



SUPPLEMENTARY APPENDIXES A-C

Project Number: BAN 41657-01
Loan Number: 2409
January 2008

BAN: Emergency Disaster Damage Rehabilitation (Sector) Project

Prepared by: Stefan Ekelund, Sr. Transport Specialist

Asian Development Bank

Project Component: Rural Infrastructure (Part B)

Outline Terms of Reference for Design and Supervision Consulting Services

A. Background

1. Is given in the main text of the report. These terms of reference are prepared for a project scope including cofinancing. If recruitment of consultants is concluded before cofinancing arrangements with the Governments of Canada and Japan are finalized, the consultant contract should be negotiated for a project scope without cofinancing and with a priced option for the scope with cofinancing.

B. Objectives

2. To assist the executing agency (EA) the Local Government Engineering Department (LGED) to:

- (i) Review, and update EA's own damage assessment, prioritize rehabilitation works and prepare subprojects in accordance with adopted selection criteria.
- (ii) Prepare design, including necessary investigations, as appropriate, and prepare necessary bidding and other documents, and assist in bid evaluation and timely award of civil works contracts for speedy repair/rehabilitation works
- (iii) Monitor and supervise the rehabilitation works ensuring specified quality and quantity and achievement of subproject objectives with overall Project completion by 31 January 2010.
- (iv) Provide capacity building and impart on-the-job training to the PMU/PIU staff of the EA in construction supervision, flood damage assessment, risk management and assessment, and development of appropriate flood resistant design standards
- (v) Review subprojects' environmental and resettlement impacts, conduct ISA and prepare resettlement check-list, and take necessary action as per Government and ADB Guidelines.

C. Scope of Services

3. The roads and bridges component will restore to pre-flood levels, and improve wherever necessary and feasible, serviceability of those sections of the upazila and union roads in the districts of Barisal, Chuadanga, Faridpur, Gaibandha, Gopalganj, Jamalpur, Jhenidah, Khulna, Kishoregonj, Kurigram, Lalmonrihat, Madaripur, Magura, Mymensingh, Netrokona, Nilphamari, Rajbari, Rangpur, Satkhira, Shariatpur, and Sherpur. Additional districts may be added, on priority basis, after completion of the damage and needs assessment following the cyclone. The rehabilitation/ replacement works will be undertaken by local contractors through contracts generally ranging in value from Tk3.4 million to Tk70.0 million.

4. The consultants' tasks will include, but not be limited to, the following:

1. Flood Damage Assessment and Sub-Project Preparation:

- (i) Review the findings of the preliminary damage assessment report prepared by LGED;
- (ii) Conduct detailed survey to identify 2007 damages;
- (iii) Prepare sub-projects that generally meet the following criteria;
 - (a) The subproject will rehabilitate damaged infrastructure and facilities caused by the 2007 floods and cyclone based on a needs assessment and further assessment carried out by the consultants selected for that purpose.
 - (b) Priority will be given to subprojects that rehabilitate completed ADB-financed projects.
 - (c) The subproject must be technically feasible and represent the least-cost alternative, while at the same time providing sufficient protection against future floods.
 - (d) The subproject must be completed within the Project completion period.
 - (e) The subproject shall not be financed by the other agency, unless the other agency and ADB are cofinancing it.
 - (f) The subproject shall be in compliance with the Government's environmental requirements and ADB's *Environmental Policy (2002)* and *Environment Assessment Guidelines (2003)* as well as its *Environmental Guidelines for Selected Infrastructure Development Projects*, and the agreed Environmental Assessment Framework. For subprojects that require an initial environment examination (IEE), the IEE shall be included in the subproject proposal, and Government environment clearance is obtained prior to the award of contract for the subproject.
 - (g) The subproject will have a value generally ranging from Tk3.4 million (\$50,000) to Tk70.0 million (\$1.02 million).
 - (h) The subproject will generally not involve any land acquisition or involuntary resettlement. If either of these is, in fact, required in course of the Project, it will be conducted in accordance with the Government's applicable laws and regulations, the ADB's *Policy on Involuntary Resettlement (1995)*, ADB's *Handbook on Resettlement: A Guide to Good Practice (1998)*, and the agreed resettlement framework.

2. Detailed Technical Design:

Carry out detailed design and drawings of all structures, pavements and the related components of the project.

3. Sub-Project Design:

- (i) Prepare tender documents that allow for a single-stage one-envelope bidding procedure with post qualification. This procedure will have the following features;
 - (a) the envelope will contain both the technical qualifications of the bidder and the financial bid based on item of works, quantity, unit rate and amount.
 - (b) Post-qualification criteria will be established and agreed upon by the Government and the ADB. A method will be established to ensure that contractor do not exceed their capacity to undertake the work.

- (ii) Assist the Executing Agency (EA) with the evaluation of tenders and recommend award of contract to the Project Director; and
- (iii) Administration of the civil works contracts as the EA's representative as defined in the contract document.

4. Construction Supervision:

- (i) Day-to-day supervision of the civil works on site by the provision of suitably qualified and experienced supervision staff;
- (ii) Certification of the work achieved and quantities achieved to the Project Director for payment to the contractor including certification of quality of works;
- (iii) Ensuring that proposed sub-projects are environmentally sound and incorporate mitigation measures as appropriate to meet Government environmental standards and regulations and implementation in compliance with the environmental and social impact mitigation requirements of the civil works contracts; and
- (iv) Preparing regular progress and other reports.

5. Coordination

- (i) Assist the EA in coordinating the project implementation with the Project Steering Committee (PSC), Implementation Monitoring Evaluation Division (IMED), and any Government 'oversight committee' that may be established for overall monitoring of the project; and
- (ii) Assist the EA in coordinating with ADB, and prepare briefings and interim reports for the joint monthly coordination meetings between ADB and the EAs, organized by ADB;

6. Social Safeguards and Anti-corruption

- (i) Ensure and monitor that the Government's and ADB's safeguard policies on environment, resettlement, road safety, and health and sanitation are adequately complied at construction sites; and
- (ii) Monitor and report to ADB through the EA on any incidence of fraudulent practice and corruption by any concerned parties in implementing the project in accordance with ADB's Anti-corruption Policy, and facilitate/assist in conducting regular periodic audits and performance audits instituted by the Government and ADB.

7. Training of EA Staff

The consultant will:

- (i) assist LGED in enhancing capacity of the project management unit/project implementation unit (PMU/PIU) in project formulation and management; and
- (ii) impart on-the-job training to the PMU/PIU staff of LGED in construction supervision, disaster damage assessment, and development of flood resistant design standards.

D. Reporting

5. The consultant will prepare the following reports:
- (i) within one month of commencement, a short Inception Report which includes the review of the flood assessment program components and contract packaging for the works in order of priorities based on the subproject selection criteria given in para. 52 in the main text of this report;
 - (ii) brief monthly reports to detail the physical and financial progress of the works; and
 - (iii) a project completion report in accordance with ADB requirements.

6. Unless directed otherwise, the consultant is to submit these reports as follows:

PSC	2 copies
Secretary, Local Government Division Ministry of LGRD&C	2 copies
Chief Engineer, LGED	2 copies
Additional Chief Engineer (Implementation), LGED	2 copies
Project Director, LGED	3 copies
ADB	3 copies

E. Implementing Arrangements

7. LGED under Local Government Division of the Ministry of Local Government, Rural Development, and Cooperatives will be the EA for rehabilitation of rural infrastructure component. Under the supervision of Additional Chief Engineer (Implementation), LGED, a fulltime Project Director of ADB assisted Emergency Disaster Damage Rehabilitation Project (Part-B: Rural Infrastructure) will be responsible for overall implementation and coordination of the Project. The Chief Engineer, LGED will provide overall guidance.

F. Consulting Services, Staffing Input

8. Both international and local consultants will be needed for the detailed damage assessment, detailed design and implementation of the project. Staffing inputs has been estimated about 26 person-months of international consultants and 426 person-months of national consultants. The exact number of person-month will be determined on the basis of detailed assessment that will be carried out in the first phase of the contract, followed by second phase of full deployment. It is expected that the consultants will propose their required person-months both international and national to carry out the task as per TOR. The consultant's contract will include facilities and services required by them including accommodation, vehicles, offices and equipment, etc. The breakdown of required staff input is given below:

I. International Consultants

Project Management Advisor (Team Leader)	-	26 p-m
Total		26 p-m

II. National Consultants

Sr. Road Engineer (Deputy Team Leader)	-	26 p-m
Design Engineer (2 personx12 months)	-	24 p-m
Field Resident Engineer (15 personsx24 months)	-	360 p-m
Environment Specialist	-	9 p-m
Resettlement Specialist	-	7 p-m
	Total	426 p-m

Below are the specific terms of reference for each of the key positions.

(i) Project Management Advisor / Team Leader

The international Project Management Advisor (Team Leader) shall have at least B.Sc. Degree in Civil Engineering who combines at least 15 years experience in the planning and implementation of rural infrastructure construction and maintenance works in developing countries, including experience in Bangladesh or elsewhere in the South Asia region, with proven Project Management skills. The TL will act as counterpart to the Project Coordinator / Director and will advise and assist the Project Implementation Office (PIO) in Dhaka. The TL will also be the team leader for the consultancy and will manage the consultants' inputs. The duties of the TL will include but not limited to:

- Assist the LGED assigned Project Coordinator/Project Director and Project Implementation Office (PIO) in performing their responsibilities, including financial management in accordance to ADB guidelines;
- Cooperate closely with the Project Director in planning, coordinating and monitoring of rehabilitation works;
- Assist in coordinating the activities among LGED staff at district and upazila and preparing work plans for the planning, design, implementation and monitoring of the rehabilitation of flood-damaged infrastructure;
- Undertake periodic field assessment of flood damage works to spot-check field surveys, construction works, quality control, verify estimates, contract management and submit report to the PIO;
- Advise, guide and coordinate activities of the consultants team pertaining to the review of existing assessments, proposed amendments to LGED's selection of sub-projects, work planning, design, tendering and construction of the rehabilitation of the flood damaged infrastructure;
- Assist the PIO in with preparing and updating Annual Work Plans, Budget and Financing Plans;
- Prepare a monitoring and evaluation plan covering project activities and in particular the construction supervision and quality control for the rehabilitation works;
- Liaise with the ADB in consultation with LGED on issues pertaining to project planning, implementation, financial management and monitoring;
- Verify necessary documentation for loan withdrawals;
- Preparation of an Inception Report, Monthly Progress Reports, Quarterly Progress Report, Maintenance Plan for Rehabilitated Infrastructures and the Project Completion Report;
- Ensure that proposed measures are environmentally sound and socially acceptable to meet the Government's guidelines and ADB's safeguard policies on environment, social assessment and resettlement;

- Assist the entire team of consultants in performing their responsibilities;
- Advise on preparation of standard contract documents, contract packaging, management of survey and design, tender evaluation and contract award;
- Advise on issues related to the implementation and supervision of project civil works, review and confirm the certification of quantity and quality of all civil works/rehabilitation works;
- Coordinate Project activities with relevant units and cells in LGED, and liaise with other Development Partners;
- Assist LGED in complying with the loan covenants;
- Establish and maintain an Management information System for all rehabilitated infrastructures;
- Justify requirement of revision of scheme if any with solid grounds; and
- Establish base line for carrying out subsequent Performance Audit.

(ii) Senior Road Engineer / Deputy Team Leader

The Senior Road Engineer / Deputy Team Leader will be at least B.Sc. Civil Engineer and shall have minimum 15 years experience in planning, design and supervision of civil construction works. He should have minimum 3 years experience with any ADB-assisted Rural Development/Rehabilitation Project. The task of the Deputy Team Leader will include, but not be limited to the following:

- Assist the Project Management Advisor (PMA) in performing his/her responsibilities, in particular by coordinating the activities of the field based consultant/staff;
- Assist in the preparation of Inception Report, Annual Work Plans, Monthly Progress Reports, Quarterly Progress; Report, Maintenance Plan of Rehabilitated Infrastructures and Project Completion Report;
- Assist in preparation of Standard Tender Document relevant to PPA and ADB guidelines for procurement;
- Assist and spot check schemes on rehabilitation of flood damage infrastructures;
- Provide orientation/on-job training to concerned LGED staff on scheme preparation and implementation;
- Carry out field visits to ensure quality of rehabilitation works;
- Prepare checklist, guidelines for quality control and running/final bill certification;
- Assist PIO on claims relating to contracts and procurements;
- Assist PIO to meet loan covenants;
- Prepare minutes of meeting, workshops relevant to project;
- Provide support to Consultant field staffs to carry out on the job training to LGED field staff;
- Administer and supervise works carried out by field staff;
- Facilitate Coordination Meeting, Information Exchange Meeting with LGED/PIO Staff, Consultants Staff and Contractors;
- Prepare briefing notes on project activities as required by ADB Project Review Missions;
- Facilitate Management Information System for project activities and fine tuning when required;
- Verify revision of schemes if any arises; and
- Facilitate Base Line Survey for subsequent Performance Audit.

(iii) Design Engineer

Design Engineer will be at least B.Sc. Engineer civil and shall have 15 years experience in design with 3 years experience of working in any rural development/rehabilitation or ADB-assisted project. The tasks of the Design Engineer for the detailed design of the sub-projects include, but not necessary be limited, to the following:

- Review all relevant design data and relevant maps in connection with the design of the sub-projects components;
- Prepare design computations and working drawings in AutoCAD for the interventions under the Sub-Projects keeping in view the 1998 Flood as the benchmark and submit to LGED for their record and approval;
- Assist with the review of cost estimates of the interventions for construction/rehabilitation works under the Sub-projects based on LGED procurement rates applicable to different zones;
- Check - as necessary - pre-construction surveys and other pre-construction benchmark data for the sub-projects;
- Prepare modifications of design and drawings as and when required during the construction phase of the sub-projects and assist with the review of BOQ of the interventions accordingly;
- Assist, as necessary, with the supervision of the works under the Sub-Projects during all critical construction stages and assist the Field Resident Engineers with quality control in compliance with the contract conditions and specifications;
- Propose solutions for engineering and other problems encountered during implementation of infrastructures under the Sub-Projects;
- Review all revised design requests submitted by the LGED field offices and detect possible trends in failure of existing design criteria, guide lines and technical specifications in the light of 2004/2007 flood damage; and
- Assist the PMA in performing his responsibilities particularly in supervision and certification of bills of structures.

(iv) Environment Specialist (ES)

The Environment Specialist shall have an advance degree on Environmental Science/Engineering having 10 years working experience of which at least three years experience of working in any rural development/rehabilitation or ADB-assisted project. The tasks of the ES will include, but not be limited to the following:

- Review the ADB's Environmental Policies and Environmental Assessment Guidelines (2003), the GOB environmental guidelines and other relevant documents related to rapid environmental assessments;
- Develop an Environmental Assessment checklist to identify likely environmental impacts and prepare mitigation measures to any potential adverse environmental impact associated with proposed rehabilitation works, especially for sub-projects requiring construction of new infrastructure;
- Physically verify such sites and consult with the direct stakeholders the local population affected and the LGED field staff to determine the scope and magnitude

- of potential environmental degradation and adverse impacts and incorporate observations and finding in the mitigation plan;
- Prepare a monitoring and evaluation plan for the sub-projects as identified under (a) above detailing indicators, monitoring frequencies and responsible entity for implementation;
 - Report to the PMA on the above tasks accordingly; and
 - Assist the PMA in performing his responsibilities particularly monitoring of environmental impact expected to be created by project interventions and report accordingly suggesting remedial measures.

(v) Field Resident Engineer (FRE)

Field Resident Engineers shall have B.Sc. Engineer Civil with 7 years of site experience including supervision of construction of paved roads, rehabilitation of damaged slope protection, bridge culverts etc. The FREs will work under the Team Leader and will receive and apply advice from the Deputy Team Leader. They will provide direct assistance to the LGED Executive Engineers and Upazila Engineers in the planning, supervision and approval of the Projects civil works including rehabilitation flood damaged rural road, bridges/culverts, protection work etc. The specific tasks of the FREs will include, but not be limited, to the following:

- Assist in checking and supervising detailed engineering surveys and site investigation carried out by LGED staff;
- Assist Fill-in checklist for EIA for individual scheme. If any adverse environmental effect is suspected inform Executive Engineer and Team Leader for necessary action;
- Update all the scheme lists in status statement format of subprojects and make respective site visits for arriving at an ideal estimate. Advise in determining contract packages appropriate to local contractors;
- Monitor on site material and equipment storage and handling procedures and environmental practices and advise on remedial actions as required;
- Assist in the site supervision of all construction works to ensure that design standards and technical specification are achieved, including use of appropriate construction methods, on site quality control, and proper checking and measurement of quantities. Advise remedial actions as required. Assist in carrying out tests for quality control as per LGED specification. Identify any issues related to the performance of laboratory testing, which may be addressed by others;
- Jointly measure and check with LGED staff all works presented for payment and jointly approve the due quantity and quality of all works;
- Report deficiency, if any, to LGED including suggestions for corrective measures where the consultants observe that for a particular part of the work, the contract specifications have not been met;
- Review the design, cost estimate and contracts;
- Attend - as observer tender openings and assist in preparation of evaluation reports if required;
- Carryout spot-checks to review tender procedures and bid evaluation and attend at randomly (or following specific requests from the PMA) Tender Evaluation Committee meetings;
- Randomly check construction works before completion of the works to ensure compliances with the contract conditions and specification;

- Instantly report, PMA/DTL any corrupt, fraudulent, collusive or coercive practice by any of the concerned parties in implementing the project;
- Report (with all required forms duly completed) to DTL on a weekly basis;
- Assist the senior consultants based in the Dhaka Head Office in performing their responsibilities; and
- Assist in Base Line Survey.

(vi) Resettlement Specialist (Local)

- Provide support to engineering team during project preparation and detailed design to minimize resettlement impact;
- Prepare social analysis for the selected subprojects involving resettlement, if any;
- Conduct field surveys and prepare RAP for the subprojects involving resettlement; and
- Identify and document any social management obligations for inclusion in the tender documentation.

G. Implementation Schedule

9. Implementation of the project will be spread over a period of about twenty four months to take advantage of two dry seasons and allow for the recession of waters in the current 2007-08 dry season. Civil works will be completed during the next construction season to January 2010. A period of additional six months to July 2010 shall be allowed for submission, certification and processing of payments.

H. Facilities

1. To be provided by the Consultant

10. The consultant's contract will provide funding for the incremental operation and equipment needed for these facilities. Accommodation for the consultant's staff will be provided through funding under consultants' contract.

2. To be provided by the Executing Agency

- (i) work permits and such other documents as shall be necessary to enable Consultants, Sub-consultants or personnel to perform the services.
- (ii) arrangement for personnel and, if appropriate, their eligible dependents to be provided promptly with all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in Bangladesh as per prevailing rules and procedures.
- (iii) facilitate prompt clearance through customs of any property required for the services and the personal effects of the personnel and their eligible dependents.
- (iv) issue to officials, agents and representatives of the government all such instructions as may be necessary or appropriate for the prompt and effective implementation of the services.
- (v) exempt the consultants and the personnel and any sub-consultants employed by the consultants for the services from any requirement to register or obtain any

- permit to practice their profession or to establish themselves either individually or as a corporate entry according to the applicable laws.
- (vi) grant to the consultants and any sub-consultant and the personnel of either of them the privilege pursuant to the applicable law of bringing into Bangladesh reasonable amounts of foreign currency for the purpose of the services for the personal use of the personnel and their dependents and of withdrawing any such amounts as may be earned therein by the personnel in the execution of the services.
 - (vii) Existing Government provisions will prevail for tax liability and insurances.

I. Counterpart Staff

11. Counterpart staff from LGED will represent the EA on site, and will act as the employer's representatives for the civil works contract.

Project Component: Municipal Infrastructure (Part C)

Outline Terms of Reference for Design and Supervision Consulting Services

A. Background

1. Is given in the main text of the report. These terms of reference are prepared for a project scope including cofinancing. If recruitment of consultants is concluded before cofinancing arrangements with the Governments of Canada and Japan are finalized, the consultant contract should be negotiated for a project scope without cofinancing and with a priced option for the scope with cofinancing.

B. Objectives

2. To assist the executing agency (EA) the Local Government Engineering Department (LGED) to:

- (i) Review, and update EA's own damage assessment, prioritize rehabilitation works and prepare subprojects in accordance with adopted selection criteria.
- (ii) Review the designs on ongoing projects in the sector/subsector including cost-effective flood resistant design elements of the adopted designs.
- (iii) Prepare design, including necessary investigations, as appropriate, and prepare necessary bidding and other documents, and assist in bid evaluation and timely award of civil works contracts for speedy repair/rehabilitation works
- (iv) Monitor and supervise the rehabilitation works ensuring specified quality and quantity and achievement of subproject objectives with overall Project completion by 31 July 2010.
- (v) Provide capacity building and impart on-the-job training to the PMU/PIU staff of the EA in construction supervision, flood damage assessment, risk management and assessment, and development of appropriate flood resistant design standards
- (vi) Review subprojects' environmental and resettlement impacts, conduct ISA and prepare resettlement check-list, and take necessary action as per Government and ADB Guidelines.

C. Scope of Services

3. The consultants shall assist the LGED/Pourashava in implementation of the project. The services to be rendered will cover 27 Pourashavas (municipalities). Additional pourashavas may be added, on priority basis, after completion of the damage and needs assessment following the cyclone. Major activities of the consultants include to assist Pourashava in contract packaging, prepare designs and tender documents to be implemented under national competitive bidding procedure and undertake, together with LGED/Pourashava staff, supervision of urban infrastructure works. Enlisted contractors of LGED will be procured for the works in Pourashavas as per Public Procurement Act 2006.

4. The consultants' tasks will include, but not be limited to, the following:

1. Flood Damage Assessment and Sub-Project Preparation:

- (i) Review the findings of the preliminary damage assessment reports prepared by pourashavas/LGED;

- (ii) Review the designs on ongoing projects in the sector/subsector including the flood resistant design elements of the adopted designs;
- (iii) Conduct detailed survey to identify 2007 damages;
- (iv) Review the findings of the pourashavas/LGED damage assessment and provide recommendations; and
- (v) Prepare sub-projects that generally meet the following criteria:
 - (a) subproject will rehabilitate or reconstruct damaged infrastructure and facilities caused by the 2007 disasters based on a needs assessment and further assessment carried out by the consultants selected for that purpose.
 - (b) priority will be given to subprojects that rehabilitate completed ADB-financed projects.
 - (c) The subproject must be technically feasible and represent the least-cost alternative, while at the same time provide sufficient protection against future floods.
 - (d) The subproject must be completed within the Project completion period.
 - (e) The subproject shall not be financed by the other agency, unless the other agency and ADB are cofinancing it.
 - (f) The subproject shall be in compliance with the Government's environmental requirements and ADB's *Environmental Policy (2002)* and *Environment Assessment Guidelines (2003)* as well as its *Environmental Guidelines for Selected Infrastructure Development Projects*, and the agreed Environmental Assessment Framework. For subprojects that require an initial environment examination (IEE), the IEE shall be included in the subproject proposal, and Government environment clearance is obtained prior to the award of contract for the subproject.
 - (g) The subproject will have a value generally ranging from Tk3.4 million (\$50,000) to Tk70.0 million (\$1.02 million).
 - (h) The subproject will generally not involve any land acquisition or involuntary resettlement. If either of these is, in fact, required in course of the Project, it will be conducted in accordance with the Government's applicable laws and regulations, the ADB's *Policy on Involuntary Resettlement (1995)*, ADB's *Handbook on Resettlement: A Guide to Good Practice (1998)*, and the agreed resettlement framework.
 - (i) Base line survey has to be conducted.

2. Detailed Technical Design:

Carry out detailed design and drawings of all structures, pavements and the related components of the project.

3. Sub-Project Design:

- (i) Prepare tender documents that allow for a single-stage one-envelope bidding procedure. This procedure will have the following features:
 - a. The envelope will contain both the technical qualifications of the bidder and the financial bid based on item of works, quantity, unit rate and amount.
 - b. Post-qualification criteria will be established and agreed upon by the Government and the ADB. A method will be established to ensure that contractor do not exceed their capacity to undertake the work.

- (ii) Assist the EA with the evaluation of tenders and recommend award of contract to the Project Director; and
- (iii) Administration of the civil works contracts as the EA's representative as defined in the contract document.

4. Construction Supervision:

- (i) Day-to-day supervision of the civil works on site by the provision of suitably qualified and experienced supervision staff;
- (ii) Certification of the work achieved and quantities achieved to the Project Director for payment to the contractor including certification of quality of works;
- (iii) Ensuring that proposed sub-projects are environmentally sound and incorporate mitigation measures as appropriate to meet Government environmental standards and regulations and implementation in compliance with the environmental and social impact mitigation requirements of the civil works contracts; and
- (iv) Preparing regular progress and other reports.

5. Coordination

- (i) Assist the EA in coordinating the project implementation with the Project Steering Committee (PSC), Implementation Monitoring Evaluation Division (IMED0, and any Government 'oversight committee' that may be established for overall monitoring of the project; and
- (ii) Assist the EA in coordinating with ADB, and prepare briefings and interim reports for the joint monthly coordination meetings between ADB and the EAs, organized by ADB;

6. Social Safeguards and Anti-corruption

- (i) Ensure and monitor that the Government's and ADB's safeguard policies on environment, resettlement, road safety, and health and sanitation are adequately complied at construction sites; and
- (ii) Monitor and report to ADB through the EA on any incidence of fraudulent practice and corruption by any concerned parties in implementing the project in accordance with ADB's Anti-corruption Policy, and facilitate/assist in conducting regular periodic audits and performance audits instituted by the Government and ADB.

7. Training of EA Staff

The consultants will

- (i) assist LGED/pourashavas in enhancing capacity of the project management unit/project implementation units (PMU/PIUs) in project formulation and management; and
- (ii) impart on-the-job training to the PMU/PIU staff of LGED/pourashavas in construction supervision, disaster damage assessment, and development of flood resistant design standards.

D. Reporting

5. The consultant will prepare the following reports:

- (i) within 1 (one month of commencement, a short Inception Report which includes the review of the flood assessment program components and contract packaging for the works in order of priorities based on the subproject selection criteria para. 52 of the main text;
- (ii) brief monthly reports to detail the physical and financial progress of the works; and
- (iii) a project completion report in accordance with ADB requirements.

6. Unless directed otherwise, the consultant is to submit these reports as follows:

Secretary, Local Government Division Ministry of LGRD&C	2 copies
Pourashava Chairperson, Participating Pourashava	2 copies
Chief Engineer, LGED	2 copies
Additional Chief Engineer (Implementation), LGED	2 copies
Superintending Engineer (Urban Management), LGED	2 copies
Project Director, LGED	2 copies
ADB	3 copies

E. Implementing Arrangements

7. LGED under Local Government Division of the Ministry of Local Government, Rural Development, and Cooperatives will be the EA for rehabilitation of municipal infrastructure component. Under the director supervision of Additional Chief Engineer (Implementation), LGED, a senior Project Director will be responsible for overall implementation and coordination of the Project. The Chief Engineer, LGED will provide overall guidance.

F. Consulting Services, Staffing Input

8. Both international and local consultants will be needed for the detailed damage assessment, detailed design and implementation of the project. Staffing inputs has been estimated about 20 person-months (p-m) of international consultants and 420 p-m of national consultants. The exact number of person-month will be determined on the basis of detailed assessment that will be carried out in the first phase of the contract, followed by second phase of full deployment. It is expected that the consultants will propose their required person-months both international and national to carry out the task as per TOR. The consultant's contract will include facilities and services required by them including accommodation, vehicles, offices and equipment, etc. The breakdown of required staff input is given below:

I. International Consultants		
Project Manager (Team Leader)	-	18 p-m
	Total	18 p-m
II. National Consultants		
Deputy Project Manager	-	26 p-m
Municipal Financial Expert	-	6 p-m
Municipal Engineer (12 persons x 24 months)	-	288 p-m

Structural & Design Engineer (2 persons)	-	28 p-m
Environmental Specialist	-	6 p-m
Resettlement Specialist	-	6 p-m
	Total	360 p-m

Specific tasks for each of the key experts are given below:

(i) Project Manager/Team leader (18 months) – International

The D&S consultancy team will be headed by a Team Leader (Project Manager) having Bachelor degree (preferably master degree) in Civil Engineering/ Municipal Engineering/ Urban Planning with over twenty five years of experience, of which at least fifteen years involved in the planning, design and supervision of urban development projects and will have a minimum of ten years proven work experience and skill in similar position in similar developing countries and experience in Flood Damaged Rehabilitation Project will be an added advantage. The Team Leader will be familiar with all aspects of the tasks listed above and will have overall responsibility for managing the team. He will act as a counterpart to the Project Director. The duties of the Team Leader will include, but not limited, to the followings:

- Ensure close co-operation and assistance to the Project Director in all respects for effective and successful implementation of the Project.
- Assist Project Director in the preparation and implementation of annual Work-Plan.
- Ensure activities as defined in the scope of works pertaining to this TOR.
- Assist Pre-Qualification of Contractors under the Project and prepare a list of Pre-qualified contractors for approval by ADB.
- Prepare and submit Inception Report (30 copies) defining the role and pin-pointing the methods and approaches following which the team will carry out its assignment and submit within 2-months from the date of commencement of contract.
- Organise and distribute assignments among the members of the consultant team and ensure team spirit among the members of the consultant team to perform assignments.
- Assist PMO in the preparation of Subproject Agreement and Subsidiary Loan Agreement for approval by ADB.
- Carry out field investigation and help PMO and PIUs in the preparation of sub-project.
- Select scheme selection criteria supported by economic, financial, social and environment impact assessment as per guidelines of ADB.
- Prepare Manual and arrange stakeholders training and promote selection of schemes jointly with Pourashava staff and preparation of sub-projects.
- Arrange training for PMO and PIU staff and for contractors on maintenance of quality of construction works. Arrange and conduct on the job training where necessary for successful implementation of Project programs.
- Conduct periodic supervision and ensure duties of other members of consultant team to ensure better performance and quality of works at field level.
- Carry out feasibility study and assist PMO and PIU in preparing plan design, cost estimates for schemes.
- Prepare Contract Document and help evaluate contract awards and prepare statement of contracts for approval by ADB.

- Advise on issues related to implementation and supervision of civil works and to review, confirm quantity and quality of work followed by certification of bills for the works implemented under the Project.
- Co-ordinate Project activities and maintain liaison with other urban Project under implementation in LGED.
- Assist and ensure proper implementation of Second Emergency Flood Damaged Rehabilitation Project at the Pourashava level.
- Collect and maintain relevant data, analyze level of performance of project, pinpoint and highlight the outcome and issues of the Project in the quarterly, annual and mid-term reports to use it as a tool and guidance for future course of action for the Project.
- Submit monthly, quarterly, annually and Project completion report.
- Assist the Project Director in liquidating/reimbursing bills/payments when required.

(ii) Deputy Project Manager/Deputy Team Leader (26 months) – Domestic

Under the Project, the consultant Team Leader will be assisted by Senior Engineers (Deputy Team Leader/Municipal Engineers). The Deputy Team Leader will have Bachelor Degree in Civil Engineering and having over 20 years experience of which at least 10 years proven work experience and skill involved in the planning, design and supervision of urban development program in Bangladesh or elsewhere in developing countries. Deputy Team Leader will be responsible to the Team Leader for his assignments. The main responsibilities will be:

- Assist the Team Leader in all respect for the implementation of the Project.
- Assist the Team Leader in the preparation of standard bidding documents, contract evaluation and Pre-Qualification of contractors, implementation and supervision of civil works, review and ensure quantity and quality of work as per specifications and certify bills for the works implemented under the Project.
- The Deputy Team Leader will be assigned with the responsibility of Team Leader in his absence.
- Assist the Team Leader in preparing quantity assurance plan, guidelines for execution of works;
- Review contract documents design, drawing and suggest modification if required
- Assist Team Leader in preparing monthly, quarterly progress report.
- Assist Team Leader in the preparation of project Completion report.

(iii) Municipal Financial Expert (6 months) – Domestic

There will be one Financial Expert (Economist) under the project each should be a Chartered Accountant with over 12 years of experience of which minimum 6 years in Municipal Accounting and Finance. He will assist in preparing and implementing pourashava short term and long term Financial Action Plan. The duties of the Financial Expert, but not limited, to the following:

- Assist the Team Leader/Deputy Team Leader on all matters relating to implementation of Financial Action Plan as required under SEFDRP-07 pertaining to this Project.
- Help Pourashava in identifying potential areas and sources to mobilize and increase resources.
- Help the Pourashava in establishing computerized financial management system.

- Help PMO in the design of financial management system for the project.
- Help Pourashava in preparing financial action plan pertaining to appraisal and collection of resources from different source.
- Assist Pourashavas in proper assessment and appraisal of property tax and improve collection efficiency.
- Help the pourashava in the implementation of Financial Action Plan as required under the Emergency Flood Damaged Rehabilitation Project (SEFDRP -07)
- Help selection of schemes based on its assessment for Environment, Social and Financial and Economic Internal Rate of Return (FIRR and
- Assist the Pourashavas in computerization and improved management of tax records with assistance of UMSU.
- Computerization and reporting of accounting records in pourashava
- Assist training of PMO and PIU staffs related to accounting/financial matters.

(iv) Municipal Engineer (12x24 months) – Domestic

Twelve Municipal Engineers having Bachelor degree in civil Engineering and each over 15 years experience will support Pourashavas in the selection and implementation of sub-project. He will be based at Regional office for full time assignment for supervision of works at the Pourashava level. A total of 2 to 4 Pourashava will be under his Jurisdiction. He will supervise the work of pourashavas in close co-operation of the Consultant's Engineers and the Pourashava Engineers of his jurisdiction. The assignment of Municipal Engineer will include, but not limited to, the following:

Assist the pourashavas in the selection of sub-project

- Assist the pourashava in the preparation of sub-project, detail design & estimates etc.
- Ensure proper selection of schemes.
- Ensure lay-out and supervision of schemes.
- Ensure quality control of sub-projects using LGED material testing laboratory located at districts, LGED Head Quarter and other approved laboratories.
- Regular check and supervision of work at field level and confirm quality and quantity of work as per specification and certify bills for construction works.
- Assist in preparing manuals, guidelines etc.
- Assist training to PMO and PIU technical staff related to civil works
- Check, verify and recommend Contract claims, dispute, variation etc. in accordance with the condition of Contract;
- To ensure proper supervision of all Construction works in accordance with the Contract provision.
- To prepare monthly progress report of physical works
- Check contractor's, invoices, claims and others statements;
- Settle final bills and accounts
- Assist tests and approve job mix for sub-base, base, asphalt concrete for surfacing and cement concrete;
- Report any deviation of contractual obligation immediately to TL, DTL and SME with a copy to Pourashava authority.

(v) Structural and Design Engineer (2x14 months) – Domestic

Two Structural and Design Engineer will be (preferably first class in Civil Engineering) each having Bachelor Degree in Civil Engineering with good academic record and having over 15 years experiences in the design of civil work using Structural Design Software. They will mainly based at PMO and help the PMO and PIUs in the design of construction work. Their tasks include, but not limited to, the following:

- Collect relevant data, information related to structural designs of schemes included in sub-project reports.
- Undertake detailed design, prepare design reports for the sub-projects.
- Assist in the preparation of detailed estimated and bill of quantities.
- Devise computer based design module using standard software and help to train PMU staff in using Auto CAD/other design software.
- Check inspect sites that need special attention
- Review structural design and drawings and suggest modifications in necessary.

(vi) Environmental Specialist (1x6 months) – Domestic

An Environmental Specialist having degree in Environmental Engineering/Civil Engineering/Social Science with over 15 years of practical experience in planning design and supervision of construction works and having five years practical experience in the design and supervision of works concerned to environmental issues will be suitable for engagement in consultant team. His main responsibility will be to:

- Design standard environmental impact evaluation criteria and help selection of schemes and preparation of Sub-Projects for Pourashavas.
- Help design of sanitary landfill, solid waste management, location of outfall in road-side drains and other environmental related schemes under the Project. Analyze and assess impact for all such schemes.
- Design training manual and help to organize training for civil society, stakeholders, concerned officials and staff of Pourashavas and conduct regular social awareness campaign on environmental protection and management.
- Identify and list the schemes that have prior concern for environment. Supervise visit, record and count the impact of all such schemes for environmental assessment.
- Maintain close liaison with the Department of Environment to follow their latest policies.

(vii) Resettlement Specialist (6 months) – Domestic

There will be one Resettlement Specialist having masters degree in Social Science who over 10 years practical experience in resettlement/survey works in relevant field. His main responsible will be follows:

- He will set-up an information processing facility to collate and update the resettlement database used to monitor progress in land acquisition and delivery of entitlement, with the help of number of appropriately qualified persons. If required, the project office will also utilize and finance the temporary services of personnel for the enumeration of the censures and baseline socio-economic surveys.
- Resettlement Specialist will, however be responsible for synchronize multi-dimensional activities involving Land Acquisition and Resettlement Action Plan. He will be the liaison link amongst project components planners/designers of

D&S Consultants; Team Leader, Deputy Team Leader, and Deputy Commissioner's Office of concerned districts. Timely implementation of project components beside other things will depend how efficiently and effectively resettlement specialist can handle all the hard persuasive elements.

- Assisting Team Leader/Deputy Team Leader for transmitting LA plan documents to PD, PMO.
- Assisting PMO for obtaining administrative approval from concern ministry;
- Assisting LGED in pursuing DC's offices for LA approval and handing over land in the field.
- In association with the Social Scientist, design, and conduct social screening, stakeholder analysis and consultation, project affected persons (PAP) census, baseline socio-economic survey and assess other project pertinent social issues.
- Identify the impact details and update the resettlement action plan (RAP);
- Establish the management information system to monitor the land acquisition and RAP implementation process according to the requirements and guidelines agreed to in the Resettlement Framework.
- Assist Team Leader in writing process reports, interim report and undertake mid-term review.

G. Implementation Schedule

9. Implementation of the project will be spread over a period of about 24 months to take advantage of two dry seasons and allow for the recession of waters in the current 2008/09 dry season. Civil works will be completed during the next construction season to January 2010. A period of additional six months to July 2010 shall be allowed for submission, certification and processing of payments.

H. Facilities

1. To be provided by the Consultant

The consultant's contract will provide funding for the incremental operation and equipment needed for these facilities. Accommodation for the consultant's staff will be provided through funding under consultants' contract.

2. To be provided by the Executing Agency

- (i) work permits and such other documents as shall be necessary to enable Consultants, Sub-consultants or personnel to perform the services.
- (ii) arrangement for personnel and, if appropriate, their eligible dependents to be provided promptly with all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in Bangladesh as per prevailing rules and procedures.
- (iii) facilitate prompt clearance through customs of any property required for the services and the personal effects of the personnel and their eligible dependents.
- (iv) issue to officials, agents and representatives of the government all such instructions as may be necessary or appropriate for the prompt and effective implementation of the services.
- (v) exempt the consultants and the personnel and any sub-consultants employed by the consultants for the services from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity according to the applicable laws.

- (vi) grant to the consultants and any sub-consultant and the personnel of either of them the privilege pursuant to the applicable law of bringing into Bangladesh reasonable amounts of foreign currency for the purpose of the services for the personal use of the personnel and their dependents and of withdrawing any such amounts as may be earned therein by the personnel in the execution of the services.
- (vii) Existing Government provisions will prevail for tax liability and insurances.

I. Counterpart Staff

10. Counterpart staff from LGED/pourashava will represent the EA on site, and will act as the employer's representatives for the civil works contract.

Project Component: Roads (Part D)

Outline Terms of Reference for Design and Supervision Consulting Services

A. Background

1. Is given in the main text of the report. These terms of reference are prepared for a project scope including cofinancing. If recruitment of consultants is concluded before cofinancing arrangements with the Governments of Canada and Japan are finalized, the consultant contract should be negotiated for a project scope without cofinancing and with a priced option for the scope with cofinancing.

B. Objectives

2. To assist the executing agency (EA) Roads and Highways Department (RHD) to:
- (i) Review, and update EA's own damage assessment, prioritize rehabilitation works and prepare subprojects in accordance with adopted selection criteria.
 - (ii) Prepare design, including necessary investigations, as appropriate, and prepare necessary bidding and other documents, and assist in bid evaluation and timely award of civil works contracts for speedy repair/rehabilitation works
 - (iii) Monitor and supervise the rehabilitation works ensuring specified quality and quantity and achievement of subproject objectives with overall Project completion by 31 January 2010.
 - (iv) Provide capacity building and impart on-the-job training to the project management unit/project implementation units (PMU/PIUs) staff of the EA in construction supervision, flood damage assessment, risk management and assessment, and development of appropriate flood resistant design standards
 - (v) Review subprojects' environmental and resettlement impacts, conduct ISA and prepare resettlement check-list, and take necessary action as per Government and ADB Guidelines.

C. Scope of Services

3. The roads and bridges component will restore to pre-disaster levels, and improve wherever necessary and feasible, sustainability and serviceability of those sections of the national, regional and 'Zilla' (district) in the greater districts of Sylhet, Dhaka, Mymensingh, Comilla, Sirajganj, Pabna, Bogra, Rajshahi, Rangpur, Faridpur and other areas damaged by 2007 floods. Additional districts may be added, on priority basis, after completion of the damage and needs assessment following the cyclone. The rehabilitation/replacement works will be undertaken by local contractors through contracts generally ranging in value from Tk7.0 million to Tk70.0 million.

4. The consultants' tasks will include, but not be limited to, the following:

1. Flood Damage Assessment and Sub-Project Preparation:

- (i) Review the findings of the preliminary damage assessment report prepared by RHD;
- (ii) Conduct detailed survey to identify 2007 damages.
- (iii) Prepare sub-projects that generally meet the following criteria:
 - a. The subproject will rehabilitate or reconstruct damaged infrastructure and facilities caused by the 2007 disasters based on needs assessment and

further assessment carried out by the consultants selected for that purpose. Damaged infrastructure caused by deferred maintenance shall not be selected as subproject.

- b. Priority will be given to subprojects that rehabilitate completed ADB-financed projects.
- c. The subproject must be technically feasible and represent the least-cost alternative, while at the same time providing cost-effective protection against future floods.
- d. The subproject must be completed within the Project completion period.
- e. The subproject shall not be financed by the other agency, unless the other agency and ADB are cofinancing it.
- f. The subproject shall be in compliance with the Government's environmental requirements and ADB's *Environmental Policy (2002)* and *Environment Assessment Guidelines (2003)* as well as its *Environmental Guidelines for Selected Infrastructure Development Projects*, and the agreed Environmental Assessment Framework. For subprojects that require an initial environment examination (IEE), the IEE shall be included in the subproject proposal, and Government environment clearance is obtained prior to the award of contract for the subproject.
- g. The subproject will have a value generally ranging from Tk.7.0 million (\$0.101 million) to Tk.70.0 million (\$1.01 million).
- h. The subproject will generally not involve any land acquisition or involuntary resettlement. If either of these is, in fact, required in course of the Project, it will be conducted in accordance with the Government's applicable laws and regulations, the ADB's *Policy on Involuntary Resettlement (1995)*, ADB's *Handbook on Resettlement: A Guide to Good Practice (1998)*, and the agreed resettlement framework.

2. Detailed Technical Design:

5. Carry out detailed design and drawings of all structures, pavements and the related components of the project.

3. Sub-Project Design:

- (i) Prepare tender documents that allow for a single-stage one-envelope bidding procedure. This procedure will have the following features:
 - a. the envelope will contain both the technical qualifications of the bidder and the financial bid based on item of works, quantity, unit rate and amount.
 - b. Post-qualification criteria will be established and agreed upon by the Government and the ADB. A method will be established to limit the numbers of contracts awarded to contractors to ensure that contractor do not exceed their capacity to undertake the work; and
- (ii) Assist the EA with the evaluation of tenders and recommend award of contract to the Project Director (Additional Chief Engineer of the respective Zones).
- (iii) Administration of the civil works contracts as the Engineer's Representative as defined in the contract document.

4. Construction Supervision:

- (i) Day-to-day supervision of the civil works on site by the provision of suitably qualified and experienced supervision staff.

- (ii) Certification of the work achieved and quantities achieved to the Project Director for payment to the contractor including certification of quality of works.
- (iii) Ensuring that proposed sub-projects are environmentally sound and incorporate mitigation measures as appropriate to meet Government environmental standards and regulations and implementation in compliance with the environmental and social impact mitigation requirements of the civil works contracts.
- (iv) Preparing regular progress and other reports.

5. Coordination

- (i) Assist the EA in coordinating the project implementation with the Project Steering Committee (PSC), Implementation Monitoring Evaluation Division (IMED), and any Government 'oversight committee' that may be established for overall monitoring of the project; and
- (ii) Assist the EA in coordinating with ADB, and prepare briefings and interim reports for the joint monthly coordination meetings between ADB and the EAs, organized by ADB.

6. Social Safeguards and Anti-corruption

- (i) Ensure and monitor that the Government's and ADB's safeguard policies on environment, resettlement, road safety, and health and sanitation are adequately complied at construction sites; and
- (ii) Monitor and report to ADB through the EA on any incidence of fraudulent practice and corruption by any concerned parties in implementing the project in accordance with ADB's Anti-corruption Policy, and facilitate/assist in conducting regular periodic audits and performance audits instituted by the Government and ADB.

7. Training

The consultant will

- (i) assist RHD in enhancing capacity of the PMU/PIUs in project formulation and management; and
- (ii) impart on-the-job training to the PMU/PIU staff of RHD in construction supervision, disaster damage assessment, and development of flood resistant design standards.

D. Reporting

6. The consultant will prepare the following reports:

- (i) within one month of commencement, a short Inception Report which includes the review of the flood assessment program components and contract packaging for the works in order of priorities based on the subproject selection criteria given in para. 52 in the main text of this report;
- (ii) brief monthly reports to detail the physical and financial progress of the works; and
- (iii) a project completion report in accordance with ADB requirements.

Unless directed otherwise, the Consultant is to submit these reports as follows:

Secretary, Planning Division, Ministry of Planning	2 copies
Secretary, Roads & Railways Division Ministry of Communications	2 copies
Secretary, IMED, Ministry of Planning	2 copies
Chief Engineer, RHD	4 copies
Additional Chief Engineer, RHD Second EFDRP	4 copies
Additional Chief Engineer (PD), each RHD Zone	3 copies
ADB	3 copies

E. Implementing Arrangements

7. RHD within Road & Railways Division of the Ministry of Communications will be the EA for the roads component of the Project. The Chief Engineer, RHD, will have overall responsibility for implementing this component of the Project. The day-to-day implementation will be coordinated by the Additional Chief Engineer (ACE), RHD exclusively designated and dedicated for management of the Project. The ACE will be assisted by a Additional Project Coordinator and Deputy Project Coordinator with the ranks of Superintending Engineer (SE) and Executive Engineer (XEN), respectively. In addition, the ACE will be supported by the existing PIU staff of RHD's ACE-ADB projects for day-to-day works of project management. The Additional Chief Engineer of each concerned RHD Zone will act as Project Director, the respective Superintending Engineers as Additional Project Directors, and the Executive Engineers as Project Managers and Sub-Division Engineers as Deputy Project Managers. The ACE will undertake coordination within RHD and the Government and with other agencies including the Project Steering Committee (PSC) and the Bank. The ACE will also be responsible for the submission of progress reports and disbursement requests to the Bank. The Zonal ACEs (Project Directors) will make payments to the contractors and the Project Coordinator (ACE-ADB) will process withdrawals under reimbursement procedures in accordance will the ADB's Loan Disbursement Handbook.

F. Consulting Services, Staffing Input

8. Both international and national consultants will be needed for the detailed damage assessment, detailed design and implementation of the project. Staffing inputs has been estimated about 100 person-months of international consultants and 730 person-months of national consultants. The exact number of person-month will be determined on the basis of detailed assessment that will be carried out in the first phase of the contract, followed by second phase of full deployment. It is expected that the consultants will propose their required man-month both international and national to carry out the task as per TOR. The consultant's contract will include facilities and services required by them including accommodation, vehicles, offices and equipment, etc. The breakdown of required staff input is given below;

I. International Staff

Team Leader/Sr. Road Engineer	- 24 PM
Sr. Resident Engineer	- 19 PM
Sr. Contract Specialist	- 11 PM
Sr. Bridge Specialist	- 21 PM
Sr. Pavement Design Specialist	- 4 PM

Sr. Material/Pavement Specialist (2 persons)	- 21 PM
	Total: 100 PM

II. National Key Staff

Project Coordinator (intermittent)	- 6 PM
Dy. Team Leader	- 28 PM
Hydrologist	- 4PM
Bridge Design Engineer (2 persons)	- 28 PM
Contract Specialist (2 persons)	- 28 PM
Environmental Specialist	- 9 PM
Resident Engineer (6 persons)	- 165 PM
Bridge Engineer (5 persons)	- 120 PM
Materials Engineer (6 persons)	- 144 PM
Quantity Surveyor (6 persons)	- 165 PM
Office/Asstt. Contract Engineer	- 24 PM
Resettlement Specialist (1 person)	- 9 PM
	Total: 730 PM

Tasks Assignment of Consultant's Key Personnel

Consultant's Key personnel will undertake the following (not limited to) tasks:

(i) Team Leader (Int'l)

- Act as Engineer's Representative for over all project management.
- Assess flood damages, prepare tender documents and assist RHD in tendering, bid evaluation and award of contracts.
- Monitor physical and financial progress and conduct progress review meeting.
- Issue instruction, directions and orders to the contractors on behalf of the Engineer.
- Develop and implement Quality Assurance Plan.
- Monitor social and environmental impact, mitigation measures and assure safety of the project.
- Certify contractors' bills.
- Review variation of works and recommend to the Engineer

(ii) Sr Resident Engineer (Int'l)

- Conduct detailed field inventory to assess damage to road infrastructures.
- Guide to prepare linear chart, BOQ of road works and assist the Team Leader in preparation of tender documents.
- Monitor construction works conforming to design and specification.
- Check and control quantities of items of works of road as per BOQ and notify variation to Team Leader.
- Monitor performance of Consultant's supervising staff.

(iii) Sr Contract Specialist (Int'l)

- Assist Team Leader in preparing tender documents, bid invitation, tender evaluation and contract awards.
- Assess and justify variations and claims and assist Team Leader in amendments of contract.
- Assist the client and the contractors in contract interpretation and settlement of disputes.

(iv) Sr Bridge Specialist (Int'l)

- Conduct detailed field inventory to assess damage to structures and select type and span of bridges and culverts to be replaced/rehabilitated.
- Guide detailed engineering survey of bridge sites.
- Conduct detailed engineering design of structures.
- Prepare drawing, BOQ of structures and assist Team Leader in preparing tender documents.
- Monitor construction works conforming to design and specification.
- Check and control quantities of items of bridge works as per BOQ and notify variation to Team Leader.
- Conduct field design adjustment.
- Monitor performance of Consultant's supervising staff.

(v) Sr Pavement Design Specialist (Int'l)

- Assist Team Leader in identification of restoration works and prioritization on the basis of road conditions.
- Prepare detailed engineering design for rehabilitation of the damaged roads.
- Assist in developing Quality Assurance Plan

(vi) Sr Materials/Pavement Specialist (Int'l)

- Assist in detailed field inventory to assess damage to infrastructures and in preparation of specification for restoration/rehabilitation works.
- Establish Inspection and Test Plan (ITP) for all construction works.
- Monitor, inspect, test, approve and maintain record of quality of construction materials conforming to specification.
- Supervise, instruct and monitor performance of Consultant's Materials Engineers, Laboratory Technicians and Laboratory Assistants.

(vii) Project Coordinator (Local)

- Coordinate with Team Leader to organize and manage works in conformity with TOR of Consulting Service Agreements.
- Coordinate with RHD, the Executing Agency and ADB for overall project management in association with Team Leader.
- Undertake overall monitoring of project progress and performance of Consultant's staff.

(viii) Deputy Team Leader (Local)

- Assist Team Leader in all matters concerning project implementation, project management and construction supervision.
- Perform Team Leader's tasks during his absence.

(ix) Hydrologist (Local)

- Review preliminary findings of 2007 damage assessment of affected roads and bridges from hydrological view point.
- Assess flood level, recommend restoration works of embankment and structure.
- Formulate strategy for selection of prioritized works.
- Prepare hydrological reports.

(x) Bridge Design Engineer (Local)

- Conduct detailed field inventory to assess damage to structures and select type and span of bridges and culverts to be replaced/rehabilitated.
- Guide detailed engineering survey on the bridge site.
- Carry out detailed engineering design of structures.
- Prepare drawing, BOQ of structures and assist to prepare tender documents.
- Monitor construction conforming to design and specification.
- Conduct field design adjustment.

(xi) Contract Specialist (Local)

- Assist Sr. Contract Specialist in preparing tender documents, bid invitation, tender evaluation and contract awards.
- Assist in assessment and justification of variations and claims and in amendments of contract.
- Assist the client and the contractors in contract interpretation and settlement of disputes.
- Assist Sr. Contract Specialist in all contractual functions and perform his task during his absence.

(xii) Environmental Specialist (Local)

- Monitor social, environmental, health and safety mitigation measures identified during design stage.
- Prepare environmental assessment report.
- Make periodic site visits to check conformity with the environment and social impact mitigation requirement of civil work.

(xiii) Resident Engineer (Local)

- Conduct detailed field inventory to assess damage to infrastructures.
- Prepare drawing, BOQ and assist in preparation of tender documents, bid invitation and tender evaluation.
- Monitor works conforming to design, specification and conditions of contract
- Monitor and supervise progress of construction works.
- Check and control quality of all civil works of contractors.
- Maintain record of measurement of works executed and recommend contractors' bills for certification to Team Leader.

- Supervise, instruct and monitor performance of Consultant's field supervision team members.

(xiv) Bridge Engineer (Local)

- Conduct detailed field inventory to assess damage to bridges.
- Prepare drawing, BOQ of structures and assist in preparation of tender documents, bid invitation and tender evaluation.
- Monitor construction conforming to design and specification.
- Monitor and supervise progress of construction works.
- Maintain record of measurement of executed works.
- Assist Resident Engineer in checking quality of works and contractor's bills prepared by the supervising staff.

(xv) Material Engineer (Local)

- Conduct detailed field inventory to assess damage to infrastructures.
- Assist Resident Engineer and Quantity Surveyor to prepare drawing, BOQ and assist in preparation of tender documents, bid invitation and tender evaluation.
- Monitor, inspect, test and record of quality of construction materials conforming to specification.
- Supervise, instruct and monitor performance of Consultant's Laboratory Technicians and Laboratory Assistants.

(xvi) Quantity Surveyor (Local)

- Conduct detailed field inventory to assess damage to infrastructures.
- Prepare drawing, BOQ and assist in preparation of tender documents, bid invitation and tender evaluation.
- Check quantity of BOQ and contractor's bills prepared by the supervising staff.
- Finalize IPC for recommending to the Project Director (RHD).
- Survey and summarize monthly progress quantities.
- Assist Resident Engineer in preparing Progress Report.

(xvi) Office/Asstt Contract Engineer (Local)

- Assist in preparation of BOQ, tender documents, bid invitation, tender evaluation and contract awards.
- Maintain document, incoming and outgoing correspondence of the project and keep records.
- Assist in preparing various reports of the projects.
- Assist in checking IPC of contractors.

(xvi) Resettlement Specialist

- Ensure and monitor that the Government's and ADB's safeguard policies on resettlement and indigenous peoples are followed.
- Review subprojects' resettlement impacts, conduct ISA and prepare resettlement check-list, and take necessary action as per Government and ADB Guidelines.
- Provide support to engineering team during project preparation and detailed design to minimize resettlement impact.
- Prepare social analysis for the selected subprojects involving resettlement, if any.
- Conduct field surveys and prepare RAP for the subprojects involving resettlement.

- Identify and document any social management obligations for inclusion in the tender documentation.

G. Implementation Schedule

9. Implementation of the project will be spread over a period of about twenty four months to take advantage of two dry seasons and allow for the recession of waters in the current 2007/08 dry season. Civil works will be substantially completed during the next construction season to January 2010. A period of additional six months to July 2010 shall be allowed for submission, certification and processing of payments.

H. Facilities

1. To be provided by the Consultant

The consultant's contract will provide funding for the incremental operation and equipment needed for these facilities. Accommodation for the consultant's staff will be provided through funding under consultants' contract.

2. To be provided by the Executing Agency

- (i) work permits and such other documents as shall be necessary to enable Consultants, Sub-consultants or personnel to perform the services.
- (ii) arrangement for personnel and, if appropriate, their eligible dependents to be provided promptly with all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in Bangladesh as per prevailing rules and procedures.
- (iii) facilitate prompt clearance through customs of any property required for the services and the personal effects of the personnel and their eligible dependents.
- (iv) issue to officials, agents and representatives of the government all such instructions as may be necessary or appropriate for the prompt and effective implementation of the services.
- (v) exempt the Consultants and the personnel and any sub-consultants employed by the Consultants for the services from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity according to the Applicable Laws.
- (vi) grant to the Consultants and any sub-consultant and the personnel of either of them the privilege pursuant to the applicable law of bringing into Bangladesh reasonable amounts of foreign currency for the purpose of the services for the personal use of the personnel and their dependents and of withdrawing any such amounts as may be earned therein by the personnel in the execution of the services.
- (vii) Existing Government Provisions will prevail for tax liability and insurance.

I. Counterpart Staff

10. Counterpart staff from RHD will represent the EA on site, and will act as the Employer's Representatives for the civil works contract.

Project Component: Water Resources (Part E)

Outline Terms of Reference for Design and Supervision Consulting Services

A. Background

1. These terms of reference are prepared for a project scope including cofinancing. If recruitment of consultants is concluded before cofinancing arrangements with the Governments of Canada and Japan are finalized, the consultant contract should be negotiated for a project scope without cofinancing and with a priced option for the scope with cofinancing. The 2007 flood damage in the water management sector required rehabilitation works, was estimated at about \$75 million by the joint ADB and World Bank damage and needs assessment mission. Additional damage may be added after completion of the survey following the cyclone. The total damage in large and medium-scale flood control and irrigation schemes were as follows:

Table 1: Damage to Water Management Facilities

Item	Full Damage	Partial Damage
Embankment (kilometer)	143	1,381
Irrigation and Drainage Canals (kilometer)	1	139
Sluice, Bridge, Culvert (number)	18	263
Protective Works (kilometer)	18	47
Groyne (number)	0	8
Spur / Hard Point	0	41

Source: Asian Development Bank-World Bank Damage and Needs Assessment.

2. Large and medium-scale rehabilitation works will cover urgent rehabilitation of flood control, drainage, and irrigation facilities in 46 districts necessary to restore them to their condition prior to the flood, and to restore some of them for disaster prevention. These facilities include embankments, flood control, drainage, and irrigation canal and structures, and protective works. Restoration works will include filling of embankment breaches, re-sectioning, protective works, and protecting of damaged embankments. Damaged or destroyed water control structures and canals will be also repaired or replaced, if justified.

3. The Bangladesh Water Development Board (BWDB), the Executing Agency (EA) will carry out surveys and detailed design of the damaged facilities, and the final design will be verified by the consultants. The consultants will also ensure that the quality of works is of an appropriately high standard, so the subprojects to be rehabilitated under the Project will be restored to their original specifications to ensure integrity with the remaining parts of the subprojects.

B. Objectives

4. To assist the EA to

- (i) Review, and update EA's own damage assessment, prioritize rehabilitation works and prepare subprojects in accordance with adopted selection criteria.
- (ii) Prepare design, including necessary investigations, as appropriate, and prepare necessary bidding and other documents, and assist in bid evaluation and timely award of civil works contracts for speedy repair/rehabilitation works.
- (iii) Monitor and supervise the rehabilitation works ensuring specified quality and quantity and achievement of subproject objectives with overall Project completion by 31 January 2010.

- (iv) Provide capacity building and impart on-the-job training to the PMU/PIU staff of the EA in construction supervision, flood damage assessment, and development of appropriate flood resistant design standards.

C. Scope of Services

5. The consultants shall assist BWDB to implement and complete the Project within the specified period.

6. The consultants' tasks will include, but not be limited to, the following:

1. Flood Damage Assessment and Sub-Project Preparation:

- (i) Review the findings of the preliminary damage assessment report of September 2007 prepared by BWDB;
- (ii) Conduct detailed survey to identify 2007 damage assessment;
- (iii) Review the findings of the BWDB damage assessment and provide recommendations; and
- (iv) Prepare sub-projects that meet the criteria in para. 52 of RRP and will have a value generally ranging from Tk3.0 million (\$50,000) to Tk70.0 million (\$1.16 million).

2. Detailed Technical Design:

Carry out detailed design and drawings of all structures, pavements and the related components of the project.

3. Sub-Project Design:

- (i) Prepare tender documents that allow for a single-stage one-envelope bidding procedure. This procedure will have the following features:
 - (a) The envelope will contain both the technical qualifications of the bidder and the financial bid based on item of works, quantity, unit rate and amount.
 - (b) Post-qualification criteria will be established and agreed upon by the Government and ADB. A method will be established to ensure that contractors do not exceed their capacity to undertake the work.
- (ii) Assist the EA with the evaluation of tenders and recommend award of contract to the Project Director; and
- (iii) Administration of the civil works contracts as the EA's representative as defined in the contract document.

4. Construction Supervision:

- (i) Day-to-day supervision of the civil works on site by the provision of suitably qualified and experienced supervision staff;
- (ii) Certification of the work achieved and quantities achieved to the Project Director for payment to the contractor including certification of quality of works;
- (iii) Ensuring that proposed sub-projects are environmentally sound and incorporate mitigation measures as appropriate to meet Government environmental standards and regulations and implementation in compliance with the environmental and social impact mitigation requirements of the civil works contracts; and
- (iv) Preparing regular progress and other reports.

5. Coordination

- (i) Assist the EA in coordinating the project implementation with the Project Steering Committee (PSC), IMED, and any Government 'oversight committee' that may be established for overall monitoring of the project; and
- (ii) Assist the Coordinator of the EA in coordinating with ADB, and prepare briefings and interim reports for the joint monthly coordination meetings between ADB and the EAs, organized by ADB;

6. Social Safeguards and Anti-corruption

- (i) Ensure and monitor that the Government's and ADB's safeguard policies on environment, resettlement, road safety, and health and sanitation are adequately complied at construction sites; and
- (ii) Monitor and report to ADB through the EA on any incidence of fraudulent practice and corruption by any concerned parties in implementing the project in accordance with ADB's Anti-corruption Policy, and facilitate/assist in conducting regular periodic audits and performance audits instituted by the Government and ADB.

7. Training of EA Staff

The consultants will

- (i) Assist BWDB in enhancing capacity of the Project management Office (PMO) in project formulation and management; and
- (ii) Implement on-the-job training to the PMO staff of BWDB in construction supervision, disaster damage assessment, and development of flood resistant design standards.

D. Reporting

7. The consultant will prepare the following reports:

- (i) Within 1 (one) month of commencement, a short Inception Report which includes the review of the flood assessment program components and contract packaging for the works in order of priorities based on the subproject selection criteria given in para 6 (iv);
- (ii) Brief monthly reports to detail the physical and financial progress of the works; and
- (iii) Prepare a project completion report in accordance with ADB requirements.

8. Unless directed otherwise, the consultant is to submit these reports as follows:

Chairman, Project Steering Committee	2 copies
Secretary, Ministry of Water Resources	2 copies
Director General, BWDB	2 copies
Additional Chief Engineer	2 copies
Project Coordinator	2 copies
Project Director, BWDB	2 copies
Asian Development Bank	3 copies

E. Implementation Arrangements

9. For the rehabilitation of facilities under this part, the Director General, BWDB, will be overall responsible for coordinating and monitoring Project activities, with the assistance of the consultants. BWDB will appoint an Additional Chief Engineer / Superintending Engineer as Project

Coordinator and a Superintending Engineer / Senior Executive Engineer as Project Director and, will provide five executive engineers and five sub-divisional engineers to the PMO. At the field level, responsibility for implementing the Project will rest with executive engineers, under the supervision of their Circle Superintending Engineer and Zonal Chief Engineer. The executive engineers will be responsible for preparing tender documents, selecting contractors, awarding contracts, supervising construction, providing quality control, and establishing accounting and detailed financial control. Design assistance will be provided by Chief Engineer, Design.

F. Consulting Services, Staffing Input

10. Both international and national consultants will be needed for the detailed damage assessment, detailed design and implementation of the project. Staffing inputs have been estimated at about 44 person-months of international consultants and 270 person-months of national consultants. The exact number of person-month will be determined on the basis of detailed assessment that will be carried out in the first phase of the contract, followed by second phase of full deployment. Expertise required includes civil/water resources engineering (team leader), design expert, and finance. The overall period of services will be about 24 months as shown in enclosed Implementation Schedule of the project. It is expected that the consultants will propose their required person-months both international and national, to carry out the task as per TOR. The consultant's contract will include facilities and services required by them including accommodation, vehicles, offices and equipment, etc. It is expected that the consultants will propose their required person-months for both international and national consultants, including national design and survey engineers to carry out the task as per TOR. The breakdown of required staff input is tentatively given below. However, the consulting firm may propose better arrangement for survey and design of the rehabilitation works.

I. International Consultant

Team Leader/Water Resources Engineer	-	24 PM
Construction Quality Control Engineer	-	10 PM
Financial Management Specialist	-	10 PM

Total: 44 PM

II. National Consultant

Social Development Specialist	-	3 PM
Environmentalist	-	3 PM
Four Construction Supervision Engineers	-	72 PM
Procurement Specialist	-	24 PM
Four Design Engineers	-	72 PM
Eight Survey Engineers	-	96 PM

Total: 270 MM

11. The international water resources engineer/team leader shall have a minimum BSc degree in civil engineering with a minimum of 20 years work experience in planning, design and construction monitoring of water resources development projects. The tasks of the team leader will include, but not be limited to, the following:

- (i) Assist in coordinating the activities among BWDB staff, and preparing work plans for the implementation of the rehabilitation of flood damage;
- (ii) Undertake field assessment of flood damage works, check field survey and submit report to the PMO;
- (iii) Advise, guide and coordinate activities pertaining to the planning, designing and construction of the rehabilitation of the flood damages;
- (iv) Prepare and update yearly work plans, budgets, and financing;

- (v) Verify necessary documentation for loan withdrawals;
- (vi) Compile withdrawal applications;
- (vii) Maintain contract files;
- (viii) Consult beneficiaries on the measures
- (ix) Identify measures to be taken;
- (x) Review BWDB's design drawings and tender documents;
- (xi) Ensure that proposed measures are environmentally sound and socially acceptable to meet the Government's guidelines and ADB's safeguard policies; and
- (xii) Prepare a monitoring and evaluation plans to supervise construction quality for the civil works.

12. The international construction quality control engineer shall have a minimum BSc degree in civil engineering with a minimum of 15 years work experience in construction supervision/monitoring of water resources development. The task of the engineer will include, but not be limited to, the following:

- (i) Establish management systems on an individual subproject basis;
- (ii) Monitor the tendering and construction stages of each subproject and track in the management systems;
- (iii) Oversee the functioning of the system for construction supervision;
- (iv) Assist the PMO in putting in place a system of effective supervision of construction work carried out by contractors and labor contracting societies;
- (v) Undertake pre-work field survey along embankment/canal alignments and submit report to the PMO;
- (vi) Monitor construction activities ensuring that the construction supervisor is one site and the contractor has a capable manager in site, proper construction practices and design are being followed;
- (vii) Assist the PMO in construction monitoring and quality control, check and certify the final to contract bills;
- (viii) Sign off on the completed structures and verify that reimbursement for the final payment can be made;
- (ix) Carry put technical audit of the completed works and certify payment for the completed works for reimbursement; and
- (x) Check construction works before completion and ensure that the completed works comply with conditions of contract and technical specifications.

13. An international financial management specialist shall have an MBA degree with a minimum of 5 years work experience in financial management of donor-funded projects to review financial management of the rehabilitation works. The specialist will undertake external evaluation of the rehabilitation works through random sampling of the ongoing rehabilitation works and report findings to BWDB and ADB directly upon completion of quarterly evaluations. The tasks of the specialist will include, but not be limited to, the following:

- (i) Train the BWDB accounting professionals posted at the division levels in the preparation of re-imburement claims in the content and formats acceptable to the donors;
- (ii) Conduct spot checks on a random basis the re-imburement claims prepared by the accountants, and assess its acceptability by the donors;
- (iii) Monitor on a regular basis the re-imburement claims submitted by PMO, BWDB, and advise the donors;
- (iv) Check the financing tables prepared by donors, and match with expenditure accounts by components and activities. Advise the donors on any deviations vis-à-vis the expenditure accounts and the Government's Project Proforma;

- (v) Recast the expenditure accounts on the basis of agreements reached between the Government and the donors; and
- (vi) Submit end-of-assignment report with observations and recommendations deemed relevant and applicable.

14 The national social development specialist will have an advance degree in Social science/ Sociology with minimum 10 years experience of which at least 5 years of experience working in water resources development projects. The tasks of the specialist will include, but not limited to, the following:

- (i) Assist the PMO in the identify socioeconomic constraints in the implementation of restoration activities;
- (ii) Advise the PMO in resolving outstanding problems through involving, and in consultation with stakeholders;
- (iii) Identify the needs of affected people by resettlement and retirement of structures;
- (iv) Document any steps taken to reduce land acquisition and resettlement impacts;
- (v) Conduct participatory rapid appraisal in the subproject area;
- (vi) Consult with key stakeholders on resettlement effects;
- (vii) Determine the scope and magnitude of resettlement effects;
- (viii) Prepare an entitlements matrix and relocation plans;
- (ix) Prepare a time frame and implementation schedule for land acquisition and resettlement;
- (x) Prepare an indicative budget with source of financing and approval process; and
- (xi) Confirm procedures for Government approval and institutional arrangements for implementation of the resettlement plan.

15. The national environmentalist will have an advance degree in environmental sciences with minimum of 15 years experience, of which at least 10 years in water resources development sector. The tasks of the environmentalist will include, not be limited to, the following:

- (i) Develop a Rapid Environmental Assessment checklist to identify likely environmental impacts and prepare mitigation measures for any adverse environmental impacts associated with the proposed rehabilitation works for all subprojects;
- (ii) Prepare a monitoring and evaluation plan for individual subprojects if necessary; and
- (iii) Prepare an initial environmental examination (IEE) in accordance with the ADB's Environment Policy and Environmental Assessment Guidelines (2003) amended from time to time for subprojects requiring construction of new infrastructure.

16. The national construction supervision engineers shall have a minimum BSc degree in civil engineering with a minimum of 10 years work experience in design and construction supervision of construction project. The tasks of the construction supervision specialist will include, but not be limited to, the following:

- (i) Administer and supervise the construction works, particularly quality of the works;
- (ii) Report the deficiency to BWDB and ADB with corrective measures, where the consultants observe that for a particular part of the works, the contract specification have not met;
- (iii) Review the design, cost estimates, and contracts;
- (iv) Review force account rates;
- (v) Carry out post-award review of bidding procedures and bid evaluation; and
- (vi) Randomly check construction works before completion of the works to ensure compliance with the contract conditions and specifications.

17. The national procurement specialist shall have a minimum bachelor degree with extensive experience working with donor's financed projects and the Government's projects and familiar with the Government's procurement guidelines of 2003, with a minimum of 10 years of work experience. The tasks of the procurement specialist will include, but not be limited to, the following:

- (i) Develop guidelines and rules of procurements of different contract types;
- (ii) Prepare contracts for civil works, services and supplies and other project procurements;
- (iii) Prepare standard bid documents as per ADB/WB/donor(s) guidelines for procurement;
- (iv) Prepare tendering procedures, procurement notices, and bid documents and prepare contract evaluation reports for the evaluation committee to award the contract;
- (v) Assist with preparation of plans, annual reports and monitoring and evaluation reports;
- (vi) Coordinate with other development partners/donors in the procurement policies and guidelines;
- (vii) Advise BWDB on claims relating to contracts and procurements;
- (viii) Review standard procurement guidelines of the donors to safeguard policies on social and environmental issues; and
- (ix) Provide training on the job to a BWDB procurement specialist posted in the consultant's office.

G. Implementation Schedule

18. Implementation of the project will be spread over a period of about twenty four months to take advantage of two dry seasons and allow for the recession of waters in the current 2007/8 dry season. Priority road civil works will be completed during the next construction season to December 2009. A period of additional six months to June 2010 shall be allowed for submission, certification and processing of payments.

H. Facilities

19. The consultant's contract will provide funding for the incremental operation and equipment needed for these facilities. Accommodation for the consultant's staff will be provided through funding under consultants' contract.

20. The EA shall provide the following:

- (i) Work permits and such other documents as shall be necessary to enable Consultants, Sub-consultants or personnel to perform the services;
- (ii) Arrangement for personnel and, if appropriate, their eligible dependents to be provided promptly with all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in Bangladesh as per prevailing rules and procedures;
- (iii) Facilitate prompt clearance through customs of any property required for the services and the personal effects of the personnel and their eligible dependents;
- (iv) Issue to officials, agents and representatives of the government all such instructions as may be necessary or appropriate for the prompt and effective implementation of the services;
- (v) Exempt the consultants and the personnel and any sub-consultants employed by the consultants for the services from any requirement to register or obtain any

- permit to practice their profession or to establish themselves either individually or as a corporate entity according to the applicable laws;
- (vi) Grant to the consultants and any sub-consultant and the personnel of either of them the privilege pursuant to the applicable law of bringing into Bangladesh reasonable amounts of foreign currency for the purpose of the services for the personal use of the personnel and their dependents and of withdrawing any such amounts as may be earned therein by the personnel in the execution of the services; and
 - (vii) Existing Government provisions will prevail for tax liability and insurances.

I. Counterpart Staff

21. Counterpart staff from BWDB will represent the EA on site, and will act as the employer's representatives for the civil works contract.

SOCIAL AND POVERTY ASSESSMENT

A. The Project Area

1. The Project will cover all affected districts of the country. The sub-projects for the rehabilitation activities will be determined based on the local needs as identified through participation of various stakeholders including the executing agencies, local government and the people.

B. Impacts of floods and cyclone

2. Bangladesh is characterized by an extensive network of rivers draining around 113 million hectare meters water to the Bay of Bengal of which 90% water flows from the upper catchments outside the country. The flat topography, high intensity rainfall and inadequate capacity of rivers cause drainage congestion, inundation, flooding during monsoon. The Brahmaputra and Ganges rivers and their tributaries dominate the economic and social life of the country the state economic activities as a whole. Flooding, cyclone and other natural disasters are regular phenomenon in some areas of the country. The coastal districts are exposed to cyclone and high tidal waves frequently and the most severe ones were in 1970, 1991 and 2007. For some of the districts, floods and cyclones are recent experience. Therefore, the preparedness and sufferings varied in different locations. The most severely flood affected districts were Sirajganj, Bogra, Kurigram Gaibandha, Manikganj, Jamalpur, Tangail, Netrokona, Faridpur, and Madaripur. The severely hit districts by cyclone *Sidr* were Bagerhat, Khulna, Satkhira, Barisal, Jhalakathi, Pirojpur, Bhola, Patuakhali, Barguna, Madaripur, Shariatpur and Gopalganj. About 42% of the land mass was flooded by September and 30 districts were affected by cyclone in November 2007. The affected areas include coastal belt, rural areas, river islands, low lying lands and urban areas including city suburbs and slums. Despite the variation in experiences and preparedness, people suffer in all affected areas. During 2007 disasters, a total of about 25 million people were affected. The disasters washed away homes, farmland and infrastructure particularly those at the riverbanks and in western coastal areas. River erosion, wind speed and tidal waves were the major factors that caused or increased the severity of effects and homes as well as arable lands were damaged or washed away. The victims had to take refuge in temporary shelters in schools, colleges, madrasas, embankments and other public places. In many areas cyclone shelters were not available. People who could not leave their homes built bamboo platforms at higher levels, raised the height of their beds, or lived on the roofs or trees. Many people lived in water putting their cattle on raised platforms even on their beds.

3. Social infrastructure facilities such as schools and health centers were also damaged by floods mainly due to river erosion and water logging. The impacts on the health of the population especially children was relatively high. In Dhaka and other urban areas, the floods caused damage or created problem in functioning of deep tube-wells, pump houses, sewerage lines, and sewer lift stations and sewage treatment plants. Drainage congestions created problem of solid and liquid waste disposal having severe implications on the environment and human health. About 70,367 tube wells and 70% of the latrines were affected. Ring wells were damaged mostly due to collapse of the platforms/aprons, soil erosion, siltation of wells, and platform breakage. As a result, people, especially children were affected by waterborne diseases following the floods. The International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) Dhaka hospital alone received 21,400 patients in August. ICDDR,B also predicted about a 30% increase in malnutrition after flood and significant stunted growth and susceptibility to diseases due to diarrhea. The cyclone added further to the suffering.

4. The farm families suffered loss twice as the seed beds and crops planted after the first phase of the floods were again affected by the floods in September. The coastal region lost during

the cyclone the only paddy crop *aman*, which was almost ready to harvest. Rice production is expected to be 1.8 million tons less than the pre-disaster rice production target for the FY2008. Huge amount of employment days have been lost in the agriculture sector particularly for the poor and the disasters have significantly reduced the number of day-labor opportunities. Shortage in other grain crops, vegetables, pulses and jute has been also significant. The poorest families already faced a shortage of stocks at household level even before the floods, as they lack sufficient income to buy food. The food security situation of the disaster-affected households, is therefore precarious. Households are facing budget deficit and there will be food shortages and increased levels of malnutrition in poor disaster-affected households until the next harvest. The price hike of the essentials especially food items has added to the misery.

5. The fisheries sub-sector was affected by loss in the form of damage to infrastructure (farms, ponds, hatcheries and nurseries) and loss of fries, fingerlings, fish, and shrimp. Both household based and commercial farms lost poultry and livestock and incurred loss in production of milk, eggs, and meat; damage to animal/poultry sheds; and loss of feed, fodder and pasture. According to a Grameen Bank survey, a total of 600,000 members, all poor and mostly women were severely affected by the floods and fully or partially lost their housing and self employment/income generating activities.

6. The disasters also affected trade and industry. In Sirajganj and Tangail districts, which account for the major part of the manufacturing of handlooms and power looms, about 50-70% units were damaged or faced the loss by flood. All business enterprises in the coastal areas were damaged by the cyclone. Employment loss in the manufacturing sectors has not been estimated yet. The direct losses include damage to machinery due to rusting, deposit of mud, chemicals, and other pollutants; damage to physical infrastructure and inventories; losses to non-fulfillment of contracts; and damage to raw materials, stock and goods in transit.

7. Although the disasters affected both poor and non-poor households, the poor were less able to withstand the effects of the disaster on housing, other household assets, income, health, and security. Women, children and elderly persons were particularly vulnerable. The poor in urban slums had to live in precarious condition due to water logging, water contamination, lack of water and sanitation facilities leading to health risks. The sufferings of floods were aggravated by the cyclone and associated price hike. Higher food prices amplified the household budget and food deficit for the poor households. This will also affect the household food consumption and nutrition negatively. Loss of income and employment will have a long-term effect on health and nutrition at the household level and the poor will face difficulties finding an income earning opportunity, which may lead them to further sell assets and resort to money lenders. Loss of housing and shelters due to floods and cyclone may lead to rural - urban migration. Many of these losses are hidden and cannot be quantified.

8. The disasters affect poor women more severally than men because of the wider range of responsibilities that they have for their households including indigenous people (IP). The responsibilities, including those for food processing and cooking, clearing, collecting water and fuel, bearing and rearing children, looking after livestock and household income generation become much more difficult to perform under flood conditions. Despite this heavy burden, which women bear in extremely difficult circumstances, they demonstrate considerable fortitude and ingenuity in their attempts to maintain the life of their households and sacrifice their own nutritional needs to support children and men. Women also face problem in the flood/cyclone refuge or even at homes, related to their gender identity, for example, insecurity, lack of toilet facilities and of being exposed in public. They are the ones to sell their own asset first as in most cases these are poultry, utensils and other small items to meet household food requirements.

9. People's vulnerability is closely linked to their poverty and thus poverty reduction initiatives that reduce vulnerability and help to rebuild their lives are needed, with emphasis on the security of women and children.

10. The safety net programs available in the country does not cover those all who need and the floods and other natural disasters only make them further inadequate even the Government expands the coverage of food for work, vulnerable group feeding, test relief and other such safety net programs after disasters. The Government has declared 45% increase and rescheduling in agricultural credit. The Government has taken a decision to extend the food supports to the vulnerable people of the cyclone affected districts from December 2007 through special vulnerable group feeding program. In operation of this program for four months about 150,233 tons rice will be required. Food deficit further amplified after the cyclone. Disaster induced imports including food grains, housing materials, fertilizers and agriculture inputs will put pressure on the trade balance. The decrease in export of frozen food, vegetable and other such items will contribute to the rising trade deficit.

C. Poverty Profile

1. National Levels

11. Although declining, poverty remains extensive in Bangladesh. The head-count rates show the incidence of poverty for Household Income and Expenditure Survey (HIES) of 2005 using the upper poverty line at 40% national, 43.8% rural, and 28.4% urban. The corresponding rates for HIES-2000 were 48.9%, 52.3%, and 35.2%. Head-count rates based on the lower poverty line stand at 25.1% national, 28.6% rural, and 14.6% urban in 2005. For 2000, the corresponding rates were 34.3%, 37.9%, and 19.9%. According to a BIDS study, the estimate of chronic poverty at the national level based on health poverty index (HPI) value was 35.5 in 2004. 24 out of 64 districts suffered from chronic poverty above the national average.

12. The country is regularly subjected to flooding and other natural disasters, causing large-scale damage to crops, livestock and infrastructure. The adverse interface between chronic poverty, remote rural areas and unfavorable agricultural environments is well known. Tidal surge, cyclone, tornado etc. are common phenomenon, especially in the coastal areas. The Bangladesh Institute of Development Studies (BIDS) study attempted to capture movements into and out of poverty in households living in flood-prone areas. It observed that about 32% of the households, who were extreme poor in 1987, continue to remain so even after a span of 13 years in the year 2000. The longer the duration of poverty, the greater the chronicity; and the long duration of poverty.

13. Regular losses of assets and livelihoods result in steady migration of the resource poor from the rural to the urban areas. The HIES 2005 found increase in working age population in urban area which might be result of rural to urban migration. Urban poverty is on the rise, mainly due to migration from rural areas. The annual growth rate of the urban population by more than 3% causes sprouting of shanty settlements along the towns' river embankments or in surrounding low lying areas. There are cases where such settlements represent more than 25% of the town's population. Slums grow in Dhaka and other towns without any service provisions. The poorer income groups, especially the recently settled urban dwellers, are the most vulnerable to disaster. Lack of flood protection, cyclone preparedness and inadequate drainage etc. lead to water clogging and overflowing of sewerage, causing widespread environmental degradation and deplorable unsanitary living conditions in the urban slums and shanties. Significant challenges remain to address shortcomings in health and nutrition which aggravates after disasters like floods and cyclone. Besides injury and deaths, infectious diseases persist, and the share of non-communicable diseases is projected to rise, placing challenges on the health care system.

14. The Government's Poverty Reduction Strategy Paper takes a multi-pronged approach and emphasizes economic growth, human development, social safety net, closing of gender gaps and participatory governance for poverty reduction. Rural and urban infrastructures have been considered essential for both direct and indirect poverty reduction.

15. In Bangladesh, the burden of poverty falls disproportionately on women. Discriminatory legal provisions exist and human rights are often violated at the family as well as community levels. Despite the increase in number of women in the paid workforce, there remain many aspects of the labor market where gender disparities are marked. The gap in wage rates between men and women is still significant. Women's employment is also concentrated in sectors with low returns on their labor and characterized by temporary terms. Key social development indicators also demonstrate continued gaps between male and female members of the same household. The most disadvantaged women are those heading or managing households, about 22% of all households. Rural households headed by women had a higher probability of being among the very poor than households headed by men. 31% in rural and 24.4% urban households headed by women were under upper poverty line in 2005. On average, households headed by females earn only 55% of the earnings of the national average households and thus experience chronic of food shortages. Due to natural calamities and economic reasons, men tend to migrate leaving behind their families, and women have to cope with the shocks and the burden of poverty in a discriminatory situation. Women of poor families are particularly disadvantaged to participate in and fully benefit from development efforts.

16. Poor Bangladeshis have little access to resources from institutional sources. Socially prescribed roles allow women's limited access to economic resources such as capital, skills and marketable skills. Through increased access to micro finance, women's labor at the household level is being transformed into cash contribution to household income. In rural areas, poor people, particularly women, generally access financial resources through nonbank sources, such as microcredit programs of nongovernmental organizations (NGOs) and other noninstitutional lending. The Grameen Bank and some NGO credit programs, such as Palli Karma-Sahayak Foundation (PKSF), Building Resources Across Communities (BRAC) and Proshika provide loans to poor people and target women specifically. Loans taken by poor people often are for supporting economic activities, but are also taken for consumption and household purposes in times of distress. At times, women are used as a means to access credit facilities by the family members.

17. The safety net programs of the Government are inadequate to cover the people who need them. During disasters the situation becomes worse and despite Government's and NGOs' additional support the coverage still remains low. A study of Power and Participation Research Center (PPRC) in Kurigram found that access to government and NGO safety net program were limited and unexpectedly low given the famine situation prevailing in the district every year which aggravates further by floods.

2. Poverty in Project Area

18. Bangladesh Bureau of Statistics (BBS) data, 2005 indicate that Barisal Division has the highest incidence of poverty measured by both higher and lower poverty line. The most deprived districts include Chittagong Hill Tracts, some tribal areas and the char areas. All districts of Barisal division were severely hit by *Sidr* and many of the poor districts were severely affected by the floods. Out of the 10 districts facing severe flood impact, 5 were suffering chronic poverty above the national level (35.5), as measured by HPI.

19. With massive income erosion and complete loss of physical assets, the affected areas now face abject poverty. The prevalence of poverty among landless households and households headed by women in these areas is particularly high. In the river island areas of the north, many families are effectively female headed. Most of the river islands are densely populated with landless and poor and are subject to annual erosion. The estimated number of vulnerable groups

(such as children under 5 years age, pregnant mothers, and elderly people) among the total population is approximately 22%.

20. Most of the people of the project area are involved in agricultural production either directly or indirectly. In the project area, women is engaged in traditional household works: agriculture, fishing, petty trade, and some low-level nonfarm jobs. The lower the status of the families (landless and marginal), the higher the percentage of women involved in activities other than household works such as involvement in construction work, farm laborers and other self-employment activities. Indigenous people are also amongst the poorest. IPs are residing in some of the affected districts.

21. Persistent water logging problems exist in many areas, creating inhuman living conditions, spread of diseases, and lack of employment opportunities. The clean water supply situation is insufficient and sanitary latrines are scarce. A major concern is the condition after the recession of floodwaters and cyclones when the risk of epidemics, particularly diarrhea as well as skin diseases, are high. Malnutrition due to diseases, food insecurity and lack of income earning opportunities may increase morbidity in the flood affected area. Thus, social issues, such as provision of services for affected people, particularly the poor and vulnerable groups are important and restoration of transport networks is important to facilitate access to services and economic activities.

D. Project Beneficiaries

22. Through the rehabilitation of public and community infrastructure, the Project will help restore social and economic activities disrupted by the floods. Restoration and rehabilitation of transport networks will help restoring the economic activities as well as accessing services. The Project will reduce future flooding and water logging of agricultural land, benefiting residents and farmers in low-lying flood-prone areas. The urban infrastructure and drainage system rehabilitation will contribute towards reduction of environmental pollution and improved health situation. The Project will not only help in relieving human and societal distress, but also create economic benefits that are likely to be substantial although perhaps not quantifiable. Any adverse impact, if identified will be mitigated through the implementation of the Involuntary Resettlement Plan of the specific subproject. The IPs will be involved in selection and implementation of the sub projects. The civil works under the Project are expected to provide employment of about 12 million person-days to local skilled and unskilled labor. The Project will help bring the farmlands in 46 flood affected and 30 cyclone affected districts (some districts have suffered both type of disasters) back to productivity by rehabilitating the flood protection and irrigation infrastructure and allow people to regain employment and to generate incomes of their own instead of relying on government emergency assistance. Rehabilitation and reconstruction activities will cover road infrastructure in seven road zones of the country, water management facilities in 38 districts, municipal infrastructure in 31 municipalities, and rural infrastructure activities in 31 districts. Provision for import of essential inputs will help in restoring agriculture production and livelihood. Capacity building for disaster preparedness and mitigation will also help reducing the sufferings in the future. The following Table indicates the type of benefits from the Project.

Table II: Estimated Benefits

Project Component	Benefits	Percentage of Women Beneficiaries
Import support for food grain and essential inputs	The supply of food grain and agriculture inputs will be increased in the market. This will help in recovering the loss and improving livelihood.	Women will benefit from agriculture recovery and restoring livelihood.
Rural Infrastructure	Economic activities and income will be restored through access to market and transportation facilities. Access to human development services will be	A large proportion of the employment days generated in construction will be utilized by women. The routine maintenance

Project Component	Benefits	Percentage of Women Beneficiaries
	facilitated. Nearly 5 million person days of employment will be generated for the poor. This will reduce vulnerability to migration and trafficking of men, women and children.	and tree plantation activities will generate employment for women. Women will be able to restore their self-employment activities and will be able to access health and other services for their families.
Municipal infrastructure	Communication and services will be facilitated and income and asset losses will be recovered. Environment and health conditions will improve. An estimated 3 million person days of employment will be generated directly in the urban infrastructure rehabilitation. Additional employment will be generated in trade and business areas.	Women will be benefited from the urban infrastructure and facilities. The families in the slums will benefit from the restoration of water and sanitation facilities.
Roads and Bridges	200,000 person-days of work will be created to rehabilitate roads, bridges and ferry landings. Restored communication facilities will enhance trade and business.	A good share of employment generated for the unskilled laborers for rural infrastructure rehabilitation will go to women.
Water resources	Reduction in vulnerability to floods and erosion will take place. Income and asset losses due to the disruption from flooding to agriculture, income generation, business activities will be recovered. Estimated 3.8 million person days of employment will be generated directly in the infrastructure rehabilitation. Additional employment will be generated in agriculture, fisheries and other related areas for the rural poor. Health and environment condition will also improve.	A great proportion of the direct beneficiaries of the employment opportunities created will be women. Besides, they will also benefit from employment in agriculture and fisheries sectors.
Disaster preparedness and mitigation	The capacity of the Government in disaster management, especially in preparedness and support system will be enhanced. Information system will be improved and will reduce sufferings of people by ensuring timely flood forecasting.	Poor and women will also benefit from the improved warning system and capacity building for disaster preparedness.

E. Needs and Demands for Infrastructure Development

23. Rehabilitation of water and flood protection infrastructure is important to protect agriculture, housing and trade and industry. A large number of tubewells and latrines that have been inundated will need to be rehabilitated. Transport infrastructure including roads, bridges, culverts and railways also need rehabilitation. Rural market infrastructure also needs rehabilitation to facilitate economic activities in the rural areas. Based on community consultations, the major demand were (i) drainage rehabilitation; (ii) employment; (iii) rehabilitation of rural and urban infrastructure facilities in towns; and (iv) rehabilitation of flood protection and irrigation facilities and cyclone shelters. The community consultations also emphasized flood preparedness and mitigation measures.

ENVIRONMENTAL ASSESSMENT AND REVIEW PROCEDURES FOR SUBPROJECTS

A. Introduction

1. The Environmental Assessment and Review Procedures (EARP) for the projects aims at defining procedure for preparing environmental assessment for each of subproject under the Project. The procedure will include what need to be considered in selecting the project, how to classified the subproject, what environmental assessment study is required, how to prepare the study and institutional arrangement to describe the responsibilities of parties involved in this project and resources (staff and funding) need to implement this framework.

B. Overview of the Project

2. The project will rehabilitate high priority, damaged infrastructure and facilities by providing civil works, equipments and materials, and includes consultancy services for project design, implementation, monitoring, and evaluation. The project comprises of following four infrastructure sectors:

- **Rural Infrastructure:** Rehabilitate and reconstruct rural infrastructure (including rural roads, Bridges, and culverts). Rehabilitate and reconstruct flood and cyclone shelters including provision of latrines.
- **Municipal Infrastructure:** Rehabilitate or reconstruct of roads, bridges and culverts and drains.
- **Roads:** Rehabilitate flood damages national, regional, and district (zilla) roads, bridges and culverts.
- **Water Resources:** Rehabilitate or reconstruct embankments, repair or replace water control Structures, protective works, and canal.

3. The rehabilitation work for roads, bridges, and river embankment will be within the Right-Of-Way (ROW). No widening is involved. In most of the subproject realignment will not be involved. the rehabilitation will focus on damaged sections and it will not cover an extensive length. The total project implementation period is 24 Months (likely to be completed by 31 January 2010).

4. The subprojects are likely to have minor, temporary and reversible construction related environmental impacts which can be mitigated with appropriate measures that will be incorporated in the contract documents. The potential environmental impacts may include impacts on flora and fauna, river hydrology and morphological, soil erosion, loss of productive soils, surface water and soil contamination, air pollution and increase in noise levels. The subprojects are also likely to have several beneficial impacts including limiting land erosion and failure of embankment along the damaged structure and reducing health risk by rehabilitating drainage system.

5. All subprojects are subject to an environmental assessment screening to determine the magnitude of potential environmental impacts associated with location and scope of rehabilitation work. In accordance with ADB's *Environment Policy 2002*, the determination of the environment category is to be based on the most environmentally sensitive component of the Project. The proposed Project has been categorized as "environment category B".

C. Bangladesh Environmental Assessment and Review Procedures

6. The Bangladesh Environment Conservation Act, 1995 and The Environmental Conservation Rules of 1997, defines the environmental assessment and review procedure for development projects in the country. According to these, projects are categorised in four categories (Green, Amber A, Amber B, and Red). The clearance requirement defined under these legislation will not apply to all the likely subprojects except subprojects requiring reconstruction/expansion of

flood control embankment, reconstruction/expansion of roads (regional, national), and bridge (length 100m and above), which will fall under red category. Therefore, environmental clearance from Department of Environment is not needed for many of subprojects.

7. Similarly for obtaining environmental clearance for Amber A projects, an application is made to Department of Environment along with No Objection Certificate (NOC) from local authority and relocation & rehabilitation plan (where applicable). For Amber-B, application is made along with Initial Environmental Examination (IEE), Environmental Management Plan, No Objection Certificate (NOC) from local authority and relocation & rehabilitation plan (where applicable).

8. For obtaining environmental clearance for RED category project, an application is made to DOE along with Initial Environmental Examination (IEE), Terms of Reference for Environmental Impact Assessment (EIA), Environmental Management Plan, No Objection Certificate (NOC) from local authority and relocation and rehabilitation plan (where applicable). The Director General, DOE first issues locational clearance certificate thereafter an environmental clearance certificate following submission of EIA report. The Director General may at the first instance, directly issue Environmental Clearance Certificate if he on the application of the project, consider it appropriate to issue clearance certificate to the project. This means EIA report may not be required to be submitted in such a situation.

9. The Protection & Conservation of Fish Act, 1950 (Act) and The Protection & Conservation of Fish Rules, 1995 may prohibit or regulate the construction, temporary or permanent of bunds, embankment and other structures in inland waters of Bangladesh. Permission will be required from Fisheries officers, if an inland water area is regulated under this Act.

10. The Bangladesh Wildlife Preservation Order, 1973/1974 (Order) deals with the preservation, conservation and management of wild life in Bangladesh. The provision of this Order will be applicable only if any project is undertaken in the area protected under this Order.

D. Responsibilities and Authorities

11. This EARP provides specific procedure to be used for every subprojects for (i) environmental classification and assessment through rapid environmental assessment (REA), preparation of IEE and a summary IEE (SIEE) of selected subprojects, (ii) review of IEE/SIEE and environmental performance (iii) compliance with public consultation and information disclosure related requirements and (iv) reporting.

12. The Executing Agency (EA) are: rural infrastructure – Local Government Engineering Department (LGED), urban infrastructure – LGED, roads – Roads and Highways Department (RHD), and water resources – Bangladesh Water Development Board (BWDB).

13. The Project Management Unit (PMU) of the line EAs, will be responsible for undertaking environmental assessment, environmental mitigation measures and monitoring, preparation of IEE and SIEE if necessary, and reporting to ADB. PMUs will be assisted by the Environmental Cell of the department or the environmental specialist to be hired for the project or provided by the Design and Supervision Consultant.

14. LGED has established an environmental unit. This unit has developed its own environmental codes of practices, guidelines for environmental screening and categorization of sub projects as well as manual for environmental supervision. This unit will provide all technical assistance for environmental aspect to two sectors (i) rural infrastructure (ii) municipal infrastructure. RHD also has set up its Social and Environmental Circle which is operational since 1998-99. This circle has developed its operational procedures for resettlement practices and social and environmental circle reports management. However this unit fully depends on external

consultant for any environmental assessment. BWDB has not set up any environmental and social unit separately and depends on consultants for any environmental assessment activity.

15. Detailed institutional responsibilities are detailed at Table SA C:1 below:

Table SA C: 1 Institutional Responsibilities

Phase	Project Management Unit (PMU)	ADB
Inception	<ul style="list-style-type: none"> • Develop executing (EA) screening checklist¹ with the help of its environmental cell or hired qualified consultant • Submit EA screening checklists to Asian Development Bank (ADB) for review • Assess the applicability of The Environment Conservation Rule 1997 for obtaining Environment Clearance certificate. If applicable obtain necessary clearance. • Check if any restriction for construction of temporary and permanent embankment and other structures in the waters of subproject area is imposed under the Protection and Conservation of Fish Act, 1950 and if yes, obtain necessary concurrence / permission from Fishery Officer. • Undertake initial environmental examinations (IEEs) and summary initial environmental examinations (SIEEs) for those subprojects where it is required in compliance with Government and ADB's requirement. • Undertake environmental impact assessment (EIA) for subprojects falling under red category as per the Environment Conservation Rules, 1997. • Submit IEEs and SIEEs to ADB for its review. • Submit EIA wherever prepared in compliance with the national legislation to ADB for review. • Conform to ADB that all statutory environmental clearance have been obtained for the subprojects where applicable prior to commencement of work. • Ensure adequate mitigation measures and monitoring requirements are included in the contract documents 	<ul style="list-style-type: none"> • Review and endorse the developed EA screening checklists • Review REA and endorse the environmental categorization (B or C) • Review IEEs and SIEEs to ensure a compliance with the environmental assessment requirements of the Government and ADB
Construction	<ul style="list-style-type: none"> • Implement and ensure implementation of adequate mitigation measures and monitoring as well as environmentally sound construction methods • Ensure that contractors have access to IEE including details of mitigative measures and plan • Ensure that contractor understand their responsibilities to mitigate environmental problem associated with their construction activities • If there is occurrence of any unexpected environmental impact, consult with ADB and undertake appropriate remedial measures 	<ul style="list-style-type: none"> • Review the progress of implementation of mitigation measures and actual impacts as needed during review mission • Review the quarterly reports and provide necessary feedback to EA/PMU if necessary

¹ ADB's REA checklist on road, highways and irrigation can be used for this.

Phase	Project Management Unit (PMU)	ADB
	<ul style="list-style-type: none"> Prepare and submit six monthly environmental monitoring reports to ADB 	

E. Environmental Criteria for Subproject Selection

16. The following criteria will be used for selecting the subprojects under the project

- All subprojects must comply with the environmental requirements specified in the ADB's Environment Policy (2002) and Environment Assessment Guidelines (2003) and those governed by the relevant environmental laws, regulations, and standards of the Government of Bangladesh.
- The project will as much as possible to include the sub project falling under B & C category² as per above ADB's Guidelines.

17. The rehabilitation work is not likely to involve major adverse environmental impacts. To ensure environmentally sustainable rehabilitation work, all subprojects will be subject to an environmental assessment screening to screen out subprojects located in environmentally sensitive areas, assess the potential negative environmental impacts, and determine the need for an IEE as well its category. If the screening indicates further analysis required³, an IEE will be conducted to identify and implement environmental mitigation measures and monitoring, and IEE reports will be sent to ADB for its review and confirming selection of the subproject. The subproject which will fall under Red category as per The Environment Conservation Rules 1997, will also requires preparation of IEE, EMP and EIA as detailed above under Bangladesh Environmental Assessment and Review Procedures section. The EIA report wherever prepared will also be sent to ADB for its review.

F. Environmental Assessment Requirement

18. All sub-projects will be screened by employing the environmental checklist of ADB and by taking into account the classification under The Environmental Conservation Rules 1997.

19. ADB classify the project based on environmental sensitivity. 'A' being the most sensitive and 'C' least sensitive. The Bangladesh Conservation Rules 1997 categorized the project based on nature of project. 'Red' being the most sensitive and 'orange' the least sensitive. Any sub-project under this project, classified as category A as per ADB Classification may not classify as Red Category as per The Environmental Conservation Rules. To facilitate environmental assessment, the broad requirement as per project classification is given below:

20. Sub Projects classified as A category: will required preparation of detail EIA and SEIA as per ADB requirement⁴. In case, sub-project is related to reconstruction/expansion of flood control

² The subprojects located in the environmentally sensitive areas or ecologically critical areas will be classified as A Category project. The Environmentally sensitive areas are generally defined as those requiring special management attentions to protect important scenic values, fish and wildlife resources, historical and cultural values, and other natural systems or processes. Those areas include national forests, mangrove, wetland, steep slope areas, buffer zone, and areas that cover endangered species. The Environment Conservation Rules 1997 considers the following factor while declaring an area as ecologically critical: ancient monument, archeological site, forest sanctuary, national park, game reserves, wild animal habitat, mangroves, forests areas, bio diversity of the relevant areas and human habitat.

³ IEE will be conducted for all those sub projects which are likely to have adverse environmental impacts due to project activities such as (i) a change in alignment for roads, canals, dykes, and bridges (ii) Borrowing earth in large area and (iii) construction of bridge instead of road due to river morphological changes etc, IEE will be conducted and IEE reports will be sent to ADB for its review.

⁴ For category A Project, the SEIA is made available to public by posting it on ADB website no later than 120 days prior to the consideration of the project by ADB board. This condition may not apply in this case being it an Emergency Flood Damage Rehabilitation project.

embankment, reconstruction/expansion of roads (regional, national), and bridge (length 100m and above), then it will be classified as Red category and would require to prepare IEE, EMP and EIA as per approved terms of reference from Department of Environment. The environmental clearance will need to be obtained following the procedure detailed under the Section C above. No environmental clearances will be required for the sub-project requiring no re-construction/expansion of roads, bridges and embankments. Permission under The Bangladesh Wildlife Preservation Order, 1973/1974 and The Forest Act, 1927 may be required if project is passing through protected area. Permission will be required from Fisheries officers, if an inland water of the sub-project area is regulated under The Protection & Conservation of Fish Act, 1950.

21. Sub Project Classified as B category: will require preparation of IEE and SIEE as per ADB requirement. The clearance requirement under The Environment Conservation Rules will be applicable depending onto the project activity as described above. Since such sub-projects will not be affecting any sensitive area no permission under The Bangladesh Wildlife Preservation Order, 1973/ 1974 and The Forest Act, 1927 may be required. Permission under The Protection & Conservation of Fish Act, 1950 may still be required.

22. Sub Project classified as C category: will not require preparation of IEE or EIA as per ADB requirement. However, environmental implications are still reviewed. No permission under The Environment Conservation Rules may either require, if project does not fall under Red Category. The Permission under The Protection & Conservation of Fish Act, 1950 may still be required.

G. Procedures for Environmental Assessment of Subprojects

23. The procedures for environmental assessment of subprojects must be in line with the requirements of the Government, as well as ADB's Environment Policy (2002), Environmental Assessment Guidelines (2003), and those Environment Assessment and Review Procedures.

24. **Environmental Classification:** PMU/PIU of respective EA will undertake REA for each subproject as per the defined EA screening checklist. The REA will be submitted to ADB for review and endorsement of the classification. Subprojects will be selected based on the selection criteria described above under "Environmental Criteria of Subproject Selection" section.

25. **Preparation of IEEs and SIEEs:** For the subproject requiring an IEE, PMUs will prepare an IEE and SIEE. ADB's Environmental Assessment Guidelines (2003) will be used to identify major environmental issues. During the preparation of the IEE, public consultation needs to be carried out to identify and address the communities' concerns and take them into account in the rehabilitation work. Environmental mitigation measures and monitoring need to be developed and included in the IEE. Institutional responsibilities, budget also needs to be described in the IEE and SIEE.

26. **Review of IEEs and SIEE:** IEEs and SIEEs prepared by the PMUs will be submitted to the ADB for review. Subproject approval will be given based on ADB's review that includes the environmental aspects. Subprojects to be financed under the project are rehabilitation of existing infrastructures and do not need environmental clearance. However, for those subprojects with a component requiring environmental clearance, such clearance must be obtained before the submittal of the IEE and SIEE to ADB.

27. **Monitoring environmental performance:** PMUs will prepare quarterly reports for subprojects, including the implementation status of mitigation measures and monitoring. PMUs will consolidate individual quarterly reports and submit them to ADB. If PMUs find any issues that need further environmental monitoring and/or mitigation measures, PMU will inform ADB. ADB will review the implementation of the environmental mitigation measures and monitoring, both through quarterly reports submitted by PMUs and during the review mission.

H. Public Consultation and Information Disclosure Plan

28. The EAs will ensure that public consultation will be conducted for each subproject to identify and take into account the concerns raised by the affected villagers and communities in the design and rehabilitation work. Necessary project information will be shared with the concerned villagers and communities. All documents on environmental issues including IEEs, and progress reports will be properly kept as part of the project document and made available to the public if requested.

I. Staff Requirements and Budget

29. Environmental mitigation and monitoring requirement and cost will be based on IEE/ EIA recommendations and will be part of the project cost. The recruitment of environmental specialist within PMU of each EA will be included in the budget to assist respective PMU staff in strengthening their capacity to carry out environmental assessment and implement mitigation measures. Provision of increasing public awareness on environmental measures will also be included in the budget.