formed as per PPR-2008 in the District and Upazila levels and is functioning in each District and Upazila to evaluate bids in accordance with the Procurement Guidelines and PPR-2008. The BEC is headed by the LGED engineer, and includes two external members (i.e., engineers and officers from RHD, BWDB and other departments) who are not under the control of the LGED. In addition, a consultant representative (AE) will be a member of the BEC.			
6	Bid evaluation, timelines and award of contract: In accordance with the procurement approval process of the Government of Bangladesh (GOB), bid evaluation reports will include a certificate of impartiality and will be submitted directly to the contract approving authority following the stipulated deadlines. The LGED will work especially hard to ensure award of contract in the initial period of bid/proposal validity so that no extension of validity is required. JICA may not finance contracts which are not awarded within the first extended period of bid validity. The LGED will closely monitor the status of bid validity and submit a quarterly report to JICA on the timeliness of the bid/proposal evaluation and approval in accordance with PPR-2008.			
7	Delegation of decision-making authority: The LGED has delegated part of its decision making authority to the field level. For a package up to an estimated cost of BDT 40 million, the Executive Engineers (XENs) of the Districts have authority in bid evaluation, contract awarding, and contract administration.			
8	Action against corrupt and unethical practices by bidders: If a possible corrupt or unethical practice is detected, the LGED will thoroughly investigate it. If involvement of GOB officials is established, the LGED will take a departmental or disciplinary action against those concerned, in accordance with the service			

Specific measures and actions		Timing of actions	Current status	Next steps
	rules of the GOB. The procurement officials and the bidders shall strictly observe the Code of Conduct for Procurement Officials and the Code of Ethics for Bidders issued by the CPTU. Any breach of the Code of Conduct for Procurement Officials will lead to initiation of proceeding under the Government Servants (Discipline and Appeal) Rule 1985. A summary of the disciplinary action taken by the authority will be published in the annual report of the LGED.			
9	Action against corrupt and unethical practices by GOB staff: If a possible corrupt or unethical practice is detected, the LGED will thoroughly investigate it. If involvement of GOB officials is established, the LGED will take a departmental or disciplinary action against those concerned, in accordance with the service rules of the GOB. The procurement officials and the bidders shall strictly observe the Code of Conduct for Procurement Officials and the Code of Ethics for Bidders issued by the CPTU. Any breach of the Code of Conduct for Procurement Officials will lead to initiation of proceeding under the Government Servants (Discipline and Appeal) Rule 1985. A summary of the disciplinary action taken by the authority will be published in the annual report of the LGED.			
10	Low competition among bidders and high price of bids: The case(s) of low completion (not solely based on the number of bidders) coupled with high-priced bids will be reviewed by the LGED. The review and decision in this regard would be made from such aspects as qualification criteria (too stringent?), the contract size (too small or too large?), location and accessibility of the site, and capacity of the local contractors (for smaller and less attractive contracts). If necessary, the LGED may change the scope of work. If local bidders' capacity is very low, a contract package may be divided into small pieces to create a competitive environment.			
11	Measures to reduce coercive practices:			

Specific measures and actions		Timing of actions	Current status	Next steps
	If an allegation of coercive practices resulting in low competition is received, the LGED will look into the matter and take appropriate measures. Observations of the LGED will be shared with JICA, along with the evaluation reports. The LGED may seek assistance from law enforcement agencies to provide adequate security for bidders during the bid submission.			
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17	Publication of award of contract: Within two weeks of contract awarding, the LGED and the			

Specific measures and actions		Timing of actions	Current status	Next steps
	CPTU will post the following information on their websites: identity of contract package; date of advertisement; number of bids sold; number of submitted bids; number of valid bids; name of the winning bidder and the price it offered; date of notification of award; date of contract signing; proposed completion date of contract; and brief description of the contract awarded.			
18	Complaint mechanism: The LGED will enforce a complaint handling mechanism in accordance with PPR-2008 including submission and disposal of complaints within the timeline stipulated therein. In the Chief Engineer's Office, PMO-NRRDLGIP and in the District XEN's Offices, the LGED will introduce a complaint box. In the pre-bid meeting, bidders will be informed of their right to complain.			
19	Monitoring and oversight function by PMO: With all of its field offices, the PMO will monitor compliance with the actions 1 to 18 above in the following ways: review the cases on corrupt and similar practices; review contract management issues (i.e., LDs, delayed payments); prepare reports on monitoring of contracts; and submit quarterly reports to the office of the Chief Engineer of the LGED and share them with JICA.			
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Specific measures and actions		Timing of actions	Current status	Next steps
	progress. Apart from the above measures, the LGED plans some additional measures for the long term.			
21	E-procurement: In order to minimize collusive and coercive bidding practices, the LGED has started e-procurement in collaboration with the CPTU on a pilot basis in a few projects. If this undertaking indicates that e-procurement is desirable and feasible, then the NRRDLGIP will introduce e-procurement in its procurement process with the help of the LGED whose IT infrastructure is one of the best in the Bangladesh government agencies.			
22	Formulation of monitoring sheet: Before starting procurement and during implementation of the NRRDLGIP, monitoring formats for transparent and corruption-free administration will be formulated in consultation with JICA and consultants while learning from and adopting the advantages of GOB regulations and the JICA Guidelines.			

Annex 20

Project implementation schedule

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Table A20-1 Project implementation schedule

Items	2012		2013		2014		2015		2016		2017		2018		2019			
	FY 2012/13		FY 2013/14		FY 2014/15		FY 2015/16		FY 2016/17		FY 2017/18		FY 2018/19		FY 19/20			
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Construction Season																		
Preliminary activities																		
Appraisal mission																		
Exchange of note																		
Loan agreement																		
Preparation of Development Project Proposal (DPP)																		
GOB approval																		
Establishment of PMO																		
Preparation of formats of tender document and approval																		
Component 1: Rural infrastructure development																		
SC1-1 Upgrading of Upazila roads																		
Confirmation of selection and phasing of roads																		
Phase 1																		
Survey and design																		
Tendering and contract																		
Pavement works (including small bridges, culverts, etc.)																		
Bridge construction																		
Phase 2																		
Survey and design																		
Tendering and contract																		
Pavement works (including small bridges, culverts, etc.)																		
Bridge construction																		
Phase 3																		
Survey and design																		
Tendering and contract																		
Pavement works (including culverts, etc.)																		
Bridge construction																		
SC1-2 Upgrading of Union roads																		
Confirmation of selection and phasing of roads																		
Phase 1																		
Survey and design																		
Tendering and contract																		
Pavement works (including small bridges, culverts, etc.)																		
Bridge construction																		
Phase 2																		
Survey and design																		
Tendering and contract																		
Pavement works (including small bridges, culverts, etc.)																		
Bridge construction																		
Phase 3																		
Survey and design																		
Tendering and contract																		
Pavement works (including small bridges, culverts, etc.)																		
Bridge construction																		
Large bridges for UZR and UNR																		
Confirmation of phasing of roads with large bridges																		
Phase 1																		
Environmental impact assessment (EIA)																		
Survey and design																		
Tendering and contract																		
Bridge construction																		
Phase 2																		
Environmental impact assessment (EIA)																		
Survey and design																		
Tendering and contract																		
Bridge construction																		

Items	2012		2013		2014		2015		2016		2017		2018		2019	
	FY 2012/13		FY 2013/14		FY 2014/15		FY 2015/16		FY 2016/17		FY 2017/18		FY 2018/19		FY 19/20	
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Construction Season																
SC1-3 Rehabilitation of Upazila roads																
Confirmation of selection and phasing of roads																
Phase 1																
Survey and design																
Tendering and contract																
Rehabilitation works																
Phase 2																
Survey and design																
Tendering and contract																
Rehabilitation works																
SC1-4 Improvement of GC and RM																
Confirmation of selection and phasing of markets																
Phase 1																
Survey and design																
Tendering and contract																
Construction of GCs																
Construction of RMs																
Phase 2																
Survey and design																
Tendering and contract																
Construction of GCs																
Construction of RMs																
Phase 3																
Survey and design																
Tendering and contract																
Construction of GCs																
Construction of RMs																
SC1-5 Improvement of ghats																
Confirmation of selection and phasing of ghats																
Phase 1																
Survey and design																
Tendering and contract																
Construction of ghats																
Phase 2																
Survey and design																
Tendering and contract																
Construction of ghats																

Items	2012		2013				2014				2015				2016				2017				2018				2019			
	FY 2012/13		FY 2013/14				FY 2014/15				FY 2015/16				FY 2016/17				FY 2017/18				FY 2018/19				FY 19/20			
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Construction Season																														
SC1-6 Labor contracting society (LCS) scheme																														
Maintenance of UZR and UNR by LCS																														
Tree planting and caretaking by LCS																														
SC1-7 Community-based road safety program																														
Road safety training to CBRSG members																														
Road safety campaign																														
SC1-8 Training and capacity development																														
Special foundation training by BARD																														
Training																														
Overseas training																														
Procurement																														
Training																														
Training by NGOs																														
Tendering and contract																														
Training																														
Component 2: Urban infrastructure and governance improvement																														
Subcomponent 2-1: Urban infrastructure development and service delivery																														
Phase 1: Infrastructure/service delivery improvement (20%)																														
Detailed design and bid preparation																														
Land acquisition for Phase 1 physical investments																														
Conclusion of Sub-project Agreement																														
Conclusion of Subsidiary Loan Agreement																														
Tendering and contract awarding																														
Implementation and supervision of physical works																														
Final inspection																														
Land acquisition for Phase 2 physical investments																														
Phase 2: Infrastructure/service delivery improvement (40%)																														
Detailed design and bid preparation																														
Conclusion of Sub-project Agreement																														
Conclusion of Subsidiary Loan Agreement																														
Tendering and contract awarding																														
Implementation and supervision of physical works																														
Final inspection																														
Land acquisition for Phase 3 physical investments																														
Phase 3: Infrastructure/service delivery improvement (40%)																														
Detailed design and bid preparation																														
Conclusion of Sub-project Agreement																														
Conclusion of Subsidiary Loan Agreement																														
Tendering and contract awarding																														
Implementation and supervision of physical works																														
Final inspection																														

Items	2012		2013				2014				2015				2016				2017				2018				2019			
	FY 2012/13		FY 2013/14				FY 2014/15				FY 2015/16				FY 2016/17				FY 2017/18				FY 2018/19				FY 19/20			
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Construction Season																														
Subcomponent 2-2: Governance improvement and capacity development																														
Implementation of Phase 1 UGIAP																														
TLCC/ WLCC Formulation																														
PDP Preparation																														
Performance Evaluation																														
Implementation of Phase 2 UGIAP																														
Phase 2 UGIAP																														
Performance Evaluation																														
Implementation of Phase 3 UGIAP																														
Phase 3 UGIAP																														
Component 3: Project implementation support																														
Selection of firm																														
Purchase committee approval																														
Consultancy service																														
Component 4: Project administration support																														
Administration assistant (PMRS, PAS, EPS, PME, SA and PC)																														
Selection of assistant																														
Assistance service																														
Procurement of vehicles and equipment																														
Capacity development conducted by LGED																														
In-country training, workshops, and meetings conducted by LGED																														
Rural road maintenance action plan																														
Pourashava infrastructure O&M action plan																														
Project operation																														
Agreement with residents and land acquisition																														

Table A20-2 Detailed schedule for selection of consultants and contractors

Items	Period (day)	Month											
		1	2	3	4	5	6	7	8	9	10	11	12
I. Procurement of services													
Selection of consulting firm by QCBS of ICB		9 months											
Preparation of tender documents for selection of consultants	45												
Approval by LGED, MLGRD&C and JICA	30												
Notification and preparation of EOI	21												
Assessment of EOI and preparation of short-list	15												
Approval by LGED, MLGRD&C and JICA	20												
Issue of RFP and preparation of proposal	42												
Technical evaluation and approval	20												
Financial evaluation and contract negotiation	7												
Approval by LGED, MLGRD&C, purchase committee and JICA	45												
Signing and formalities of agreement	14												
II. Procurement of goods and works													
Preparatory work		3 months											
Preparation of tender documents and contract forms	60												
Approval by LGED, MLGRD&C and JICA	30												
Selection of contractors by NCB (contract amount: up to BDT 50 mill.)		2.5 months											
Tender notice and preparation of proposal	21												
Tender opening, evaluation and approval	14												
Contract negotiation	7												
Approval by LGED (and MLGRD&C)	10												
NOA, signing and formalities of contract	14												
Selection of contractors by NCB (contract amount: more than BDT 50 mill.)		2.8 months											
Tender notice and preparation of proposal	28												
Tender opening, evaluation and approval	14												
Contract negotiation	7												
Approval by LGED and MLGRD&C	10												
NOA, signing and formalities of contract	14												
Selection of contractors for goods by ICB		3 months											
Tender notice and preparation of proposal	42												
Tender opening, evaluation and approval	14												
Contract negotiation	7												
Approval by LGED and MLGRD&C	10												
NOA, signing of contract and mobilization of contractor	14												

Table A20-3 Action plan of the Project key activities

Items	Activities	Action by	To be completed within		Means of verification
Preliminary activities	Preparation of DPP	LGED	Q1 2013		Development of Project Proposal
	Establishment of PMO	LGED	Q2 2013		Member list
Selection of administration assistants	Direct procurement	PMO	Q2 2013		Contract agreement
Selection of consultants	Bid preparation	PMO	Q3 2013		Tender documents
	Tendering and contract	PMO	Q1 2014		Contract agreement
Upgrading of Upazila roads	Designing and bid preparation	PMO and DSM	Phase 1	Q3 2014	Tender documents
			Phase 2	Q3 2015	
			Phase 3	Q3 2016	
	Tendering and contract	PMO, SMO, PIO, and DSM	Phase 1	Q4 2014	Contract agreement
			Phase 2	Q4 2015	
			Phase 3	Q4 2016	
	Supervision of construction work	PMO, SMO, PIO, LGED Upazila Office and DSM	Phase 1	Q2 2016	Completion certificate
			Phase 2	Q2 2017	
			Phase 3	Q2 2018	
Upgrading of Union roads	Designing and bid preparation	PMO and DSM	Phase 1	Q4 2014	Tender documents
			Phase 2	Q4 2015	
			Phase 3	Q4 2016	
	Tendering and contract	PMO, SMO, PIO, and DSM	Phase 1	Q4 2014	Contract agreement
			Phase 2	Q4 2015	
			Phase 3	Q4 2016	
	Supervision of construction work	PMO, SMO, PIO, LGED Upazila Office and DSM	Phase 1	Q2 2016	Completion certificate
			Phase 2	Q2 2017	
			Phase 3	Q2 2018	
Large bridges for UZR and UNR	Environmental impact assessment (EIA)	PMO and DSM	Phase 1	Q2 2014	EIA report
			Phase 2	Q2 2015	
	Designing and bid preparation	PMO and DSM	Phase 1	Q3 2014	Tender documents
			Phase 2	Q3 2015	
	Tendering and contract	PMO, PIO, PIU and DSM	Phase 1	Q4 2014	Contract agreement
			Phase 2	Q4 2015	
	Supervision of construction work	PMO, SMO, PIO, LGED Upazila Office and DSM	Phase 1	Q4 2016	Completion certificate
			Phase 2	Q4 2017	
Rehabilitation of Upazila roads	Designing and bid preparation	PMO and DSM	Phase 1	Q2 2014	Tender documents
			Phase 2	Q2 2015	
	Tendering and contract	PMO, SMO, PIO, and DSM	Phase 1	Q3 2014	Contract agreement
			Phase 2	Q3 2015	
	Supervision of construction work	PMO, SMO, PIO, LGED Upazila Office, PIU and DSM	Phase 1	Q3 2015	Completion certificate
			Phase 2	Q3 2016	

Items	Activities	Action by	To be completed within		Means of verification
Upgrading of GCs and RMs	Designing and bid preparation	PMO and DSM	Phase 1	Q3 2014	Tender documents
			Phase 2	Q3 2015	
			Phase 3	Q3 2016	
	Tendering and contract	PMO, SMO, PIO, and DSM	Phase 1	Q4 2014	Contract agreement
			Phase 2	Q4 2015	
			Phase 3	Q4 2016	
	Supervision of construction work	PMO, SMO, PIO, LGED Upazila Office, PIU and DSM	Phase 1	Q2 2016	Completion certificate
			Phase 2	Q2 2017	
			Phase 3	Q2 2018	
Improvement of ghats	Designing and bid preparation	PMO and DSM	Phase 1	Q2 2016	Tender documents
			Phase 2	Q2 2017	
	Tendering and contract	PMO, PIO, PIU and DSM	Phase 1	Q3 2016	Contract agreement
			Phase 2	Q3 2017	
	Supervision of construction work	PMO, SMO, PIO, LGED Upazila Office, PIU and DSM	Phase 1	Q2 2017	Completion certificate
			Phase 2	Q2 2018	
Poverty reduction, road safety and capacity development programs	Poverty reduction program by LCS	PMO, PIO, PIU and DSM		Q2 2019	Progress reports
	Road safety training and campaign	PMO, PIO, PIU and DSM		Q2 2018	
	Capacity development	PMO, PIO, PIU and DSM		Q2 2018	
Implementation of subprojects (Category B and C Pourashavas)	Designing and bid preparation	PMO, PIU and DSM	Phase 1	Q3 2014	Tender documents
			Phase 2	Q4 2015	
			Phase 3	Q3 2017	
	Subproject agreement and subsidiary loan agreement	PMO, PIU and DSM	Phase 1	Q3 2014	Subproject agreement
			Phase 2	Q2 2015	Subsidiary loan agreement
			Phase 3	Q4 2016	
	Tendering and contract	PMO, PIU and DSM	Phase 1	Q3 2014	Contract agreement
			Phase 2	Q4 2015	
			Phase 3	Q3 2017	
	Supervision of construction work	PMO, PIU and DSM	Phase 1	Q4 2015	Completion certificate
			Phase 2	Q2 2017	
			Phase 3	Q1 2019	
Implementation of UGIAP	TLCC/WLCC formulation	UMSU, RUMSU, PIU, GICD	Phase 1	Q2 2014	Member lists, Minutes of meetings
	PDP preparation	UMSU, RUMSU, PIU, GICD	Phase 1	Q2 2014	Pourashava Development Plan
	Trainings and workshops	UMSU, RUMSU, PIU, GICD	Phase 2	Q2 2017	Training/workshop reports
			Phase 3	Q1 2019	
Procurement of vehicles, construction equipment and office equipment	Bid preparation	PMO	Phase 1	Q3 2013	Tender documents
			Phase 2	Q3 2015	
			Phase 3	Q3 2017	
	Tendering and purchase	PMO	Phase 1	Q1 2014	Purchase order
			Phase 2	Q1 2016	Invoice
			Phase 3	Q1 2018	

Items	Activities	Action by	To be completed within	Means of verification
In country training by LGED	For LGED and government officials	PMO, SMO, PIO, PIU and DSM	Q2 2018	Minutes of meetings Training/workshop reports
	For contractors and construction workers	PMO, PIO, PIU and DSM	Q2 2018	
	For Upazila Chairpersons, UNO and UP Chairpersons	PMO, PIO, PIU and DSM	Q2 2018	
	For GC/RM stakeholders	PMO, PIO, PIU and DSM	Q2 2018	
	For women and physically challenged shopkeepers	PMO, PIO, PIU and DSM	Q2 2018	
	For LCS members	PMO, PIO, PIU and DSM	Q2 2018	
Rural road maintenance action plan (RRMAP)	Project road maintenance plan preparation	PMO, RMRSU and DSM	Q2 2015	Project road maintenance plan
	Sustainability program preparation	PMO, RMRSU and DSM	Q2 2014	Sustainability program
	Approval of road maintenance policy	PMO	Q4 2013	Policy gazetted
	Annual RRMAP work plan preparation	PMO, RMRSU and DSM	Q2 2014-2018	Annual RRMAP work plan
	Annual RRMAP work plan implementation	PMO, SMO, PIO and DSM	Q2 2015-2019	Progress reports
	Monitoring of road maintenance service delivery	PMO, RMRSU and DSM	Q2 2015-2019	Road maintenance monitoring reports
Pourashava infrastructure O&M action plan	Pourashava Infrastructure O&M Action Plans (PIOMAPs) preparation	PMO, PIU, DSM, and GICD	Q2 2014, Q2 2015	PIOMAPs
	PIOMAPs implementation	PMO, PIU, DSM, and GICD	Phase 1 Q4 2014 Phase 2 Q4 2015 Phase 3 Q4 2016	Reports from PIUs
	Infrastructure inventory preparation and update	PMO, PIU, DSM, and GICD	Phase 1 Q4 2014 Phase 2 Q4 2015 Phase 3 Q4 2016	Inventories of infrastructure
	Annual O&M Plan preparation	PMO, PIU, DSM, and GICD	Q2 of 2015-2019	Annual O&M Plans
	Annual O&M Plan implementation	PMO, PIU, DSM, and GICD	Q2 of 2016-2019	Reports from PIUs

Annex 21

Economic evaluation

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1 Introduction

The scope of Component 1 “Rural infrastructure development” is the upgrading of Upazila roads and Union roads including bridges and culverts, rehabilitation of Upazila roads including bridges and culverts, upgrading of Growth Center and rural markets, and improvement of ghats. Of these infrastructure subprojects, the largest benefits are expected to be accrued from improvements in Upazila roads and Growth Centers. The Survey team carried out economic appraisal of Upazila roads, Union roads, Growth Centers and rural markets. The methods applied for economic appraisal of rural roads and Growth Center markets are the VOC saving benefit and the spoilage savings methods, respectively. These methods are the standard methods used by rural road and market development projects in Bangladesh. The methods are explained in detail in the Guidelines for Effect Monitoring and Evaluation (EME) of Rural Road and Market improvement (LGED, 1999).

As for Subcomponent 2-1 “Urban infrastructure and service delivery,” the economic appraisal on sample urban infrastructures was conducted on four selected Pourashavas from 33 candidates. Since Subcomponent 2-1 is expected to implement a number of types of subprojects, the benefits accruing from them will be different. Among those benefits, only quantifiable benefits have been selected for sample economic appraisals in this Survey.

2 Evaluation of rural infrastructure

2.1 Upazila roads and Union roads

(1) Overview

There are two methods for calculating economic benefits of road improvement projects, namely: User’s Cost Saving (UCS) approach, and Vehicle Operating Costs (VOCs) approach. For the economic appraisal of this Project, the VOCs approach has been adopted for the following reasons:

- In rural areas of Bangladesh, their demographic, agricultural, and trading characteristics generate a large demand for the movement of goods and people via the rural road network, which constitutes the rationale for calculating benefits based on traffic, i.e., using the VOCs approach.
- The VOCs approach is recommended by the LGED guidelines (LGED, 1999) and has been used in the formation of preceding LGED projects such as the South-western Bangladesh Rural Development Project (SWRDP) and the Rural Transport Infrastructure Project 2 (RTIP-2).

The VOCs approach is based on the quantification of savings in financial and economic VOCs by vehicles before and after the implementation of road development projects. The method is explained in detail in the Guidelines for Effect Monitoring and Evaluation (EME) of Rural Road and Market improvement (LGED, 1999).

The economic evaluation with the VOCs approach involves the following three steps:

- 1) Collection of traffic counts;
- 2) Calculation of VOCs; and
- 3) Calculation of Economic Internal Rate of Return (EIRR)

(2) Calculation

The EIRR and NPV are calculated for each Upazila and Union road using a spreadsheet. The quantified benefits for the roads are the VOCs in economic prices. These benefits are compared with the economic costs of road improvement and maintenance. All costs and benefits are expressed in constant 2011/2012 prices.

(3) Results

EIRR on Upazila roads (development)

69 Upazila roads in total passed the selection and appraisal procedure. All 69 UZR were economically viable with having the EIRR higher than 12%. The EIRR for these UZR ranges from 12 % to 57 % and the average is 25.58 %. This indicates moderately high economic viability.

EIRR on Upazila roads (rehabilitation)

18 Upazila roads passed the preliminary selection and appraisal procedure. All UZR were economically viable, with having EIRR higher than the standard discount rate of 12%. The EIRR for these UZR range from 14.5% to 53.4%, and the average EIRR is 31.4%. These results indicate high economic viability.

EIRR on Union roads

47 Union roads in total passed the selection and appraisal procedure. The EIRR for these union roads ranges from 12% to 41% and the average is 21.43%. This indicates moderately high economic viability.

Annexes of Final Report

Table A21-1 Result of economic analysis: UZR

DISTRICT	UPAZILA	ROAD CODE	ROAD NAME	EIRR	NPV (million BD ^T)
DINAJPUR	BIRAMPUR	127102005	Tatakpur RHD-Madhala GC (Janipur) via Munnpara River ghat & Jotjoyram	22.56%	61.1
DINAJPUR	CHIRIRBANDAR	127302008	Binnakuri GC to Ishamati National HY	23.54%	67.7
DINAJPUR	GHORAGHAT	127432009	Bager hat GC (Azad mor)-Osmanpur GC via T&T mor.	23.92%	60.5
DINAJPUR	BIROL	127172009	Narabari GC to Pulhat RHD	24.60%	81.3
DINAJPUR	HAKIMPUR	127472003	Hilli GC-Katlahat GC starting from Satkuri Railgate via NAYANAGAR HAT GC	31.98%	79.8
DINAJPUR	KHANSHAMA	127602006	Khansama-Kachinia hat G.C.	35.98%	313.9
DINAJPUR	BIRGANJ	127122004	Kobiraj GC (NHV)-Mahugaon R&H.Road	40.16%	153.8
DINAJPUR	KAHAROL	127562006	Mutunihat-Noshipurhat Rd.	40.46%	129.4
DINAJPUR	FULBARI	127382008	Amdungihat GC-Baraihat GC via Pathokparahat and Samser nagar hat Rd.	41.93%	222.1
GAIBANDHA	GAIBANDHA-S	132242009	Tulsighat hat-Ramchandrapur Palli Health center road	13.47%	6.3
GAIBANDHA	SUNDARGANJ	132912005	Sundarganj-Materhat G.C (FRA)	15.51%	38.3
GAIBANDHA	SADULLAPUR	132822009	Madergonj G.C-Pachar bazar G.C	25.79%	109.7
GAIBANDHA	PALASHBARI	132672004	Palashbari Upazila H/Q-Chattra GC Road via Kishorgari UP office	29.70%	143.6
JAMALPUR	JAMALPUR-S	339362005	Banschara G.C-Jamalpur-Chacua-Moktagasa D.R at Gopalpur.	12.11%	0.8
JAMALPUR	BAKSHIGANJ	339072008	Dotterchar R&H-Sarmara G.C.	18.47%	24.0
JAMALPUR	ISLAMPUR	339292007	Mosharofgonj R & H-Guthail GC Via Belghacha UP Rd.	25.19%	137.1
JAMALPUR	MADARGANJ	339582009	Rayaganj GC-Simla Bazar RHD Road via Royerchara Bazar Rd. (Madarganj Part)	27.00%	119.2
JAMALPUR	MELENDHA	339612010	Tonkey GC - Durmut GC (Shundara fasal) Road	27.24%	28.4
JAMALPUR	SARISHABARI	339852009	Simlabazar (RHD)-Rayaganj GC Road via Borobaria	36.20%	109.4
KISHOREGANJ	MITHAMOIN	348592003	Mithamoin-Natunhati-Austagram Rd (Mithamoin Part).	15.65%	15.5
KISHOREGANJ	NIKLI	348762006	Nikli Bazar-Chuntikhali Launch Ghat-Ashtagram Road	16.96%	28.6
KISHOREGANJ	AUSTAGRAM	348022002	Austagram-Mitamon Road	26.41%	143.4
KURIGRAM	FULBARI	149182006	Fulbari-Gagla G. C.-Gongerhat R & H Road to Ramkhana Dighirpar Via Anantopur Bari	12.53%	2.5
KURIGRAM	RAJIBPUR	149082003	Rajibpur GC-Kadalkati G.C.	13.80%	8.2
KURIGRAM	RAJARHAT	149772005	Nazimkhan GC-Ratigram GC via Dangrarhat.	19.14%	31.8
LALMONIRHAT	LALMONIRHAT-S	152552010	Lalmonirhat upazilla H/Q at purbo thana para to Mohendranagar GC via Dhebdhebir hat.	18.59%	44.3
LALMONIRHAT	KALIGANJ	152392008	Durakuti GC to Zill Road at Bhularhat via chapar Hat	27.91%	129.7
LALMONIRHAT	ADITMARI	152022007	Mohishkhocha GC-Namurihat Zila road .	31.67%	93.7
MYMENSINGH	GOURIPUR	361232005	Shyamgonj GC-Hogla GC (Gouripur part).	12.51%	2.3
MYMENSINGH	GAFFARGAON	361222010	Lamkain-Kandipara Rd.	13.28%	3.5
MYMENSINGH	MUKTAGACHA	361652010	Mukttagacha Trimohini Natun Bazar GC-Mohammadnagar GC via Hazi Kashem Ali Girls	14.26%	12.3
MYMENSINGH	HALUAGHAT	361242003	R&H (Nagla)-Goatola GC via Shakuai GC(Haluaghat part).	17.20%	75.5
MYMENSINGH	PHULPUR	361812007	kakni R&H-Shyamgonj GC Road via Bhusher Bazar & Rajdarikel G.C.	22.97%	136.4
MYMENSINGH	FULBARIA	361202011	Hatkali Bazar GC-Kalibari Bazar via Garajan	27.50%	38.8
MYMENSINGH	TRISHAL	361942010	Chakrampur GC-Kalirbazar GC road .	30.88%	221.7
MYMENSINGH	BHALUKA	361132004	Mallikbari Bazar-Borchona	36.07%	214.3
NETROKONA	ATPARA	372042008	Avoypasha R&H-Najirganj G.C. road via Mobarakpur	13.91%	17.4
NETROKONA	BARHATTA	372092007	Amtala-Samaj GC Road (Barhatta Portion)	16.72%	31.0
NETROKONA	NETRAKONA-S	372742006	Netrakona-Shidly GC Road. (Sadar part.)	21.16%	214.3
NETROKONA	MADAN	372562008	Teosree GC-Fatepur GC.	46.36%	305.0
NILPHAMARI	DOMAR	173152013	Sonarai Hat RHD road -Basunia Hat GC via Sonarai UP Office.	21.48%	38.9
NILPHAMARI	DIMLA	173122011	Baburhat G.C-CARE bazar R&H Road	22.83%	35.6
NILPHAMARI	NILPHAMARI-S	173642018	Nilphamari-Jaldhaka R&H road at Kachukata Bondor to Nilphamari-Domar R&H road v	30.12%	215.8
NILPHAMARI	JALDHAKA	173362007	Jaldhaka Bazar (Upazila H/Q)-Mirgonj GC Via Binnabari hat	47.44%	208.6
PANCHAGARH	TETULIA	177902006	Panchagarh-Banglabandha R&H (Dargashing) - Shalbahan GC	19.38%	17.4
PANCHAGARH	DEBIGANJ	177342009	Saldanga R&H at Gp School - Shakoa GC	24.84%	32.4
PANCHAGARH	BODA	177252006	Maidandighi GC - Bottoli G.C Road.	31.92%	203.9
PANCHAGARH	PANCHAGARH-S	177732007	Panchagarh Barister Institute - Goalharhat via Amtola Road.	38.44%	300.6
RANGPUR	KAUNIA	185422005	Mahigonj Pawtana (Damurchakla)-Nabdigonj Tapamodhupur GC (Kaunia Portaion)	16.25%	4.6
RANGPUR	MITHAPUKUR	185582009	Bairagigonj Busstand NHW to Ranipukur Via Dhap Bazar.	20.67%	55.7
RANGPUR	GANGACHARA	185272002	Gangachara UZHQ (Near College)-Paglapir GC Via Birabarihat	23.73%	72.7
RANGPUR	PIRGANJ	185762010	Bhendabari GC to Nawabgonj GC via Pirehat-Tukuria-Katchdaherghat	53.72%	555.8
RANGPUR	PIRGACHA	185732005	Chowdhurani GC-Sundarganj UZHQ (Part)	57.52%	481.5

DISTRICT	UPAZILA	ROAD CODE	ROAD NAME	EIRR	NPV (million BD ^T)
SHERPUR	SHERPUR-S	389882010	Lasmanpur RHD - Nandina GC Road via. Gugurakandi UP	12.54%	6.8
SHERPUR	NAKLA	389672003	Nakla-Tarakanda GC-Nalitabari Road.	15.28%	24.6
SHERPUR	NALITABARI	389702011	Araiani Bazar-Ghagpara bazar-Kalakuma-Karanga para	17.11%	50.2
SHERPUR	SREEBORDI	389902004	Bhayadanga-Bakshigonj Road.	28.09%	130.5
TANGAIL	TANGAIL-S	393952006	Torapgonj-Jamuna Bridge Approach Road via char pouly	15.07%	72.3
TANGAIL	BHUAPUR	393192002	Shiakol GC-Nikrail GC Via Golabari road	15.15%	17.0
TANGAIL	MADHUPUR	393572003	Chapri-Garohat Road	18.34%	24.3
TANGAIL	SHAKHIPUR	393852004	Sakhipur - Suruj GC Road via Salgrampur,Teipur Ferryghat.	22.77%	88.4
TANGAIL	DELDUAR	393232003	Delduar-Natiapara Rd.	25.80%	100.2
TANGAIL	NAGARPUR	393762003	Nagarpur-Mirzapur Road Via Mokna	28.86%	362.6
TANGAIL	BASAIL	393092004	Basail-Natiapara GC via Bilpara Road.	31.85%	253.9
TANGAIL	GHATAIL	393282005	Dhalapara-Deopara-Purbasinda Road	34.60%	162.9
THAKURGAON	THAKURGAON-S	194942015	Parpugi RHD-Neckmorad GC Road.	14.18%	8.6
THAKURGAON	BALIADANGI	194082004	Lahiri G.C-Ramnath G.C via Chowrangi hat Road	28.53%	96.8
THAKURGAON	RANISANKAIL	194862008	Nekmord College R&H-Moharaja GC Road	33.88%	106.9
THAKURGAON	PIRGANJ	194822007	Nakkatihath GC-Sinua RHD Road.	43.08%	125.7

Table A21-2 Result of economic analysis: UZR (Rehabilitation)

DISTRICT	UPAZILA	ROAD CODE	ROAD NAME	EIRR	NPV
DINAJPUR	HAKIMPUR	127472001	Hakimpur-Ghoraghat Road Starting from Hilli CP BDR Camp	53.4%	268.1
DINAJPUR	KAHAROL	127562001	Kaharol-Bochaganj (D-2) Road .	25.2%	40.3
DINAJPUR	BIROL	127172002	Birol Upazila H/Q. to Dhukurjhari hat road.	30.3%	30.3
JAMALPUR	MELENDIAH	339612004	Bhabki RHD - Raigonj GC Via Beltail Bazar.	14.5%	9.4
KURIGRAM	CHILMARI	149092005	Thanahat GC-Ramna River Ghat Road	27.5%	14.9
KURIGRAM	KURIGRAM-S	149522003	Dharla bridge approach-Jatrapur GC	41.5%	81.5
LALMONIRHAT	ADITMARI	152022003	Burirhat GC-Bhelabari GC	22.3%	25.8
MYMENSINGH	TRISHAL	361942014	RHD road at Raghamura-Chakrapur GC.	23.2%	26.6
MYMENSINGH	GOURIPUR	361232006	Kaltapara RHD-Gouripur.	19.9%	11.8
NILPHAMARI	NILPHAMARI-S	173642001	Nilphamari to Bhobanigonj G.C.	22.9%	37.2
NILPHAMARI	DOMAR	173152002	Domar GC-Chilahati GC via Muktirhat road	34.4%	209.8
PANCHAGARH	PANCHAGARH-S	177732002	Panchagarh - Chaklahat Road.	49.3%	221.9
PANCHAGARH	DEBIGANJ	177342002	Debiganj R&H Road (Bat Tree More) - Jharbari GC	35.1%	148.4
PANCHAGARH	ATWARI	177042001	Fakirgonj hat GC - Shathkhamar R&H Road	29.9%	99.5
RANGPUR	PIRGANJ	185762002	Barodarga NHW-Madargonj GC	32.0%	93.8
RANGPUR	RANGPUR-S	185492005	NHW at Lalbag-Ranipukur GC.	30.3%	59.1
RANGPUR	MITHAPUKUR	185582005	Damdama NHW to Nagarkotha GC via Begum Rokey Momu. Centre	33.8%	229.4
TANGAIL	DELDUAR	393232001	Delduar-Lowhati GCCR.	39.6%	126.5

Table A21-3 Result of economic analysis: UNR

DISTRICT	UPAZILA	ROAD CODE	ROAD NAME	EIRR	NPV
DINAJPUR	PARBATIPUR	127773011	R & H Road at Jakerganj-Chaklardanga hat via Sundarpir, Gomostapara, Belichan	15.8%	16.28
DINAJPUR	NAWABGANJ	127693012	Nandanpur to Kapaldara via Binodnagar	18.9%	23.24
DINAJPUR	DINAJPUR-S	127643006	Jhanjira hat-Torongini-Ramdobi hat.	26.1%	43.37
DINAJPUR	BOCHAGANJ	127213002	Mushidhat-Rangaon UP office	27.1%	46.15
GAIBANDHA	SAGHATA	132883001	Saghata GC-Kachua UP Office via Ullah Sonatala Bazar	15.8%	12.53
GAIBANDHA	FULCHARI	132213004	Udakhali U.P H/Q-Udakhali Bazar	17.4%	10.09
GAIBANDHA	GOBINDAGANJ	132303003	Shakahar U.P-Bager hat GC (Ghoraghat Mazar) Via Deghir hat	25.2%	59.05
JAMALPUR	DEWANGANJ	339153012	Bahadurabad UP-Shepara Bazar	26.4%	48.99
KISHOREGANJ	BAJITPUR	348063001	Ujanchar bazar-Halimpur UP Rd.	12.8%	2.50
KISHOREGANJ	KULIARCHAR	348543003	Kuliarchar UZHQ to Nowapara Bazar	13.3%	2.37
KISHOREGANJ	PAKUNDIA	348793002	Tarakandi bazar-Char Faradi UP Rd.	17.8%	16.55
KISHOREGANJ	KARIMGANJ	348423007	Kadirjangan UP H/Q-Nilganj GC Road via Hatrapara Bazar	18.2%	19.40
KISHOREGANJ	ITNA	348333002	Dhanpur UP-Janatagonj Bazar Road	19.6%	47.09
KISHOREGANJ	KISHOREGANJ-S	348493002	Jalalpur bazar-Majkhanj UP Rd.	27.1%	29.73
KISHOREGANJ	BHAIRAB	348113003	Shimulkandi UP H.Q-Ananda Bazar Rd.	29.2%	50.62
KISHOREGANJ	HOSSAINPUR	348273007	Char Pundi bazar-Pundi UP H/Q Road	29.9%	77.33
KISHOREGANJ	KATIADI	348453009	Banagram UP H/Q.-Madhyapara bazar Rd.	36.5%	91.73
KISHOREGANJ	TARAIL	348923004	Thana H.Q-Dhamiha Bazar	40.5%	75.56
KURIGRAM	ROWMARI	149793002	Dantbhanga Feeder(Shalur more)--Kazakata hat	12.0%	-0.09
KURIGRAM	ULIPUR	149943005	Tabakpur UP-Adarsa bazar.	15.6%	11.39
KURIGRAM	NAGESWARI	149613010	Nageswari Gc-Hashnabad UP office.	18.0%	22.42
KURIGRAM	CHILMARI	149093003	Thanahat UP office at Gabtola to Ranigonj UPC.	20.0%	23.68
KURIGRAM	KURIGRAM-S	149523006	Pangachi-Bhitorbond road.	22.2%	49.60
KURIGRAM	BHURUNGAMARI	149063002	Jomyonirhat UP-Bhurangamari(Bus stand)	22.2%	19.28
LALMONIRHAT	PATGRAM	152703005	Patgram UP-Varverirhat Via Kawamarihat & Kalirhat.	20.08%	105.17
LALMONIRHAT	HATIBANDHA	152333010	Dakalibandha to Fepranogre(Dauwabari up) via Ketkibari	23.9%	73.26
MYMENSINGH	ISHWARGANJ	361313006	Mogtola U.P-Modhupur Bazar Road.	12.9%	2.42
MYMENSINGH	DHOBURA	361163001	Dhobaura up-Ghosegoan up Rd [Started from Hospita]	16.7%	15.04
MYMENSINGH	NANDAIL	361723007	Chandipasha U.P-Shiakhara Bazar Road via Bashati bazar	17.9%	28.01
MYMENSINGH	MYMENSINGH-S	361523004	Dapunia UP-Montala Bazar Rd. via Shorshamala Bazar	30.8%	104.30
NETROKONA	MOHANGANJ	372633003	Mohonganj Upazila H/Q (Satur)-Maghan Shiadhar UP rd.	13.6%	2.78
NETROKONA	KHALIAJURI	372383003	Khaliajuri UP-Proshadpur Bazar via Roail-Adawara Nayanagar	15.0%	24.06
NETROKONA	DURGAPUR	372183012	Durgapur UP office(Attraikhal)-Fanda bazar rd.	17.6%	20.10
NETROKONA	PURBADHALA	372833015	Netrokona (Hatkhola bazar)-Dhaka Mulgaon UP road	18.5%	11.44
NETROKONA	KENDUA	372473005	Goradoba UP office-Bashati bazar via Biddha ballab and Goradoba Bazar	19.6%	33.36
NETROKONA	KALMAKANDA	372403010	Langura UP Office-Rahimpur Bazar via Nalchapra Bz. Rd.	28.2%	93.09
NILPHAMARI	KISHOREGANJ	173453023	Chandkhana UP Office-Kellabarirhat via Darjitari, Burirhat & Chandkhana ghat.	14.6%	12.51
NILPHAMARI	SAYEDPUR	173853009	Banirhat-Shibarhat.	35.2%	80.00
PANCHAGARH	ATWARI	177043004	Dhamore UP - Sonapatila Hat Via Kiron Babu Hat Road	21.2%	29.34
RANGPUR	BADARGANJ	185033004	Bisnupur UP-Matherhat via Kaligonj	19.7%	64.53
RANGPUR	RANGPUR-S	185493002	UZHQ to Nekirhat Bazar via Horidebpur UPC	20.1%	97.89
SHERPUR	JHENAIGATI	389373005	Jhenaigati GC-Sribordi RHD Road via Garjaripa UP.	24.9%	69.50
TANGAIL	MIRZAPUR	393663005	Bhabkhanda Bazar-Khagutia bazar Anaitola UP Road	12.56%	1.37
TANGAIL	KALIHATI	393473004	Kokdohara-Pathalia Road via Bagutia	17.3%	60.87
TANGAIL	GOPALPUR	393383002	Syedpur-Nagdasimla UP office	22.1%	11.60
TANGAIL	DHANBARI	393963019	Kendua-Paiska road	37.5%	81.53
THAKURGAON	HARIPUR	194513008	Bakua UP Office-Chapdahat Road.Via Buzrok,Singhari.	14.1%	9.35

2.2 Growth Centers

(1) Overview

The method used for the economic analysis of Growth Center (CG) markets and rural markets is the “Spoilage Savings” (SS) method, a prominent method adopted in a number of LGED projects. This method measures the portion of revenue lost to the seller as a result of deterioration of perishable commodities. The deterioration arises due to the lack of market facilities such as selling sheds, storage and un-improved transport infrastructure connected to the market. The sellers have to take back the unsold commodities for other markets or for the next market day. As a result, the sellers sell their commodities, particularly perishable ones, at a lower price at the end of the market day. Therefore, prices fluctuate widely throughout the day in the market that creates a revenue loss. This forms the basis of the Spoilage Savings method. In a developed market, this loss is plausibly expected to be less and the turnover of commodities is higher, due to better interaction of market forces and protection to perishable commodities. This cost-benefit approach is adopted to construct economic indicators of improving GC and rural markets.

(2) Calculation

EIRR and NPV are calculated for each Growth Center market using a spreadsheet.

(3) Results

EIRR on Growth Center markets

In total, 70 Growth Center markets passed the selection and appraisal procedure. The EIRR ranges from 16% to 2,076% and the average EIRR is a robust 199%. This high EIRR can be attributed mainly to the relatively low-cost investment which is substantially exceeded by the benefits in the form of reduced spoilage of produce. Among them, two markets have even higher EIRR (over 2,000%) due to the large volume of the most perishable commodities such as fish that suffer from the greatest reduction in price over the course of the trading day.

EIRR on Rural markets

In total, 126 rural markets passed the selection and appraisal procedure. The EIRR ranges from 12% to 1,580% and the average EIRR is a robust 115%. The reasons of this high EIRR are the same as those on Growth Center markets.

Table A21-4 Summary of economic analysis results: GCM/RM-1

District	Upazila	Name of Market	Type	EIRR	NPV
Dinajpur	Birampur	Birampur Hat	GCM	99.0%	51.0
Dinajpur	Birgonj	Golapganj hat	GCM	115.2%	60.7
Dinajpur	Bochagonj	Setabganj Hat G.C	GCM	89.2%	45.1
Dinajpur	Chirirbandar	Binnakuri	GCM	78.6%	38.7
Dinajpur	Chirirbandar	Chirirhat	GCM	38.2%	14.5
Dinajpur	Dinajpur Sadar	Fasiladanga	GCM	48.9%	20.9
Dinajpur	Dinajpur Sadar	Raniganj	GCM	43.0%	17.3
Dinajpur	Ghoraghat	Ranigonj	GCM	59.6%	27.3
Dinajpur	Kaharol	Kaharol	GCM	294.2%	167.8
Dinajpur	Khansama	Pakerhat	GCM	58.5%	26.7
Dinajpur	Nawabgonj	Daudpur Hat	GCM	110.5%	57.9
Dinajpur	Nawabgonj	Vaduria Hat	GCM	109.3%	57.1
Dinajpur	Parbatipur	Bhabanipur	GCM	18.7%	3.3
Dinajpur	Parbatipur	Khyarpukur	GCM	82.0%	40.8
Dinajpur	Birampur	Desham Hat	RM	34.3%	7.2
Dinajpur	Birgonj	Sanka	RM	64.3%	18.1
Dinajpur	Birgonj	Khalsihat	RM	22.5%	3.2
Dinajpur	Birol	Fulbari Hat	RM	31.7%	6.3
Dinajpur	Birol	Choker Hat	RM	199.1%	66.5
Dinajpur	Bochagonj	Sadamahal Hat	RM	79.8%	23.7
Dinajpur	Bochagonj	Preetir Bazaar	RM	41.9%	10.0
Dinajpur	Chirirbandar	Dangarhat	RM	14.9%	0.8
Dinajpur	Dinajpur Sadar	North Gopalpur	RM	51.4%	13.4
Dinajpur	Fulbari	Pukhuri Hat	RM	236.6%	79.9
Dinajpur	Fulbari	Khayerbari Bazar	RM	95.3%	29.2
Dinajpur	Ghoraghat	Bologari	RM	41.6%	9.9
Dinajpur	Ghoraghat	Chadpara	RM	89.3%	27.1
Dinajpur	Hakimpur	Khattauchna	RM	33.2%	6.9
Dinajpur	Hakimpur	Jangoi Hat	RM	27.3%	4.8
Dinajpur	Kaharol	Boleya hat	RM	84.6%	25.4
Dinajpur	Kaharol	Bogdoir	RM	76.2%	22.4
Dinajpur	Khansama	Dangarhat	RM	25.3%	4.1
Dinajpur	Nawabgonj	Charar Hat	RM	282.8%	96.5
Dinajpur	Nawabgonj	Dolar Dorga Hat	RM	94.8%	29.0
Dinajpur	Parbatipur	Banirhat	RM	31.2%	6.2
Gaibandha	Sadullapur	Sadullapur Bazar	GCM	112.9%	59.6
Gaibandha	Sundarganj	Sovaganj	GCM	28.8%	8.9
Gaibandha	Gobindagonj	Gheedanga hat	RM	28.1%	5.1
Gaibandha	Palashbari	Talukjamira Hat	RM	114.7%	36.4
Gaibandha	Sadullapur	Edrakpur Bazar	RM	13.4%	0.4
Gaibandha	Saghata	Kochuahat	RM	25.3%	4.1
Gaibandha	Saghata	Ullah Sonatola	RM	28.0%	5.1
Gaibandha	Sundarganj	Baruarhat	RM	22.1%	3.1
Gaibandha	Sundarganj	Saitantola	RM	38.1%	8.7
Jamalpur	Islampur	Dharmakura Bazar	GCM	542.0%	327.0
Jamalpur	Islampur	Guthail Bazar	GCM	542.0%	327.0
Jamalpur	Melandah	Hazrabari GC	GCM	54.4%	25.0
Jamalpur	Sarishabari	Aramnagar Hat	GCM	176.7%	101.0
Jamalpur	Dewanganj	Katerbeel	RM	320.3%	114.0
Jamalpur	Dewanganj	Jalurchar	RM	67.5%	19.9
Jamalpur	Melandah	Beltail Bazar	RM	42.5%	10.6
Jamalpur	Melandah	Kahetpara Bazar	RM	36.8%	8.5

Table A21-5 Summary of economic analysis results: GCM/RM-2

District	Upazila	Name of Market	Type	EIRR	NPV
Kurigram	Rajibpur	Baliamari	GCM	76.8%	37.8
Kurigram	Rowmari	Rowmari	GCM	152.5%	83.3
Kurigram	Fulbari	Pakhirhat	RM	299.0%	102.7
Kurigram	Kurigram Sadar	Sulkurbazar	RM	35.6%	7.8
Kurigram	Nageswari	Naykerhat	RM	68.7%	19.7
Kurigram	Nageswari	Momingonj	RM	32.4%	6.6
Kurigram	Rajarhat	Nakkatirhat	RM	41.1%	9.7
Kurigram	Rajibpur	Nayachar Bazar	RM	92.7%	28.4
Kurigram	Rowmari	Char Shoulmari	RM	86.7%	26.3
Kurigram	Rowmari	Pakhiura	RM	69.2%	19.9
Mymensingh	Bhaluka	Birunia	GCM	59.7%	28.2
Mymensingh	Gouripur	Shyamgonj	GCM	82.3%	42.3
Mymensingh	Gouripur	Gouripur	GCM	73.9%	37.0
Mymensingh	Haluaghat	Shakuai GC Market	GCM	45.2%	19.2
Mymensingh	Haluaghat	Haluaghat GC	GCM	66.1%	32.2
Mymensingh	Ishwarganj	Rayer Bazar	GCM	2076.1%	1,271.2
Mymensingh	Phulpur	Bhaitkandi Bazar	GCM	123.0%	67.4
Mymensingh	Bhaluka	Angargara	RM	377.2%	134.6
Mymensingh	Bhaluka	Paruldia	RM	241.9%	84.5
Mymensingh	Dhobaura	Chariakanda	RM	182.3%	62.4
Mymensingh	Gaffargaon	Mukhi school bazar	RM	65.8%	19.2
Mymensingh	Haluaghat	Dhurail	RM	118.5%	38.8
Mymensingh	Haluaghat	Mazrakura	RM	157.5%	53.2
Mymensingh	Ishwarganj	Charpara Bazar	RM	342.1%	121.6
Mymensingh	Ishwarganj	Surjer Bazar	RM	111.2%	36.1
Mymensingh	Muktagacha	Shasa Bangla bazar	RM	85.6%	26.6
Mymensingh	Muktagacha	Kheruajani Bazar	RM	479.4%	172.4
Mymensingh	Nandail	Bashati Market	RM	38.4%	9.0
Mymensingh	Nandail	Seed Store Market	RM	102.1%	32.7
Mymensingh	Phulpur	Charia Bazar	RM	195.7%	67.4
Mymensingh	Phulpur	Horiagai Bazar	RM	117.9%	38.6
Mymensingh	Trishal	Dhala Bazar	RM	69.1%	20.5
Mymensingh	Trishal	Kashigong Bazar	RM	33.3%	7.1
NETROKONA	Kalmakanda	Pagla Bazar	RM	31.7%	6.5
NETROKONA	Kendua	Bekhair Hati	GCM	19.0%	3.5
NETROKONA	Khaliajuri	Udaypur Bazar	RM	17.7%	1.7
NETROKONA	Khaliajuri	Satgaon	RM	12.3%	0.1
NETROKONA	Madan	Singher Bazar	RM	16.9%	1.5
NETROKONA	Mohanganj	Charpar Bazar	RM	30.3%	6.0
NETROKONA	Purbadhala	Hogla Bazar	GCM	35.4%	13.1
NETROKONA	Purbadhala	Jaria Bazar	RM	81.6%	25.1
NILPHAMARI	Dimla	Shutibari Hat	GCM	462.6%	269.6
NILPHAMARI	Dimla	Thakurgonj Hat	GCM	316.8%	182.0
NILPHAMARI	Dimla	Khagakharibari Hat	RM	517.5%	181.4
NILPHAMARI	Dimla	Shalhathi Hat	RM	443.1%	154.6
NILPHAMARI	Jaldhaka	Baroghat hat	RM	46.4%	11.6
NILPHAMARI	Jaldhaka	Rother Bazar	RM	281.3%	96.4
NILPHAMARI	Kishoreganj	Bangla Bazar (Magura UP)	RM	93.2%	28.6
NILPHAMARI	Sadar	Dhelapir hat	RM	66.8%	19.0
NILPHAMARI	Sadar	Jadur hat	RM	18.2%	1.8

Table A21-6 Summary of economic analysis results: GCM/RM-3

District	Upazila	Name of Market	Type	EIRR
PANCHAGARH	Atwari	Fakirgonjr hat GC	GCM	122.3%
PANCHAGARH	Atwari	Dungdungir hat	RM	79.7%
PANCHAGARH	Atwari	Rakhal Debi hat GC	RM	68.5%
PANCHAGARH	Boda	Balaram Hat	RM	38.7%
PANCHAGARH	Boda	Tepukuria Hat	RM	16.8%
PANCHAGARH	Debiganj	Kaliganjhat	GCM	152.2%
PANCHAGARH	Debiganj	Saldangahat	RM	24.2%
PANCHAGARH	Debiganj	Laxmirhat	RM	65.5%
PANCHAGARH	Sadar	Futkibarihat	RM	112.1%
PANCHAGARH	Sadar	Jhalaihat	RM	165.1%
PANCHAGARH	Tetulia	Shalbahan	GCM	149.1%
PANCHAGARH	Tetulia	Magurmari Chowrasta	RM	21.9%
PANCHAGARH	Tetulia	Ranachandi hat	RM	33.4%
RANGPUR	Badargonj	Shyampur	GCM	101.7%
RANGPUR	Badargonj	Madargonj	RM	15.0%
RANGPUR	Badargonj	Shakerhat	RM	27.5%
RANGPUR	Kaunia	Modhupur hat	GCM	73.3%
RANGPUR	Kaunia	Takipal hat	GCM	87.2%
RANGPUR	Kaunia	Jamtolir hat	RM	51.4%
RANGPUR	Kaunia	Joy Bangla Bazar	RM	92.7%
SHERPUR	Jhenaigati	Jhenaigati	GCM	134.0%
SHERPUR	Jhenaigati	Gobindaganj Hat	GCM	149.6%
SHERPUR	Jhenaigati	Mohangong Hat	RM	71.4%
SHERPUR	Jhenaigati	Bakakura Bazar	RM	79.9%
SHERPUR	Nakla	Narayankhola	GCM	267.0%
SHERPUR	Nakla	Nakla Bazar	GCM	64.8%
SHERPUR	Nakla	Baromaisha	RM	46.8%
SHERPUR	Nakla	Pathakata	RM	186.0%
SHERPUR	Nalitabari	Ghakpara	RM	20.2%
SHERPUR	Nalitabari	Noljora	RM	58.0%
SHERPUR	Sherpur Sadar	Kamarerchar GC	GCM	368.2%
SHERPUR	Sherpur Sadar	Bimgonj Bazar	RM	520.0%
SHERPUR	Sherpur Sadar	Rasulpur Bazar	RM	431.9%
SHERPUR	Sreebordi	GILAGACHA	RM	27.7%
SHERPUR	Sreebordi	BALIJBHURI	RM	12.7%

Table A21-7 Summary of economic analysis results: GCM/RM-4

District	Upazila	Name of Market	Type	EIRR	NPV
TANGAIL	Basail	Moytha Janjania Notun Bazar	RM	44.7%	11.4
TANGAIL	Bhuapur	Gabshara Hat	RM	98.1%	31.3
TANGAIL	Shakhipur	Boheratail Hat	GCM	18.1%	3.0
TANGAIL	Delduar	Naliapara	RM	149.7%	50.6
TANGAIL	Delduar	Rupshi Hat	RM	251.1%	88.3
TANGAIL	Tangail Sadar	Torapgonj	GCM	216.1%	125.3
TANGAIL	Tangail Sadar	Gala Bazar	RM	316.5%	112.6
TANGAIL	Dhanbari	Zagirachala	RM	12.6%	0.2
TANGAIL	Tangail Sadar	Binnafoir	RM	142.4%	47.8
TANGAIL	Dhanbari	Bhaight	RM	22.2%	3.2
TANGAIL	Ghatail	Delutia	RM	35.7%	8.0
TANGAIL	Ghatail	Pacharata	RM	49.6%	13.2
TANGAIL	Gopalpur	Bhengala Bazar	GCM	300.6%	177.6
TANGAIL	Gopalpur	Jhawail	GCM	53.2%	24.3
TANGAIL	Kalihati	Powjan	RM	17.0%	1.5
TANGAIL	Madhupur	Madhupur	GCM	57.4%	26.9
TANGAIL	Madhupur	Lawfula	RM	24.4%	3.9
TANGAIL	Mirzapur	Hatubhanga	GCM	109.6%	59.4
TANGAIL	Mirzapur	Dewhata	GCM	468.6%	281.6
TANGAIL	Nagarpur	Tebaria	GCM	16.1%	2.0
TANGAIL	Nagarpur	Shahjani	GCM	22.0%	5.2
TANGAIL	Nagarpur	Bhadra	RM	17.1%	1.5
TANGAIL	Nagarpur	Panan	RM	18.1%	1.8
TANGAIL	Shakhipur	Shakhipur Hat	GCM	23.1%	5.9
THAKURGAON	Baliadangi	Khochabari hat	RM	31.6%	6.3
THAKURGAON	Baliadangi	Dhogachi hat	RM	23.3%	3.4
THAKURGAON	Baliadangi	Lahiri GC	GCM	350.8%	201.7
THAKURGAON	Haripur	Jadurani GC	GCM	250.7%	141.8
THAKURGAON	Pirganj	Jabor Hat	GCM	267.4%	151.8
THAKURGAON	Ranisankail	Katihar	GCM	81.2%	40.3
THAKURGAON	Thakurgaon Sadar	Shibganj	GCM	48.7%	20.8
THAKURGAON	Thakurgaon Sadar	Danarhat	RM	21.9%	3.0
THAKURGAON	Thakurgaon Sadar	Rangianihat	RM	36.5%	8.0

2.3 Component 2 (Pourashava Infrastructure Development)

(1) Pourashava road

a) Overview

Pourashava roads are located in Pourashava, and fall under the responsibility of Pourashava Parisad. Many of these roads are connected to Upazila roads or Union roads.

For economic appraisal of developing Pourashava roads, a Pourashava road that is connected to either the main Pourashava market or Pourashava bhaban has been selected from one Pourashava through discussion with the Pourashava engineer. Then the Survey team has selected the following four Pourashava roads:

Table A21-8 Selected Pourashava roads

Pourashava	Selected Pourashava Road	Road Length (km)	Respective Upazila Road* (Road Code)
Ulipur	Gobar mor to Bazar mor Road	1	Ulipur-Ranigonj- Fakirerhat Road (149942002)
Haragach	Haragach Pourashava Road	4	Mirbag Kadamtola R&H-Sarai GC (185422002)
Gouripur	Bangha Boundu Road	2	Ramgopalpur RHD to Shyamgonj GC via Gouripur (361232001)
Nandail	Nandail Old Bus Station Road	4	Nandail H.Q-Bakchanda G.C Road (361722002)

* Exists on either side or both sides of the Pourashava road

b) Methodology

The methods and assumptions on economic appraisal of Pourashava roads are similar to those of Upazila roads (UZRs) and Union roads (UNRs). A standard cost-benefit analysis method with Vehicle Operating Cost (VOC) savings approach was adopted to carry out economic evaluation of Pourashava roads. A two-day traffic count (one in hat-day and another in non-hat day) was undertaken in each Pourashava to perform economic appraisal. Then the AADT was calculated in the same way as that of UZRs and UNRs. In the same way as the improvement of rural road, the capital cost was generated on the basis of the type of physical work and per unit cost with respect to four cost regions in the Project area. Based on the review by the Survey team, the unit cost for Upazila road was adopted.

c) Results

The EIRR of the four sample Pourashava roads ranges from 68% to 150%, and the average EIRR is 107%. These indicate the high economic viability of the sample subprojects. A sensitivity analysis shows that a 20% increase in the capital cost will result in an average EIRR of 96%, whereas a 20 % decrease in benefit will result in an average EIRR of 94%. Finally, in a combined case of a 20% increase in the capital cost and a 20% decrease in benefit, the EIRR accounts for 85%. Moreover, if no growth of traffic occurs, EIRR results in 101%. Therefore, the project remains viable to significant variations in cost and benefit.

Table A21-9 Result of economic analysis: Pourashava roads

Pourashava	Selected Pourashava Road	EIRR	NPV
Ulipur	Gobar mor to Bazar mor Road	67.6%	30.04
Haragachh	Haragach Pourashava Road	114.6%	79.49
Gouripur	Bangha Boundu Road	95.8%	60.15
Nandail	Nandail Old Bus Station Road	149.8%	137.00

(2) Pourashava market

a) Overview

Each Pourashava has are some Growth Center Markets (GCM) or municipal markets (MM). If a market is utilized properly and generates sufficient lease revenue to cover development activity and facilities, then the market could be used as an important trading point in an urban area. Therefore, each Pourashava market should be improved to increase opportunities to trade, increase market lease revenue, and reduce spoilage of perishable goods. For economic appraisal, four Pourashava markets, which are the major agricultural crops markets in the Pourashavas, were selected in Kurigram, Rangpur and Mymensingh districts. A market survey was carried out on a hat day with a prescribed questionnaire to have the necessary market input for economic appraisal. As in the case of markets under Component 1, a spoilage savings method was adopted to carry out economic appraisal of the four Pourashava markets. Among the four Pourashava markets, Ulipur under Kurigram district and Nandail under Mymensingh district are two Growth Center markets (GCM), whereas the other two markets, Haragach in Rangpur district and Gouripur under Mymensingh districts, are municipal markets (MM). In the same way as the assessment on rural market, the capital cost of Pourashava market development is based on regions and types of markets. Table A21-10 shows selected GCN and MM.

Table A21-10 Selected GCM/MM

District	Pourashava	Type	Name of market
Kurigram	Ulipur	GCM	Ulipur Kacha Bazar
Rangpur	Haragachh	MM	Haragach Pourashava Market
Mymensingh	Gouripur	MM	Pourashava Market Modha Bazar
Mymensingh	Nandail	GCM	Nandail Pourashava Bazar

b) Methodology

The cost and benefits of GCM/MM are assumed to spread over 20 years, which is also the project life. The benefit will be the annual peak period spoilage value (in million BDT). The economic indicators of EIRR, NPV and BCR are calculated for each proposed GCM/RM using a spreadsheet. The format adopted is the same as the one in the analysis of GCM/RM in Component 1. A sensitivity analysis of respective GCM/MM was conducted to see whether the concerning GCM/MM remains viable in the following three cases: 1) cost plus 20%; 2) benefit minus 20%; and 3) combination of cases 1 and 2.

c) Results

The EIRR of the four sample Pourashavas markets range from 75% to 254%, and the average EIRR is 175%. These results indicate high economic viability of the sample subproject. A sensitivity analysis shows that a 20% increase in the capital cost will result in an average EIRR of 146%, and a 20% decrease in benefit will result in an average EIRR of 141%. Finally, in the combined case of a 20% increase in the capital cost and a 20% decrease in benefit, the EIRR becomes 117%. Therefore, the subproject remains viable even with a significant variation in cost and benefit.

Table A21-11 Results of economic analysis: Pourashava market

District	Pourashava	Name of market	EIRR	NPV
Kurigram	Ulipur	Ulipur Kacha Bazar	232.9%	161.65
Rangpur	Haragach	Haragach Pourashava Market	75.1%	29.41
Mymensingh	Gouripur	Pourashava market Modha Bazar	254.1%	118.61
Mymensingh	Nandail	Nandail Pourashava Bazar	139.9%	77.86

(3) Urban drainage

a) Overview

The expected benefit of improvement of the drainage component derives from reduced flooding to roads, houses and other properties. In addition, the income loss of inactive days due to flooding will be reduced. To assess these benefits, a sample survey was conducted in four Pourashavas in three Districts, i.e., Ulipur in Kurigram district, Haragach in Rangpur district, and Gouripur and Nandail in Mymensingh district.

c) Results

The economic analysis of the four sample Pourashava markets generated the average EIRR of 71.7% and the EIRR lies between 53% and 116%. A sensitivity analysis shows that a 20% increase in the capital cost results in an average EIRR of 47%, whereas a 20 % decrease in benefit pushes the EIRR down to 43%. Finally, a combined case of a 20% increase in the capital cost and a 20% decrease in benefit results in EIRR of 29%. These results indicate high economic viability of those subprojects.

Table A21-12 Results of economic analysis: urban drainage

District	Pourashava	EIRR	NPV(million BDT)
Kurigram	Ulipur	115.8%	43.21
Rangpur	Haragach	54.0%	25.77
Mymensingh	Gouripur	63.7%	29.69
Mymensingh	Nandail	53.2%	25.43
Average		71.7	31.02

2.4 Synergy effect between Component 1 and 2

(1) Overview

One of the key approaches of the Project is integrated rural and urban development, in which rural-urban linkages will be strengthened to generate extra benefits or synergy effect for both rural and urban people. This approach aims to achieve the extra benefit or synergy effect by strategically coordinating the design and implementation of subprojects in Component 1 and Subcomponent 2-2.

The main objective of Component 1 is to enhance access to opportunities, such as trade, education, and health facilities. These benefits will be enhanced by improving adjacent urban infrastructure under Subcomponent 2-1. For example, improving rural roads will improve access to urban areas, and thereby enable rural residents to seek employment opportunities in urban areas where they can expect higher earnings. Rural farmers will be able to expand their reach to urban areas as a new market to sell their products.

From the Pourashava development perspective, Component 1 will enhance the synergy effect by strategically coordinating the development of urban and rural infrastructure. By attracting inflow of goods and labor forces from rural areas, it will accelerate economic development of Pourashavas. Economic development will in turn benefit rural areas by expanding their opportunities of trade, businesses and employment. This virtuous cycle will be achieved by integrated rural and urban development in which subprojects of respective components are strategically coordinated.

A concrete example of strategic coordination of subprojects in Component 1 and Subcomponent 2-1 is the improvement of an Upazila road and Pourashava roads that are directly connected to each other. It was reported in the Survey that there are many incidences in which, although an Upazila road has been improved by the LGED, some Pourashava roads connecting to the Upazila road remain in poor conditions, which undermines the impact of the development of the Upazila road. If those Pourashava roads are improved strategically in coordination with Pourashava under Subcomponent 2-2, a synergy effect could be created.

(2) Methodology

The Survey team examined the possibility to quantify the synergy effect between Component 1 and Subcomponent 2-1 by applying existing methodologies of economic analysis. Based on the review, the Survey team conducted the analysis on Pourashava markets and rural roads as to how the coordination of Component 1 and Subcomponent 2-1 would enhance their benefits. To assess the additional benefits, a sample survey was conducted in the four sample Pourashavas to collect relevant data. The idea of analysis and methodology applied are as follows:

- Identify the rural road connecting to Pourashava roads and markets.
- Collect market data to identify the origin of commodities sold in the market.
- Interview market sellers to identify the use of roads for respective commodities.
- Collect the traffic volume of relevant means such as cargo trucks and vans, which are usually used for commodity transport.
- Based on the economic analysis on rural roads and Pourashava roads, a 50% reduction in the travel time and a 50% VOC savings for the transport are expected. This would consequently increase the efficiency and volume of commodity transport, resulting in a 30% increase based upon the collected sample data.
- This synergy effect will be enhanced over time, as the market would grow and enhance economic activities between Pourashava and adjacent rural areas. This cycle is assumed to add a 3% growth rate of sales on top of the annual growth rate.

(3) Results

The economic analysis of sample Pourashava markets showed a 3% to 29% increase from standard EIRR, indicating the tangible impact of the synergy effect of Component 1 and Subcomponent 2-1. The range of EIRR is generated by the type of commodities transported on the respective rural roads. The EIRR will become higher when the road improvements enhance transport of high-value, most perishable commodities such as fish, meat and vegetables. This indicates that strategic selection of roads and markets with consideration on each market and transport demand are critical to achieving higher economic benefits.

Table A21-13 Sample economic analysis on synergy effect

Name of Pourashava: Ulipur Name of market: Ulipur Kacha Bazar	Commodities transported	EIRR	NPV (million BDT)
1. Standard EIRR/NPV		232.88%	131.65
2. EIRR/NPV when “Hatia to ulipur bazar road” is improved	Rice, paddy	244.84%	138.83
3. EIRR/NPV when “Kurigram to Ulipur por Kacha Bazar Road” is improved	Fish, meat, vegetables	270.21%	154.05

Name of Pourashava: Haragach Name of market: Haragach Pourashava Market	Commodities transported	EIRR	NPV (million BDT)
1. Standard EIRR/NPV		75.07%	29.41
2. EIRR/NPV when “Rangpur to Haragach Por Road” is improved	Rice, wheat flour, fish, fruits, poultry, vegetables	93.97%	38.53
3. EIRR/NPV when “Sarai to Haragach Por Road” is improved	Paddy	75.99%	29.85
4. EIRR/NPV when “Khansama to Haragach Por Road” is improved	Meat	78.43%	31.03

Annex 22

Draft Environmental Framework

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1 Objectives of Environmental Framework

This Environmental Framework aims to guide the executing agency (i.e., the LGED for Component 1 or Pourashavas for Component 2) in fulfilling the requirements of the national laws and policies, and the JICA Guidelines for Environmental and Social Considerations (hereinafter the “JICA Guidelines”) in the implementation phase of the Northern Region Rural Development and Local Governance Improvement Project (NRRDLGIP). The Framework describes the basic concept, potential impacts and necessary mitigation measures, survey and monitoring items, and implementation arrangements with respect to environmental and social considerations under the NRRDLGIP.

2 Institutional framework for environmental and social considerations

2.1 Legal framework

(1) Environment Conservation Act 1995

The Environment Conservation Act (ECA) 1995 is the main legal framework for environmental conservation in Bangladesh. The main objectives of the ECA are: 1) conservation and improvement of the environment; and 2) control and mitigation of pollution in the environment. To achieve these objectives, the ECA focuses on the following items:

- 1) Declaration of Ecologically Critical Areas (Section 5);
- 2) Regulations for emissions from vehicles (Section 6);
- 3) Issuance of environmental clearances (Section 12);
- 4) Formulation of environmental guidelines (Section 13);
- 5) Regulation of development activities’ discharge permits (Section 20);
- 6) Promulgation of standards for the quality of air, water, noise, and soil (Section 20); and
- 7) Promulgation of standard limits for waste discharge (Section 20).

The ECA also stipulates the establishment of the Department of the Environment (DOE) and the power and functions of the Director General (DG) to carry out the purposes of the ECA (Section 3 and 4). For instance, the DG, who is appointed by the Government of Bangladesh (GOB) may issue directions of prohibition or regulations for an industry, undertaking, or process when he or she considers it necessary for environmental conservation. In addition, according to Section 12 of the ECA, all development projects shall obtain an Environmental Clearance Certificate (ECC) from the DG of the DOE.

(2) Environment Conservation Rules 1997

The Environment Conservation Rules (ECR) 1997, which was issued by the Ministry of the Environment and Forest (MOEF), spells out the detailed procedures and requirements for the enforcement of the ECA. The ECR was promulgated in exercise of the powers conferred by Section 20 of the ECA, stating that the government is empowered to make rules for carrying out the purposes of the ECA. The subjects relevant to environmental assessment are as follows:

- 1) Considerations for the declaration of Ecologically Critical Areas (Rule 3)
- 2) Classification of projects (Rule 7)
- 3) Procedures to obtain ECCs (Rule 7)
- 4) Requirements for Initial Environmental Examinations (IEE) and Environmental Impact Assessments (EIA) (Rule 7)
- 5) Determination of environmental quality standards for air, water, noise, odor and other components of the environment (Rule 12)

- 6) Determination of standards for waste discharge and gaseous emissions from industry or development projects (Rule 13)

Rule 3 defines the factors to be considered in declaration of Ecologically Critical Areas such as wetlands and forest areas as per Section 5 of the ECA. It also empowers the government to specify the activities which cannot be continued or initiated in an Ecologically Critical Area.

Rule 7 provides a classification for development projects into four categories depending upon their environmental impact and location. These categories are labeled as: 1) Green; 2) Orange A; 3) Orange B; and 4) Red. Classified projects shall obtain an ECC for each category in accordance with the requirements stipulated in the ECR. Table A22-1 illustrates the documents for each category which are required to be submitted to the Division Officer of the DOE for an application for the ECC. All development projects that are considered to be low-polluting are classified in the Green category, and shall automatically be granted an ECC after the submission of the application with the necessary documents. Projects that are considered to be potentially polluting are classified as Orange A, Orange B, and Red categories in order of the magnitude of the potential environmental impact, and are required to obtain first a Site Clearance Certificate, and thereafter an ECC after the submission of the application form and other required documents according to their categories in Table A22-1. Apart from the general requirements and the Environmental Management Plan (EMP), for projects classified as Orange B and Red category projects, the application shall also be accompanied with an IEE or EIA report on the basis of the terms of reference approved by the DOE, respectively. The flowcharts describing the detailed procedures for Orange-B and Red categories are presented in Figure A22-1 and Figure A22-2, respectively.

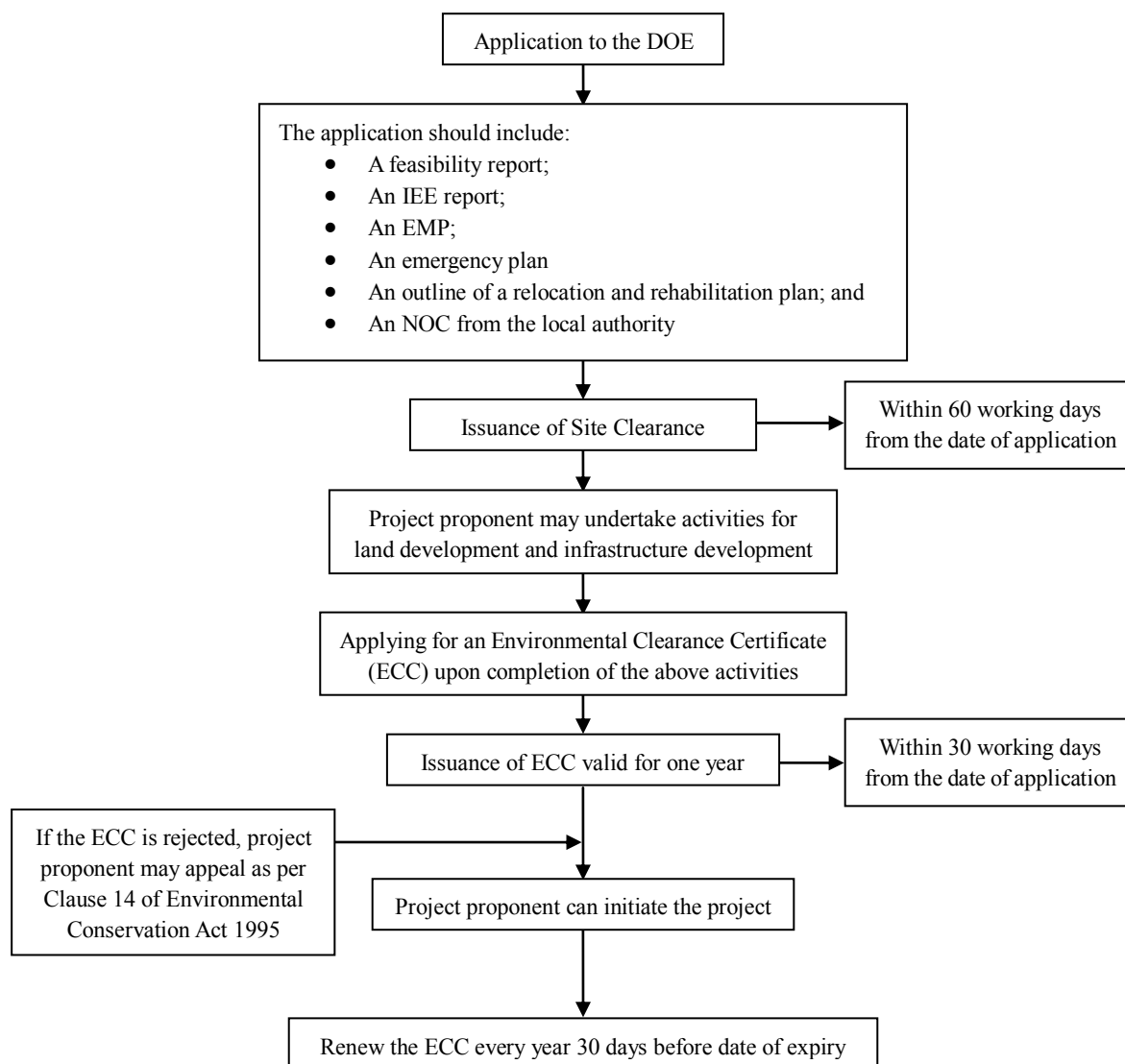
Table A22-1 Requirements by environmental categories

Category	Requirements
Green	General information, no objection certificate (NOC) from the local authority, etc.
Orange-A	General information, NOC etc.
Orange-B	IEE, EMP, NOC, etc.
Red	EIA, EMP, NOC, etc.

Source: GOB (1997)

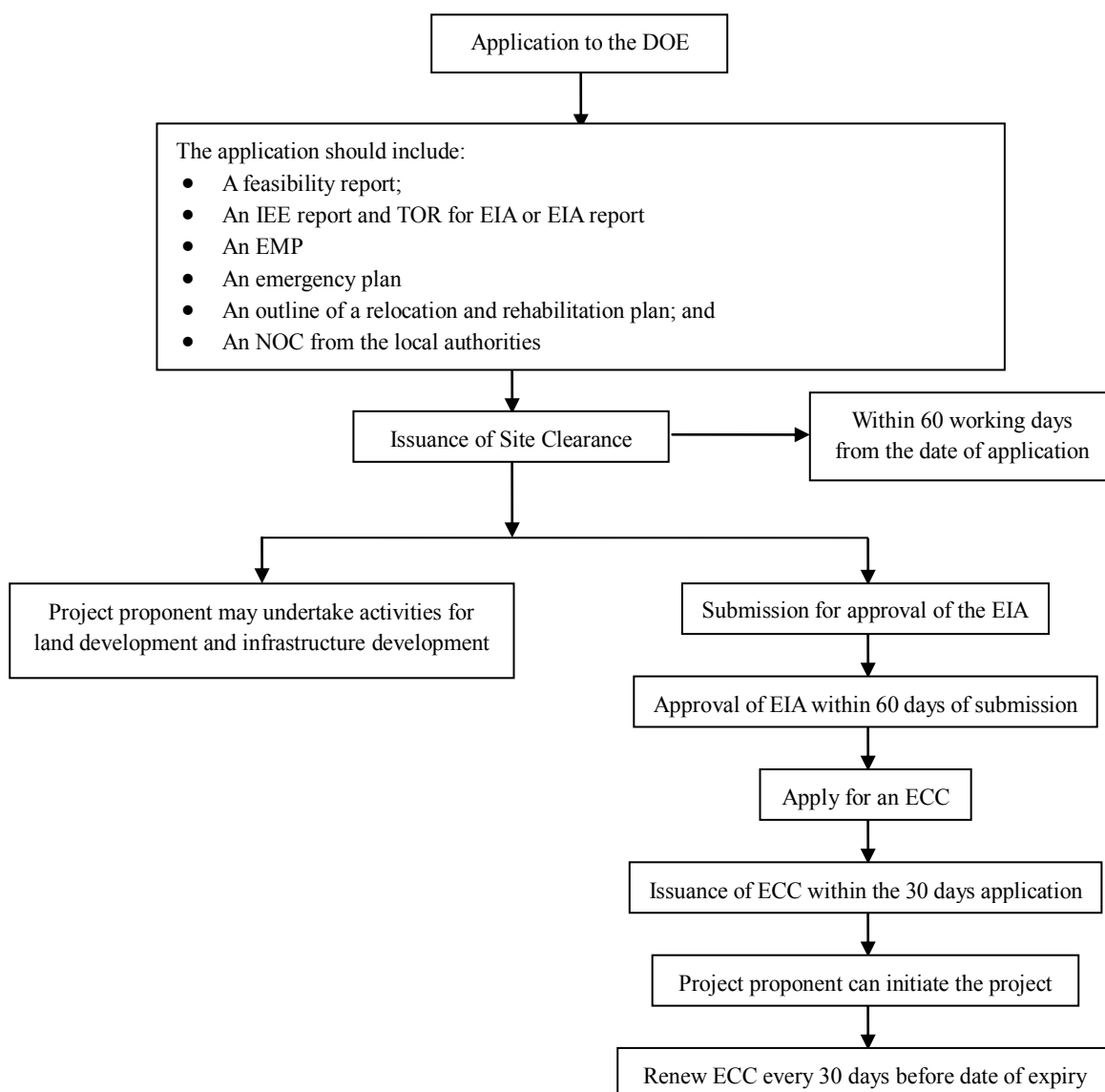
Normally, if a project consists of multiple subprojects, the project proponent needs to obtain an ECC for each subproject separately in accordance with the ECR. However, according to officials from the DOE and the Bangladesh Municipal Development Fund (BMDF), a company under the Ministry of Finance, there is one exception. If the DG of the DOE decides that a project will not be highly hazardous and the subprojects need sufficient time for their implementation, he may issue an ECC after the implementing agency submits its IEE or EIA report for only one sample of the subproject. Indeed, the DG has given an ECC for the Municipal Service Project (MSP) funded by the World Bank after the BMDF, the implementing agency, submitted an EIA report for only one sample of the subproject. This is because the DG considered the subprojects of the MSP to be unlikely to have adverse impacts on the environment and society, and because the BMDF had an environmental and social safeguard specialist to monitor the activities through all stages of the project. Thus, for the issuance of an ECC for the NRRDLGIP, the LGED will need to coordinate with the DOE.

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Source: Adapted from LGED (2008)

Figure A22-1 Procedures of Orange-B category projects



Source: Adapted from LGED (2008)

Figure A22-2 Procedures of Red category projects

(3) Acquisition and Requisition of the Immovable Property Ordinance 1982

The Acquisition and Requisition of the Immovable Property Ordinance (ARIPO) 1982, and subsequent amendments made during 1993 and 1994, constitute the legal framework used to govern all cases of land acquisition in Bangladesh. The ARIPO contains the procedural details required for land acquisition. However, the ARIPO does not cover project-affected persons (PAPs) who do not possess titles of ownership records. It does not ensure replacement value of any property acquired. In addition, the ARIPO has no provisions related to the resettlement or restoration of livelihoods for PAPs, even though these efforts are required by international donor agencies including JICA. To supplement the gaps, past projects similar to the NRRDLGIP prepared Resettlement Policy Frameworks (RPFs) and Resettlement Action Plans (RAPs).

Thus, if the NRRDLGIP requires land acquisition, the LGED or Pourashava shall coordinate with the DC and the Division Commissioner or the Ministry of Land to engage in necessary procedures for land acquisition. In addition, if resettlement of less than 200 persons is expected, the LGED or

Pourashava needs to prepare a Abbreviated Resettlement Action Plan (ARAP) in accordance with the JICA Guidelines. Detailed procedures to be implemented can be found in the draft RPF for NRRDLGIP.

(4) JICA Guidelines for Environmental and Social Considerations

To ensure the environmental and social sustainability of its funded projects, JICA formulated the Guidelines for Environmental and Social Considerations (hereafter “JICA Guidelines”) in April 2010. The objectives of the JICA Guidelines are to: 1) encourage the executing agency to have appropriate considerations for environmental and social impacts; and 2) ensure that JICA’s support for, and examination of, environmental and social considerations is conducted accordingly. The JICA Guidelines require that all executing agencies of JICA-funded projects shall meet certain requirements. The key requirements include, but are not limited to the following:

- 1) Assessment of potential environmental and social impacts and elaboration of mitigation measures during the earliest possible planning stage, and incorporation of them into the project plan.
- 2) Examination of multiple alternatives to avoid or minimize adverse impacts, and to select better project options
- 3) Conduct of sufficient consultations with local stakeholders to ensure disclosure of information at the earliest stage.
- 4) Compliance with laws, standards, and plans.
- 5) Avoidance of significant adverse impacts on ecosystem and biota.
- 6) Avoidance and minimization of involuntary resettlement, where feasible, and preparation and implementation of RAPs, where involuntary resettlement is unavoidable.
- 7) Implementation of special considerations for indigenous people.
- 8) Conduct of sufficient monitoring to check the performance and effectiveness of mitigation measures.

Thus, as the executing agencies of subprojects of the NRRDLGIP, the LGED and Pourashavas shall satisfy all of the above requirements, as well as others described in the JICA Guidelines, even if the national laws and policies do not fully prescribe requirements for these issues.

(5) LGED Environmental Guidelines

The LGED published the “Environmental Guidelines for the LGED Projects” (hereinafter the “LGED Guidelines”) in 2008, as part of its goal to implement all development projects in an environmentally sound and sustainable manner. If a project follows the LGED Guidelines, it will meet all requirements of the GOB and its financing partners, including JICA. The guidelines outline required procedures and formats for IEEs and EIAs for rural infrastructure development and urban sector projects. For example, procedures such as analysis of alternatives, public consultations, and preparation of EMPs are included in the suggested outline of the EIA report. Thus, it can be concluded that conduct of an IEE and EIA in accordance with the LGED Guidelines would generally satisfy the requirements of the JICA Guidelines.

2.2 Organizational framework

(1) Local Government Engineering Department

The LGED, under the Ministry of Local Government, Rural Development, and Cooperatives (MLGRD&C), is one of the executing agencies that perform for the NRRDLGIP. Therefore, the LGED is responsible for the fulfillment of the requirements of both the national laws and the JICA Guidelines for subprojects related to rural infrastructure i.e., Component 1. The specific requirements

to be fulfilled by the LGED include: 1) to obtain ECCs from the DOE in accordance with the ECR; and 2) preparation and implementation of land acquisition plans and ARAPs in accordance with the ARIPO and the JICA Guidelines, if any subproject involves involuntary resettlement. The LGED can use this Environmental Framework for the former requirements, and the draft RPF for the latter one as guiding materials.

To obtain ECCs, the LGED needs to prepare IEE and EIA reports. However, the LGED does not have any environmental units or posts for environmental specialists at any of its levels including the headquarters and the Regional, District, and Upazila levels. Thus, the LGED usually commissions environmental consultants to conduct IEEs and EIAs. With respect to environmental monitoring, no specific person is responsible for this task for the LGED. Normally, LGED staff members at the District level are given the additional responsibility to assist environmental consultants in the conduct of IEEs or EIAs and monitoring projects. According to an LGED Assistant Engineer and an LGED Laboratory Technician at the District level, LGED staff members have received general environmental trainings from a number of different projects including the Small Scale Water Resources Development Sector Project (SSWRDSP) and the RDP 21, and assisted the IEE or EIA and environmental monitoring in those previous development projects. According to the Social Safeguard Specialists of the BMDF, the BMDF commissioned an environmental expert to monitor the environment in the project area. The LGED also employed the same scheme for the UGIIP-2. Thus, for the NRRDLGIP, environmental consultants need to be commissioned, and, with their assistance, the LGED shall conduct IEEs and/or EIAs, and environmental monitoring for Component 1.

Similarly in relation to involuntary resettlement and land acquisition, the LGED needs to prepare and implement land acquisition plans and ARAPs for each subproject, if they are confirmed in field surveys during the detailed design phase. Since it has no social consideration unit, the LGED needs to commission resettlement and/or land acquisition consultants for the preparation and implementation of land acquisition plans and RAPs.

The LGED is, in general, considered capable of performing environmental and social considerations in rural and urban projects, taking into account its experiences in similar projects in the past. However, the LGED needs to recruit consultants who will properly conduct environmental and social assessments. Therefore, a Design, Supervision, and Monitoring (DSM) consultant team including Environmental Specialist and Resettlement & Rehabilitation Specialist should be assigned under the NRRDLGIP.

(2) Pourashava

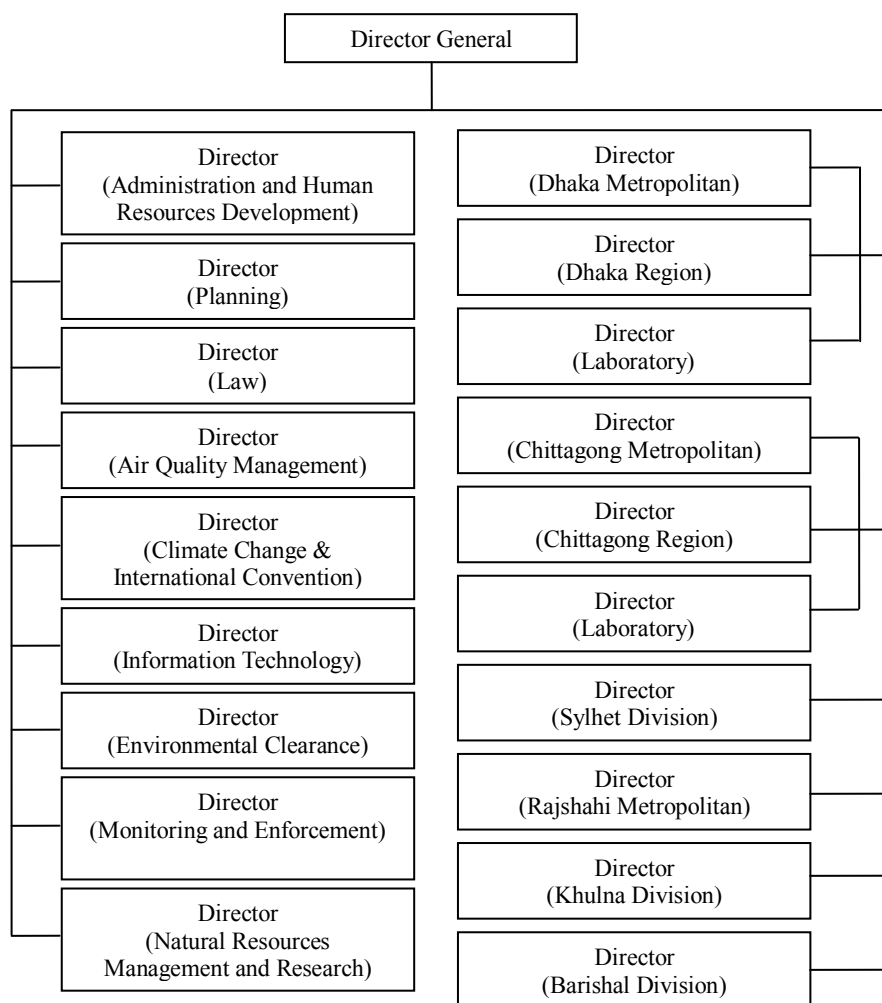
Pourashavas are the other executing agency for the NRRDLGIP. Therefore, they are responsible for fulfillment of the same requirements of national laws and policies, and requirements of the JICA Guidelines for subprojects related to urban infrastructure, i.e., Subcomponent 2-1. If any subprojects fall under Orange-B or Red categories under the ECR, then Pourashavas are responsible for the conduct of IEE or EIA in accordance with the ECR. If any subprojects involve involuntary resettlement, concerned Pourashavas are required to prepare and implement land acquisition plans and ARAPs in accordance with ARIPO and JICA Guidelines. Pourashavas can rely on this Environmental Framework and the RPF for guidance.

Pourashavas generally suffer from a lack of human resources. There is no section in charge of environmental and social assessment found in the organizational chart prescribed by the Local Government Division. No posts for environmental or social assessment specialist have been assigned in Pourashavas. They normally lack experience in the conduct of IEEs and EIAs, land acquisition, and involuntary resettlement. Therefore, the Project Management Office (PMO) should provide support to Pourashavas in performing their environmental and social responsibilities. In this regard, DSM consultants, especially Environmental Specialists and Resettlement & Rehabilitation Specialists, need

to be assigned at the Regional level to assist Pourashavas.

(3) Department of Environment

The DOE within the MOEF is responsible for environmental laws and regulations. The DG oversees the DOE's activities. DOE Headquarters is currently organized into nine main functional areas that are subdivided into six Division Offices that ensure the overall management of the environment. Their efforts are supported by laboratory analysis (Figure A22-3). The DOE also serves as the regulatory body responsible for the enforcement of the ECA and ECR. Under the legal framework, the DOE issues ECCs required for the implementation of development projects. Therefore, if an IEE and EIA are required for the NRRDLGIP, the LGED needs to coordinate with the DOE.



Source: Department of Environment

Figure A22-3 Organogram of the Department of Environment

2.3 Consistency with the JICA Guidelines

Many gaps were identified between the JICA Guidelines and the laws and policies that concern environmental and social considerations in Bangladesh. The Survey Team identified the following gaps: 1) Although the ECR generally covers major requirements of JICA in environmental considerations, there are still partial insufficiencies; 2) The ARIPO does not cover JICA requirements for social considerations related to assistance for resettlement or restoration of livelihood of PAPs.

With respect to environmental considerations, there are three key insufficiencies of the ECR to satisfy the JICA requirements: 1) analysis of alternatives; 2) range of impacts to be assessed; and 3) public consultation and information disclosure. These issues are not addressed in any domestic laws or policies, including the ECR. They are only recommended in the LGED Guidelines. Additional specific gaps found in environmental considerations are listed in Table A22-2.

With respect to social considerations, there are two key insufficiencies in the ARIPO: 1) restoration of livelihood of PAPs; and 2) eligibility of PAPs that have no legal rights to land. These issues have not been sufficiently addressed in the ARIPO. Detailed gaps regarding land acquisition and involuntary resettlement have been specified in the draft Resettlement Policy Framework.

To bridge these gaps, the LGED and Pourashavas need to take appropriate measures in accordance with the JICA Guidelines. The LGED has already agreed to take these actions. Specific measures to bridge the gaps related to environmental considerations have been described in this draft Environmental Framework. Measures to address social considerations have been described in the draft RPF.

Table A22-2 Comparison between relevant laws, regulations and guidelines of GOB and JICA

Requirements by JICA Guidelines	ECR, ARIPO and other relevant policies	Gap	Gap bridging measures to be taken in the NRRDLGIP
Analysis of alternatives and mitigation measures	The ECR provides for the submission of mitigation plans to cover the effects of pollution for the issuance of ECC (ECR §7). In addition, analysis of alternative measures is recommended in the LGED Guidelines.	Analysis of alternatives is not provided in legal instruments of Bangladesh, but recommended in the LGED guidelines.	Alternative options will be analyzed in the process of environmental assessment in accordance with the JICA Guidelines and LGED Guidelines.
Scope of impacts to be assessed	The ECR has no provision for the scope of impacts to be assessed for environmental assessment, but the LGED guidelines recommend using a checklist covering a broad range of environmental and social issues.	Scope of impacts to be assessed is not provided in legal instruments of Bangladesh, but recommended in the LGED guidelines.	Scope of impacts to be assessed will be determined in accordance with the JICA Guidelines and LGED Guidelines.
Information disclosure and consultation with stakeholders	The ECR has no provision for information disclosure or public consultation, but the LGED guidelines provide general recommendations for information disclosure and public consultation in environmental assessment.	Information disclosure and public consultation is not provided in legal instruments of Bangladesh, but recommended in the LGED guidelines.	Stakeholder meeting will be held, and findings of environmental analysis as well as the draft IEE/EIA reports will be explained in the local language.
Grievance mechanism	The ECR or the LGED guidelines have no provision for grievance mechanism.	Grievance mechanism is not provided in legal instruments of Bangladesh or the LGED guidelines.	Grievance mechanism will be established in accordance with the JICA Guidelines.
Consideration for ecosystems and biota	The ECR provides for the consideration of ecosystems and biota by declaring Ecologically Critical Areas and limiting activities in those areas (ECR §3).	There is no significant gap.	Ecologically Critical Areas declared under the ECR will be excluded from the Project site. Besides, all impacts on ecosystem and biota will be considered in accordance with the JICA Guidelines.
Restoration of livelihoods of PAPs to pre-project level at least.	The ARIPO has no provisions regarding livelihood restoration.	Restoration of livelihoods and standards of living of the PAPs is not provided in legal instruments of Bangladesh or the LGED Guidelines.	Measures to restore livelihoods and standards of living of the PAPs will be taken based on their needs in accordance with the JICA Guidelines.
Eligibility of benefits for PAPs with formal or informal legal rights to land	The ARIPO does not cover PAPs without titles of ownership record for compensation.	While JICA Guidelines provide eligibility of PAPs without titles of ownership record, the ARIPO does not.	The PAPs without titles of ownership record who indeed require assistance will be carefully screened out in social survey, and entitlement will be delivered to them in accordance with the JICA Guidelines.
Special consideration for vulnerable group	The ECR or the LGED guidelines have no provision for special consideration for vulnerable groups.	Special consideration for vulnerable groups is not provided in legal instruments of Bangladesh or the LGED guidelines.	Vulnerable groups will be specially considered in accordance with the JICA Guidelines.
Monitoring	The ECR provides for the submission of an EMP for the issuance of an ECC (ECR §7).	There is no significant gap.	EMP which comprises environmental monitoring plan will be prepared to obtain ECC prior to the implementation of the Project. Monitoring will be conducted according to the EMP.

Source: Survey Team

Note: “§” indicates provision of the ECR and ARIPO. (e.g., ECR §3 indicates Rule 3, and ARIPO §5 indicates Section 5.)

3 Overview of subprojects to be assessed

This section describes the characteristics of each subproject to be assessed and categorization and requirements based on the institutional framework mentioned in the previous section.

3.1 Infrastructure and work type of subprojects

The NRRDLGIP covers eight Districts of the Rangpur Division and six Districts in the northern area of the Dhaka Division. The characteristics of the Project area are described in Chapter 3. The NRRDLGIP consists of three components. Component 1 will develop basic rural infrastructures. Component 2 will consist of two subcomponents. Subcomponent 2-1 will improve Pourashavas' basic infrastructure and service delivery. Subcomponent 2-2 will enhance Pourashavas' local governance and capacity development. Component 1 and Subcomponent 2-1 will involve physical infrastructure work that may cause adverse impacts on the environment and society in the Project area.

Component 1 will include the following: 1) upgrading of Upazila roads (UZR) and Union roads (UNR) including construction of bridges and culverts; 2) rehabilitation of UZR; 3) improvement of Growth Centers and rural markets; and 4) improvement of *ghats*. Upgrades and/or rehabilitation of UZR and UNR may involve bituminous pavement of unpaved sections, road widening as per the Road Design Standards of 2005 (RDS, 2005), minor realignments, construction of bridges, and installation of culverts and other facilities. With respect to Growth Center markets and rural markets, major components may include access and internal road rehabilitation, improvement of drainage facilities, construction of modern sheds, installation of sanitary latrines and tubewells, and construction of garbage pits.

No subprojects within Subcomponent 2-1 have presently been determined at present since they will be selected through participatory approaches during the implementation phase of the NRRDLGIP. The eligible types of infrastructure works under the subcomponent may include: 1) improvement and rehabilitation of Pourashava roads, bridges, and culverts; 2) repair, rehabilitation, and expansion of drains; 3) improvement of municipal markets; 4) construction of slaughter houses; 5) rehabilitation and expansion of water distribution network and tubewells; 6) construction of public and community toilets; 7) construction of solid waste management facilities; 8) construction of bus and truck terminals; 9) installation of streetlights; 10) establishment of parking areas; and 11) other basic infrastructures for the poor. Improvement of Pourashava roads and markets may include the rehabilitation, repair, and widening of existing roads in the Pourashavas. The repair, rehabilitation, and rehabilitation of drainage may involve: 1) the elimination of blockages on existing drainage paths; 2) the cleaning of existing drains; 3) the construction of new drains; and 4) construction of missing links. The construction of bus and truck terminals may involve: 1) the placement of fill material to bring the site to grade; 2) surfacing of parking areas; and 3) the construction of a terminal building and public toilet.

3.2 Environmental category under relevant laws and policies

(1) JICA Guidelines for Environmental and Social Considerations

According to the JICA Guidelines, all to-be-funded subprojects are categorized into four groups based on the extent of the environmental and social impacts: Category A, B, C and FI. The NRRDLGIP is classified as category FI. This is because any subproject of Component 2 and some subprojects of Component 1, for example ghat improvement, cannot be specified prior to the funding approval of JICA.

(2) Environmental Conservation Rules 1997

In accordance with the ECR, some of the subprojects under the NRRDLGIP are classified as either Red or Orange-B categories depending on their work types. Table A22-3 demonstrates the categorization of subprojects by the ECR.

In Component 1, construction of bridge over 100m is classified under Red category, and the upgrading and rehabilitation of UZR and UNR, and the construction of bridge below 100 m under Orange B category. Although there is no specific categorization for the improvement of Growth Center and rural markets, they may be categorized as Orange B if they involve the construction of public or community toilets. The construction of culverts and improvement of *ghats* are not classified under any category. The LGED needs to prepare EIA and IEE reports for the Red category subprojects, and IEE report for the Orange B category subprojects in consultation with the DOE.

Regarding Subcomponent 2-1, the rehabilitation and expansion of water distribution networks and construction of solid waste management facilities are classified under Red category, and the improvement and rehabilitation of Pourashava roads, construction of bridges below 100 m, construction of public and community toilets under Orange B category. Although there is no specific categorization for the improvement of municipal markets, construction of bus and truck terminals, and establishment of parking areas, they may be categorized as Orange B if they involve the construction of public or community toilets. The construction of slaughterhouses and tubewells, installation of streetlights, and repair, rehabilitation and expansion of drains are not classified under any category. The concerned Pourashavas will bear the responsibility for conducting EIA and IEE for Red category subprojects, and IEE for Orange B category subprojects in consultation with the DOE.

In addition, according to the ECR, subprojects may be categorized as Orange B if they involve engineering works up to 1 million BDT and as Red if they involve those above 1 million BDT. In those cases, the LGED and concerned Pourashavas will need to coordinate with the DOE to implement necessary procedures.

Table A22-3 Categorization of subprojects under the Environmental Conservation Rules 1997

Type of work	Category	Action to be taken	Responsible Agency
Component 1			
• Upgrading and rehabilitation of UZR	Orange B	IEE	LGED
• Upgrading and rehabilitation of UNR	Orange B	IEE	
• Construction of bridges (over 100 m)	Red	EIA, IEE	
• Construction of bridges (below 100 m)	Orange B	IEE	
• Construction of culverts	N/A	-	
• Improvement of Growth Centers and rural markets	N/A, but may be categorized as Orange B depending on the construction works	IEE if required	
• Improvement of <i>ghats</i>	N/A	-	
Subcomponent 2-1			
• Improvement and rehabilitation of Pourashava roads	Orange B	IEE	Concerned Pourashavas
• Construction of bridges (below 100 m)	Orange B	IEE	
• Construction of slaughterhouses	N/A	-	
• Rehabilitation and expansion of water distribution networks	Red	EIA, IEE	
• Construction of tubewells	N/A	-	
• Construction of public and community toilets	Orange B	IEE	
• Construction of solid waste management facilities	Red	EIA, IEE	
• Installation of streetlights	N/A	-	
• Repair, rehabilitation, and expansion of drains	N/A	-	
• Improvement of municipal markets	N/A, but may be categorized as Orange B depending on the construction works	IEE if required	
• Construction of bus and truck terminals			
• Establishment of parking areas			

Source: Environmental Conservation Rules of 1997

Note: N/A = Not applicable

3.3 Subprojects to be noticed

Some subprojects of the NRRDLGIP are classified under Red category in accordance with the ECR. For these subprojects, due attention should be paid to ensure that IEE and EIA are conducted properly without any delay to obtain ECCs from the DOE. Red category subprojects of the NRRDLGIP are described below.

(1) Component 1

Subprojects which involve the construction of bridges over 100 m are classified under Red Category under the ECR. The LGED inventory of UZR and UNR provides the information of bridges over 100 m. In addition, the bridges over 80 m should be also paid attention to ensure that the bridges over 100 m are identified in advance, considering the lessons learned from a similar project and a finding by the Survey Team indicated in the following:

- After the start of the South-Western Bangladesh Rural Development Project (SWBRDP), it was revealed that the lengths of some selected bridges were much longer than the spans of gaps recorded in the LGED road inventory.
- A field investigation by the Survey Team revealed that the estimated spans between abutments on both sides of riverbank in sample roads were longer than the spans of gaps recorded in the

LGED road inventory.

The locations and numbers of bridges over 100 m are provided in Annex 18 of the Final Report of the Preparatory Survey on the NRRDLGIP.

(2) Component 2

The subprojects which contain the rehabilitation and expansion of water distribution networks and construction of solid waste management facilities are categorized as Red category under the ECR. However, since subprojects in Subcomponent 2-1 will be selected through participatory process at the implementation phase of the Project, the locations and numbers of these subprojects cannot be identified at the Preparatory Survey stage.

3.4 Selection of subprojects and detailed design

During the preparatory survey phase, the status of subproject selection varies between Component 1 and Component 2. A description of the status and actions to be taken during the implementation stage is provided below.

a) Component 1

Most subprojects under Component 1 have been specified in the Preparatory Survey. These include UZR and UNRs, Growth Center Markets, and rural markets. However, detailed engineering designs for these subprojects have not yet been determined. These designs will be determined by the PMO, with the assistance of DSM consultants, after the commencement of the NRRDLGIP.

After the determination of the detailed designs, the LGED, with the assistance of DSM consultants, need to conduct EIAs and/or IEEs based on the categories of the subprojects under the ECR. At the very beginning of the process of EIA and/or IEE preparation, the LGED should consult with the DOE about required procedures.

b) Component 2

With respect to Component 2, type, quantity, and locations of subprojects have not been specified during the Preparatory Survey. This is because they are planned to be selected by concerned Pourashavas through the participatory processes during the implementation stage. In this regard, the selection criteria of subprojects under Subcomponent 2-1 have been developed during the Preparatory Survey. Thus, all selected subprojects shall meet these criteria under the NRRDLGIP.

After the selection of subprojects, detail designs of subprojects will be determined by the PIO of each concerned Pourashava with the assistance of DSM consultants. The PIO is responsible for collection of environmental and social measures, and conduct of IEEs and/or EIAs, as needed. The Regional Environment Expert (REE) will support the PIO in the conduct of required environmental and social measures.

If any Red or Orange B category subprojects are selected, each concerned Pourashava need to conduct EIAs and/or IEEs. The LGED should provide sufficient assistance to these Pourashavas because the current capacities of Pourashavas are not considered enough to conduct of IEEs and/or EIAs. Consultations with the DOE should be held at the earlier stage to confirm necessary procedures.

4 Policy for environmental and social considerations under the NRRDLGIP

The NRRDLGIP will adopt the following policies with respect to environmental and social considerations, taking into account the requirements of national laws and regulations, JICA Guidelines, and characteristics of the NRRDLGIP. The executing agency shall comply with the following policies.

(1) Analysis of alternative options

Alternative options shall be analyzed and considered prior to determination of the detailed design of each subproject. Alternatives to the alignment of roads, and location or layout of infrastructures should be considered to avoid or minimize adverse impacts. Environmental and social aspects as well as technical and financial aspects should be taken into account in the process of alternative analysis.

(2) Scope of impacts to be assessed

Impacts on natural, physical, and social environment shall be assessed to examine the comprehensive impacts each subproject may exert on the environment and society. Impacts to be assessed include, but are not limited to, air quality, water quality, soil erosion, noise and vibration, wastes, offensive odors, bottom sediments, protected areas, ecosystems, regional hydrology and drainage, involuntary resettlement and land acquisition, living and livelihood, cultural heritage, landscape, ethnic minorities and indigenous peoples, and safety and health. Subproject-specific impacts shall be also assessed depending on the characteristics of each subproject site.

(3) Compliance with national laws and policies, and the JICA Guidelines

The executing agency shall comply with both the national laws and policies, and the JICA Guidelines. Firstly, the executing agency needs to obtain an ECC for each subproject. If any subproject, after the detailed designs are determined, is confirmed to be classified under the Orange B or Red category per the ECR, then the executing agency shall conduct IEEs, or EIAs and IEEs, respectively.

Second, if any subproject is expected to cause involuntary resettlement and/or land acquisition, necessary actions should be taken as per the draft RPF prepared under the Preparatory Survey. In particular, gaps between the JICA Guidelines and the ARIPO shall be sufficiently filled up.

(4) Information disclosure, consultation, and participation

The NRRDLGIP will disclose subproject information to a wide range of stakeholders, and consult with these stakeholders. A series of consultation meetings with stakeholders should be held during the process of design, implementation, operation, and maintenance of subprojects. This aims to incorporate their perceptions into the subproject plans, and eventually to minimize or mitigate adverse impacts of the subprojects.

For subprojects with larger environmental and social impacts, such as those that cause involuntary resettlement, and those that involve the construction of large bridges, sufficient consultations with local stakeholders shall be conducted at the earlier stage where an alternative analysis on subproject plans will be carried out.

All information shall be presented in local languages comprehensible to local stakeholders. For illiterate people, suitable other communication methods such as briefings, discussions, meetings, and radio or television broadcasts should be employed.

As part of the mechanisms to be used to solicit the perceptions of local stakeholders, a grievance

redress mechanism shall be established at the LGED Upazila offices or at the PIU of each concerned Pourashava to receive and address the grievances of local stakeholders about environmental and social issues. The focal persons at the ground level will be appointed, and local stakeholders will be appropriately informed of the grievance redress mechanism.

(5) Land acquisition and involuntary resettlement

Some subprojects under the NRRDLGIP may involve small-scale involuntary resettlement and land acquisition. Resettlement and land acquisition could cause significant impacts on the livelihoods of PAPs. Thus, the NRRDLGIP shall pay significant attention to these impacts.

If any subproject is confirmed to involve involuntary resettlement, necessary actions, such as compensation for the loss of land and other assets, and restoration and rehabilitation assistance, shall be undertaken by the executing agency in accordance with the draft RPF. As described earlier, many gaps exist between the ARIPO and the JICA Guidelines. These gaps should be appropriately addressed during the subproject planning and implementation process.

It is especially important to note that, under the NRRDLGIP, the lack of legal titles for affected assets will not affect PAPs' eligibility to receive entitlements. In addition, restoration and rehabilitation assistance should be provided to PAPs, even though the ARIPO contains no provisions for this type of assistance. Additional detailed policies of the NRRDLGIP for land acquisition and resettlement are included in the RPF.

(6) Special considerations for vulnerable groups

The NRRDLGIP will provide special attention to vulnerable groups so that subprojects will not significantly affect their livelihoods. Vulnerable groups include female-headed households, households below the poverty line, elderly-headed households, the landless, and indigenous people.

Vulnerable groups within and near the vicinity of subproject sites shall be identified prior to the detailed design phase. Following identification, close consultations should be conducted to learn about their needs for livelihood assistance. The executing agency should provide special assistance, such as income generating programs, depending on their assistance needs and the extent of adverse impacts.

(7) Implementation and monitoring

Organizational and administrative arrangements related to environmental and social considerations shall be established to implement necessary measures for environmental and social considerations prior to the commencement of the detailed planning of subprojects. This will include the provision of adequate human resources and budget.

Adequate budgetary support should be fully committed by the government, and made available to cover the costs for environmental assessments such as IEEs and EIAs, implementation of mitigation measures, and related environmental and social monitoring.

Appropriate reporting, monitoring, and evaluation mechanisms with respect to environmental and social considerations will be established and implemented as part of the project management system of the NRRDLGIP.

5 Environmental management system

An environmental management system will be established under the NRRDLGIP to ensure that

necessary environmental and social measures are properly conducted for each subproject. More specifically, the environmental management system shall address the following issues.

- 1) Identification of potential environmental and social impacts that may be caused by subprojects
- 2) Elaboration and implementation of mitigation measures against negative impacts
- 3) Clarification of environmental and social monitoring systems
- 4) Establishment of institutional mechanisms

5.1 Identification of potential impacts and elaboration of mitigation measures

With respect to the identification of potential impacts that may be caused by subprojects, field examinations shall be undertaken by DSM consultants for each subproject during the detailed design phase. During field examinations, potential environmental and social impacts shall be screened, and impacts which need to be further examined or addressed during the implementation phase shall be identified.

During the field surveys, the following environmental and social impacts need to be examined (Table A22-4). The sample format for the identification is given in Attachment 1. Impacts to be examined under the NRRDLGIP have been identified through the semi-IEE study, sample IEE and EIA studies, and literature reviews on past similar projects.

Table A22-4 Impacts to be examined in the screening process

Pollution	Natural environment	Social environment
<ul style="list-style-type: none"> • Air quality and dust • Water quality • Noise and vibration • Wastes • Offensive odor • Bottom sediments 	<ul style="list-style-type: none"> • Ecosystem • Regional hydrology and drainage • Soil erosion 	<ul style="list-style-type: none"> • Land acquisition and involuntary resettlement • Living and livelihood • Cultural heritage • Ethnic minorities and indigenous peoples • Safety and health

Source: Survey Team

Any adverse impacts identified in the screening process shall be properly addressed under the NRRDLGIP. Necessary mitigation measures against such impacts shall be elaborated and implemented. Descriptions of possible impacts and general mitigation measures are described in the following section.

In addition to the screening, subprojects classified under Red or Orange B categories under the ECR shall be identified. As described earlier, IEEs and EIAs need to be conducted for Red category subprojects, whilst IEEs shall be conducted for Orange B category subprojects. Therefore, the executing agency needs to consult with the DOE about required procedures. When IEEs and/or EIAs are required, draft IEE and EIA reports prepared in the Preparatory Survey can be used for reference.

DSM consultants, especially the Environment Specialist or Regional Environment Experts, will assist executing agencies in the conduct of the process described above.

5.1.1 Potential impacts and mitigation measures for subprojects

This section describes general potential impacts and necessary mitigation measures for subprojects to be implemented under the NRRDLGIP. These impacts and mitigation measures can be referred in identifying potential impacts and elaborating mitigation measures for each subproject at the implementation phase.

However, it is important to note that the impacts listed in this section do not necessarily cover all possible impacts that might be caused by individual subprojects. The same applies to mitigation measures. These factors will vary depending on the natural and socioeconomic conditions of each subproject site. Therefore, it is necessary to pay sufficient attention to these other impacts, and take into account subproject-specific conditions when identifying potential impacts.

(1) Air quality and dust

a) Impact

[General] During the construction phase, heavy machinery and construction vehicles may emit negligible amounts of air pollutants. Construction work, such as earth moving, may cause dust pollution. Local residents in the vicinity of work sites may be temporarily disturbed by these conditions. However, overall adverse impacts are expected to remain low for all types of subprojects because these impacts are unlikely to occur on a large scale.

[Road improvement] Regarding air pollution from motor vehicles in the operational phase, there is generally no risk of pollution. This is because the current traffic volume of motor vehicles on UZR, UNRs, and Pourashava roads is light to cause air pollution. It is expected that traffic volume will not increase significantly after the improvements.

[Bridge construction] Subprojects may cause low levels of air pollution depending on the socioeconomic conditions of the surrounding areas of the construction site. This is because large bridge construction will exert significant social and economic impacts, and thus there is a possibility of traffic volume increase after the construction. However, the prediction of the extent of traffic volume increase after bridge construction will be more difficult and complicated in comparison to cases of the existing road improvement. It is therefore necessary to monitor the air quality periodically.

[Bus and truck terminal construction] Localized air pollution may occur because a number of motor vehicles may accumulate at bus and truck terminals.

b) Mitigation measures

- Water should be sprayed on construction sites to minimize dust effects.
- Nearby residents should be informed of construction work schedules.
- With respect to large-scale bridges, air quality near subproject sites should be monitored periodically.
- Development of bus and truck terminals should be located at a sufficient distance from populated residential areas. Furthermore, the idling of buses and trucks should be minimized.

(2) Water quality

a) Impact

[General] Some negative impacts on water quality may be caused associated with construction works. This type of risk will increase if construction work is conducted during the rainy season. Construction materials, such as bituminous materials and other petro-chemicals, may also cause water pollution if chemicals spills occur.

[Road improvement] Road improvement works, such as earthmoving works associated with road surface grading and embankment rehabilitation, may cause soil runoff during the construction phase,

which will eventually cause water quality degradation of roadside water bodies such as rivers and canals.

[Bridge construction] Bridge construction works will include dredging activities and the construction of main bridge over water body and approach roads along water bodies, and thus may cause impact on the quality of surface water.

[Construction of slaughterhouse] The operation of slaughterhouses may cause surface and groundwater pollution, since carcasses and blood will be generated from the slaughterhouses. However, the overall impact will be small or remain local, since slaughterhouses to be constructed under the NRRDLGIP will not be large-scale ones, and thus the amount of carcasses and blood is anticipated to be small.

[Construction of community and public toilets] Community and public toilets will ameliorate conditions in the surrounding environment and improve hygienic conditions in residential areas and public spaces such as markets and bus terminals. However, community toilets may cause groundwater pollution if excrement in the pits soaks into the ground. Similarly, public toilets may cause groundwater pollution if disposal of excrement is improperly executed. Proper execution requires the development of sewerage systems, septic tanks, and/or soak wells. Thus, the overall impact will be positive if appropriate measures are undertaken to avoid the aforementioned groundwater pollution.

[Construction of waste management facilities] In general, construction of landfills for waste disposal will improve hygienic conditions in residential and other areas in Pourashavas. However, this type of construction may cause surface and groundwater pollution caused by leachate from wastes that contain hazardous substances and organic matters.

b) Mitigation measures

- Soil erosion shall be prevented by implementing the measures described in the soil erosion section below.
- Construction materials, such as bituminous materials and other petro-chemicals, shall be treated carefully to prevent spills.
- With respect to large-scale bridge construction, surface water quality shall be monitored periodically during construction and post-construction phases.
- With respect to slaughterhouses, sufficient water supply systems, drains, septic tanks, soak wells, and waste storage facilities should be installed to gather and properly treat carcasses and blood.
- With respect to community and public toilets, appropriate facilities such as septic tanks and soak wells, shall be installed to avoid groundwater pollution. Regular maintenance of these toilets should be ensured by the executing agency.
- With respect to waste disposal landfills, the construction of sanitary landfills that include proper drains, sedimentation ponds, and water treatment facilities is strongly recommended to prevent water pollution. Waste acceptance criteria should be clearly defined to avoid hazardous waste. When an ordinary landfill is constructed, careful considerations shall be made in site selection. Important aspects to be considered include, but are not limited to 1) avoidance of floodplains and wetlands; 2) avoidance of areas where groundwater level is high; 3) avoidance of areas in the vicinity of residential areas; and 4) setting of buffer zones within 500 m of each site.

(3) Noise and vibration

a) Impact

[General] During the construction phase of all types of subprojects, noise and vibration caused by heavy machinery and construction vehicles may temporarily disturb nearby residents. However, the impacts are limited.

[Road improvement] During the operational phase, no significant noise and vibration are anticipated because traffic volume of motor vehicles on the UZR, UNR, and Pourashava roads is expected to be light.

[Bridge construction] A certain level of noise may be anticipated at the operational phase, depending on the socioeconomic conditions of the surrounding areas of the construction site. As written in the section of air pollution, large bridge construction may lead to traffic volume increase, but the prediction of the extent of traffic volume increase is difficult and complicated. It is therefore necessary to monitor noise levels periodically.

[Bus and truck terminal construction] It is possible that a number of motor vehicles will accumulate at bus and truck terminals. This type of situation will disturb nearby residents' livelihoods.

b) Mitigation measures

- Construction works shall be restricted to daytime hours to avoid and mitigate disturbance to local residents' lives.
- Nearby residents should be informed of construction work schedules.
- With respect to large-scale bridges, noise levels near subproject sites should be monitored periodically.
- Bus and truck terminals should be located at sufficient distances from populated residential areas. Construction of sound insulation walls may be needed at some sites.

(4) Offensive odors

a) Impact

[Construction of slaughterhouse] The operation of slaughterhouses may cause offensive odors because carcasses and other waste are generated by slaughterhouses. However, overall impacts will be small or remain local because slaughterhouses to be constructed under the NRRDLGIP will not be large. Thus, the amount of carcasses and other wastes is anticipated to be small.

[Construction of community and public toilets] Community and public toilets will ameliorate hygienic conditions in the surrounding environment, and eventually contribute to the reduction of offensive odors. However, the risk of offensive odors is possible if proper maintenance of these toilets does not occur.

[Construction of waste management facilities] During the operational phase, offensive odors may be emitted by waste disposal sites.

b) Mitigation measures

- With respect to slaughterhouses, proper treatment and disposal of carcasses and other waste is essential. Sufficient water supply systems, drains, septic tanks, soak wells, and waste storage

facilities shall be installed to allow proper accumulation and treatment of carcasses and other waste.

- With respect to community and public toilets, appropriate facilities, such as septic tanks and soak wells shall be installed to prevent offensive odors. Regular maintenance of these toilets shall be ensured by the executing agency.
- With respect to waste disposal landfills, the construction of sanitary landfills that include proper drains, sedimentation ponds, and water treatment facilities is strongly recommended to prevent water pollution. If an ordinary landfill is constructed, it shall be located outside areas near the vicinity of residential areas. A buffer zone shall be set within 500 m of each site.

(5) Bottom sediments

a) Impact

[General] During construction works, there is a risk of contamination of bottom sediments by accidental spills of construction materials such as bituminous materials and other petro-chemicals. These spills will be particularly significant if subprojects are conducted along or nearby water bodies.

[Bridge construction] Bridge construction will involve dredging activities and the construction of main bridge over water body and approach roads along water bodies. Therefore, this type of construction carries the additional risk of spills of construction materials into the water body.

b) Mitigation measures

- Construction materials, such as bituminous materials and other petro-chemicals shall be treated carefully to prevent spills.
- With respect to large-scale bridge construction, bottom sediment samples taken from areas that surround subproject sites should be tested and recorded to monitor the impact of subprojects on bottom sediments.

(6) Waste

a) Impact

[General] Civil works of all types of subprojects may generate a certain amount of wastes such as unused construction materials during the construction phase. Such wastes may negatively affect the surrounding environment if they are left at the construction sites.

[Market improvement] Generally, market improvement will exert positive effects on waste issues in markets. However, negative impacts may also be anticipated if garbage bins and disposal sites are improperly operated and maintained. The field survey revealed that few of the unimproved Growth Center Markets have garbage bins or waste disposal sites. Waste is often dumped into nearby water bodies or internal drains. This causes water quality degradation and congestion problems. In addition, even in the Growth Center Markets improved under similar past project, installed garbage bins were not regularly cleaned.

[Construction of slaughterhouse, public toilet, and bus and truck terminal] Construction or development of other urban infrastructures, and, in particular, slaughterhouses, public toilets, and bus and truck terminals, are expected to increase the amount of waste generated. Thus, a risk of adverse impacts on the surrounding environment will occur if waste is not disposed of properly or if waste is left at these infrastructure facilities.

b) Mitigation measures

- Contractors should clean up construction waste and unused materials on a regular basis during construction work. All types of waste should be cleared and removed after the completion of construction work. Therefore, it will be necessary to incorporate an article that concerns appropriate disposal of waste into contracts with contractors.
- With respect to market improvement, garbage bins and waste disposal sites shall be installed at suitable locations in each market. Waste generated in markets shall be disposed of in garbage bins and at waste disposal sites. Composting of waste is an option that should be considered. Maintenance of garbage bins and waste disposal sites shall be ensured by the Market Management Committees (MMCs).
- With respect to construction of slaughterhouses, public toilets, and bus and truck terminals, generated waste should be properly treated and disposed of in accordance with national regulations. This should be the responsibility of the Health Division of each Pourashava.

(7) Ecosystem**a) Impact**

[General] Construction work will inevitably involve removal of trees and vegetation. Widening of roads, rehabilitation of road embankments, and construction of bus and truck terminals and waste management facilities will require certain scales of vegetation clearance. The scale of tree and vegetation clearance will depend on the size and characteristics of the land at each site.

On the other hand, the possibility of negative effects on primeval forests or valuable ecosystems remains very low because all subprojects will be implemented either on existing road alignments or structures, or in urban areas.

[Ghat improvement] Ghat improvement proposed in the *haor* area in the Mymensingh area may, to some extent, disturb wetland ecosystems. However, no ecologically critical areas have been designated based on the ECR in the *haor* area. An Important Bird Area¹ (i.e., Madhupur National Park), is located in the *haor* area. However, no subprojects will be located within or in the vicinity of the National Park. Therefore, the extent of impacts of ghat improvement on wetland ecosystems is considered low.

b) Mitigation measures

- When determining detailed designs of subprojects, efforts should be made to conserve as many trees and other vegetation as possible.
- The existence/nonexistence of valuable ecosystems shall be confirmed prior to the detailed design phase. If these ecosystems are identified, then it will be necessary to avoid them.
- Re-vegetation and replanting of trees shall be conducted if any construction work involves tree and vegetation clearance.
- With respect to ghat improvement, vegetation clearance should be minimized. Construction work shall be strictly restricted to the dry season.

¹ The Important Bird Areas are designated and published by the BirdLife International, an international NGO.

(8) Regional hydrology and drainage

a) Impact

[Road improvement] Storage of soil, sand, and construction materials alongside roads during construction work may temporarily impede natural drainage. This typically may occur if construction work is conducted during the rainy season. An increase in embankment heights of currently submersible roads may also affect regional hydrology.

The field survey confirmed that some drainage facilities of existing roads do not currently function at an adequate level because they are inadequate in number and capacity. Drainage congestion problems also cause embankment erosion or soil runoff because of the increased pressure of flood water on embankments. However, planned civil work is expected to contribute to the improvement of these types of drainage problems by the provision of additional cross-drainage capacities. Therefore, the impacts on regional hydrology are considered positive overall.

[Bridge construction] Bridge construction work will include dredging activities, construction of main bridges over water bodies, and construction of approach roads alongside water bodies. This type of construction will exert temporary influences on the regional hydrology mainly during civil work.

[Market improvement] Current poor conditions of market drainage systems are expected to be improved under the NRRDLGIP. However, the field survey performed during the Preparatory Survey revealed that drainage systems in these markets improved by similar past projects sometimes malfunction because of congestion caused by dumped garbage. Therefore, an effective maintenance system shall be established and implemented to prevent the occurrence of localized drainage problems.

[Urban drainage improvement] Rehabilitation and construction of urban drainage systems will improve drainage conditions in Pourashavas. However, the field survey revealed that some drainage systems did not function well because of the lack of sufficient slope to ensure water flow to outlets. Thus, they have congestion problems. Therefore, the overall impact will be positive if smooth water flow to outlets is properly considered in the detailed designs of drainage systems.

b) Mitigation measures

- With respect to road improvement, storage areas for soil and other construction materials should be carefully selected to avoid disturbance of natural drainage. Earthwork shall be restricted to the dry season. It is vital to install a sufficient number of functional culverts and other drainage facilities at appropriate locations. Culverts, bridges, and other structures should be carefully designed to ensure sufficient cross-drainage capacity.
- With respect to bridge construction, alternative drainage shall be ensured when civil work such as dredging and foundation construction is implemented.
- With respect to market improvement, an effective maintenance system shall be established and implemented. The budget for maintenance should be ensured by the MMCs.
- With respect to urban drainage improvement, engineering designs of drainage systems should consider topographic features in the target areas to ensure smooth water flow to outlets. The establishment of effective maintenance systems and their implementation should be ensured. The budget for maintenance should be secured by each concerned Pourashava.

(9) Soil erosion

a) Impact

[General] Construction works will have a risk of soil erosion, in particular if the works are undertaken on embankment of water bodies.

[Road improvement] Road improvement work that involves civil work, such as clearing, excavating, and other earthmoving activities, may cause soil erosion. Impacts may be significant if the works are conducted during the rainy season. Soil texture will also affect the stability of embankments.

Soil erosion and runoff will be particularly severe at the road sections along water bodies. However, planned road improvement aims to address erosion and runoff problems by compaction and protection of embankment soil, re-vegetation of embankments, installation of palasidings², placement of sand-filled bags, and installation of proper drainage facilities. Thus, the overall impacts are considered positive.

[Bridge construction] Bridge construction will involve dredging activities, construction of main bridges over bodies of water, and construction of approach roads along water bodies. These activities bear risks of soil erosion.

b) Mitigation measures

- Earthworks shall be restricted to the dry season.
- Vegetation clearance should be minimized at construction sites.
- Embankment soil should be properly tested and compacted to ensure stability. Grass turfing and tree planting on batter slopes should be undertaken to prevent soil erosion. In particular, road embankments adjacent to water bodies such as rivers and canals need to be properly compacted and covered by grass and trees.
- Protective measures, including installation of palasiding and placement of sand-filled bags, along with regular maintenance, shall be taken at sites identified as vulnerable to erosion.

(10) Land acquisition and involuntary resettlement

a) Impact

[Road improvement and bridge construction] Road improvement will inevitably require some amount of land acquisition. In particular, widening and realignment of roads and construction of bridge approach roads will require land acquisition. Field investigations revealed that several portions of sample roads required road widening or realignment, which would eventually require acquisition of private land. Furthermore, involuntary resettlement of less than 200 people may occur. However, involuntary resettlement of more than 200 people is excluded from the candidate list of subprojects based on one of the criteria for road selection.

Land acquisition and involuntary resettlement will also exert social and economic impacts on local people's livelihoods. These include loss of land, other assets, and other means of income generation. Impacts on vulnerable groups may become more significant.

² Palasiding consists of wooden boards, concrete, or other materials that will be installed on embankments to prevent soil erosion.

[Construction of bus and truck terminals, and waste management facilities] Construction of bus and truck terminals and waste management facilities may require small-scale land acquisition that may result in subsequent involuntary resettlement of less than 200 people. This may occur because one of the selection criteria for subprojects under Subcomponent 2-1 disqualifies any subprojects that will cause resettlement of more than 200 persons or will affect more than 10% of their productive assets. The impacts of land acquisition and involuntary resettlement on local people's livelihoods described above should also be given sufficient attention.

b) Mitigation measures

Mitigation measures shall be conducted in accordance with the RPF. Measures of particular importance are listed below.

- Detailed designs of subprojects shall consider the socioeconomic characteristics of lands adjacent to subproject sites. Priority should be given to the avoidance and minimization of land acquisition and involuntary resettlement.
- If land acquisition is unavoidable, prior consultation meetings should be held with PAPs. Agreements on land acquisition shall be obtained from PAPs.
- Reasonable compensation shall be paid to the PAPs.
- If involuntary resettlement is unavoidable, an ARAP shall be prepared. The draft ARAPs prepared during the Preparatory Survey can be used as reference materials.
- If the number of people to be resettled involuntarily is confirmed to exceed 200 based on field surveys and local consultations, then that subproject will be disqualified. It shall be excluded from the candidate list.

(11) Living and livelihood

a) Impact

[General] Some construction work may cause certain adverse impacts on local people's living and livelihood. Businesses located near construction sites may be disturbed. In addition, construction work may temporarily obstruct vehicle passage. On the other hand, the implementation of subprojects will also exert positive impacts such as the creation of temporary job opportunities.

[Road improvement] Road improvement will not cause significant adverse impacts on local living and livelihood. Furthermore, improved roads will increase local residents' accessibility to goods, other people, nearby markets, and bigger towns and cities. In turn, this will provide local people with long-term income-generating opportunities.

[Bridge construction] Workers involved in ferry and boat transportation and other ferry-related workers, including shopkeepers at ghats, may lose their means of livelihood.

[Market improvement] In general, market improvement will exert positive impacts on local peoples' living and livelihood. Yet, it may also cause certain adverse impacts. Market facilities to be improved will be selected in consultation with local stakeholders during the implementation phase. In some cases, the selected facilities may alter shopkeepers' business patterns in the market. This could result in adverse impacts on their income. For example, the field survey found that, in some unimproved Growth Center Markets, shopkeepers who conducted their businesses in closed-door sheds, such as grocery shops or repairing shops, expressed some concerns that, if open sheds were selected for construction, they might need to change their business patterns.

b) Mitigation measures

- Local residents' should be given advance notice of any construction work that may cause disturbances to local livelihood. Therefore, consultation meetings should be held prior to the commencement of construction work.
- If large-scale bridge construction is planned in areas where ferry services operate, the plans for bridge construction should be explained well in advance to ferry-related workers so that they can have sufficient time to find new means of income generation.
- With respect to market improvement, if improvement of selected facilities will exert adverse impacts on existing shopkeepers' incomes, then proper alternative business premises should be provided based on their willingness. Provision of livelihood restoration assistance such as training courses on how to start new businesses may be required.

(12) Cultural heritage**a) Impact**

[General] It can be assumed that a number of cultural heritage sites and other culturally and religiously important sites, such as mosques, Hindu temples, and graveyards, are located within the target areas of the NRRDLGIP. These sites may be affected by subproject construction work, especially in rural areas.

b) Mitigation measures

- Culturally and religiously important sites shall be identified before the detailed design phase through field surveys and consultation meetings. Protection measures need to be incorporated into the detailed design. These measures should focus on avoiding disturbance of cultural and religious customs.
- Hours for construction works shall be decided to avoid any disturbance of culturally and religiously important sites.
- If any disturbance is anticipated, the agreement of local stakeholders should be obtained by consultation meetings held prior to construction work.

(13) Ethnic minorities and indigenous peoples**a) Impact**

[General] Several indigenous groups are located within the target areas of the NRRDLGIP: the Rajbongshi and Santal in Dinajpur District, and the Mandi in Mymensingh District. During the current survey, locations of inhabitants who belong to these groups were not identified in the vicinity of subproject sites, but there remains a possibility that subprojects might disturb their lives and cultures.

b) Mitigation measures

- Existence/nonexistence of residences of indigenous peoples shall be confirmed through field surveys and local stakeholder consultations before the detailed design phase.
- If the residences of indigenous peoples are identified in the vicinity of subproject sites, consultation meetings shall be held. Agreements with them should be obtained prior to the commencement of civil work if any disturbance to their lives and cultures is anticipated.

(14) Safety and health

a) Impact

[General] Construction workers may be involved in accidents at work sites. In addition, a risk exists that infectious diseases, such as HIV/AIDS, could spread because of the inflow of construction workers.

[Road improvement] Road safety problems at work sites might be significant unless proper measures, such as placement of signs, guards, and speed breakers are properly undertaken. The field survey conducted during the Preparatory Survey revealed that some sample roads had one or more sharp curves. Children use these roads to commute to school. Situations such as those noted above may result in traffic accidents if no proper measures are taken.

[Market improvement] The lack of safe water supply facilities may have severe implications for human health. The field survey revealed that most Growth Center Markets had water supply facilities. However, the number of facilities was inadequate. Some of these facilities were inoperative. This situation may cause adverse impacts on human health unless proper measures are taken.

[Urban drainage improvement] The improvement of urban drainage systems will reduce poor drainage that can cause risks such as offensive odors and the transmission of diseases. However, the field survey revealed that one urban drainage system upgraded by a similar past project was currently blocked. Offensive odors emanated from the stagnant water. This stagnant water may serve as a source for mosquito breeding. Mosquitoes may transmit infectious diseases such as dengue fever. Thus, adverse impacts will occur if proper measures are not taken.

b) Mitigation measures

- Safety education for accident prevention shall be provided to construction workers, maintenance and management staff, and other relevant persons. Basic information on infectious diseases, including HIV/AIDS, shall be provided to construction workers. This is particularly important for sites where construction workers will be brought in from other areas.
- With respect to road improvement, potential safety hazards shall be explained to construction workers prior to the commencement of work. Warning signs, guards and speed breakers to prevent traffic accidents need to be placed, in particular at sharp curves and school commuting roads, well in advance of construction sites.
- With respect to market improvement, an adequate numbers of tubewells and other water facilities shall be installed. Regular maintenance, including water quality inspection, shall be properly conducted.
- With respect to urban drainage improvement, regular maintenance shall be properly conducted. In addition, it may be effective to inform local residents of the risk of infectious diseases, including dengue fever, so they can reduce their risks by ensuring proper maintenance of nearby drainage systems on their own.

5.1.2 Considerations for climate change

Bangladesh is one of the most vulnerable countries in the world to climate risks (World Bank 2010). It is anticipated that climate change will cause increases in the frequency and intensity of floods and storm surges. To address these climate change impacts, the GOB endorsed the Climate Change Strategy and Action Plan (CCSAP) in 2009. The CCSAP is based on the following six themes: 1) food security, social protection and health; 2) comprehensive disaster management; 3) infrastructure; 4)

research and knowledge management; 5) mitigation and low carbon development; and 6) capacity building and institutional strengthening.

Under the NRRDLGIP, the theme of infrastructure of the CCSAP should be taken into account particularly. Specifically, the following issues should be considered to the extent possible in designing infrastructures.

- 1) Adaptation against floods, including securing sufficient heights of road embankments and bridges, and installation of additional cross-drainage facilities for roads.
- 2) Improvement of urban drainage, including upgrading, rehabilitation, and expansion of drainage systems.

5.2 Environmental and social monitoring system

5.2.1 Concept of environmental and social monitoring

Based on the key environmental and social impacts identified and mitigation measures recommended in the previous steps, a monitoring system shall be clarified for each subproject site. Environmental monitoring consists of the following five parts:

- Verification of compliance with the mitigation measures proposed during individual examinations of subproject sites, as well as during IEEs and/or EIAs.
- Verification of compliance with compensation and resettlement measures proposed in ARAPs and the RPF.
- Monitoring of the effectiveness and adequacy of the proposed mitigation measures.
- Additional measures if the proposed measures are found to be inadequate
- Necessary measures if unexpected problems emerge

Key environmental impacts that require monitoring at subproject sites shall be identified based on the natural and socioeconomic characteristics of each project site.

5.2.2 Potential monitoring items for subprojects

Possible items to be monitored for each individual subproject under the NRRDLGIP are provided for reference in Table A22-5. However, it is important to remember that other items may require monitoring depending on the types and specific characteristics of each subproject. Similarly, some items may not require monitoring. The executing agency should identify subproject-specific items that require monitoring based on anticipated impacts prior to commencement of civil work.

Sample monitoring formats are provided in Attachment 2.

Table A22-5 Environmental and social monitoring items for the NRRDLGIP

Phase	Key impact	Monitoring item
Pre-construction	Environmental clearance	<ul style="list-style-type: none"> • Verify compliance with the conditions attached to the ECC by DOE
	Land acquisition and resettlement	<ul style="list-style-type: none"> • Check whether land acquisition and resettlement are required in accordance with the RPF • Check whether land acquisition procedure is properly undertaken in accordance with the RPF • Check whether compensations are completed in accordance with the ARAPs

Phase	Key impact	Monitoring item
Construction	Subproject selection	<ul style="list-style-type: none"> • Check whether selected subprojects meet all the selection criteria (Subcomponent 2-1)
	Air quality and dust	<ul style="list-style-type: none"> • Confirm whether measures to minimize dust such as spraying water are properly undertaken • Confirm the change in air quality in the vicinity of construction site of subprojects that may cause significant air pollution
	Water quality	<ul style="list-style-type: none"> • Check whether earthworks are undertaken in the dry season • Check whether bituminous materials and other construction materials are treated properly • Check whether wastes which may cause water pollution are properly collected, stored, and disposed of • Check whether maintenance system for toilets or other facilities which may cause water pollution are properly established • Confirm the change in water quality in the vicinity of construction site of subprojects that may cause significant water pollution (e.g., large bridge construction)
	Noise and vibration	<ul style="list-style-type: none"> • Check whether construction works are conducted during daytime hours • Check whether local residents are informed of the schedule of works • Check whether bus and truck terminals are developed sufficiently far from populated residential area • Confirm the change in noise level in the vicinity of construction site of subprojects that may cause significant noise
	Offensive odor	<ul style="list-style-type: none"> • Check whether wastes which may emit offensive odor are properly collected, stored, and disposed of • Check whether maintenance system for toilets or other facilities which may emit offensive odor are properly established
	Bottom sediments	<ul style="list-style-type: none"> • Check whether bituminous materials and other construction materials are treated properly • Confirm the change in substances contained in the bottom sediments in the vicinity of construction site for subprojects that may cause significant sediment contamination (e.g., large bridge construction)
	Wastes	<ul style="list-style-type: none"> • Check whether construction sites are cleaned by contractors • Check whether facilities such as garbage bins and waste disposal sites are installed properly • Check whether wastes are treated and disposed of properly by responsible entities
	Ecosystem	<ul style="list-style-type: none"> • Check whether subprojects cause large-scale vegetation clearance • Check whether conservation measures are properly undertaken • Check whether construction works are undertaken in the dry season in haor area
	Regional hydrology and Drainage	<ul style="list-style-type: none"> • Check whether earthworks are undertaken in the dry season • Check whether construction materials are properly stored to avoid disturbance of local hydrology • Check whether the capacity of drainage facilities is adequate • Check whether alternative drainage is provided when dredging works are implemented • Check whether the improved drainage is maintained on a regular basis
	Soil erosion	<ul style="list-style-type: none"> • Check whether earthworks are undertaken in the dry season • Check whether soil protection measures, e.g., such as soil compaction and minimization of vegetation clearance, are properly undertaken • Check whether regular maintenance of the protection measures is undertaken

Phase	Key impact	Monitoring item
	Land acquisition and involuntary resettlement	<ul style="list-style-type: none"> • Check whether the ARAP is properly implemented, focusing on compensation, restoration and rehabilitation assistance, and special attention to vulnerable persons • Confirm the perceptions of PAPs on the NRRDLGIP, including grievances or any other request
	Living and livelihoods	<ul style="list-style-type: none"> • Check whether there are people who may lose income sources, such as workers on ferries near ghat and shopkeepers who need to change their business patterns in market • Check whether such people are informed well in advance • Check whether consultations with such people are sufficiently held
	Cultural heritage	<ul style="list-style-type: none"> • Check existence or nonexistence of cultural heritage in the vicinity of subproject sites • Check whether consultations with local stakeholders are sufficiently held • Check whether agreement of local stakeholders is obtained if any disturbance is inevitable.
	Ethnic minorities and indigenous peoples	<ul style="list-style-type: none"> • Check existence or nonexistence of residences of ethnic minorities and indigenous peoples • Check whether consultations with such peoples are sufficiently held • Check whether agreement of such peoples is obtained if any disturbance is inevitable.
	Safety and health	<ul style="list-style-type: none"> • Check whether potential safety hazards and health issues are explained to construction workers • Check adequate equipment to prevent accidents is provided to construction workers
Operation and maintenance	Environmental Monitoring	<ul style="list-style-type: none"> • Undertake a periodic environmental monitoring on air quality, water quality, noise level, sediments, or other parameters for subprojects where required • If any of the monitoring results of the above parameters exceed environmental quality standards or baseline data, continue the monitoring on the parameter(s)
	Regional hydrology and drainage	<ul style="list-style-type: none"> • Check whether regional hydrology is disturbed by the subproject • Check whether the capacity of drainage facilities is adequate
	Soil erosion	<ul style="list-style-type: none"> • Check the conditions of embankment to evaluate adequacy of soil protection measures
	Living and livelihoods	<ul style="list-style-type: none"> • Confirm the perceptions of PAPs on the NRRDLGIP
	Land acquisition and resettlement	<ul style="list-style-type: none"> • Confirm the perceptions of PAPs on the NRRDLGIP • Check whether PAPs have any complaints
	Safety/health	<ul style="list-style-type: none"> • Check whether safety measures such as the installation of a sufficient number of warning signs are undertaken • Confirm the perceptions of local residents
	Operation and maintenance	<ul style="list-style-type: none"> • Check whether improved or constructed facilities are properly maintained on a regular basis

Source: Survey Team

6 Consultation, information disclosure, and grievance redress mechanism

6.1 Public Consultation

The executing agency shall conduct public consultations for each subproject. The purpose of these consultations is to identify the present status of each subproject site, to identify the perceptions of local

stakeholders, and to reflect them in the design, implementation, and operation and maintenance of each subproject. These meetings will enable the entire NRRDLGIP to function more appropriately with respect to environmental and social considerations. They will eventually contribute to minimization of adverse impacts and maximization of the benefits of the NRRDLGIP.

The consultations will primarily be conducted in the form of focus group discussions (FGDs) with local stakeholders. They will be held at least twice during the detailed design and construction phases. Individual interviews with key informants and public consultation meetings will also be conducted as appropriate. If subprojects are found to cause significant impacts, such as impacts on local people's livelihoods or indigenous people's livelihoods and traditions, then more intensive consultations shall be held.

Consultations should be conducted in an atmosphere free of intimidation or coercion. In addition, the executing agency shall ensure that all consultations are gender-inclusive and responsive, and that vulnerable people are given sufficient attention.

6.2 Grievance Redress Mechanism

The executing agency shall establish a mechanism to address local people's grievances with respect to environmental- and social-related issues, and to seek for the resolution. The grievance redress mechanism should address grievances promptly. It shall employ an understandable and transparent process that allows special considerations for vulnerable groups such as women, children, the elderly, the poor, and minority groups at no costs and without retribution. The mechanism should not impede access to the country's judicial or administrative remedies. Local stakeholders shall be appropriately informed about the operations of the mechanism.

In the NRRDLGIP, grievances shall first be brought to the LGED Upazila offices or to PIUs at Pourashavas. The focal persons who will receive grievances shall be appointed. These appointments shall be disclosed to the public. PAPs will be informed about the existence and operation of the grievance redress mechanism on occasions such as public consultations.

With respect to Component 1, grievances lodged at the LGED Upazila offices shall first be addressed by the Upazila Engineers with support provided by DSM consultants at the Regional level. Grievances that cannot be resolved by the LGED Upazila offices shall be brought to the LGED District offices. District XENs, with support by DSM consultants at the Regional level, will address those unresolved grievances. Grievances not redressed by the District XENs will be brought to the PMO. The PMO must address them with support provided by DSM consultants in the PMO.

With respect to Subcomponent 2-1, grievances brought to the PIU shall be addressed by Pourashava Engineers, with support provided by Regional DSM consultants. Grievances not resolved by the PIU shall be brought to the PMO. The PMO must address them with support provided by DSM consultants in the PMO.

With respect to both Component 1 and Subcomponent 2-1, grievances not redressed by the PMO shall be sent to and addressed by the Inter-ministerial Steering Committee (ISC). Further grievances will be referred to the appropriate courts of law.

Generally, grievances lodged at the ground level will be brought to the upper level on a quarterly basis. They will be included in project quarterly reports. However, particularly important grievances should be immediately transferred to the upper levels when they cannot be resolved at the current level.

In addition to the grievance redress mechanism described above, another grievance redress mechanism will be established to handle grievances particularly related to land acquisition or resettlement. Details

of this mechanism are presented in the draft RPF.

6.3 Information Disclosure

Information that contains details of subprojects shall be disclosed to local stakeholders prior to consultations. This information shall include the location of each subproject site, the type of construction work to be performed, possible environmental and social impacts of each subproject, and mitigation measures.

The information should be disclosed at convenient locations, such as the District, Upazila, and Pourashava offices, or at main villages or other convenient places located near each subproject site so that local stakeholders can easily access the information. All information shall be provided in a local language that is comprehensible to local stakeholders. For illiterate people, other, suitable communication methods such as briefings, discussions, meetings, and radio and television broadcasts should be employed.

In addition, when IEEs, EIAs, or ARAPs have been prepared, summaries of IEEs and/or EIAs and ARAPs shall be prepared for distribution to PAPs and other stakeholders. The full documents shall be made available on request. The status of disclosures will be reported to JICA.

7 Institutional arrangement

The LGED and Pourashavas, as the executing agencies, are responsible for the environmental and social considerations. However, few members within the LGED have sufficient capacity to handle environmental and social considerations. Furthermore, there is no section or posts in charge of environmental and social issues in Pourashavas. Therefore, the PMO shall establish an internal section for environmental and social considerations to ensure that proper environmental and social measures are undertaken. Consultants with expertise in environmental and social considerations, as members of DSM consultants, will be assigned to the internal section.

Due to the difference in institutional arrangements between Components 1 and 2, the entities to be involved and their responsibilities also differ, thus two sets of environmental and social sections are proposed to be established.

Table A22-6 Responsibilities of relevant entities for Component 1

Responsibility	Pre Construc- tion	Construc- tion	Operation
LGED District Offices			
District Executive Engineers (XENs)			
• Responsible for identification of potential impacts and elaboration of mitigation measures	X		
• Responsible for conducting environmental and social monitoring activities	X	X	X
• Supervise and assist UE in supervising contractors		X	X
• Receive complaints transferred from UE and send it to PMO		X	X
Project Management Office (PMO)			
Assistant engineer in charge of environmental and social monitoring			
• Supervise overall activities for identification of potential impacts and elaboration of mitigation measures	X		
• Supervise overall activities for environmental and social monitoring	X	X	X
• Supervise DSM consultants in elaborating an environmental and social monitoring plan	X		
• Supervise and assist DSM consultants in conducting activities for identification of impacts, elaboration of mitigation measures, and environmental and social monitoring	X	X	X
DSM consultants			
(Environmental Specialist, and Rehabilitation and Resettlement Specialist)			
• Assist the PMO in supervising overall activities for identification of impacts, elaboration of mitigation measures, and of environmental and social monitoring activities	X	X	X
• Assist District XENs and Regional DSM consultants in conducting activities for identification of impacts, elaboration of mitigation measures, and monitoring	X	X	X
• Elaborate an environmental and social monitoring plan	X		
LGED Regional Offices			
Regional Deputy Project Director/Regional Executive Engineer (XEN)			
• Supervise the monitoring activities of the District XENs	X	X	X
DSM consultants (Regional Environmental Experts and Regional Rehabilitation & Resettlement Experts)			
• Assist District XENs in conducting activities for identification of impacts, elaboration of mitigation measures, and monitoring	X	X	X
LGED Upazila Offices			
Upazila Engineers (UEs)			
• Supervise contractors to ensure compliance with IEE and/or EIA and ARAP		X	X
• Assist District XENs and DSM consultants in conducting activities for identification of impacts, elaboration of mitigation measures, and monitoring, especially in conducting sample field survey	X	X	X
• Receive complaints from local residents about environmental and social issues regarding the Project and send them to District XENs		X	X

[Legend] DSM: Design, Supervision, and Monitoring, ES: Environmental Specialist, PMO: Project Management Unit, RRS: Rehabilitation and Resettlement Specialist, UE: Upazila Engineer, XEN: Executive Engineer

Table A22-6 the responsibilities of relevant entities at respective phases of subprojects in Component 1. District Executive Engineers (XENs) of LGED District Offices bear the responsibility for environmental and social issues. The DSM consultant team, especially, the Environmental Specialists (ES) and Rehabilitation and Resettlement Specialists (RRS) to be assigned in the PMO, will assist the District XENs. Regional Deputy Project Director (RDPD) or XEN at the LGED Regional Offices will

supervise the activities of the District XENs such as identification of potential impacts, elaboration of mitigation measures, and monitoring. District level and Upazila level engineers will need to assist the Regional Environmental Expert (REE) and Rehabilitation and Resettlement Expert (RRRE) of DSM consultants to be assigned at the Regional level in conducting the field surveys. Upazila Engineers shall also be responsible for the supervision of contractors to ensure the compliance with the Environmental Framework, RPF, IEE and/or EIA, and ARAP. Complaints from local residents should also be received by Upazila Engineers and transferred to the PMO via District XENs. The PMO, under the assistance of an ES and a RRS shall be responsible for supervising overall activities related to environmental and social issues.

Table A22-7 Responsibilities of relevant entities for Component 2

Responsibility	Pre Construc- tion	Construc- tion	Operation
Project Implementation Units (PIUs) for Component 2			
Pourashava Engineers			
• Responsible for identification of potential impacts and elaboration of mitigation measures	X		
• Responsible for conducting environmental and social monitoring activities	X	X	X
• Receive complaints from local residents about environmental and social issues regarding the Project and send them to PMO		X	X
Project Management Office (PMO)			
Assistant engineer in charge of environmental and social monitoring			
• Supervise overall activities for identification of potential impacts and elaboration of mitigation measures	X		
• Supervise overall activities for environmental and social monitoring	X	X	X
• Supervise DSM consultants in elaborating an environmental and social monitoring plan	X		
• Supervise and assist DSM consultants in the identification of impacts, elaboration of mitigation measures, and environmental and social monitoring	X	X	X
DSM consultants (Environmental Specialist and Resettlement & Rehabilitation Specialist)			
• Assist the PMO in supervising overall environmental and social monitoring activities	X	X	X
• Assist PIUs and Regional DSM consultants in conducting activities for identification of impacts, elaboration of mitigation measures, and monitoring	X	X	X
• Elaborate an environmental and social monitoring plan	X		
LGED Regional Offices			
DSM consultants (Regional Environmental Experts and Regional Rehabilitation & Resettlement Experts)			
• Assist PIU-C2 in conducting activities for identification of impacts, elaboration of mitigation measures, and monitoring	X	X	X

[Legend] DSM: Design, Supervision, and Monitoring, PIU: Project Implementation Unit, PMO: Project Management Office

Table A22-7 presents the responsibilities of relevant entities at respective phases in Component 2. The PIUs of Pourashavas bear the responsibility for environmental and social issues. The DSM consultants, i.e., REEs and RRREs will assist the PIUs in conducting the field surveys. The PMO, under the assistance of the ES and RRS in the PMO, shall also be responsible for supervising overall activities related to environmental and social issues. The PIUs of Pourashavas shall also be responsible for the supervision of contractors to ensure compliance with the Environmental Framework, RPF, IEE and/or EIA, and ARAP. Complaints from local residents should also be received by Engineers of PIUs and transferred to the PMO.

In each quarter, the concerned District XENs and the PIUs of Pourashavas shall conduct monitoring and fill in the prescribed monitoring form. The District XENs will submit it to the Regional Deputy Project Directors, who will subsequently submit it to the PMO. The PIUs will directly submit it to the PMO.

8 Staffing requirements

Environmental assessment and related monitoring and supervision tasks will be carried out by the DSM consultants, including the ES and RRS to be assigned to the PMO, and REE and RRREs to be assigned to the Supervision and Monitoring Offices (SMO). Specifically, they will be in charge of 1) verifying the compliance with the proposed mitigation measures, and compensation and resettlement measures proposed in the relevant documents such as the Environmental Framework and RPF, 2) monitoring of the effectiveness and adequacy of these measures, 3) taking additional measures if necessary, and 4) taking necessary measures if unexpected problems emerge. The responsibilities of the ES and REEs are described in this section. The responsibilities of the RRS and RRREs are presented in the draft RPF.

With respect to Component 1, the ES and REEs will work in close collaboration and coordination with the following three institutions:

- 1) The DOE.
- 2) LGED staff including the District XENs, Regional XENs, and Upazila Engineers.
- 3) The PMO, including the Assistant Engineer of LGED headquarters.

Collaboration and coordination with the DOE shall be ensured to remain updated on all environmental assessment requirements, and to receive their advice on compliance with those requirements. Close collaboration with the LGED staff at the Regional, District, and Upazila levels shall be ensured to conduct adequately and efficiently environmental monitoring at subproject sites. Furthermore, these entities will advise project-related LGED staff and DSM consultants in the PMO on subproject-specific environmental and social matters.

With respect to Component 2, the ES will work in close collaboration and coordination with the following three institutions:

- 1) The DOE;
- 2) PIUs of concerned Pourashava; and
- 3) The PMO, including the Assistant Engineer of LGED headquarters.

Collaboration and coordination with the DOE shall occur for the same purposes listed for Component 1. The REEs will primarily be in charge of environmental monitoring activities on subproject sites with the assistance of ES in the PMO. Their collaboration with the PIUs of the Pourashavas shall be ensured to allow adequate and efficient conduct of environmental monitoring at subproject sites in the Pourashavas. They will also provide advice to project-related LGED staff and consultants on environmental and social matters.

In addition to the above, consultants and surveyors involved in the implementation and documentation of IEEs and EIAs shall be assigned as required. The number of consultants and surveyors that shall be assigned depends on the number of subprojects that require IEEs and/or EIAs. The executing agency shall consult with the DOE on specific approaches required to cover all target subprojects. In this draft Environmental Framework, required costs have been estimated based on available information on the subprojects collected during the Preparatory Survey phase. For IEE studies, IEE consultants and

surveyors will form IEE study teams. Similarly, for EIA studies, EIA consultants and surveyors will form EIA study teams. Additional surveyors or consultants may be added depending on the technical characteristics of each subproject.

8.1 Draft TOR for IEE and EIA consultants

The draft TOR for IEE and/or EIA consultants and surveyors, including hydrologists and sociologists, is summarized below.

(1) EIA consultant

The EIA consultant will perform the following tasks under the supervision and guidance of ES and the Regional ES:

Task 1: Consult with the DOE about the approach of EIA

The consultant shall consult with the DOE about the specific approach to cover all subprojects for which EIAs are required in the NRRDLGIP. Importantly, it shall be confirmed whether individual EIA studies are required for each Red category subproject under the ECR, or whether an EIA study may cover a group of subprojects.

Task 2: Conduct EIA

The consultant shall conduct EIA studies for Red category subprojects, and prepare EIA reports in accordance with the Environmental Framework and ECR. The subprojects for which EIAs are required will be instructed by the PMO at the beginning stage of detailed design phase.

Task 3: Consult with Department of Environment about EIA

The consultant shall consult with the DOE about the contents of the draft EIA reports to obtain initial comments on the draft. In response to the comments, the consultant shall revise the draft EIA report in consultation with the PMO.

Task 4: Provide guidance to the surveyors and supervise their work

The consultant shall lead the EIA study team. The consultant shall provide technical guidance to the Surveyors (Hydrology and Sociology) on their surveys, and supervise their works.

(2) IEE consultant

The EIA consultant will perform the following tasks under the supervision and guidance of ES and the Regional ES:

Task 1: Consult with the DOE about the approach of IEE

The consultant shall consult with the DOE about specific approaches that may be used to cover all subprojects that require IEEs in the NRRDLGIP. Importantly, it shall be confirmed whether individual IEE studies are required for each Orange-B category subproject under the ECR, or whether an IEE study may cover a group of subprojects.

Task 2: Conduct IEE

The consultant shall conduct IEE studies for Orange-B category subprojects, and prepare IEE reports in accordance with this Environmental Framework. Subproject for which IEEs are required will be instructed by the PMO at the beginning stage of the detailed design phase.

Task 3: Consult with Department of Environment about IEE

The consultant shall consult with the DOE about the contents of the draft IEE reports to obtain initial comments on the draft. In response to the comments, the consultant shall revise the draft IEE reports in

consultation with the PMO.

Task 4: Provide guidance to the surveyors and supervise their work

The consultant shall lead the IEE study team. The consultant shall provide technical guidance to the Surveyors (Hydrology and Sociology) on their surveys, and supervise their work.

(3) Environmental Survey 1 (Hydrology)

The surveyor for hydrology will perform the following tasks under the supervision and guidance of ES and RREs:

Task 1: Conduct hydrological survey for EIA and/or IEE

The consultant shall conduct a hydrological survey for each subproject site under the supervision of the EIA or IEE consultant. The survey shall cover 1) Hydrological conditions of the subproject site, 2) Impacts of the subproject in the context of hydrology, 3) Mitigation measures against expected impacts in the context of hydrology, 4) Environmental management plans in the context of hydrology, 5) Environmental monitoring plans in the context of hydrology, and 6) Other items designated by the EIA Consultant.

(4) Environmental Survey 2 (Sociology)

Task 1: Conduct social survey for EIA and/or IEE

The consultant shall conduct a social impact survey on each subproject site under the supervision of the EIA or IEE consultant. The survey shall cover 1) Local social situations at the subproject site, 2) Impacts of subprojects on the social situations, 3) Mitigation measures against expected social impacts, 4) Management plans for identified social issues, 5) Monitoring plans for identified social issues, and 6) Other items designated by the EIA Consultant.

Attachment 1 Sample format for screening of subprojects

Impacts	Overall rating of impacts			
	Construction phase		Operation phase	
	Positive	Negative	Positive	Negative
<i>Pollution</i>				
Air quality and dust				
Water quality				
Noise and vibration				
Bottom sediments				
Wastes				
<i>Natural environment</i>				
Protected areas				
Ecosystem				
Regional hydrology and drainage				
Soil erosion				
Topography and geology				
<i>Social environment</i>				
Living and livelihood				
Cultural heritage				
Landscape				
Ethnic minorities and indigenous peoples				
Resettlement				
Land acquisition				
Safety and health				

Note: The extent of impacts is rated by “Medium”, “Low”, and “Nil”, which indicate medium impacts, low impacts, and no or negligible impacts, respectively.

Attachment 2 Sample format for environmental and social monitoring

1. Responses/actions to comments and guidance from government authorities and the public

Comments and guidance from government authorities and the public need to be considered in environmental and social monitoring. For example, the conditions attached to ECC by the DOE may include monitoring of items which are not specified in this sample format. Those items shall be added to the below table, and monitored accordingly.

Monitoring item	Monitoring results during report period
e.g.) Conditions attached to ECC by the DOE	

2. Pollution control

If any subproject is found to cause significant adverse impacts on any environmental items, those items shall be measured periodically to prevent environmental pollution. Under the NRRDLGIP, the possible parameters to be measured include but are not limited to air quality, surface and groundwater quality, noise level, and bottom sediments quality. Where required, other parameters need to be added to the monitoring items considering the specific characteristics of each subproject site. Frequency of monitoring will be also determined based on the site-specific characteristics.

a) Air quality

Item	Unit	Measured value (mean)	Measured value (max.)	Country's standards	Referred international standards	Measurement point	Frequency
PM2.5	mg/m ³						
PM10	mg/m ³						
SPM	mg/m ³						
CO	mg/m ³						
NO	mg/m ³						
NO ₂	mg/m ³						
SOx	mg/m ³						
Pb	ng/m ³						

b) Surface and groundwater quality

Item	Unit	Measured value (mean)	Measured value (max)	Country's standards	Referred international standards	Measurement point	Frequency
DO	mg/l						
BOD	mg/l						
COD	mg/l						
pH							
EC	μs/cm						
TSS	mg/l						
TDS	mg/l						
Turbidity	JTU						

c) Noise level

Item	Unit	Measured value (mean)	Measured value (max.)	Country's standards	Referred international standards	Measurement point	Frequency
Noise level	dBA						

d) Bottom sediments

Item	Unit	Measured value (mean)	Measured value (max.)	Country's standards	Referred international standards	Measurement point	Frequency
Zn	mg/kg						
As	mg/kg						
Hg	mg/kg						
Mn	mg/kg						
Cd	mg/kg						

3. Monitoring items to be checked under the NRRDLGIP

Specific monitoring items will be determined from the below list for each subproject, considering the site-specific characteristics.

Environmental Impact/ Issue	Monitoring item	Monitoring results	Remarks
Pre-construction phase			
Environmental clearance	• Are the conditions attached to the ECC by DOE complied with?	• Yes/ No	
Land acquisition	• Has the scale of land acquisition confirmed?	• Yes / No • Area to be acquired (appx. _____ ha)	
	• Is the required land acquisition complied with the RPF?	• Yes/ No	
	• Have compensations been completed in accordance with the RPF or ARAPs?	• Yes / No • Completion date: <u>DD/MM/YY</u>	
Subproject selection	• Do the selected subprojects meet all the selection criteria? (Subcomponent 2-1)	• Yes / No	
Construction phase			
Air quality	• Are measures to minimize dust such as spraying water properly undertaken?	• Yes / No	
	• Is the change in air quality in the vicinity of the proposed subproject sites confirmed? If yes, results of measurements need to be provided using the table presented in “2. Pollution control” in this sample format.	• Yes/ No • Measurement date <u>DD/MM/YY</u>	
Water quality	• Are earthworks undertaken in the dry season?	• Yes/ No	
	• Were bituminous materials and other construction materials spilled into the nearby water bodies?	• Yes/ No	
	• Are construction wastes and unused materials collected, stored, and disposed of?	• Yes/ No	
	• Are maintenance systems for toilets or other facilities which may cause water pollution properly established?	• Yes/ No	

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Environmental Impact/ Issue	Monitoring item	Monitoring results	Remarks
	<ul style="list-style-type: none"> Is the change in water quality in the vicinity of the proposed subproject sites confirmed? If yes, results of measurements need to be provided using the table presented in “2. Pollution control” in this sample format. 	<ul style="list-style-type: none"> Yes/ No Measurement date <u>DD/MM/YY</u> 	
Noise and vibration	<ul style="list-style-type: none"> Are construction works conducted during daytime hours? Are local residents informed of the work schedule? Are bus and truck terminals developed sufficiently far from populated residential area? Is the change in noise level in the vicinity of the proposed subproject sites confirmed? Is the change in noise level in the vicinity of the proposed subproject sites confirmed? If yes, results of measurements need to be provided using the table presented in “2. Pollution control” in this sample format. 	<ul style="list-style-type: none"> Yes/ No Yes/ No Date: <u>DD/MM/YY</u> Yes/ No Distance: appx. ____km Yes/ No Measurement date <u>DD/MM/YY</u> 	
Offensive odor	<ul style="list-style-type: none"> Are wastes which may emit offensive odor properly collected, stored and disposed of? Are maintenance systems for toilets or other facilities which may emit offensive odor properly established? 	<ul style="list-style-type: none"> Yes/ No Yes/ No Date: <u>DD/MM/YY</u> 	
Bottom sediment	<ul style="list-style-type: none"> Are bituminous materials and other construction materials treated properly? Is the change in substances contained in the bottom sediments in the vicinity of the proposed subproject sites confirmed? Is the change in water quality in the vicinity of the proposed subproject sites confirmed? If yes, results of measurements need to be provided using the table presented in “2. Pollution control” in this sample format. 	<ul style="list-style-type: none"> Yes/ No Yes/ No Measurement date <u>DD/MM/YY</u> 	
Wastes	<ul style="list-style-type: none"> Are construction sites cleaned by contractors? Are facilities such as garbage bins and waste disposal sites are installed at suitable locations? Are wastes treated and disposed of in accordance with the national regulation by responsible entities? 	<ul style="list-style-type: none"> Yes/ No Yes/ No Yes/ No 	
Ecosystem	<ul style="list-style-type: none"> Are subprojects expected to cause large-scale vegetation clearance? Are conservation measures, such as minimization of vegetation clearance and re-vegetation, properly undertaken? Are construction works undertaken in the dry season in haor area? 	<ul style="list-style-type: none"> Yes/ No Estimated area of vegetation clearance: ____ha Yes/ No Yes/ No 	
Regional hydrology and drainage	<ul style="list-style-type: none"> Are earthworks undertaken in the dry season? Are construction materials properly stored to avoid disturbance of local hydrology? Is the capacity of drainage facilities adequate? Is alternative drainage provided when dredging works are implemented? Is the improved drainage maintained on a regular basis? 	<ul style="list-style-type: none"> Yes/ No Yes/ No Yes/ No Yes/ No Yes/ No 	
Soil erosion	<ul style="list-style-type: none"> Are earthworks undertaken in the dry season? Are soil protection measures, e.g., such as soil compaction and minimization of vegetation clearance, properly undertaken? Is regular maintenance of the protection measures undertaken? 	<ul style="list-style-type: none"> Yes/ No Yes/ No Yes/ No 	

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Environmental Impact/ Issue	Monitoring item	Monitoring results	Remarks
Land acquisition	<ul style="list-style-type: none"> Has the land acquisition process been properly implemented, focusing on compensation, restoration and rehabilitation assistance, and special attention to vulnerable groups? 	<ul style="list-style-type: none"> Yes/ No Completion date of compensation: <u>DD/MM/YY</u> Completion date of restoration and rehabilitation assistance: <u>DD/MM/YY</u> 	
	<ul style="list-style-type: none"> Has the perceptions of PAPs on the NRRDLGIP, including grievances or any other request, been confirmed? If yes, summary of their perceptions needs to be submitted in a separate attachment. 	<ul style="list-style-type: none"> Yes/ No Date of confirmation: <u>DD/MM/YY</u> 	
Living and livelihoods	<ul style="list-style-type: none"> Are there people who may lose income sources, such as workers on ferries near ghat and shopkeepers who need to change their business patterns in market? 	<ul style="list-style-type: none"> Yes/ No Estimated number of affected people: _____ people 	
	<ul style="list-style-type: none"> Are such people informed well in advance? 	<ul style="list-style-type: none"> Yes/ No Date of notification: <u>DD/MM/YY</u> 	
	<ul style="list-style-type: none"> Have consultations with such people been sufficiently held? If yes, summary of the consultations needs to be submitted in a separate attachment. 	<ul style="list-style-type: none"> Yes/ No Date of consultation: <u>DD/MM/YY</u> 	
Cultural heritage	<ul style="list-style-type: none"> Does any cultural heritage exist in the vicinity of subproject sites? If yes, the list of heritages needs to be submitted in a separate attachment. 	<ul style="list-style-type: none"> Yes/ No Name of the heritage: _____ 	
	<ul style="list-style-type: none"> Have consultations with local stakeholders been sufficiently held? If yes, summary of the consultations needs to be submitted in a separate attachment. 	<ul style="list-style-type: none"> Yes/ No Date of consultation: <u>DD/MM/YY</u> 	
	<ul style="list-style-type: none"> Has agreement of local stakeholders been obtained if any disturbance is inevitable? 	<ul style="list-style-type: none"> Yes/ No Date of obtainment: <u>DD/MM/YY</u> 	
Ethnic minorities and indigenous peoples	<ul style="list-style-type: none"> Does any residence of ethnic minorities and indigenous peoples exist? 	<ul style="list-style-type: none"> Yes/ No Estimated number of affected people: _____ people 	
	<ul style="list-style-type: none"> Have consultations with such peoples been sufficiently held? If yes, summary of the consultations needs to be submitted in a separate attachment. 	<ul style="list-style-type: none"> Yes/ No Date of consultation: <u>DD/MM/YY</u> 	
	<ul style="list-style-type: none"> Has agreement of such peoples been obtained if any disturbance is inevitable? 	<ul style="list-style-type: none"> Yes/ No Date of obtainment: <u>DD/MM/YY</u> 	
Safety and health	<ul style="list-style-type: none"> Has potential safety hazards and health issues been explained to construction workers? 	<ul style="list-style-type: none"> Yes/ No Date: <u>DD/MM/YY</u> 	
	<ul style="list-style-type: none"> Is adequate equipment to prevent accidents provided to construction workers? 	<ul style="list-style-type: none"> Yes/ No 	
Unexpected impacts	<ul style="list-style-type: none"> Have impacts which had not been expected been caused by the construction works? 	<ul style="list-style-type: none"> Yes/ No 	
Post-construction phase			
Environmental monitoring	<ul style="list-style-type: none"> Has a periodic environmental monitoring on air quality, water quality, noise level, bottom sediments, or other parameters if any, been undertaken six months after the completion of civil work? If yes, results of measurements need to be provided using the tables presented in “2. Pollution control” in this sample format. 	<ul style="list-style-type: none"> Yes/ No Measurement date <u>DD/MM/YY</u> 	

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Environmental Impact/ Issue	Monitoring item	Monitoring results	Remarks
	<ul style="list-style-type: none"> Are there any of the monitoring results of the above parameters exceeding environmental quality standards or baseline data? 	<ul style="list-style-type: none"> Yes/ No Parameters exceeding standards: _____ 	
Soil erosion	<ul style="list-style-type: none"> Are the conditions of embankment checked to evaluate adequacy of soil protection measures? 	<ul style="list-style-type: none"> Yes/ No 	
Regional hydrology and drainage	<ul style="list-style-type: none"> Is regional hydrology disturbed by the subproject? 	<ul style="list-style-type: none"> Yes/ No 	
	<ul style="list-style-type: none"> Is the capacity of drainage facilities adequate? 	<ul style="list-style-type: none"> Yes/ No 	
Land acquisition and involuntary resettlement	<ul style="list-style-type: none"> Is the ARAP properly implemented, focusing on compensation, restoration and rehabilitation assistance, and special attention to vulnerable persons? 	<ul style="list-style-type: none"> Yes/ No Completion date of compensation: <u>DD/MM/YY</u> Completion date of restoration and rehabilitation assistance: <u>DD/MM/YY</u> 	
	<ul style="list-style-type: none"> Are the perceptions of PAPs on the NRRDLGIP, including grievances or any other request confirmed? 	<ul style="list-style-type: none"> Yes/ No 	
Living and livelihoods	<ul style="list-style-type: none"> Are the perceptions of PAPs on the NRRDLGIP confirmed? If yes, summary of their perceptions needs to be submitted in a separate attachment. 	<ul style="list-style-type: none"> Yes/ No Date: <u>DD/MM/YY</u> 	
Safety and health	<ul style="list-style-type: none"> Are safety measures such as the installation of a sufficient number of warning signs undertaken? 	<ul style="list-style-type: none"> Yes/ No 	
	<ul style="list-style-type: none"> Are the perceptions of local residents confirmed? If yes, summary of their perceptions needs to be submitted in a separate attachment. 	<ul style="list-style-type: none"> Yes/ No Date: <u>DD/MM/YY</u> Method: _____ 	
Operation and maintenance	<ul style="list-style-type: none"> Are improved or constructed facilities properly maintained on a regular basis? 	<ul style="list-style-type: none"> Yes/ No 	
Other (if any)			

Annex 23

Draft Resettlement Policy Framework

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1 Introduction

1.1 Objectives of the Resettlement Policy Framework

This draft Resettlement Policy Framework (RPF) aims to provide the basic concept of land acquisition and involuntary resettlement, and to describe items to be surveyed, procedures, and methodologies to meet the requirements of both national laws and policies, and the JICA Guidelines for Environmental and Social Considerations 2010 (hereinafter the “JICA Guidelines”). This document was prepared based on the findings of the field works conducted for two sample subprojects under the Survey, and on the literature survey of the past similar projects. This RPF will serve as a guiding material for the executing agency, i.e., LGED for Component 1, and Pourashavas for Component 2, in preparing and implementing Abbreviated Resettlement Action Plans (ARAPs) for subprojects that would cause involuntary resettlement in the implementation phase of the Northern Region Rural Development and Local Governance Improvement Project (NRRDLGIP).

1.2 Definition of relevant terms

The following definitions will be applied for this RPF.

- **Project Affected Persons (PAPs)** includes any persons, households, communities, firms, or private or public institutions who would have their;
 - Standard of living adversely affected;
 - Right, title, or interest in any house, land or any other assets adversely affected; or
 - Business, occupation, places of work or residence adversely affected, with or without displacement.

If any adverse impact on a household is anticipated, PAP in that case covers all members of the affected household if they reside underneath one roof and operate as a single economic unit. Therefore, in the context of the RPF and ARAP, PAPs are considered as members of certain affected households.

- **Household** is a group of persons who live together and take their meals from a common/one kitchen.
- **Replacement cost** means an amount needed to replace an asset at current market value including depreciation and overhead expenses of the transaction, registration stamp duty and registration charges for such replacements. These include: 1) agricultural land based on its productive potential; 2) residential land based on current market value; 3) structures based on current market price of building materials and labor including transaction costs; 4) trees, crops and plants on current market value; and 5) shops and commercial assets based on market value of similar location attribute.
- **Cut-off date** is the date of commencement of the census of PAPs within the sites of a target subproject. This is the date beyond which any person whose land is occupied for the use of the Project will not be eligible for compensation.
- **Involuntary resettlement** means the involuntary taking of land resulting in direct or indirect economic and social impacts caused by: 1) loss of benefits from use of such land; 2) relocation or loss of shelter; 3) loss of assets or access to assets; or 4) loss of income sources or means of livelihood, whether or not the PAP has moved to another location.

- **Land acquisition** means the taking of land by government or other public bodies for the purpose of a public project. This includes the acquisition of land or assets for which the owner enjoys uncontested customary rights.
- **Restoration and rehabilitation assistance** means the provision of development assistance in addition to compensation, such as land preparation, credit facilities, training, or job opportunities. These assistances are provided to restore the living standards, income earning capacity and production levels of PAPs to the pre-project level at least.
- **Abbreviated Resettlement Action Plan (ARAP)** must be prepared when small-scale involuntary resettlement (i.e., fewer than 200 people are resettled) is required. It illustrates the number of PAPs, affected land and other assets including their values, and identification of entitled people, compensation, restoration and rehabilitation assistance, and monitoring, and budget. The purpose of ARAP is to facilitate entire process of land acquisition and assistance to PAPs in line with the ARIPO and the JICA Guidelines.
- **Vulnerable groups** include: 1) female-headed households; 2) households below the poverty line; 3) those less able to care for themselves (e.g., children, the elderly and the disabled); 4) the landless; 5) indigenous peoples; and 6) other groups not protected by national compensation law.
- **Squatters** are people who occupy or possess an asset without legal title.
- **Encroachers** are the land owners who have illegally extended their land holdings or structures into the neighboring public land.

1.3 Project description

The NRRDLGIP will cover eight Districts of the Rangpur Division and six Districts in the northern area of the Dhaka Division. The NRRDLGIP largely consists of two main components. Component 1 will develop basic rural infrastructures. Component 2 is further divided into two subcomponents. Subcomponent 2-1 will improve basic infrastructure and service delivery of Pourashavas, and Subcomponent 2-2 will enhance local governance and capacity development of Pourashavas. Component 1 and Subcomponent 2-1 will involve physical infrastructure work which may cause adverse environmental and social impacts in the Project area.

Component 1 will include the following infrastructure development: 1) upgrading of Upazila roads (UZR) and Union roads (UNR) including bridges and culverts; 2) rehabilitation of UZR; 3) improvement of Growth Centers and rural markets; and 4) improvement of ghats.

Subprojects under Subcomponent 2-1 will not be determined at the preparatory survey phase. They will be selected through participatory approaches in the implementation phase of the Project. The eligible types of infrastructure works under the subcomponent may include: 1) improvement and rehabilitation of Pourashava roads, bridges, and culverts; 2) repair, rehabilitation, and expansion of drains; 3) improvement of municipal markets; 4) construction of slaughter houses; 5) rehabilitation and expansion of water distribution network and tubewells; 6) construction of public and community toilets; 7) construction of solid waste management facilities; 8) construction of bus and truck terminals; 9) installation of streetlights; 10) establishment of parking areas; and 11) basic infrastructures for the poor.

2 Identification of land acquisition and resettlement under the Project

2.1 Necessity of land acquisition and resettlement

Land acquisition

Although the upgrading of UZR and UNR and the rehabilitation of UZR under Component 1 will be basically on the existing road alignments, a small amount of land from private ownership will be required for the following cases: 1) widening of roads to meet LGED standards; 2) realignment of roads to ease curve radii; 3) increase in the embankment height of roads; and 4) construction of approach roads for large-scale bridges. Since Growth Centers and rural markets are normally located on Government's land, no land acquisition is anticipated. Occurrence of land acquisition and its scale shall be identified after the determination of detailed design of each subproject.

Regarding Subcomponent 2-1, land acquisition will be required for the following cases: 1) widening of Pourashava roads; 2) construction of bus and truck terminals; and 3) construction of waste management facilities. Since subprojects under Subcomponent 2-1 will be selected after the commencement of the NRRDLGIP, the necessity of land acquisition for each subproject will be confirmed during the selection process.

Resettlement

Subprojects requiring large-scale involuntary resettlement of more than 200 people will be excluded by the exclusion criterion for subproject selection of the Project. Therefore, under the NRRDLGIP, only small-scale involuntary resettlement, i.e., that of fewer than 200 PAPs, is expected for both Component 1 and Subcomponent 2-1.

Regarding Component 1, the roads that are expected to require large-scale involuntary resettlement have been excluded, based on the information gathered from concerned Upazila Engineers at the preparatory survey phase. It is, however, necessary to confirm, at the beginning of the detailed design of subprojects, whether involuntary resettlement would occur and how many people would be affected. This is because the information from the Upazila Engineers appears incomplete in some cases, and there seem to be additional roads that would cause large-scale involuntary resettlement for the following reasons:

- 1) In the past rural infrastructure projects of the LGED, involuntary resettlement occurred along many roads, though such resettlement was not anticipated at the project preparation stage. In the NRRDLGIP, it is therefore assumed that there still remains possibility of involuntary resettlement for the roads other than those excluded based on the information from Upazila Engineers.
- 2) Even for roads for which resettlement was indicated by Upazila Engineers, the information was not obtained through detailed surveys. There still remains uncertainty as to whether the number of people to be resettled exceeds 200. Thus, if some UZR or UNR are found to cause resettlement of more than 200 people at the implementation phase, these roads shall be excluded.

Similar to Component 1, small-scale involuntary resettlement is anticipated in Subcomponent 2-1. Subprojects under Subcomponent 2-1 are not determined at the preparatory survey phase, and will be selected in a participatory manner after the commencement of the NRRDLGIP. Thus, whether involuntary resettlement will occur and how many people will be affected shall be confirmed during the subproject selection process.

2.2 Scope of land acquisition and resettlement

The NRRDLGIP will require small-scale land acquisition and involuntary resettlement as described in the previous section. However, it is not possible to precisely estimate the scale of land acquisition and involuntary resettlement at the preparatory survey phase due to the following reasons:

- 1) More than 100 roads will be targeted under the NRRDLGIP, but it is impossible to conduct thorough surveys for all the target roads at the preparatory survey phase. Therefore, the precise proportion of public land and private land is still unknown.
- 2) Some private lands may be acquired through voluntary donations. However, at the preparatory survey phase, it is unclear how many hectares of area will be voluntarily donated.
- 3) The detailed designs of roads and other infrastructures have not been determined yet at the preparatory survey phase, and thus the area of land to be acquired and the number of PAPs to be relocated are not determined as well.

In the preparatory survey, two UZR subprojects, one in Bhaluka Upazila in Mymensingh area and another in Birampur Upazila in Rangpur Division, were sampled and surveyed. Based on the sample survey, 70 PAPs for Bhaluka and 101 PAPs for Birampur were identified. No temporary impacts were anticipated. The anticipated impacts for the sample subprojects are summarized in Table A23-1.

Table A23-1 Summary of resettlement impacts anticipated from sample subprojects

Types of Impacts	Unit	Bhaluka	Birampur
Temporary impacts:		0	0
Permanent impacts:			
Land (Government land)	Decimal	9.5	0
Land (Private land)	Decimal	0	8.9
Residence	No.	0	15
Other structures	No.	0	0
Business shop	No.	16	7
Common properties	No.	1	0
Number of affected households	No.	16	23
Number of PAPs	No.	70	101
Vulnerable PAPs	No.	5	1
Average monthly income of PAPs	BDT	8,663.5	11,717.5
Primary source of income		Small business	Agriculture and small business

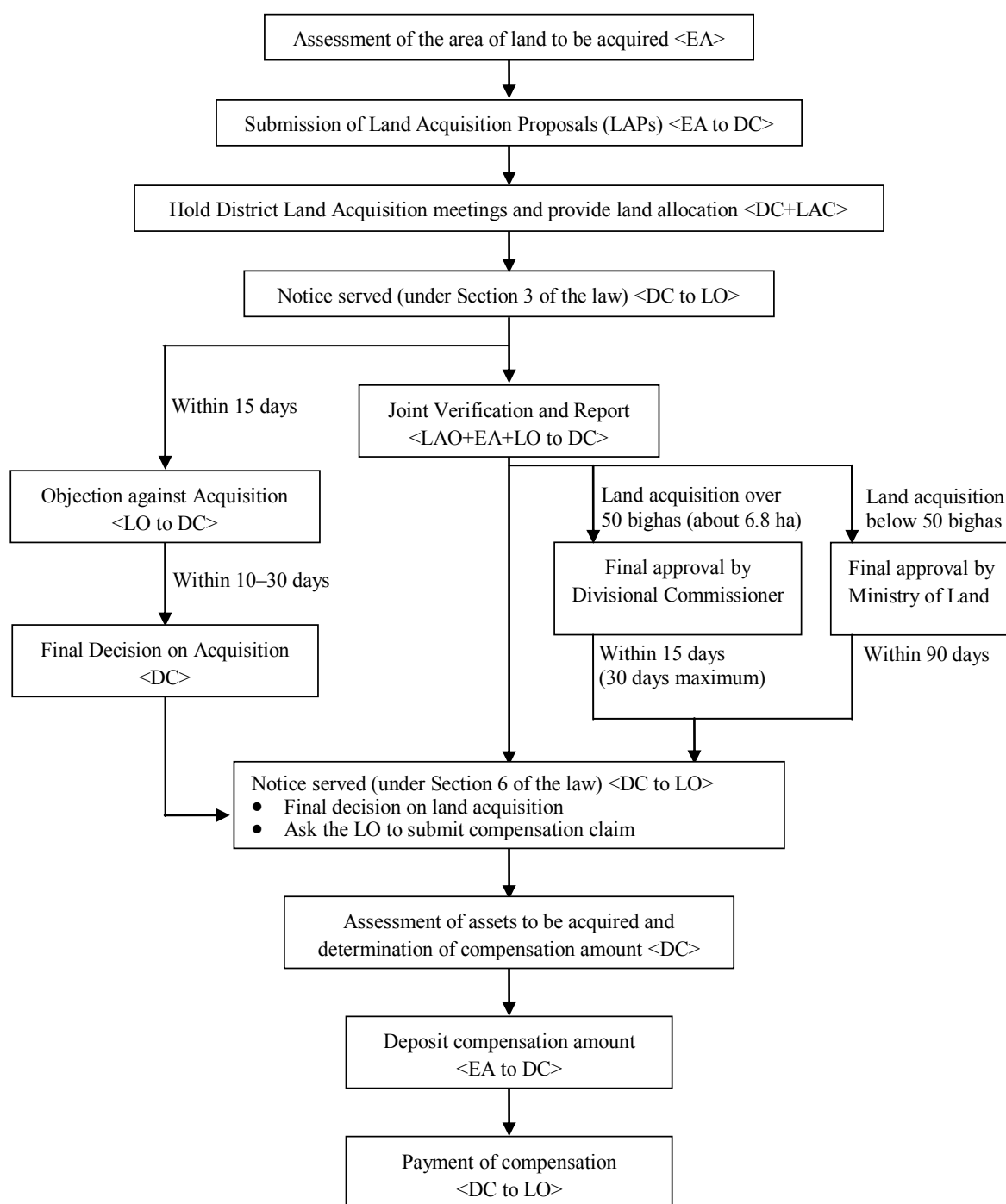
Source: Survey Team

As per the JICA Guidelines, any subproject causing involuntary resettlement of less than 200 people is required to prepare an ARAP. Thus, two separate draft ARAPs have been prepared for the above two sample subprojects. These draft ARAPs will serve as an example used by the executing agency in preparing and implementing ARAPs at the implementation phase.

3 Applicable laws and policies

3.1 Acquisition and Requisition of Immovable Property Ordinance, 1982

The Acquisition and Requisition of the Immovable Property Ordinance (ARIPO) 1982 and the subsequent amendments made during 1993 and 1994 constitute the legal framework that governs all cases of land acquisition in Bangladesh. The Acquisition and Requisition of Immovable Property Rules 1982 were issued under Section 46 of the ARIPO stipulating that the government is empowered to make rules for carrying out the purposes of the ARIPO. The ARIPO presents the procedural details required for land acquisition as presented in Figure A23-1.



Source: Land Administration Manual (2003)

Legend: EA = Executing Agency, DC= Deputy Commissioner, LAC = Land Acquisition Committee, LO = Land Owner, LAO = Land Acquisition Official

Figure A23-1 Procedures of land acquisition

Land acquisition below 50 *bigha* (about 6.7 hectare) is handled by Division Commissioner, and that of over 50 *bigha* by the Ministry of Land. Regardless of the size of land to be acquired, it is Deputy Commissioner (DC) who determines market price of the assets based on the approved procedure, and pays one hundred and fifty percent of the assessed value as compensation. Section 10A inserted by the amendment in 1994 made provisions for payment of crop compensation to tenant cultivators.

However, the ARIPO does not cover project-affected persons (PAPs) without titles of ownership record. For example, informal settlers or squatters, occupiers, and informal tenants and lease-holders without legal documents will not be compensated under the ARIPO. Also, it does not ensure replacement value of the property acquired.

In addition, the ARIPO has no provision related to involuntary resettlement and the restoration and rehabilitation assistance to PAPs. For instance, provision of the expenses necessary for relocation and re-establishment of communities at resettlement sites are not prescribed in the ARIPO. However, these are the requirements of international donor agencies including JICA. Thus it is necessary to supplement the gaps.

3.2 JICA Guidelines for Environmental and Social Considerations

To ensure the environmental and social sustainability of its assisted projects, JICA has formulated the Guidelines for Environmental and Social Considerations (hereafter “JICA Guidelines”) in April 2010. The objectives of the JICA Guidelines are to: 1) encourage the executing agency to have appropriate considerations for environmental and social impacts; and 2) ensure that JICA’s support for, and examination of, environmental and social considerations are conducted accordingly. The JICA Guidelines specify requirements that all executing agencies of JICA-funded projects must meet. The key requirements related to land acquisition and resettlement are summarized below:

- 1) Involuntary resettlement and loss of means of livelihood are to be avoided when feasible by exploring all viable alternatives.
- 2) When involuntary resettlement is unavoidable, effective measures to minimize the impact and to compensate for losses should be taken.
- 3) People who are forced to be resettled and whose means of livelihood are hindered or lost must be sufficiently compensated and supported, so that they can improve or at least restore their standard of living, income opportunities, and production levels to pre-project levels.
- 4) Compensation must be based on the full replacement cost if at all possible.
- 5) Compensation and other kinds of assistance must be provided prior to displacement.
- 6) For projects that entail large-scale involuntary resettlement, i.e., that involves more than 200 PAPs, resettlement action plans must be prepared and made available to the public. It is desirable that the resettlement action plan include elements laid out in the World Bank Safeguard Policy, OP 4.12, Annex A.
- 7) The resettlement policy framework will be prepared for the sector loan project, where details of subprojects will not be determined at the project preparation stage. The framework will cover the following: 1) subproject specific resettlement plan; 2) compensation, and restoration and rehabilitation assistance; 3) institutional framework for implementation; 4) monitoring and evaluation mechanism; 5) timeframe for implementation; and 6) detailed financial plan including budget.
- 8) In preparing a resettlement action plan, consultations must be held with the affected people and their communities based on sufficient information made available to them in advance. When consultations are held, explanations must be given in a form, manner, and language that are understandable to the affected people.
- 9) Appropriate participation of affected people must be promoted in planning, implementation, and monitoring of the resettlement action plans.
- 10) Appropriate and accessible grievance mechanisms must be established for the affected

people and their communities.

The above principles are complemented by the World Bank OP 4.12, since the JICA Guideline states that “JICA confirms that projects do not deviate significantly from the World Bank’s Safeguard Policies.” Additional key principles based on the World Bank OP 4.12 are as follows.

- 11) Affected people are to be identified and recorded as early as possible in order to establish their eligibility through an initial baseline survey (including population census that serves as an eligibility cut-off date, asset inventory, and socioeconomic survey), preferably at the subproject identification stage, to prevent a subsequent influx of encroachers of others who wish to take advance of such benefits.
- 12) Eligibility of benefits includes the PAPs who have formal legal rights to land (including customary and traditional land rights recognized under law), the PAPs who do not have formal legal rights to land at the time of census but have a claim to such land or assets, and the PAPs who have no recognizable legal right to the land they are occupying.
- 13) Preference should be given to land-based resettlement strategies for displaced persons whose livelihoods are land-based.
- 14) Support for the transition period (between displacement and livelihood restoration) should be provided.
- 15) Particular attention must be paid to the needs of the vulnerable groups among those displaced, especially those below the poverty line, landless, elderly, women and children, and ethnic minorities.
- 16) For subprojects that entail land acquisition or involuntary resettlement of fewer than 200 people, ARAP is to be prepared.

3.3 Consistency with the JICA Guidelines for Environmental and Social Considerations

Many gaps between the requirements of JICA Guidelines and the provisions of the ARIPO have been identified. Such gaps are listed in Table A23-2.

Seven key insufficiencies of the ARIPO are identified as follows: 1) avoidance and minimization of involuntary resettlement; 2) restoration of livelihood of PAPs; 3) compensation based on replacement cost; 4) public consultation and information disclosure in preparing resettlement action plans; 5) grievance mechanism and participation of PAPs in planning, implementation, and monitoring of resettlement action plans; 6) eligibility of PAPs without legal rights to land; and 7) special assistance to vulnerable groups. These issues are not sufficiently addressed in the ARIPO.

To bridge these gaps, the LGED and Pourashavas need to take appropriate measures in accordance with the JICA Guidelines as presented in Table A23-2.

3.4 Policy of the NRRDLGIP on land acquisition and resettlement

The NRRDLGIP will adopt the following land acquisition and resettlement policies regarding involuntary resettlement and land acquisition caused by subprojects, taking into account the requirements of the JICA Guidelines, and the characteristics of the NRRDLGIP. The executing agency shall ensure that the following policies are complied with¹.

¹ For the NRRDLGIP, the executing agency for Component 1 is the Project Management Office (PMO) in the LGED headquarters, and that for Subcomponent 2-1 is the Project Implementing Units (PIUs) in Pourashavas.

Table A23-2 Comparison between relevant laws of GOB and JICA Guidelines

Requirements by JICA Guidelines	ARIPO and other relevant policies	Gap	Gap bridging measures to be taken in the Project
Avoidance of involuntary resettlement and loss of means of livelihood (when feasible)	The ARIPO has no provisions regarding involuntary resettlement.	Avoidance of involuntary resettlement and loss of means of livelihood is not provided in legal instrument of Bangladesh or the LGED Guidelines.	Involuntary resettlement and loss of means of livelihood will be avoided as much as possible in accordance with the JICA Guidelines.
Minimization of impact (when population displacement is unavoidable)	The ARIPO has no provisions regarding involuntary resettlement.	Minimizing adverse impacts is not provided in legal instruments of Bangladesh or the LGED Guidelines.	Impacts of involuntary resettlement will be minimized in accordance with the JICA Guidelines, and excluded in the process of subproject selection.
Restoration of livelihoods of PAPs to pre-project level at least.	The ARIPO has no provisions regarding livelihood restoration.	Restoration of livelihoods and standards of living of the PAPs is not provided in legal instruments of Bangladesh or the LGED Guidelines.	Measures to restore livelihoods and standards of living of the PAPs will be taken based on their needs in accordance with the JICA Guidelines.
Compensation based on the full replacement cost (as much as possible)	The ARIPO provides that market value of the property at the date of public notice of acquisition is considered in determining compensation amount (ARIPO §8).	Compensation based on the full replacement cost is not provided in legal instruments of Bangladesh or the LGED Guidelines. Market value calculated under the ARIPO does not consider depreciation and deduction for taxes and/or costs of transaction.	Compensation amount will be determined based on full replacement cost in accordance with the JICA Guidelines.
Consultation with the PAPs and disclosure of information in preparing resettlement action plan	The ARIPO provides that the DC shall publish a notice at convenient places near the property proposed for acquisition (ARIPO §3).	Although the ARIPO provides indirect public consultation, it does not provide disclosure of detailed information such as the purpose of land acquisition and compensation as well as entitlements of and special assistance to PAPs.	Public consultation will be ensured through stakeholder meetings, and information will be made available during preparation and implementation of ARAP in accordance with the JICA Guidelines.
Grievance mechanism and participation of PAPs in planning, implementation, and monitoring of ARAPs	The ARIPO provides the occupant of the land to raise their objections to be filed to DC within 15 days after the public notice of acquisition (ARIPO §4).	The ARIPO provides a limited grievance mechanism where landowners can raise objections against acquisition. However, there is no provision of promoting participation of PAPs in planning, implementation, and monitoring of ARAPs.	Grievance Redress committees will be formed through participatory appraisal with all stakeholders. Besides, proper stakeholder consultations will be ensured in planning, implementation, and monitoring of ARAPs in accordance with the JICA Guidelines.
Eligibility of benefits for PAPs with formal or informal legal rights to land	The ARIPO does not cover PAPs without titles of ownership record for compensation.	While the JICA Guidelines provide eligibility of PAPs without titles of ownership record, the ARIPO does not.	The PAPs without titles of ownership record who indeed require assistance will be carefully screened out in social survey, and entitlement will be delivered to them in accordance with the JICA Guidelines.
Special assistance to vulnerable groups	The ARIPO has no provision for particular assistance to vulnerable groups.	While the JICA Guidelines provide particular assistance to vulnerable groups, the ARIPO does not.	Vulnerable groups will be identified in social survey, and provided with special assistance in accordance with the JICA Guidelines.

Source: Survey Team

Note: “§” indicates provision of the ECR and ARIPO. (e.g., ECR §3 indicates Rule 3, and ARIPO §5 indicates Section 5.)

(1) Necessity of involuntary resettlement

- 1-1) Involuntary resettlement and loss of livelihood means should be avoided to the extent possible by taking into account alternative locations and designs.
- 1-2) Where involuntary resettlement is unavoidable, the impacts should be minimized by adjusting and modifying the detailed design of subprojects as much as possible.
- 1-3) Subprojects requiring involuntary resettlement of more than 200 people will be excluded from the NRRDLGIP. If small-scale involuntary resettlement of fewer than 200 people occurs, the ARAP shall be prepared by the executing agency in accordance with this RPF.
- 1-4) If voluntary donation of small strips of land is anticipated, the non-objection certificate shall be obtained from the concerned PAPs. Voluntary donation shall not affect the living standards of the PAPs, thus if an owner donates sizable parts of his/her land for instance, such donation shall be deemed to negatively affect the owner's living standards. In addition, donations from vulnerable people shall be prohibited.

(2) Eligibility of PAPs

- 2-1) Where involuntary resettlement is unavoidable, all PAPs losing their assets and livelihoods should be fully compensated and assisted so that they can improve, or restore their living standard to the pre-project level at least.
- 2-2) PAPs to be provided with compensation and restoration and rehabilitation assistance shall include the following person or household adversely affected by the subproject implementation temporarily or permanently:
 - Those whose standard of living are adversely affected;
 - Those whose right, title or interest in any house, land and asset (including premises, agricultural and grazing land, commercial properties, tenancy, annual or perennial crops, trees, or any other fixed or moveable assets) are acquired or affected;
 - Those whose income earning opportunities, business, occupation, place of work or residence, or habitat are adversely affected temporarily or permanently;
 - Those whose social and cultural activities and relationships are affected; or
 - Those who suffer from any other losses that may be identified during the process of resettlement planning.
- 2-3) All affected persons will be eligible for compensation and restoration and rehabilitation assistance, irrespective of tenure status, social or economic status, and any such factors that may result in any discrimination. Lack of legal rights to the assets to be adversely affected, and tenure status and social or economic status will not bar the PAPs from entitlements to such compensation and restoration and rehabilitation assistance.
- 2-4) All PAPs residing, working, running business and/or cultivating land within the subproject affected areas as of the cut-off date are entitled to compensation for their affected assets, and restoration and rehabilitation assistance.
- 2-5) If PAPs lose only part of their assets and the remaining portion will be inadequate to sustain their current living standard, compensation and restoration and rehabilitation assistance should cover the whole assets. The minimum size of remaining land and structures will be agreed with the PAPs during the preparation of ARAPs.
- 2-6) People temporarily affected are considered as PAPs. Temporary land acquisition and resettlement shall be compensated.
- 2-7) The cut-off-date of eligibility refers to the date prior to which the occupation or use of the assets in subproject area makes the residents or users eligible to be categorized as PAPs and be entitled to compensation and restoration and rehabilitation assistance under the NRRDLGIP. In the NRRDLGIP, cut-off dates will be the beginning date of the PAP census. This date should be disclosed to each affected subproject area by the executing agency. The establishment of the eligibility cut-off date is intended to prevent the influx of ineligible

non-residents who might take advantage of entitlements of NRRDLGIP.

(3) Compensation, and restoration and rehabilitation assistance

- 3-1) Payment of compensation for affected land and other assets will be based on the principle of full replacement cost. The full replacement cost is the amount which is necessary to replace an affected asset without depreciation and without deduction for taxes and/or costs of transaction. It should be calculated before the occurrence of the resettlement.
- 3-2) Restoration and rehabilitation assistance will be provided not only for immediate loss, but also for a transition period needed to restore livelihood of PAPs. Such assistance could take the form of short-term jobs, subsistence support, salary maintenance, or other similar arrangements, and the forms will be determined based on the socioeconomic conditions of PAPs.
- 3-3) Relocation and land acquisition shall not occur before the provision of compensation and other assistance. Sufficient civil infrastructure must be provided in resettlement site prior to relocation. Acquisition of assets, payment of compensation, and the resettlement will be completed prior to any construction activities. Restoration and rehabilitation assistance activities for PAPs must also be in place but not necessarily completed prior to construction activities, as they may be ongoing activities even after the commencement of the construction activities.
- 3-4) Provision of land-based compensation shall be prioritized wherever possible, especially for PAPs who depends on agricultural activities. Such compensation may include the provision of replacement land, securing of tenure, upgrading of livelihoods of people without legal titles. If replacement land is not available, cash compensation will be taken into account, together with other assistance including skill development and training, wage employment, and other restoration and rehabilitation assistance. Solely cash compensation will be avoided as this may not address losses that are not easily quantified, such as access to services and common rights.
- 3-5) The replacement lands should be within the immediate vicinity of the affected lands wherever possible, and be of comparable productive capacity and potentials. If such lands are not available there, sites where social disruption of PAPs can be minimized should be selected. Such lands shall have access to services and facilities similar to those available in the lands to be affected.
- 3-6) If a host community will be affected by the development of a resettlement site, such host community shall be involved in the preparation process of ARAPs. Adverse impacts of resettlement on such host communities shall be minimized.

(4) Consultation and participation

- 4-1) In preparation of the ARAP, consultations should be held with PAPs. PAPs should be involved in the process of preparing and implementing the ARAP.
- 4-2) The ARAP shall be disclosed for PAPs and other stakeholders for the reference. The ARAP shall be translated into the local language, i.e., Bengali, and explained in the language.
- 4-3) PAPs and their communities will be consulted about the subprojects, the rights and options available to them, and proposed mitigation measures for adverse effects. They will also be involved in the decision making process concerning their resettlement to the extent possible.

(5) Special attention to the vulnerable groups

- 5-1) The ARAP must consider the needs of those vulnerable to the adverse impacts of involuntary resettlement. Vulnerable groups will include women, the poor, children, the elderly, the disabled, the landless, indigenous peoples, and other groups. The ARAP should ensure that they are well considered in the process of resettlement planning. Special assistance should be

provided to help them improve their socioeconomic status.

(6) Implementation and monitoring

- 6-1) Organizational and administrative arrangement for the effective preparation and implementation of the ARAP should be established prior to the commencement of the process. This will include the provision of adequate human resources for supervision, consultation, and monitoring of land acquisition, involuntary resettlement, and restoration and rehabilitation assistance activities.
- 6-2) Adequate budgetary support should be fully committed by the government, and made available to cover the costs of land acquisition and resettlement, including compensation and restoration and rehabilitation assistance, within the agreed implementation period.
- 6-3) Appropriate reporting, monitoring, and evaluation mechanisms regarding land acquisition and resettlement will be established and implemented as part of the Project management system. An external monitoring group will be formed under the NRRDLGIP, and will evaluate the resettlement and land acquisition process.

3.5 Project affected persons

3.5.1 Eligibility criteria

PAPs eligible to receive compensation and assistance to restore livelihood under the NRRDLGIP are individuals, households, communities, and private and public entities, regardless of the possession of legal title, who are residing, working or cultivating lands and other assets that are acquired for subprojects as of the cut-off date. Furthermore, those who may be affected due to temporary land acquisition and resettlement are also eligible for compensation for disruptions in their livelihood activities.

A detailed inventory of PAPs and scope of impacts will be prepared during the detailed design phase of subprojects, and finalized after the subproject sites and detailed designs are determined.

3.5.2 Categories of PAPs and types of losses

The PAPs under the NRRDLGIP are listed below.

- Persons whose land is being used for agricultural, residential, or commercial purposes and is in part or in total affected (temporarily or permanently)
- Persons whose structure is being used for residential, commercial, or worship purposes in part or in total affected (temporarily or permanently)
- Persons whose assets, other than land or structure, are partly or fully affected (temporarily or permanently)
- Persons whose business or source of income is in part or in total affected (temporarily or permanently)
- Persons whose annual or perennial crops and/or trees are affected
- Persons whose access to common property resources is affected (temporarily or permanently)
- Persons affected who belong to socially and economically vulnerable groups

3.6 Entitlement matrix

Based on the ARIPO and the JICA Guidelines, the entitlement matrix for the NRRDLGIP is prepared. Table A23-3 shows the details of possible losses of PAPs and their entitlements and compensations for such losses.

Table A23-3 Entitlement matrix for the NRRDLGIP

No	Type of loss	Entitled Persons	Entitlement/ Compensation policy	Implementation issues/ Guidelines	Responsible organization
Loss of land					
1	Loss of agricultural land, pond, ditches, orchards and other lands or water bodies for production	- Legal owner of land	<ul style="list-style-type: none"> - Provision of replacement land with equal productive capacity satisfactory to PAPs - Cash compensation equivalent to replacement cost, and additional grant to cover the market value of land at market price - Refund of registration cost incurred for replacement land purchase at the replacement value* - Additional compensation and assistance for the vulnerable households (see No. 9) 	<ul style="list-style-type: none"> a) Assessment of type, quantity and quality of land or water body by JVT b) Assessment of replacement value of lands or water bodies by PVAT c) Updating of titles of the PAPs d) Refund of all taxes, registration costs, and other fees if land or water body is purchased within one year from the date of receiving full compensation for land e) Explanation to PAPs about their entitlements and procedures f) Identification of vulnerable households 	<ul style="list-style-type: none"> a) DC, JVT b) EA, PVAT c) DC, EA, JVT d) EA e) EA f) EA
2	Loss of homestead, residential or commercial plots	- Legal owner of land	<ul style="list-style-type: none"> - Provision of replacement land with equal productive capacity satisfactory to PAPs - Cash compensation equivalent to replacement cost, and additional grant to cover the market value of land at market price - Provision of all taxes, registration costs, and other fees incurred for replacement land purchase at the replacement value - Additional compensation and assistance for the vulnerable households (see No. 9) 	<ul style="list-style-type: none"> a) Assessment of type, quantity and quality of land by JVT b) Assessment of replacement value of lands by PVAT c) Updating of titles of the PAPs d) Refund of all taxes, registration costs, and other fees if land is purchased within one year from the date of receiving full compensation for land e) Explanation to PAPs about their entitlements and procedures f) Identification of vulnerable households 	<ul style="list-style-type: none"> a) DC, JVT b) EA, PVAT c) DC, EA, JVT d) EA e) EA f) EA
Loss of crops and trees					
3	Loss of perennial and seasonal crops, trees, or fish stocks	<ul style="list-style-type: none"> - Person with legal ownership of the land - Socially recognized owner - Unauthorized occupant of trees or fishes 	<ul style="list-style-type: none"> - For seasonal crops, 60 days advance notice to harvest them. If harvest is not possible, cash compensation for crops (or share of crops) equivalent to prevailing market price - For perennial crops and fruit bearing trees, cash compensation based on annual net product market value multiplied by remaining productive years - For non-fruit trees for timber, cash compensation equivalent to prevailing market price of timber - For fish stocks, cash compensation equivalent to prevailing market price of fish 	<ul style="list-style-type: none"> a) Formulation of work schedule to allow PAPs to harvest seasonal crops b) Identification of ownership of perennial and seasonal crops, trees, or fish by JVT c) Assessment of type, size, and quantity of trees, crops, or fish by JVT d) Determination of values of trees, crops or fish through market surveys by PVAT 	<ul style="list-style-type: none"> a) EA b) EA, JVT c) EA, JVT d) EA, PVAT, Departments of Agriculture, Forest, and Fishery

No	Type of loss	Entitled Persons	Entitlement/ Compensation policy	Implementation issues/ Guidelines	Responsible organization
Loss of structure					
4	Loss of residential or commercial structure by owners	- Legal titleholder, owner of the structure	- Cash compensation equivalent to replacement value of the whole or part of structure - Right to salvaged materials from structure for free - Provision of all taxes, registration costs, and other fees incurred for replacement structure - Transfer and subsistence allowance of BDT 4,000 - Additional compensation and assistance for the vulnerable households (see No. 9)	a) Identification of ownership of structure by JVT b) Assessment of type, size, and quantity of structure by JVT c) Determination of values of structure through market surveys by PVAT d) Identification of vulnerable households	a) EA, JVT b) EA, JVT c) EA, DC, PVAT d) EA
5	Loss of residential or commercial structure by squatters and unauthorized occupants	- Squatters, informal settlers, and other unauthorized occupants	- Cash compensation equivalent to replacement value of the whole or part of structure - Right to salvaged materials from structure for free - Provision of all taxes, registration costs, and other fees incurred for replacement structure - Transfer and subsistence allowance of BDT 4,000 - Additional compensation and assistance for the vulnerable households (see No. 9)	a) Identification of ownership of structure by JVT b) Assessment of type, size, and quantity of structure by JVT c) Determination of values of structure through market surveys by PVAT d) Identification of vulnerable households	a) EA, JVT b) EA, JVT c) EA, DC, PVAT d) EA
Loss of livelihood					
6	Loss or decrease of business or rental income	- Proprietor of business - Owner of commercial structure	- Cash compensation equivalent to three month-net income from business or rental	a) Identification of proprietor or owner of commercial structure by JVT b) Assessment of business or rental income by JVT	a) EA, JVT b) EA, DC, JVT
7	Loss of income and work days due to displacement	- Household head or employees identified	- Cash compensation for lost income based on three months lost income or minimum wage rates - Additional compensation and assistance for the vulnerable households (see No. 9)	a) Identification of proprietor or owner of commercial structure by JVT b) Assessment of business or rental income by JVT c) Identification of vulnerable households	a) EA, JVT b) EA, DC, JVT c) EA
8	Relocation of community structure	- Community representative	- Compensation to reconstruct or relocate community structure	a) Identification of community structure by JVT b) Assessment of community structure by JVT	a) EA, JVT b) EA, DC, JVT
Impacts on vulnerable PAPs					
9	Impacts on vulnerable households	- Vulnerable households, including informal settler, squatters, women headed household	- Additional allowance equivalent to BDT 3,000 for loss of land or structure - Prioritized employment under the NRRDLGIP	a) Identification of vulnerable households	a) EA

No	Type of loss	Entitled Persons	Entitlement/ Compensation policy	Implementation issues/ Guidelines	Responsible organization
Temporary loss					
10	Temporary loss of access to cultivable land by owner cultivator, tenant/ sharecropper	<ul style="list-style-type: none"> - Legal owner of land - Tenant, sharecropper, and lessee - unauthorized occupant such as squatter and encroacher 	<ul style="list-style-type: none"> - 60-day advance notice - Provision of cash compensation equivalent to expected income earned from land during the duration of access loss - Additional compensation and assistance for the vulnerable households (see No. 9) 	<ul style="list-style-type: none"> a) Identification of owner or other stakeholders by JVT b) Assessment of net income earned from land during the duration of access loss by JVT c) Identification of vulnerable households 	<ul style="list-style-type: none"> a) EA, JVT b) EA, DC, JVT c) EA
11	Temporary loss of access to residential houses/ commercial structures by owners, rented or leased	<ul style="list-style-type: none"> - Legal owner of land - Tenant, sharecropper, and lessee - unauthorized occupant such as squatter and encroacher 	<ul style="list-style-type: none"> - 60-day advance notice - Provision of land rental value during the duration of access loss - Restoration and enhancement of affected land, structures and other assets. - Additional compensation and assistance for the vulnerable households (see No. 9) 	<ul style="list-style-type: none"> a) Identification of owner or other stakeholders by JVT b) Assessment of rental value of structure with equal livelihood level by JVT c) Identification of vulnerable households 	<ul style="list-style-type: none"> a) EA, JVT b) EA, DC, JVT c) EA
Any other loss not identified					
12	Unforeseen impact		- Documentation of unforeseen impacts, and elaboration of mitigation measures in accordance with this RPF.	a) Identification of unforeseen impacts through periodical monitoring	a) EA

Legend: EA=Executing agency, DC=Deputy Commissioner, JVT=Joint Verification Team, PAP=Project affected person, PVAT=Property Valuation Advisory Team

Note: * Registration cost is usually about 10% of the sale value for the rural area

4 Surveys and documentation

The executing agencies are the LGED for Component 1 and Pourashavas for Subcomponent 2-1. If any subprojects are confirmed to cause land acquisition and involuntary resettlement after the determination of detailed designs, the executing agencies shall conduct various surveys to prepare the ARAPs. In case of Subcomponent 2-1, Pourashavas will need intensive supports by the LGED, considering the limited capacities of Pourashavas. Necessary actions to be taken by the executing agencies are described below.

4.1 Preliminary screening

The initial step of a resettlement planning during the subproject preparation phases is to carry out a preliminary screening survey to identify the occurrence of land acquisition and involuntary resettlement, and their scale associated with individual subprojects (or group of subprojects). The information collected during the screening survey will be used for identifying the possible scale of impacts. Based on the survey result, necessary level and depth of subsequent field surveys will be determined.

If the screening survey indicates that any subproject will cause land acquisition or involuntary resettlement, further field surveys and consultations with key stakeholders will be necessary. A standard checklist form for the preliminary screening survey is included in Attachment 1.

4.2 Necessary surveys

The executing agency, with the help of the Design, Supervision and Monitoring (DSM) consultants,

especially the Rehabilitation and Resettlement Specialist (RRS) and Regional Rehabilitation and Resettlement Expert (RRRE), needs to carry out necessary surveys if land acquisition and involuntary resettlement are found to be necessary during the preliminary screening survey. For the NRRDLGIP, four types of surveys will be needed: 1) a PAP census; 2) a socioeconomic survey; 3) a survey for inventory of losses; and 4) a market price survey. A sample format for these surveys is presented in Attachment 2.

Prior to undertaking the surveys, the executing agency needs to prepare for the dissemination of subproject information, including subproject types, result of the preliminary screening survey, contents and implementation schedule of a census and other surveys, and other background information to key stakeholders.

4.2.1 PAP census

The executing agency will conduct a PAP census to identify the demographic characteristics of PAPs. The PAP census shall cover 100% of affected households and entities, and should identify and record all PAPs. The census will identify details of PAPs, assets to be affected and their values, and main sources of livelihoods. The result will be the basis to prepare an inventory of losses for each PAP.

Furthermore, the executing agency needs to identify individuals and groups who may be differentially or disproportionately affected by the subproject because of their vulnerable status. Where such individuals and groups are identified, the executing agency needs to propose and implement targeted measures so that adverse impacts do not fall disproportionately on them, and they are not disadvantaged in relation to sharing the benefits and opportunities resulting from the development. The following criteria will be adopted by the executing agency for the screening or identification of vulnerable households who are entitled to receive special assistance from the NRRDLGIP.

1) Household headed by women

- Widowed, divorced or separated as confirmed by neighbors and village chairman
- Carrying the whole responsibility of raising her family
- With household members below 18 years of age

2) Household headed by the elderly

- With age of 65 years old and above, regardless of gender and marital status as confirmed by neighbors and village chairman
- Carrying the whole responsibility of raising the family
- Not receiving regular support from children and/or relatives
- With household members below 18 years of age

3) Poor Household

- With monthly income below BDT 5,000
- Carrying the whole responsibility of raising the family as confirmed by neighbors and village chairman
- With household members below 18 years of age

4) Household headed by indigenous person

- Indigenous person or ethnic minority confirmed by neighbors and village chairman
- Carrying the whole responsibility of raising the family
- With household members below 18 years of age

4.2.2 Socioeconomic survey

A detailed socioeconomic survey shall be carried out by the executing agency for at least 20% of the affected households identified in the census. This survey will establish baseline information on major economic activities, detailed livelihood sources and incomes, possessed assets, and other socioeconomic indicators in the subproject affected area.

Based on the result, the executing agency will prepare an ARAP. In addition, support for restoration and rehabilitation of livelihoods will be determined, and incorporated into the ARAP.

4.2.3 Inventory of losses

After the determination of the engineering design of each subproject, an inventory of losses will be prepared to ascertain the types of affected assets and their values. The inventory will also be used for determining necessary restoration and rehabilitation assistance measures. More specifically, this inventory of losses will include all types of losses incurred by PAPs such as 1) area of land to be acquired, 2) type and area of affected structures (houses, shops, fences, sheds, toilets, wells, etc.), 3) area of crop production, 4) number of affected trees by type, 5) loss of income or livelihood, 6) loss of employment, and 7) loss of access to common property resources, if any. Vulnerability status of each PAP should also be described where appropriate.

4.2.4 Market price survey

To determine the replacement cost or current market prices of the affected properties, the executing agency shall conduct a market price survey. The coverage of affected properties and the methodology of obtaining their market prices are stated below.

- **Lands:** It will include all kinds of lands, such as agricultural, homestead, commercial, orchard, garden, water bodies, and fallow. The replacement cost will be obtained through a combination of surveys: 1) a random sampling of 5 to 10 landowners in and adjacent to the subproject site; 2) if available, hearing from recent buyers' and sellers of similar lands in the similar local areas; 3) some deed writers at the land registration offices, who recently handled transactions in those or adjacent local areas; and 4) interviews with school or madrasa teachers, Imams of mosques, local elites including retired government officials, and Union Parishad's Chairman and members.
- **Houses and other built structures:** Compensation price of houses and other built structures will be determined based on the current market prices of the different kinds of building materials in the local markets.
- **Trees:** Compensation will be determined by surveying the current prices of different varieties of trees in the local markets. These prices will also apply for the timber, but the compensation for the perennial fruits will be determined differently.
- **Fruits and other seasonal and perennial crops:** Compensation will be determined by surveying current prices in the local markets. For the seasonal crops, compensation will be paid for only one crop, and that for the perennial crops will be paid for three crops, i.e., three times the value assessed by the Joint Verification Team.
- **Unforeseen losses:** Compensation for any unforeseen losses will be determined by using methods that will be considered most appropriate.

These above surveys to determine the current market prices will begin as soon as the land acquisition requirements are identified in subproject areas. Reports on the current market prices of the different asset categories will be prepared by subprojects or other logical spatial units.

4.3 Database

All information collected through the above surveys will be entered onto a computer database by the RRS or RRRE of DSM consultants. This database will form the basis of information for preparation and implementation of the ARAP. The dataset of the basic information will also facilitate the effective and efficient monitoring of compensation and other assistance activities.

4.4 Preparation of Abbreviated Resettlement Action Plans

Based on the results of the above surveys, the executing agency, with the assistance of RRS and RRRE of DSM consultants, shall prepare an ARAP for subprojects which will cause land acquisition and involuntary resettlement. The contents to be covered by the ARAP are listed as follows:

- PAP census and their socioeconomic information
- Inventory of losses
- Valuation of lost assets at market value
- Description of compensation and restoration and rehabilitation assistance
- Entitlements for the compensation and assistance under the NRRDLGIP
- Consultation with PAPs
- Grievance redress mechanism
- Monitoring and evaluation
- Institutional and implementation arrangements
- Implementation schedule
- Budget

Under the preparatory survey, the draft ARAPs have been formulated for two sampled UZR, i.e., UZR in Bhaluka Upazila in Mymensingh area and in Birampur Upazila in Rangpur Division. These will serve as reference materials for the subsequent preparation of ARAPs during the implementation phase.

5 Land acquisition, resettlement, compensation, and restoration and rehabilitation assistance

The NRRDLGIP will basically follow the legal procedures for land acquisition stipulated in the ARIPO. However, since there are many gaps between the ARIPO and the JICA Guidelines, additional issues, including but not limited to compensation at full replacement cost, inclusion of PAPs without titles in eligible persons, restoration and rehabilitation assistance, and public consultations and participation, need to be addressed in accordance with the policy presented in Section 3.4.

If involuntary resettlement occurs, the executing agency is required to prepare an ARAP. The ARAP will be formulated based on the census and other relevant surveys. After the finalization of the ARAP, resettlement activities will be implemented in accordance with the ARAP by the executing agency with assistance from DSM consultants and implementing NGOs (INGOs). Compensations for PAPs shall be paid and restoration and rehabilitation assistance needs to be provided prior to the resettlement activities.

The implementation steps of the ARAPs will include: 1) identification of cut-off date; 2) verification of rights to concerned assets; 3) determination of unit prices; 4) compensation, and restoration and rehabilitation assistance; and 5) implementation of land acquisition and resettlement activities. Details of each step under the NRRDLGIP are described below.

5.1 Identification of cut-off date

At the very beginning of the process of resettlement and land acquisition, all PAPs will be properly identified and recorded based on the census and socioeconomic surveys. The cut-off date is defined in Section 1.2 of this RPF.

The cut-off date is the beginning date of the PAP census in each subproject site. Subproject-specific cut-off date shall be specified for each subproject, and must be informed in advance of the commencement of resettlement and land acquisition activities.

5.2 Verification of rights to concerned assets

The executing agency, with assistance from the RRREs and implementing NGOs (INGOs), needs to verify the rights of PAPs who claim the compensation and other entitlements of affected land and assets. The verification will be undertaken based on the result of the census survey. With or without legal titles over the lands and affected assets will not affect the eligibility of the PAPs.

The detailed information on affected lands and other assets will be surveyed. The boundaries of land to be affected will be properly determined, and the area of affected lands will be measured. Such information will be utilized for the calculation of compensation amount.

5.3 Determination of unit prices

For the purpose of determining the unit prices for calculating the replacement costs, the executing agency will verify the prevailing market unit prices of lands and other assets to be affected. The unit prices of affected lands and other assets will be assessed by the market price survey described in Section 4.2.

5.4 Compensation, and restoration and rehabilitation assistance

Compensation amount will be calculated by multiplying the unit prices by actual size or number of affected properties, such as the size of affected lands or lost assets, numbers of replacement construction materials, number of trees, income lost days, and volume of crops. The basis for the unit prices will be disclosed to PAPs in the consultation about the compensation amount.

Contents of restoration and rehabilitation assistance will be determined based on the results of relevant surveys. Based on the socioeconomic data gained from the surveys, the executing agency will classify the income sources of the PAPs to be affected. Each type of livelihood has different approaches of intervention in restoring adversely affected incomes of PAPs. If they depend on agriculture, the first priority is to provide them with replacement land. If they are involved in micro business, they will receive cash compensation equivalent to three months of lost incomes or minimum wage rates for employees of micro business. In addition, a detailed plan and scoping for the income generation program will be designed by DSM consultants and INGOs. The executing agency shall commit for adequate budgetary support. Moreover, it will advise civil work contractors to give preference for employment to any members of the PAPs' households during the construction of subprojects.

5.5 Land acquisition and resettlement

Land acquisition and resettlement can be initiated after confirming all the necessary compensations are paid and restoration and rehabilitation assistance is provided. The restoration and rehabilitation assistance will continue to be provided after the commencement of the construction activities.

For PAPs dependent on agriculture, provision of alternative land should be prioritized. The other PAPs

are also qualified to receive alternative lands as compensation. The executing agency will allocate lands for the PAPs within their jurisdictions to the extent possible. The alternative lands should be close to the affected lands wherever possible, and have the same or more productivity. The place to which PAPs will relocate shall be conducive to social rehabilitation, accessible to social services and drinking water, and with space for sanitary latrines in accordance with the ARAP. The timing of resettlement will be made convenient to PAPs.

6 Consultation, participation, and disclosure

6.1 Public consultation

The executing agency, in the process of preparation and implementation of ARAPs, shall consult with PAPs and other stakeholders for each subproject that will cause land acquisition and involuntary resettlement. The consultation aims to identify the present status of subproject sites and the perceptions of PAPs and other stakeholders, and incorporate them into an ARAP. This will enable the Project to formulate a more appropriate ARAP, and eventually contribute to reducing the risk of social conflicts which may be caused by subproject implementation.

The consultation will be held mainly in the form of focus group discussions with PAPs and other stakeholders. Individual interviews with PAPs and key informants and public consultation meetings will also be held where appropriate. The consultation shall be undertaken in an atmosphere free of intimidation or coercion. It shall also be gender inclusive and responsive. In holding consultation meetings, the executing agency shall pay due attention to vulnerable groups.

Prior to the consultation, relevant and adequate information shall be disclosed timely in a manner that is understandable and readily accessible to the PAPs.

6.2 Information disclosure

Information on details of subprojects shall be disclosed to the PAPs and other stakeholders prior to the consultation. Such information needs to include the location of subproject site, type of construction work, possible impacts of land acquisition and resettlement, and procedures for compensation and restoration and rehabilitation assistance.

Such information should be disclosed at the convenient places such as the District, Upazila, and Pourashava offices so that PAPs and other stakeholders can easily access the information. All information needs to be presented in a local language which is understandable to PAPs. For illiterate people, suitable other communication methods such as briefing them, holding discussions and meetings, broadcasting in the radio/television etc. will be used.

If there is no impact and thus no ARAP is prepared, the executing agency will disclose the information on subprojects at the main villages, or other convenient places nearby the subproject sites.

The ARAP should be made available to the PAPs and other stakeholders. It shall be disclosed at the convenient place for PAPs, i.e., the District, Upazila, and Pourashava offices. A summary of the ARAP will be prepared for the distribution to PAPs and other stakeholders. The status of disclosure will be reported to JICA.

6.3 Identification of stakeholders of the Project

It should be ensured that a wide range of stakeholders are informed of details of subprojects and possible adverse impacts related to land acquisition and involuntary resettlement. Timing, frequencies,

and topics will be different from stakeholders to stakeholders according to their degree of involvement, positions, and responsibilities.

The most salient stakeholders are the PAPs identified under the NRRDLGIP, including land owners and occupants to be affected by land acquisition and involuntary resettlement. Lack of legal rights to the affected assets does not hinder the entitlement under the NRRDLGIP. Communities and local business entities, including shopkeepers, fishermen, boatmen, and businessmen are also important stakeholders who should be closely consulted. During the preparation of ARAPs, views of these stakeholders shall be incorporated properly.

Other stakeholders include Departments of Forest, Agriculture, and Public Works and other government agencies, and relevant Upazilas, and Unions. JICA is also a key organization to ensure appropriate procedures. The executing agency needs to communicate with them to complete land acquisition and resettlement smoothly.

Contractors, sub-contractors and suppliers during the construction period will be also informed of the contents of ARAPs prior to the commencement of their works. INGOs, which will directly contact with PAPs at the grassroots level, are also important stakeholders since they will directly contact with PAPs.

6.4 Process of consultation and responsible entity

The details on the process of consultation and disclosure and the responsible entities at each phase are described in Table A23-4.

Table A23-4 Process of consultation and disclosure, and responsible entity at each stage

Phase	Consultation and disclosure	Detailed action	Responsible Entity
Detailed design phase	<ul style="list-style-type: none"> - Information disclosure on details of subprojects, and preliminary screening of land acquisition and resettlement - Consultation with potential PAPs and local stakeholders 	<ul style="list-style-type: none"> - Leaflets containing information on the NRRDLGIP and subprojects will be prepared and distributed to potential PAPs and local stakeholders. - Consultation with PAPs will be held. Public notice will be posted on convenient places and newspapers. - PAPs will be informed of preliminary possibility of land acquisition and resettlement, and the tentative alignment and location of subprojects. 	EA, RRS, RRRE, INGO
ARAP preparation phase	- Consultation with PAPs and other stakeholders	<ul style="list-style-type: none"> - Further consultations will be held with PAPs about entitlements, procedures, schedule, and any other issues raised by the PAPs. - Summary ARAP will be made available to all PAPs at the convenient place and in local language. 	EA, RRS, RRRE, INGO
	- Disclosure of final entitlement packages and of draft ARAP	<ul style="list-style-type: none"> - Draft ARAP will be explained to all PAPs in local language. - Feedback from PAPs and other stakeholders will be sought and incorporated into the draft ARAP. 	EA, RRS, RRRE, INGO
	- Finalization of ARAP	<ul style="list-style-type: none"> - ARAP will be elaborated by EA. - ARAP will be approved by JICA (prior to award of contract). - Final ARAP will be disclosed to PAPs and other stakeholders. 	EA, RRS, RRRE
ARAP implementation phase	- Consultation with PAPs during ARAP implementation	- Consultations will be held with PAPs on entitlements and any other issues raised by the PAPs.	EA, RRS, RRRE, INGO

Legend: EA=Executing Agency, RRRE=Regional Rehabilitation and Resettlement Expert, RRS=Rehabilitation and Resettlement Specialist, INGO=Implementing NGO

7 Grievance redress mechanism

7.1 General

During the ARAP implementation process, the executing agency shall establish a Grievance Redress Mechanism (GRM) to receive PAPs' grievances about the implementation of ARAPs under the NRRDLGIP. The GRM is intended to seek resolutions of the grievances promptly without resorting to expensive and time-consuming legal procedures. This will enable PAPs to receive compensation and other entitlements in a short time. However, it should be noted that the GRM shall not impede access of PAPs to the existing judicial or administrative remedies. PAPs shall be informed properly that they have a right to raise grievances against adverse impacts under the GRM.

7.2 Grievance Redress Committee

Under the GRM, a grievance redress committee (GRC) shall be established for each or group of subproject that requires land acquisition and resettlement. The GRC receives all the grievances related to land acquisition and resettlement impacts such as right of ownership, entitlement to compensation and other assistance, and any other issues raised by the PAPs. The GRC for a subproject shall comprise the following members:

For Component 1:

- | | |
|--|--------------------|
| • Upazila Engineer, LGED | - Convener |
| • INGO | - Member Secretary |
| • Union Parishad (UP) Chairman or his/her designated UP member | - Member |
| • Female UP member | - Member |
| • One representative from PAPs | - Member |

For Subcomponent 2-1:

- | | |
|--|--------------------|
| • Representative from PIU | - Convener |
| • INGO | - Member Secretary |
| • Pourashava Mayor or his/her designated Councilor | - Member |
| • Female Pourashava Councilor | - Member |
| • One representative from PAPs | - Member |

7.3 Procedure

Grievances of PAPs will first be brought to the RRRE or INGO. If grievance is lodged only in verbal form, the RRRE or INGO shall write it down at no cost. Grievances not redressed by RRRE and INGO shall be brought to the GRC. The GRC will meet every month, and determine the responses to individual grievances within 15 days upon the date of receipt.

If PAPs are not satisfied with the decision of the GRC, they can attend the next meeting to appeal for the reconsideration of the GRC decision. Grievances not redressed by the GRC will be sent to and addressed by the Inter-ministerial Steering Committee (ISC). If they are related to land acquisition, Deputy Commissioner (DC) will address them. Further grievances will be referred by PAPs to the appropriate courts of law. All grievances received shall be recorded, and the record shall include contact details of complainant, the date of receipt of grievance, nature of grievance, agreed corrective actions and the date when the actions were effected, and final outcome. All expenses incurred in arranging grievance negotiations and meetings of GRC as well as logistics required, shall be arranged by LGED.

Table A23-5 Procedures for grievance redress

	Concerning Land	Concerning structures and other assets
Step 1	PAP lodges a grievance to RRRE/INGO, who resolve it within 15 days upon the receipt.	

If no resolution is reached, then...

Step 2	PAP lodges the grievance to GRC for resolution within 15 days. PAP can appeal in the next GRC if not satisfied with the decision of GRC.	
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If no resolution is reached, then...

Step 3	PMO, PIU and/or GRC assists the PAP in lodging the grievance to ISC or DC. DC appoints an arbitrator under Section 27 of the ARIPO.	PMO, PIU, and /or GRC guide the PAP in lodging the grievance to the District Court.
Step 4	Arbitrator hears the grievances and renders decision within 30 days upon appointment. If the PAP is not satisfied with the decision of arbitrator, DC forms an Arbitration Appellate Tribunal.	The District Court will assess the merit of grievance and schedule the hearing. The decision of the District Court is final and binding.
Step 5	Arbitration Appellate Tribunal hears and assesses the merit of grievance. The decision is final and binding.	Not applicable.

Note: ARIPO: Acquisition and Requisition of Immovable Property Ordinance 1982; DC: Deputy Commissioner; GRC: Grievance Redress Committee; INGO: Implementing Non-Government Organization; ISC: Inter-ministerial Steering Committee; PIU: Project Implementing Unit; PMO: Project Management Office; PAP: Project-affected Persons; RRRE: Regional Rehabilitation and Resettlement Expert

8 Monitoring and reporting

8.1 Monitoring system

Under the NRRDLGIP, a monitoring system needs to be established to ensure the effective and efficient implementation of land acquisition and resettlement. More specifically, the objectives of the monitoring are to: 1) check if compensation, restoration and rehabilitation assistance, and other entitlements are sufficiently provided; 2) see if the standards of living of PAPs are restored or improved; 3) ascertain whether land acquisition and resettlement are implemented as per the schedule; and 4) identify problems and resolve them.

The two-tiers of monitoring mechanism will be established under the NRRDLGIP. The first tier of the monitoring mechanism is at the field level. The Executive Engineers (XEN) at the LGED District Offices and PIUs at concerned Pourashavas are responsible for the field-level monitoring. Field-level data and information will be collected by them, and the RRRE and INGOs will help them to collect necessary data and information.

The second tier of the monitoring mechanism will be established at the Project Management Office (PMO) at the LGED headquarters. The PMO, under the assistance of a RRS at the PMO, will be in charge of overall monitoring and will check the compliance of field-level activities with this RPF and other relevant laws and guidelines. The PMO is also responsible for the reporting to JICA on the progress of land acquisition and involuntary resettlement.

In addition, an external independent monitoring will be conducted to see the social impacts of subprojects, in particular whether entitlements are timely and sufficiently provided. This external monitoring will contribute to increase in the objectiveness and transparency of the monitoring and evaluation. For this purpose, an independent external monitoring agency (EMA) with experience in resettlement and rehabilitation and restoration assistance will be engaged.

8.2 Monitoring at the LGED District Offices and Pourashavas

The LGED District Office for Component 1 and PIUs at concerned Pourashavas for Subcomponent 2-1 will monitor the implementation status of land acquisition and resettlement activities. The RRRE and INGOs will help them for the monitoring.

The INGO, with guidance from the RRRE, will collect information on the progress of the ARAP. The progress of each activity listed in the ARAP will be checked by interviews and consultations with PAPs, sample on-site investigations, and other appropriate means. The collected information will be consolidated in a quarterly progress report by the LGED District Offices or PIUs, and then the report will be submitted to the PMO. The report will contain the following: 1) accomplishments to-date; 2) objectives attained and not attained during the period of subprojects; 3) problems and challenges regarding land acquisition and resettlement; and 4) proposed countermeasures for the next quarter. Such information shall be described in a quantitative way as much as possible. The monitoring report will be integrated by the PMO into the progress reports of the NRRDLGIP to be submitted to JICA.

The indicators to be covered by the monitoring activities at the LGED District Offices and PIUs of Pourashavas are listed in Table A23-6.

Table A23-6 Monitoring indicators

Monitoring Issues	Monitoring Indicators
Budget and timeframe	<ul style="list-style-type: none"> - Have all land acquisition and resettlement staff been appointed and mobilized for field and office work on schedule? - Have capacity building and training activities been completed on schedule? - Are resettlement implementation activities being achieved against agreed implementation plan? - Are funds for land acquisition and resettlement being allocated to the executing agency on time? - Have funds been disbursed according to ARAP? - Has the land made encumbrance free and handed over to the contractor in time for subproject implementation?
Delivery of PAP entitlements	<ul style="list-style-type: none"> - Have all PAPs received entitlements according to numbers and categories of loss set out in the entitlement matrix? - How many affected households relocated and built their new structure at new location? - Are activities related to income and livelihood restoration being implemented as planned? - Have affected businesses received entitlements? - Have the squatters and encroachers displaced due to the subproject been compensated? - Have the community structures (e.g., mosque, community organization) been compensated for and rebuilt at new site? - Have all processes been documented?
Consultations, grievances, and special issues	<ul style="list-style-type: none"> - Have resettlement information brochures/leaflets been prepared and distributed? - Have consultations taken place as scheduled, including meetings, groups, and community activities? - Have any PAPs used the grievance redress procedures? - What grievances were raised? - What were the outcomes? - Have conflicts been resolved? - Have grievances and resolutions been documented? - Have any cases been taken to court?

Monitoring Issues	Monitoring Indicators
Benefit monitoring	<ul style="list-style-type: none"> - What changes have occurred in patterns of occupation compared to the pre-project situation? - What changes have occurred in income and expenditure patterns compared to pre-project situation? - Have PAPs income kept pace with these changes? - What changes have occurred for vulnerable groups?

Source: Modified and adapted from ADB (2005). *Resettlement Planning Document: Second Rural Infrastructure Improvement Project*.

8.3 Monitoring by the PMO

The PMO is responsible for the overall monitoring on the progress of land acquisition and involuntary resettlement activities. It will verify the monitoring activities by the LGED District Offices and PIUs at concerned Pourashavas.

The PMO will basically check the compliance with the ARAP and other relevant laws and guidelines. In particular, under such monitoring the PMO shall assess: 1) subproject compensation and entitlement policies; 2) adequacy of organizational mechanism for implementing the ARAP; 3) restoration and rehabilitation assistance to PAPs; 4) complaints and grievances; and 5) provisions for adequate budgetary support by the LGED or concerned Pourashavas for implementing the ARAP. In the context of 3) above, the RRS at the PMO will assess whether PAPs have been received sufficient compensation and other entitlements, and whether they have reestablished their structures and livelihoods. The restoration of their incomes up to the pre-project levels will be focused in particular. The RRS will also appraise the accounting documents which record the payments of compensation to PAPs by the LGED or concerned Pourashavas.

8.4 External Monitoring

The external monitoring, which will be conducted by the External Monitoring Agency (EMA), will focus on social impacts of subprojects on PAPs, and status of entitlement provision to PAPs. The EMA will be recruited from an independent consult, academic research institution, or NGO which has enough experience in monitoring on land acquisition and involuntary resettlement.

The timing of the external monitoring are proposed as post-subproject phase, since the expected scale of land acquisition and resettlement are considered small. Such monitoring should be conducted six month-after the completion of land acquisition or resettlement.

Through consultations with the PAPs and on-site investigations, the EMA will assess the socioeconomic conditions of the PAPs, and aftermath impacts. Perceptions of the PAPs on their received entitlements are also confirmed. Baseline information on PAPs' income and livelihood level will be properly referred in the post-subproject monitoring. Based on the monitoring, lessons learned from the land acquisition and resettlement activities will be derived, and they will provide important feedback for future subprojects involving land acquisition and resettlement.

The RRS and the PMO shall provide necessary assistance, including the provision of field data and information and arrangement of field surveys, to the EMA.

8.5 Reporting Requirements

The Project Director (PD) will periodically prepare and send status reports to JICA on ARAP implementation by incorporating them in the Quarterly Project Progress Reports. A sample monitoring report format is given in Attachment 3. All relevant documents listed below shall be submitted,

together with the Reports, by the PMO to JICA.

- A draft ARAP approved by the LGED before subproject appraisal
- The final ARAP approved by the LGED after the PAP census has been completed
- An updated ARAP if updated during subproject implementation phase
- Monitoring reports on land acquisition and resettlement

The RRS at the PMO will assist the PD in periodic reviews and supervision during the implementation stage. The RRS will assess the quarterly progress reports, which will be submitted by the LGED District Office through the LGED Regional offices, or by the PIUs at Pourashavas, and check the progress of all activities related to land acquisition and resettlement. The RRS will report the assessment results to the PD, and recommend necessary actions as appropriate.

The EMA is responsible for the post-subproject monitoring, and will elaborate a monitoring report. The report shall be submitted to both the PMO and JICA directly.

9 Institutional arrangements and implementation mechanism

9.1 Entities responsible for resettlement and land acquisition

For the effective and efficient implementation of the ARAP, it is critical to institute a firm implementation arrangement within the Project. The executing agencies responsible for land acquisition and involuntary resettlement under the NRRDLGIP are the LGED and target Pourashavas. More specifically, the LGED District Office for Component 1 and PIUs at Pourashavas for Subcomponent 2-1 are primarily responsible for the implementation of activities related to land acquisition and involuntary resettlement. They need to take necessary actions, including constituting various organizations and mobilizing INGOs.

Relevant entities in relation to the preparation, implementation, and monitoring of the ARAP are presented below.

(1) LGED

The LGED is primarily responsible for overall activities related to involuntary resettlement and land acquisition for both Component 1 and Subcomponent 2-1. The PMO will be established within the LGED headquarters for the implementation of the overall Project activities, and the PMO needs to perform primary responsibilities for activities related to the involuntary resettlement and land acquisition. It will recruit the DSM consultant team, especially the Rehabilitation and Resettlement Specialists. INGOs will be also recruited for the implementation of activities on the ground, especially household surveys and consultations with PAPs. The DSM consultant will assist the PMO in overseeing the activities of INGOs.

For Component 1, the PMO will have supervisory roles, whilst the District-level XEN will be responsible for the actual implementation of resettlement and land acquisition activities. The PMO will recruit a RRS at the PMO, and three RRRE who will assist the District XENs in preparing and implementing the ARAPs.

The XENs at the District offices, with assistance of the RRS, RRRE, and INGOs, will implement the necessary actions. They will include disclosure of subproject information, detailed surveys on PAPs and other stakeholders, and consultation with PAPs, preparation and implementation of ARAPs. The monitoring reports on the progress of resettlement and land acquisition activities need to be elaborated by the District XENs, and be submitted to the LGED Regional offices, which will subsequently submit

it to the PMO. The reports will then be submitted to JICA for its approval.

The Upazila Engineers (UE) of each Upazila will also support the XENs, the RRREs and INGOs in conducting detailed surveys and providing other field-level assistance.

In terms of Subcomponent 2-1, the PMO will supervise all the activities by the PIUs at Pourashava. It shall, through the RRREs, collect relevant information and assess the progress of activities related to involuntary resettlement and land acquisition. It will assess the ARAPs submitted by concerned Pourashavas. After the approval, the PMO will submit it to JICA for its approval.

(2) Pourashavas

Pourashavas are responsible for the implementation of subprojects under Subcomponent 2-1. For the purpose of the subproject implementation, the Project Implementation Unit (PIU) will be formed in each Pourashava, and the PIU will have responsibilities for the implementation of resettlement and land acquisition activities, including the preparation of the ARAPs. The DSM consultants, in particular the RRREs, will assist PIUs in preparing and implementing the ARAPs, and the INGOs will engage in field-level activities.

The PIU, with assistance of the RRRE and INGOs, will disclose relevant information to and hold consultation meetings with PAPs and other stakeholders. It will conduct necessary surveys to identify socioeconomic conditions of PAPs, and make inventory of losses, and determine unit prices for calculating compensation and entitlements. Based on the survey results and consultations, it will elaborate the draft ARAPs. Further consultations will be held to finalize the ARAPs. After the finalization of the ARAP, the PIU shall submit it to the PMO for its approval.

The PIU is also responsible for the implementation of the ARAPs. It needs to secure the budget for the implementation of the ARAPs, and interact with PAPs in terms of prior notification, compensation, and grievances. It shall also perform the monitoring on the progress of the related activities, and will elaborate a report on a quarterly basis.

(3) DSM Consultants

The DSM Consultants will be recruited by the PMO to provide assistance to the PMO and PIUs. They include a RRS at the PMO, and three RRREs at the Regional level. The RRREs will be based in the Supervision and Monitoring Office (SMO), but will be in charge of land acquisition and resettlement issues of both Component 1 and Subcomponent 2-1. The RRREs shall support the PMO to ensure that all subprojects comply with the requirements of the JICA Guidelines in terms of involuntary resettlement and land acquisition. They are responsible for regular reviewing and updating of the RPF, assisting LGED District Offices and PIUs in the preparation and implementation of the ARAPs, and monitoring on activities related to involuntary resettlement and land acquisition.

(4) Implementing Non-Government Organization

The Implementing Non-Government Organizations (NGOs) with guidance and supervision of the RRS and RRRE will engage in the preparation and implementation of the ARAPs. The INGOs will work at the level of grassroots as a catalyst to interact with PAPs. They should have enough capacity to identify problems or complaints at the grassroots level, and assess the needs of PAPs for the restoration of income and livelihoods.

The roles of the INGOs are basically to assist the executing agency at the field level in accordance with the guidance from RRREs. The INGOs will assist in: 1) disclosure of subproject information; 2) public consultation meetings; 3) socioeconomic surveys on PAPs including those on the inventory of

losses and replacement cost; 4) consultation with PAPs and other stakeholders; 5) processing the collected data for the preparation of ARAPs; 6) implementation of ARAPs including payment of compensation and entitlements, and restoration and rehabilitation assistance; and 7) monitoring on the implementation of the ARAPs. The sample questionnaires to be used in the surveys are attached as Attachment 2.

(5) Deputy Commissioners

The office of Deputy Commissioner (DC) will be responsible for land acquisition, in particular the assessment of affected assets under the ARIPO. It will appoint representatives as member of the Joint Verification Team (JVT) and Property Valuation Advisory Team (PVAT) for quantifying losses and determining valuation of affected properties. The LGED, RRS, RRREs and INGOs shall liaise with concerned DC offices to take necessary procedures.

(6) Relevant organizations for implementation of ARAP

The executing agency shall constitute several committees or organizations for the implementation of the ARAPs. They include Joint Verification Team (JVT), Property Valuation Advisory Team (PVAT), and Grievance Redress Committee (GRC).

a) Joint Verification Team

The Joint Verification Team (JVT) will be formed in each District. The major responsibility of the JVT is to review the field data collected by the INGO together with the DCs' assessment on the loss of physical assets. The JVT will scrutinize the list of PAPs and affected assets, and verify and finalize the list through conducting joint verification activities. The entitlements of PAPs will be determined by using the assessment result of the JVT as one of the important determinants. The JVT will be a three-member body and be comprised as follows:

- | | |
|--|------------------|
| • District XEN or representative from PIU: | Convener |
| • Representative of DC office: | Member |
| • INGO: | Member Secretary |

b) Property Valuation Advisory Team

A Property Valuation Advisory Team (PVAT) will be formed in each District. The PVAT will determine the market price and replacement cost of lands or other affected properties. Based on the assessment of the PVAT, the compensation amount will be finalized. The PVAT will be comprised as follows:

- | | |
|--|------------------|
| • District XEN or representative from PIU: | Convener |
| • Representative of DC office: | Member |
| • INGO: | Member Secretary |

c) Grievance Redress Committee

The Grievance Redress Committee will be formed for each subproject. Representatives of PAPs will be involved in the GRCs to review and resolve disputes related to compensation and other resettlement entitlements. Details of the GRC are presented in Section 7.2.

9.2. Roles and responsibilities of relevant entities

Details on activities and responsibilities of relevant entities described above related to ARAP activities are presented in Table A23-7.

Table A23-7 Institutional roles and responsibilities

Activity	Implementing/ Responsible entity	
	Component 1	Subcomponent 2
1. Detailed design phase		
Recruitment of RRS and RRREs	PMO	PMO
Recruitment and mobilization of INGO	PMO, RRS	PMO, RRS
Information disclosure on details of subprojects	D-XEN, RRS, RRRE, INGO	PIU, RRS, RRRE, INGO
Preliminary screening of land acquisition and resettlement	D-XEN, UE, RRRE, INGO	PIU, RRRE, INGO
Consultation with potential PAPs and local stakeholders	D-XEN, UE, RRRE, INGO	PIU, RRRE, INGO
2. ARAP preparation phase		
PAP census and socioeconomic survey	D-XEN, UE, RRRE, INGO	PIU, RRRE, INGO
Preparation of inventory of losses	D-XEN, UE, RRRE, INGO	PIU, RRRE, INGO
Market price survey	D-XEN, UE, RRRE, INGO	PIU, RRRE, INGO
Consultation with PAPs and other stakeholders	D-XEN, UE, RRRE, INGO	PIU, RRRE, INGO
Preparation of draft ARAP	D-XEN, RRS, RRRE	PIU, RRS, RRRE
Disclosure of final entitlement packages and of draft ARAP	D-XEN, RRS, RRRE, INGO	PIU, RRS, RRRE, INGO
Finalization of ARAP and its submission to JICA	PMO, D-XEN, RRS, RRRE	PMO, PIU, RRS, RRRE
3. ARAP implementation phase		
Budget allocation and approval	PMO, RRS	PMO, RRS
Disbursement of funds	PMO	PMO
Payment of compensation to PAPs for land and other properties	D-XEN, RRS, RRRE, INGO	PIU, RRS, RRRE, INGO
Commencement of restoration and rehabilitation assistance	D-XEN, RRRE, INGO	PIU, RRS, RRRE, INGO
Advance notice to PAPs on schedule of clearing of land and resettlement	D-XEN, RRRE, DC, INGO	PIU, RRS, RRRE, DC, INGO
Clearance of lands, and resettlement	DC, D-XEN, RRRE, INGO	DC, PIU, RRRE, INGO
Monitoring of implementation status of ARAP	D-XEN, RRS, RRRE, INGO, EMA	PIU, RRS, RRRE, INGO, EMA
Overall monitoring of progress of land acquisition and resettlement activities	PMO, RRS	PMO, RRS
Resolution of grievances of PAPs	GRC, RRS, RRRE, INGO	GRC, RRS, RRRE, INGO
Preparation of quarterly monitoring report	D-XEN, RRS, RRRE	PIU, RRS, RRRE
Submission of monitoring report to JICA	PMO	PMO

Legend: ARAP: Abbreviated Resettlement Action Plan; DC: Deputy Commissioner; D-XEN: District Executive Engineer; EMA: External Monitoring Agency; GRC: Grievance Redress Committee; INGO: Implementing Non-Government Organization; PAP: Project affected person; PIU: Project Implementing Unit; PMO: Project management Office; RRS: Rehabilitation and Resettlement Specialist; UE: Upazila Engineer

9.3 Implementation Schedule

For each subproject or group of subprojects involving involuntary resettlement of less than 200 PAPs under the Project, an ARAP shall be prepared and implemented. Each ARAP will have a separate time bound implementation schedule for a particular subproject or group of subprojects. The standard implementation schedule of an ARAP is presented in Table A23-8.

Table A23-8 Implementation schedule of Abbreviated Resettlement Action Plan

No	Land Acquisition and Resettlement Activities	Start Date	Completion Date	Duration (days)
1	Hiring, mobilization and deployment of INGO	1 st of Month 1	30 th of Month 1	30
2	Information campaign on a subproject and possible resettlement	1 st of Month 2	30 th of Month 8	240
3	Consultation and focus group discussion	1 st of Month 2	30 th of Month 8	240
4	Organization of internal monitoring team	1 st of Month 1	15 th of Month 1	15
5	Formation of GRC and other committees and teams	15 th of Month 2	30 th of Month 2	15
6	Preliminary screening survey based on detailed design of subproject	1 st of Month 2	7 th of Month 2	7
7	Implementation of a census survey, socioeconomic survey, and other surveys	15 th of Month 2	15 th of Month 3	30
8	Identification of entitled PAPs	15 th of Month 2	15 th of Month 3	30
9	Data processing, fixation of property value, and determination of individual entitlements	1 st of Month 3	30 th of Month 3	30
10	Agreement of entitlements with PAPs, and preparation of land acquisition documents, and an ARAP if necessary.	1 st of Month 3	30 th of Month 3	30
11	Preparation and submission of land acquisition and/or resettlement budget	15 th of Month 3	15 th of Month 4	30
12	Approval of land acquisition and/or resettlement budget by the LGED	15 th of Month 4	30 th of Month 4	15
13	Release of funds for compensation, and payment of compensation to PAPs, and provision of restoration and rehabilitation assistance	1 st of Month 5	30 th of Month 8	120
14	Documentation and resolution of grievances from PAPs	1 st of Month 2	30 th of Month 8	240
15	Consultation with PAPs on schedule of clearing lands, or relocation if necessary	1 st of Month 5	30 th of Month 5	30
16	Clearing of lands, or relocation if necessary	15 th of Month 5	30 th of Month 5	105
17	Training and income generation programs if necessary	1 st of Month 5	30 th of Month 8	120
18	Elaboration and submission of the completion report by INGO to the PMO	1 st of Month 9	15 th of Month 9	15
19	Award of civil work contract to subproject contractor, and the mobilization of the contractor	15 th of Month 9	-	-
20	Post-resettlement and acquisition monitoring on the impacts of subprojects, and adequacy of the compensation and other entitlements	180 days after the 30 th of Month 8		

Source: Survey team

It is expected to take about nine months to complete the ARAP preparation and implementation, except for the external monitoring. This duration may vary depending on the individual situations of subprojects.

Attachment 1 Checklist for preliminary screening survey**1. Land Acquisition**

Probable effects	Yes	No	Unclear	Remarks
1 Will there be any land acquisition?				
2 Is the site for land acquisition identified?				
3 Is the ownership status and current usage of the land to be acquired identified?				
4 Will the subproject be implemented within an existing Right of Way (ROW)?				
5 Will there be loss of shelter and residential land due to land acquisition?				
6 Will there be loss of agricultural and other productive assets due to land acquisition?				
7 Will there be losses of crops, trees, and fixed assets due to land acquisition?				
8 Will there be loss of businesses or enterprises due to land acquisition?				
9 Will there be loss of income sources and means of livelihoods due to land acquisition?				

2. Restrictions on land use or on access to land

Probable effects	Yes	No	Unclear	Remarks
10 Will people lose access to natural resources, communal facilities and services?				
11 If land use is changed, will it have an adverse impact on social and economic activities?				
12 Will access to land and resources owned communally or by the state be restricted?				

3. Quantification of private land required to be acquired

13 Is there any preliminary estimate of the land likely to be acquired by the Project?
[] Yes [] No
If yes, approximately how much? _____ decimal

4. Information on resettlement

14 Is there any estimate of the number of persons likely to be resettled due to the Project?
[] Yes [] No
If yes, approximately how many? _____ persons
15 How many of them belong to the following groups?
Female-headed households approx. _____ persons
Households below the poverty line approx. _____ persons
* Income less than Tk. 5,000/household/month
Children, the elderly and the disabled approx. _____ persons
Landless people approx. _____ persons
Indigenous people approx. _____ persons
Other groups not protected by the national compensation law approx. _____ persons

Attachment 2 Sample format of census and socioeconomic survey questionnaire**Northern Region Rural Development and Local Governance Improvement Project in Bangladesh (NRRDLGIP)****Census and Socioeconomic Survey Questionnaire for the Affected Households (PATT-1: Census Questionnaire)****I. General**

- i. Questionnaire No.: ii. Road Subproject Name:
- iii. Name of Likely Affected Household Head:
- iv. Father's Name:
- v. Village: vi. Union:
- vii. Upazilla: viii. District:
- ix. Ethnic Group: 1. Bengali 2. (Specify) 3. (Specify)
- x. Details of Family Members of affected household: (please fill appropriate code)

Sl. No.	Name of family member	Age (in years)	Sex	Marital Status	Education	Occupation

Codes: Sex: 1.Male 2.Female**Marital Status:** 1. Married, 2. Unmarried, 3. Widow/Widower, 4. Separated, 5. Others**Education:** 1. Illiterate, 2. Can sign only, 3. Can read and write, 4. Primary, 5. Below SSC, 6. HSC, 7. Graduate, 8. Above**Occupation:** 1. Service (private/Government/NGO), 2. Business, 3. Day Labor, 4. Fisherman/Pisciculture, 5. Boatman, 6. Motor Driver, 7. Carpenter, 8. Mason, 9. Electrician/mechanics, 10. Housewife, 11. Unemployed, 12. Student, 13. Old, 14. Disabled, 15. Others (specify)**II. Details of Affected Land**

2. Ownership of the Land: 1. Private 2. Government 3. Religious 4. Community 5. Others
3. Use of Land:
1. Cultivation 2. Orchard 3. Residential 4. Commercial

11. Number of trees within the affected area:

Type Code: 1. Fruit bearing	2. Timber	3. Firewood
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a) Area of the affected structure (Square Meter).....
b) Length (Meter) c) Width (Meter)

14. a) Area of the total structure (Square Meter)
 b) Length (Meter) c) Width (Meter)
15. Scale of Impact (considering total area of structure)
 1) 25% 2) 50% 3) 75% 4) 100%
16. Type of construction materials used for the structure
 1. Temporary (buildings with mud/brick/wood made walls, thatched/tin roof)
 2. Semi-Permanent (buildings, with tiled roof and normal cement wall & floor)
 3. Permanent (with RCC, Single/ Double storey building)
17. Market Value of the Structure (Tk.).....
18. Use of the Structure (select appropriate code from below)
 1. Residential 2. Commercial 3. Residential & commercial. 4. School
 5. Community center/club 6. Religious (Mosque/temple/Girja) 7. Government office
 8. Others (e.g., Boundary Wall, Cattle Shed, Well/Tube Well, Latrine, farm house etc.)
 (specify).....
19. Status of the Respondents regarding Structure
 1. Legal Titleholder 2. Renter 3. Lease holder 4. Encroacher 5. Squatter
- If not legal owner, mention name of the Owner:
 Father's Name:
20. Is there any tenant of the Structure?
 1. Yes (Specify number) 2. No
21. Is any employee/ wage earner associated with commercial structure
 i) 1. Yes 2. No
 ii) If Yes, How many? Male: Female:
- IV. Resettlement & Rehabilitation**
22. Vulnerability Status of the Household:
 i) Is it a woman-headed household? 1. Yes 2. No
 ii) Is it headed by physically/mentally challenged person? 1. Yes 2. No
 Note: Refer to the definition of vulnerable groups described in the Resettlement Policy Framework.
23. Average monthly income of the family (Tk.):
24. Average monthly expenditure of the affected family (Tk.):
25. Resettlement/ Relocation Option
 1. Self Relocation through purchasing new land 2. Relocation on residual land
 3. Project Assisted Resettlement
26. Compensation Option for Land loser
 1. Land for land loss 2. Cash for Land loss
27. Compensation Options for Structure Loser
 1. House/Shop for House/ Shop Loss 2. Cash for House/ Shop Loss

28. Income Restoration Assistance (the most preferred option)

1. Employment opportunities in construction work
2. Assistance/loan from other ongoing development scheme
3. Vocational training
4. Others (specify)

29. How would you like to spend the compensation money?

1. To buy land 2. To shift a house 3. To build a house
4. To get training for taking a new occupation 5. To get a job 6. To invest in business
7. To market produce 8. To invest for self-employment
9. To adjust a loan 10. Other (Please specify)

1 st	2 nd	3 rd

* Planning according to preference

30. What are the available sources/opportunities for employment in your locality?

- i)
- ii)
- iii)

31. Do you think that you or your family members need training to develop skills for taking up a new occupation? Yes/ No

If the answer is yes, please specify the name(s) or type(s) of training essential for you or your family members:

- i)
- ii)
- iii)

(Name of the Investigator) Date:

(Signature of the Investigator)

PART-2: Socioeconomic Survey of the Affected Households**1. Household Information**

1.1. Name of the Head of the Household:

1.2. Household Composition (Population):

Sl. No.	Category	Male	Female	Total
1	Small Children (Below 5 Years)			
2	Aged between 6 to 15 Years			
3	Aged between 16 to 60 Years			
4	Aged above 60 Years			
5	Total			

1.3. Settlement Type: 1. Rural 2. Semi-Urban 3. Urban

1.4. Ethnicity: i) Bengali ii) Tribal (Specify)

2. Economic Activity of Households

2.1. What are the economic activities of the household? (Please tick all that apply)

Sl. No.	Type of Activities	Main	Allied/secondary
1	Agriculture		
2	Share cropping		
3	Working for other farmers		
4	Agriculture day labor		
5	Non-agriculture day labor		
6	Rickshaw/van puller		
7	Motor driver		
8	Mason		
9	Carpenter		
10	Mechanics/electrician		
11	Fishing		
12	Teacher		
13	Business/shop keeping		
14	Service for Government and NGO		
15	Others (Specify)		

3. Total Landholding of Household

(in hectare)

Cultivable	Residential	Water bodies/ Non-Cultivable	Total Land Area

4. Major Crop Produce in the Previous Year

Sl. No.	Type of Crops	Area under each crop (Decimal)	How many times/ seasons per Year	Total Yield (kg)	Price per kg (Tk.)
1	Rice				
2	Wheat				
3	Pulses				
4	Oil seeds				
5	Potato				
6	Vegetables				
7	Others				

5. Annual & Monthly Income of the Household

Sl. No.	Source	Monthly income (Tk.)	Annual Income (Tk.)
1	Agriculture		
2	Service		
3	Business		
4	Labor		
5	Fishery (pisciculture/shrimp farming)		
6	Professional		
7	Remittance		
8	Any other (specify)		
	Total		

6. Consumption Pattern

Kindly indicate the consumption/expenditure on different items in the previous year.

Sl. No.	Particulars / Source	Expenditure (Tk.)	
		Monthly	Annual
1	Food		
2	Transportation		
3	Clothing		
4	Health		
5	Education		
6	Communication		
7	Social functions		
8	Agriculture inputs (such as seeds, hiring of farmhands)		
9	Consumption of fuel for household		
10	Fuel/ Electric Bill		
11	Others Specify.....		
	Total (1-11)		

7. Possession of Asset

In the table below, please specify the type and quantity of assets possessed by the household.

Sl. No.	Item	Quantity
1	Radio	
2	Bicycle	
3	Television	
4	L.P.G connection/ Gas cylinder	
5	Computer	
6	Refrigerator	
7	Washing machine	
8	Motor cycle/Scooter/Auto rickshaw	
9	Car	
10	Rickshaw/Van	
11	Power tiller	
12	Boat/trawler	
13	Phone/mobile	
14	Solar panels	
15	Cow/bullock	
16	Goat/sheep	
17	Poultry	
18	Any other (specify.....)	

8. Indebtedness

8.1. Do you have any debt or loan? 1. Yes 2. No

8.2. If yes, please indicate your borrowings in the previous year. (Tk.)

Sl. No.	Source	Total Amount taken	Total Amount returned	Balance	Interest Rate (%)
1	Bank				
2	NGO				
3	Relative/Friend				
4	Private money lender				
5	Other				
Total					

9. Coverage under Government/Other Development Schemes

9.1. Did you derive any benefit from any project or scheme? 1. Yes 2. No

9.2. If 'Yes', kindly give us the following details

Source	Name of scheme	Type of help: 1. Loan; 2. Training; 3. Employment, 4. Grant; 5. Health care; 6. Others
Government		
NGO		
Funding agency		
Other		

9.3. If "1 Loan", kindly indicate the amount:

9.4. If “2 Training”, kindly indicate the type of training:

9.5. After using this project or scheme, did your annual income increase? 1 Yes 2 No

9.6. If “Yes”, how much?

9.7. If “No”, why?

10. Health Status

10.1. Please provide information on major illnesses of family members in the previous year.

No. of Cases/ Persons	Type of disease/ illness*	Treatment Taken**	Did you take treatment in time 1-yes, 2- No	Any difficulties to access to clinic/health center due to: 1. Long distance 2. Bad road condition

* 1. Waterborne diseases (Diarrhea, dysentery, cold/cold fever etc) 2. Typhoid 3. Cardinal 4. Rheumatic fever
5. Others (specify)

** 1. Allopathic 2. Homeopathic 3. Herbal 4. Traditional 5. No treatment

11. Status of Women

11.1. Kindly indicate the type(s) of economic and non-economic activities that the female members of your family are engaged in.

Sl. No.	Economic/Non-economic Activities	Yes/No	If yes, no. of women engaged in it
1	Cultivation/crop processing		
2	Allied activities (dairy, poultry, sheep rearing, etc.)		
3	Trade and business		
4	Agricultural labor		
5	Non agricultural labor		
6	Handicrafts/sewing		
7	Service for Government or NGO		
8	Others (Specify):		

11.2. Does your female member have any involvement in decision making on household matters?

1. Yes 2. No

11.3. If “Yes”, please choose “1” (=Yes) or “2” (=No) on the following matters.

Sl. No.	Matter	1 Yes, 2 No
1	Financial matter	
2	Education of child	
3	Health care of child	
4	Purchase of assets	
5	Day-to-day activities	
6	Social functions and marriages	

Sl. No.	Matter	1 Yes, 2 No
7	Business investment	
8	Others	

12. Do any female member of your household take part in a social or community organization, or a Local Government body?

1. Yes 2. No

12.1. If “Yes”, specify: Name of organization: Position:

13. Amenities

13.1. Source of Drinking Water:

1. Piped-water supply 2. HTW 3. Shallow TW 4. Deep TW 5. Well
6. River/canal/pond 7. Rain harvesting 8. Bottled water 9. Others

13.2. Type of Toilet:

1. Sanitary 2. Open/hang 3. No toilet

13.3. Fuel for cooking:

1. Electricity 2. Wood 3. Gas 4. Diesel/Kerosene 5. Solar

13.4. Sources of lighting:

1. Electricity 2. Diesel/Kerosene 3. Solar 4. Others (specify)

14. Housing Structure/ Building Information

14.1. Use of Structure

1. Area of Residential housesquare meter.

14.2. Type of Construction materials used

1. Mud, thatched and tin 2. Thatched, wood and tally/tin 3. Tin and bricks
4. Brick/Cemented 5. Others

15. Transport Usage

15.1. Is your house immediately connected to a road?

1. Yes 2. No

15.2. If Yes, to which road?

1. Village Road 2. Union Road 3. District road 4. National Highway

15.3. Distance to the road in meters:

15.4. How is the condition of the connected road?

1. Good 2. Average 3. Poor 4. Very Poor

15.5. How often do you use the road for production/business activities?

15.6. Have you heard about this road development project?

1. Yes 2. No

15.7. If yes, what do you think of/expect from the project?

1. Saving travel time 2. Saving fuel/repair/travel cost 3. Any other (specify)

15.8. Will you be willing to contribute/participate (i.e., land, money, toll /tax, physical labor) if road development is undertaken?

1. Yes 2. No

(Name of the Investigator) Date:

(Signature of the Investigator)

Attachment 3 Sample format for monitoring report

1. Progress of land acquisition and involuntary resettlement

Resettlement activities	Planned total	Unit	Progress in quantity			Progress in %		Expected date of completion	Responsible organization
			During the quarter	Till the last quarter	Up to the quarter	Till the last quarter	Up to the quarter		
Preparation of ARAP									
Employment of consultants		Man-month							LGED
Implementation of census and socioeconomic survey									LGED, Pourashavas
Approval of ARAP			Date of approval: <u>DD/MM/YY</u>						LGED
Finalization of PAPs list		No. of PAPs							LGED, Pourashavas
Progress of compensation payment									LGED, Pourashavas
Site 1		No. of PAHs							
Site 2		No. of PAHs							
Site 3		No. of PAHs							
Site 4		No. of PAHs							
Progress of land acquisition									DC, LGED, Pourashavas
Site 1		ha							
Site 2		ha							
Site 3		ha							
Site 4		ha							
Progress of asset replacement									LGED, Pourashavas
Site 1		No. of PAHs							
Site 2		No. of PAHs							
Site 3		No. of PAHs							
Site 4		No. of PAHs							
Progress of resettlement of PAPs									LGED, Pourashavas
Site 1		No. of PAHs							
Site 2		No. of PAHs							
Site 3		No. of PAHs							
Site 4		No. of PAHs							

2. Public consultation

No	Date	Place	Contents of the consultation
1			
2			
3			

3. Monitoring on specific actions

Activities	Progress	Remarks
1. Pre-construction monitoring		
a) Have all land acquisition and resettlement staff been appointed and mobilized for field and office work on schedule?	Yes/ No Date of appointment:	
b) Have resettlement information brochures/leaflets been prepared and distributed?	Yes/ No Date of distribution	
c) Are resettlement implementation activities being achieved against the agreed implementation plan?	Yes/ No	
d) Are funds for land acquisition and resettlement being allocated to the executing agency on time?	Yes/ No	
e) Have funds been disbursed according to ARAP?	Yes/ No	
f) Have consultations taken place as scheduled, including meetings, groups, and community activities?	Yes/ No Date of consultation:	
g) How many affected households relocated and built their new structure at new location?	Number of affected households:	
h) Has the land made encumbrance free and handed over to the contractor in time for subproject implementation?		
i) Have all PAPs received entitlements according to numbers and categories of loss set out in the entitlement matrix?		
j) Are activities related to income and livelihood restoration being implemented as planned?		
k) Have affected businesses received entitlements?		
l) Have all the squatters and encroachers displaced due to the subproject been compensated?		
m) Have the community structures (e.g., Mosque, community organization) been compensated for and rebuilt at new sites?		
n) Have all processes been documented?		
2. Post acquisition/ resettlement monitoring: grievance redress		
a) Have any PAPs used the grievance redress procedures? How many?		
b) What grievances were raised? (Attach the summaries of grievances.)		
c) What were the outcomes? (Attach the summaries of the outcomes.)		
d) Have conflicts been resolved? (Attach the summaries of resolution. If unresolved, explain the details.)		
e) Have grievances and resolutions been documented?		
f) Have any cases been taken to court? (Attach the summaries of the cases)		
3. Post acquisition/ resettlement monitoring: assistance to PAPs		
a) Have capacity building and training activities been completed on schedule?		
b) What changes have occurred in patterns of occupation compared to the pre-project situation?		
c) What changes have occurred in income and expenditure patterns compared to the pre-project situation?		
d) Have PAPs income kept pace with these changes?		
e) What changes have occurred for vulnerable groups?		

Note 1: In the case of subproject at Bhaluka Upazila and Birampur Upazila, the draft ARAPs for these subprojects need to be updated as per the changes in subproject designs and site conditions.

Note 2: Relevant documents such as the inventory of loss of assets and record of consultation meetings shall be submitted together.

4. Preparation of resettlement sites (where necessary)

No.	Explanation of the site (e.g. Area, no. of resettled PAHs etc)	Status (Completion date/ not completed yet)	Details (e.g. Site selection, identification of candidate sites, discussion with the PAPs, development of the site etc.)	Expected date of completion
1				
2				
3				

Annex 24

Environmental checklist

List of tables

Table A24-1 Environmental checklist for the NRRDLGIP	2
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Table A24-1 Environmental checklist for the NRRDLGIP

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/IEE reports been already prepared in official process? (b) Have EIA/IEE reports been approved by authorities of the host country's government (i.e., the Department of Environment)? (c) Have EIA/IEE reports been unconditionally approved? If conditions are imposed on the approval of EIA/IEE reports, are the conditions satisfied? (d) Have an Environmental Clearance Certificate under the Environmental Conservation Rules 1997 officially obtained? (e) 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) N (e) N	(a)(b)(c)(d) EIA/IEE reports have not been prepared yet due to the following reasons: 1) Detailed designs of subproject under Component 1 have not been determined at the preparatory survey phase; and 2) Subprojects under Subcomponent 2-1 are not selected at the preparatory survey phase. The LGED will complete EIA/IEE process for subprojects that EIA/IEE are mandatory, and obtain the Environmental Clearance Certificate under the Environmental Conservation Rules 1997 prior to the commencement of the subprojects. A draft EIA and IEE report for a sample subproject of bridge over 100 m were prepared in the preparatory survey. (e) Subprojects that will require other environmental permits have not been identified at present.
	(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) N (b) N	(a)(b) The contents and potential impacts have not been fully explained and disclosed to the public yet since subprojects and their detailed designs are not determined yet.
	(3) Examination of Alternatives	(a) Have alternative plans of the project been examined with social and environmental considerations?	(a) Y	(a) Alternatives were examined during the preparatory survey from the following viewpoints: 1) comparison among subprojects; 2) engineering design of each subproject; and 3) zero option. It was concluded that the proposed project plan of the NRRDLGIP can be justified.
2 Pollution Control	(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) Y (b) N	(a) The air quality of subproject site is not expected to exceed the ambient air quality standards of Bangladesh, since the traffic volume on target roads is too small to cause air pollution. (b) No subprojects are expected to make worse air quality since they are basically located in rural areas where no or few big industries are located.

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
	(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 infrastructure facilities 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) Soil runoff from the bare lands will be minimized by measures such as the compaction of road side. (b) There is no risk of the contamination of water sources because surface runoff from roads will contain little pollutants. (c) Effluents may be discharged from Growth Center Markets and other markets, bus and truck terminals, waste bins and disposal facilities, and public and community toilets. However, prevention measures will be proposed in individual IEE and EIA and will be undertaken so that the effluents will not affect the water quality of nearby areas. In addition, compliance with the environmental regulations is one of the criteria for the subproject selection.
	(3) Wastes	(a) Are wastes generated from the infrastructure facilities properly treated and disposed of in accordance with the country's regulations?	(a) Y	(a) Infrastructure facilities such as Growth Center Markets and other public markets, bus and truck terminals will discharge some amount of wastes, but they are properly treated and disposed of.
	(4) Soil Contamination	(a) Are adequate measures taken to prevent contamination of soil and groundwater by the effluents or leachates from the infrastructure facilities and the ancillary facilities?	(a) Y	(a) As described in "(2) Water Quality", adequate measures will be taken.
	(5) Noise and Vibration	(a) Do noise and vibrations comply with the country's standards?	(a) Y	(a) Noise and vibrations are not expected to exceed the standards since traffic volume of Upazila and Union roads is not so heavy.
	(6) Subsidence	(a) In the case of extraction of a large volume of groundwater, is there a possibility that the extraction of groundwater will cause subsidence?	(a) N	(a) Subsidence is not expected because no subproject involves the extraction of groundwater.
	(7) Odor	(a) Are there any odor sources? Are adequate odor control measures taken?	(a) Y	(a) Infrastructure facilities such as public and community toilets, and garbage bins and disposal facilities may cause odor. However, adequate measures such as adoption of sanitary latrines and compliance with relevant regulations will be undertaken.
3 Natural Environment	(1) Protected Areas	(a) Is the project site or discharge area 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) In the Project area, there are six national parks, but no subprojects will be located in and adjacent to the national parks because one of the criteria will exclude such subprojects.

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
	(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) 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) If the project site is located at undeveloped areas, is there a possibility that the new development will result in extensive loss of natural environments? (g) Is there a possibility that changes in localized micro-meteorological conditions, such as solar radiation, temperature, and humidity due to a large-scale timber harvesting will affect the surrounding vegetation?	(a) N (b) N (c) N (d) N	(a)(b) No subprojects will be located in the vicinity of ecologically valuable sites and protected habitats of endangered species because such subprojects will be excluded by one of the selection criteria. (c) No significant ecological impacts are anticipated. (d) There is no or very minor risk of impacts on wildlife and livestock because subprojects will be implemented only on existing roads and markets, and in urban areas. (e) No subprojects will cause significant impacts on natural environment and ecosystems. (f) No subprojects will be located at undeveloped areas. (g) No subprojects will involve any large-scale timber harvesting.
	(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) The Project will not cause massive hydrologic changes, and thus no adverse impacts on surface water and ground water flows are expected.
	(4) Topography and Geology	(a) Is there a possibility the project will cause large-scale alteration of the topographic features and geologic structures in the project site and surrounding areas? (b) 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? (c) 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? (d) 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) Y (c) Y (d) Y	(a) No subprojects will cause large-scale alteration of the topographic features and geologic structures. (b) The slope of embankment is planned to be adequately compacted to prevent slope failures. Thus, no significant landslide and slope failures are anticipated. (c) There is a certain possibility of small-scale slope failures caused by civil works. Therefore preventive measures against slope failures will be undertaken. (d) There is a certain possibility of soil runoff from cut and fill areas. Therefore preventive measures will be undertaken.

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
4 Social Environment	(1) Resettlement and land acquisition	(a) Is involuntary resettlement or land acquisition caused by project implementation? If they are caused, are efforts made to minimize the impacts caused by the resettlement? (b) Is adequate explanation on compensation and assistance related to resettlement and land acquisition given to affected people prior to the resettlement? (c) Is the resettlement or land acquisition plan, including compensation with full replacement costs, restoration of livelihoods and living standards, developed based on socioeconomic studies on resettlement and land acquisition? (d) Are the compensations going to be paid prior to the resettlement and land acquisition? (e) Is the compensation policies prepared in document? (f) Does the resettlement or land acquisition plan pay particular attention to vulnerable groups or people, including women, children, the elderly, people below the poverty line, ethnic minorities, and indigenous peoples? (g) Are agreements with the affected people obtained prior to the resettlement and land acquisition? (h) Is the organizational framework established to properly implement resettlement and land acquisition? Are the capacity and budget secured to implement the plan? (i) Are any plans developed to monitor the impacts of resettlement and land acquisition? (j) Is the grievance redress mechanism established?	(a) Y (b) Y (c) Y (d) Y (e) Y (f) Y (g) Y (h) Y (i) Y (j) Y	(a) Small-scale involuntary resettlement, i.e., that of fewer than 200 PAPs, will be required for some subprojects. Land acquisition is also anticipated for some subprojects. Efforts to avoid and minimize the impacts will be made in accordance with the draft Resettlement Policy Framework (RPF). (b) Adequate explanation, compensation and other assistance will be provided prior to the resettlement or land acquisition in accordance with the draft RPF. (c) An abbreviated resettlement action plan (ARAP) will be formulated. (d) Compensations will be paid prior to the resettlement and land acquisition in accordance with the draft RPF. (e) Compensation policies will be presented in the ARAP. (f) The ARAPs will pay special attention to vulnerable groups in accordance with the draft RPF. (g) Agreements with the affected people will be obtained prior to the resettlement and land acquisition. (h) The organizational structures will be established. The capacity of the executing agencies will be supported by the Resettlement Specialist to be recruited under the Project. The budget will be secured in accordance with the draft RPF. (i) Monitoring plans will be included in the ARAPs. (j) The grievance redress mechanism will be established.
	(2) Living and Livelihood	(a) 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? (b) 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? (c) 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)? (d) Is there any possibility that roads will impede the movement of inhabitants? (e) Is there any possibility that structures associated with roads (such as bridges) will cause a sun shading and radio interference?	(a) Y (b) Y (c) Y (d) N (e) N	(a) Workers for ferry and boats, and shopkeepers at ferry ghats may lose their income sources if bridges are newly constructed. Adequate measures such as earlier information disclosure will be undertaken. (b) There is a certain risk of health problems, thus measures such as safety and health education to construction workers will be undertaken. (c) Road safety problems could be caused, thus adequate road safety measures, including the installation of warning signs, guards, and speed breakers, will be undertaken. (d) There is no risk of the impediment of local people's movement. (e) There is no possibility of a sun shading and radio interference since large-scale structures are not planned.

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
	(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) Y	(a) There may be some culturally and religiously important sites in the vicinity of subproject sites. If such sites are found, adequate measures, such as avoiding disturbance of those sites, will be undertaken.
	(4) Landscape	(a) Is there a possibility that the project will adversely affect the local landscape? Are necessary measures taken?	(a) N	(a) The project will not adversely affect the local landscape because subprojects will be implemented only on existing roads and markets, and in urban areas.
	(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 respected?	(a) Y (b) Y	(a) Special attention to ethnic minorities and indigenous peoples will be given. (b) All rights of ethnic minorities and indigenous peoples will be respected if they are identified in subproject sites.
	(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? (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) The LGED and Pourashavas will comply with any laws and ordinances regarding working conditions of Bangladesh. (b) Construction workers will be provided with necessary safety equipment. (c) Construction workers will be provided with safety and health educations. (d) Security guards will be educated not to violate safety of local residents.
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)(b)(c) Adequate measures will be undertaken to mitigate environmental and social impacts in accordance with the draft Environmental Framework (EF) and RPF.

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
	(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) - (c) Y (d) Y	(a) The LGED will develop and implement environmental and social monitoring plan in accordance with the draft EF and RPF. (b) Monitoring items, methods, and frequencies will be determined in accordance with the draft EF and RPF. (c) The LGED will establish the adequate monitoring framework in accordance with the draft EF and RPF. (d) Format and frequency of monitoring reports will be determined in accordance with the draft EF and RPF.

[Legend] ARAP: Abbreviated Resettlement Action Plan, EF: Environmental Framework, LGED: Local Government Engineering Division, RPF: Resettlement Policy Framework

- 1) Regarding the term “Country’s Standards” mentioned in the above table, if environmental standards in the country where the project is located diverge significantly from international standards, then appropriate environmental considerations must 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.

Annex 25

Operation and maintenance of rural transport and trading infrastructure

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1 Core rural road network

As set out in the Rural Roads Master Plan (LGED, 2005), the LGED assumes direct responsibility for the maintenance of what we have defined as the “core” rural road network, i.e., Upazila Roads (UZR) and Union Roads (UNR). To fulfill this responsibility, the LGED utilizes the annual GOB revenue budget allocation for rural road maintenance, complemented by maintenance financing included in foreign-financed rural infrastructure projects. The core network comprises 82,571 km of rural roads, as presented in Table A25-1.

Table A25-1 Core rural road network

Road type	Total number	Total length (km)	Developed length (km)				Earthen length (km)
			Bitumen	Concrete	Brick	Total	
Upazila road	4,494	37,819	26,783	471	2,481	29,735	8,085
Union road	7,974	44,752	17,238	504	4,276	22,018	22,733
Total core road	12,468	82,571	44,021	975	6,757	51,753	30,818

Source: LGED, RMRSU

There are nearly 117,000 cross-drainage structures (bridges and culverts) on these roads, totaling 675,141 m span, as set out in Table A25-2.

Table A25-2 Existing cross-drainage structures on core rural roads

Road type	Already developed	
	Total number	Total span (m)
Upazila Road	57,858	369,650
Union Road	58,917	305,491
Total core road	116,775	675,141

Source: LGED, RMRSU

2 Other rural roads

The LGED is responsible for the development of Village Roads types A and B, but maintenance responsibility is delegated to the Local Government Institutions (LGI). The Village Road network comprises 215,774 km of roads as presented in Table A25-3.

Table A25-3 Village road network

Road type	Total number	Total length (km)	Developed length (km)				Earthen length (km)
			Bitumen	Concrete	Brick	Total	
Village road-A	35,572	109,622	13,486	508	6,956	20,950	88,672
Village road-B	56,974	106,152	3,995	286	3,465	7,746	98,405
Total village road	92,546	215,774	17,481	794	10,421	28,696	187,077

Source: LGED, RMRSU

There are over 112,000 cross-drainage structures (bridges and culverts) on these village roads, totaling 479,265 m span, as set out in Table A25-4.

Table A25-4 Existing cross-drainage structures village roads

Road type	Already developed	
	Total number	Total span (m)
Village road-A	71,090	324,148
Village road-B	41,480	155,117
Total village road	112,570	479,265

Source: LGED, RMRSU

The maintenance of village roads, and some earthen UNR, is carried out by the Upazila Parishads (UZP) and Union Parishads (UP). These LGIs, however, receive technical assistance from the LGED in preparation of designs and estimates for the maintenance schemes. The LGED Upazila Engineers also provide overall supervision of the works.

Various sources of funds are used for maintenance of village roads which, as the data show, are largely earthen. The GOB Rural Employment Road Maintenance Program (RERMP) provides substantial resources for routine maintenance of earthen roads (including some earthen UNR), providing employment for the rural poor, particularly destitute women and landless workers. Additional government funds are provided to the UZP and UP through their Annual Development Program (ADP) allocations. In addition, there are annual block grant allocations to UPs from the World Bank-supported and Local Government Division (LGD)-executed Second Local Governance Support Program (LGSP-II) from 2011 to 2016. The UPs may use part of these block grant funds for village road maintenance.

Maintenance of village roads remains problematic. Further support is needed to develop management and implementation capacity, and to increase local revenue generation, particularly at the UP level.

3 Growth Centers and rural markets

Bangladesh has thousands of rural markets known as hat-bazaar. Data from the LGED's Upazila-based GIS system gives a figure of 17,121 while a survey commissioned by the Department of Agricultural Marketing (DAM) in 2000 recorded 16,476. Of these, 2,100 are designated by the Planning Commission as Growth Centers.

The improvement of Growth Center and rural market facilities to provide an efficient and hygienic trading environment is the responsibility of the LGED, through various foreign- and GOB-financed rural infrastructure projects. However, the responsibilities for operation and maintenance of these markets are divided among the lessee, the Market Management Committee (MMC), and the Upazila Market Management Committee (UMMC) as stipulated in the "Guideline on Government Hat/Bazaar Management, Lease Procedures and Distribution of Income" (LGD, 2011a).

(1) Roles and responsibilities of the lessee

The relevant roles and responsibilities of the hat-bazaar lessee are as follows:

- The lessee shall carry out regular day-to-day cleaning of hat-bazaar.
- The lessee shall erect a signboard showing the approved schedule of toll rates at a public place in the market.
- If the lessee breaches any part of the lease conditions, his lease agreement will be null and void. In such case, his deposited lease money shall be forfeited and arrangements will be made to lease out the market again.

(2) Market Management Committee

To review all activities including day-to-day operation, maintenance and development of the market, a MMC shall be formed at each hat-bazaar with the following members.

1. Union Parishad Chairman	Chairperson
2. UP Member from the concerned ward	Member
3. Reserved UP Women Member of the concerned ward	Member
4. Union Land Officer/Land Assistant Officer	Member
5. One selected/nominated representative from women shopkeepers (as applicable)	Member
6. Community Organizer of Upazila Engineer's office	Member
7. Two representatives selected/nominated by temporary vendors	Member
8. One representative selected/nominated by local rickshaw/van drivers	Member
9. One representative nominated by bus/truck owners association (as applicable)	Member
10. One representative selected by the hat-bazaar permanent shopkeepers	Member secretary

The lessee must not be a member of the MMC.

The relevant functions of the MMC are as follows:

- Prepare annual development plans for overall development and maintenance of the hat-bazaar.
- Submit a project proposal to the UMMC for improvement and maintenance of the hat-bazaar.
- Supervise toll collection and all other activities on tolls, and ensure that the toll rate signboard is erected.
- Ensure that the hat-bazaar and its water supply and sanitation systems are cleaned and maintained properly.

The MMC shall meet at least once a month. Necessary recommendations on all issues including hat-bazaar operation, toll collection, maintenance and improvement shall be made and submitted to the UMMC.

(3) Upazila Market Management Committee

To supervise activities of all MMCs, provide instructions and advice, and ensure improvement and maintenance of each hat-bazaar, a UMMC at the Upazila level shall be formed with the following members:

1. Upazila Nirbahi Officer	Chairperson
2. A government officer at the Upazila level (nominated by the Deputy Commissioner)	Member
3. LGED Upazila Engineer	Member
4. Union Parishad Chairman	Member
5. An elite person at the Upazila level (nominated by the Upazila Parishad Chairman)	Member
6. Two representatives from the Member Secretaries of all MMCs under the Upazila (nominated by Upazila Parishad)	Member
7. Assistant Commissioner (Land)	Member-secretary

The relevant functions of the UMMC are as follows:

- Ensure that all markets in the Upazila are properly managed, operated and maintained.
- Review and approve the development and maintenance plans and proposals prepared by the MMCs.
- Submit development and maintenance plans and proposals to the Upazila Parishad for

approval.

- Observe that the responsibilities assigned to the MMCs are properly performed and ensure that regular meetings of all MMCs are held.
- Inform the Deputy Commissioner of the activities of the MMCs and the UMMC on a regular basis and work as per directions from him.

(4) Financing of market operation and maintenance

The UZP is responsible for the annual leasing of all rural markets within its jurisdiction, as stipulated in the 2011 market leasing policy.

15% of the lease value of each market shall be allocated to the maintenance of the market, in accordance with the decisions made by the UMMC. For markets improved by the LGED, the allocation to market maintenance may be increased from 15% to 25% of the annual lease value, as per conditions of the agreement between the GOB and the development partner(s).

In addition, 10% of the annual lease money from all markets shall be deposited into the Upazila Development Fund for maintenance and development of the markets within the Upazila.

4 Rural ghats

Improved ghats are often constructed adjacent to a Growth Center or rural market as part of the market improvement scheme. The operation and maintenance of such ghats then falls under the responsibility of the MMC and the market lessee. Other ghats improved by the LGED may be leased out by the Upazila Nirbahi Officer (UNO) on the same basis as leasing of markets.

5 Role of civil society

In order to involve civil society in operation and maintenance of rural transport infrastructure, the circular/instruction letter issued by the LGD in 2000 establishes the District Road Users Committees (DRUC) and the Upazila Road Users Committees (URUC). The objective of forming DRUCs and URUCs is to secure proper utilization and maintenance of all UZR, UNR and village roads in the Districts and Upazilas concerned.

The 2000 circular requests DRUCs to hold meetings at least twice a year to discuss district-level issues related to road safety, traffic movement and management, and road development and maintenance. The LGED's roles defined in the circular are to consider the recommendations made by DRUCs and to execute follow-up activities if the LGED deems the recommendations appropriate under its jurisdiction. The URUCs are also requested to hold meetings to share and discuss Upazila- and Union-level road-related issues in order for the LGED to consider follow-up activities. The compositions of DRUCs and URUCs are presented in Table A25-5 and Table A25-6.

Road Operation and Maintenance Committees are sometimes voluntarily formed following the construction of a road and are composed of eight to ten beneficiaries, including the UP Chairperson. There is no official instruction to form Road Operation and Management Committees. Since the maintenance of UZR and UNR is the responsibility of the LGED, the functions of these committees are limited to reporting on, or complaining about, the damage and repair of roads to the UP Chairman or the Upazila Engineer.

Table A25-5 Composition of DRUC

1. Chairperson	Deputy Commissioner (DC)
2. Member Secretary	LGED Executive Engineer
3. Member	RHD Executive Engineer
4. Member	Police Superintendent
5. Member	Civil Surgeon
6. Member	Assistant Director, Bangladesh Road Transportation Association
7. Member	Chairperson, District Truck Owners' Association
8. Member	Chairperson, District Bus Owners' Association
9. Member	Chairperson, Bus and Truck Drivers' Association
10. Member	Chairperson, Rickshaw/Van Owners' Association
11. Member	Chairperson, Rickshaw/Van Drivers' Association
12. Member	Chairperson, Auto-rickshaw Owners' Association
13. Member	Chairperson, Auto-rickshaw Drivers' Association
14. Member	Chairperson, District Merchants' Association

Source: LGD (2000)

Table A25-6 Composition of URUC

1. Chairperson	UNO
2. Member Secretary	LGED Upazila Engineer
3. Member	Officer-in-charge, Police
4. Member	Concerned UP Chairperson
5. Member	Upazila representative from the Association of Industries and traders
6. Member	Upazila representative from the Association of Bus/Truck Owners
7. Member	Upazila representative from the Association of Bus/Truck Drivers
8. Member	Upazila representative from the Association of Rickshaw/Van Owners
9. Member	Upazila representative from the Association of Rickshaw/Van Drivers
10. Member	Upazila representative from the Association of Drivers
11. Member	Representative from a local NGO

Source: LGD (2000)

Annex 26

Risks and mitigation measures

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1 Risks and mitigation measures

There are risks and constraints that could emerge at the implementation stage of the Project. This section identifies potential risks and constraints of the Project, and proposes mitigation measures that could be taken by key agencies involved in the Project.

Risks and constraints	Proposed mitigation measures	Responsible agencies
Policy risks		
The adoption of draft Rural Road Maintenance Policy by GOB could be delayed.	The GOB will adopt Rural Road Maintenance Policy before the commencement of the Project.	MLGRD&C
The adoption of draft National Urban Sector Policy by GOB could be delayed.	The GOB will adopt National Urban Sector Policy before the commencement of the Project.	MLGRD&C
Commitment of target Pourashavas, particularly their mayors and council members, are critical to implementing Component 2.	LGED and target Pourashavas will sign MOUs to make clear the terms and conditions of cooperation and assistance under the Project.	LGED, Pourashava Parishads
Institutional arrangement risks		
Personnel change in key positions of the Project, particularly PD and DPDs, could cause disruption in project implementation.	LGED and JICA will sign an agreement on no replacement of identified positions, before the commencement of the Project.	LGED, JICA
Coordination between Project Management Office (PMO) and UMSU could be hampered due to cross-organizational nature of PMO within LGED.	The LGED will appoint a DPD for subcomponent 2-2, who is also Deputy Director of UMSU, and will work full time for the Project under the supervision of PD.	LGED
Coordination among PMO, NILG and DPHE could be ineffective and inefficient in implementing the Project due to organizational barriers among them.	The government would set up Inter-Agency Working Group (IAWG), and sign an MOU among LGED, NILG and DPHE about the terms and conditions of coordination before commencement of the Project.	LGED, NILG, DPHE
LGED has neither direct authority nor enforcement power over Pourashavas, except for providing technical assistance for Pourashavas. This could cause delays or no action on the side of Pourashavas in Component 2.	Target Pourashavas under the Project and LGED will sign MOUs on the terms and conditions of works under the Project.	LGED, Pourashava Parishads
Frequent changes or continued vacancy in key staff positions at Pourashavas could hamper project implementation.	The MOU between LGED and target Pourashavas will include a clause about the conditions of changes in key staff positions of Pourashavas.	LGED, Pourashava Parishads

Risks and constraints	Proposed mitigation measures	Responsible agencies
Infrastructure component risks (Component 1 and Subcomponent 2-1)		
Delays in resettlement and land acquisition could cause delays in the implementation of subprojects.	A Resettlement Policy Framework and two samples of draft Abbreviated Resettlement Action Plans, which have been prepared for two subprojects in Component 1, will facilitate smooth processing of resettlement and land acquisition of subprojects. The Project will exclude subprojects that involve more than 200 project affected persons as included in the selection criteria.	LGED
The infrastructure subprojects that involve bridges exceeding 100 m could cause adverse impacts on environment and delay in implementation.	The Environmental Framework, and draft IEE and draft EIA for a sample subproject that involves a bridge exceeding 100 m have been prepared under the preparatory survey. These will help mitigate adverse environmental impacts and reduce delay in implementation.	LGED
Pourashavas may not be interested in improving linkages with adjacent rural areas.	The Project will implement 'special allocation for rural-urban linkages', which will provide additional financial incentives for Pourashavas if they choose to implement subprojects in PDP that enhance connectivity of Pourashavas with adjacent rural areas.	LGED
LGED may not give adequate attention to operation and maintenance of the roads to be improved under the Project.	LGED will implement Operation and Maintenance Action Plan prepared under the Project, and will report the progress in the quarterly progress monitoring report to JICA.	LGED
Governance improvement and capacity development risks (Subcomponent 2-2)		
Pourashavas are reluctant to implement UGIAP in phase 1 because infrastructure investment starts from phase 2 under UGIIP-2.	Under the Project, 20% of infrastructure investment in Pourashava will be undertaken in phase 1 to provide sufficient incentives for Pourashavas to improve their governance and capacity from phase 1.	LGED, Pourashava Parishads
Weak capacity of Pourashavas could adversely affect project implementation in Component 2.	Adequate training will be provided to elected and technical officials in Pourashavas. In addition, key additional staff positions in PIUs will ensure implementation capacity of Pourashavas.	LGED, Pourashavas
Operation and maintenance (O&M) of infrastructure may not be given high priority in Pourashavas.	Preparation of O&M plan and allocation of required budget are included as one of the UGIAP activities, and thus Pourashavas are encouraged to prioritize O&M. The Project will provide capacity building on O&M for concerned officials of Pourashavas.	LGED, Pourashavas

Risks and constraints	Proposed mitigation measures	Responsible agencies
Financial management risks		
The Project may cause significant expenditure burden on operation and maintenance cost of Pourashavas due to large infrastructure investment.	The implementation of UGIAP will enhance revenue-raising capacities of Pourashavas, and prioritize expenditures in infrastructure investment under PDP. This will help create fiscal space for operation and maintenance cost of infrastructure facilities in Pourashavas.	LGED, Pourashavas
Pourashava residents may not be willing to pay for proper operation and maintenance of infrastructure facilities developed under the Project.	The implementation of UGIAP will improve service delivery of Pourashavas and the satisfaction levels of Pourashava residents as a result. This will enhance willingness of Pourashavas to pay proper operation and maintenance of infrastructure facilities.	LGED, Pourashavas
Pourashavas may not repay sub-lending of their revenue-raising subprojects.	Detailed financial analysis of sample Pourashavas has been conducted to set appropriate sub-lending conditions. This will mitigate the risk of non-repayment of sub-lending of Pourashavas.	LGED, Pourashavas
Social and environmental risks		
Poor and vulnerable groups may not be consulted properly in decision making.	The PDP process and TLCC/WLCC in Pourashavas will provide opportunities for poor and vulnerable groups to participate in the decision making process.	LGED, Pourashavas
Poverty alleviation of the poor may not be properly addressed.	The Project will: 1) involve destitute women in Labor Contracting Societies (LCS) for off-pavement road maintenance and tree plantation in Component 1; 2) encourage Pourashavas to prepare Poverty Reduction Action Plan and Gender Action Plan as part of PDP in Component 2; and 3) give high priority to subprojects in poor areas in both Components.	LGED, Pourashavas
Social and environmental risks may not be properly addressed in the Project implementation.	The preparatory survey has identified potential environmental and social impacts, and identified their mitigation measures. These are included in the Environmental Framework and the Resettlement Policy Framework. In addition, a draft EIA and a draft IEE have been prepared for LGED to use them as examples at the implementation stage of the project.	LGED