

Standard Format for Advertising Expressions of Interest (EOI) for Services

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

1.	Ministry/Division	Ministry of Water Resources	▼
2.	Agency	Bangladesh Water Development Board	▼
3.	Name of Procuring Entity	Project Director, Secondary Towns Integrated Flood Protection Project	
4.	Procuring Entity Code	Not used at present	
5.	Procuring Entity District	Dhaka	▼
6.	Expression of Interest for Selection of	Consulting Firm	▼ Lump - sum ▼
7.	EOI Ref. No.	PD/STIFPP-II/FSSTIFPP-III/BWDB/2010-11/ 789	
8.	Date (dd/mm/yyyy)	16/06/2010	
KEY INFORMATION			
9.	Procurement Sub-Method	Quality and Cost Based Selection (QCBS)	▼
FUNDING INFORMATION			
10.	Budget and Source of funds	Development Budget	▼ Aid Grant / Credit ▼
11.	Development Partner (if applicable)	Asian Development Bank(ADB)	
PARTICULAR INFORMATION			
12.	Project/Programme Code (if applicable)		
13.	Project/Programme Name (if applicable)	Feasibility Study for Secondary Towns Integrated Flood Protection Project, Phase- III	
14.	EOI Closing Date and time	07/07/2010	
INFORMATION FOR APPLICANT			
16.	Brief Description of the Assignment	The Project is looking for qualified Consulting firm for selection of Towns, preparation of Indicative Investment Program to assess the feasibility of the proposed project for investment decision including preliminary design and cost estimates, and evaluation in terms of technical, economical, financial, social and environmental aspects; propose options for institutional and financial arrangements for implementation, operation and management of project components and the Project as a whole and, out of these, make recommendations for the most appropriate arrangements for the Project; assess the planning and management capabilities of Government agencies concerned and make specific recommendations for support in these respects; and assess the need for expert advisory (consultancy) services during implementation of the project and prepare the terms of reference for such services.	

17.	Experience, Resources & Delivery Capacity Required	Details are furnished in ToR. Interested Consulting firm(s) may obtain ToR & further information from the office of the Procuring Entity as well as in the BWDB's website: www.bwdb.gov.bd .Interested consultants are invited to provide information indicating that they are qualified to perform the services(brochures, description of similar assignments, experience in similar operating conditions, availability of appropriate experience and professional qualifications among staff and resources etc). Experience of similar assignment for last five years is requested to be submitted. Brochures should include the registration number, list of available appropriate professionals with qualification & experience with signed CV, areas of expertise with administrative strength & financial capability. All documents must be supported upon showing original document if procuring entity desires.The financial capability (Financial Turn Over) is to be supported by a registered Audit Firm for the last three years.The Eols would be reviewed on the basis of description above to prepare short list.
18.	Other Details (if applicable)	The firm(s) may form Joint Venture, Consortium or Association (JVCA) to enhance their qualifications, but should mention whether the association is in the form of a “Joint-Venture” or “Sub-Consultancy”.. The Proposals in four sets (One Original+ Three Duplicate) shall be submitted in sealed envelope, delivered to the address of the undersigned shown above by 07-07-2010 during office hour and clearly marked “Request for Expression of Interest” for Feasibility Study for Secondary Towns Integrated Flood Protection Project, Phase- III.The participating firms must confirm their mode of association clarifying the positions with MOU within the closing date. The Consultant will be selected in accordance with the procedures of the Public Procurement Rule- 2008 and ADB Guidelines.
19.	Association with foreign firms is	Encouraged ▼
	Ref. No.	Phasing of Services
		Location
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PROCURING ENTITY DETAILS		
30.	Name of the Official Inviting EOI	Md. Saidur Rahman
31.	Designation of the Official Inviting EOI	Project Director, Secondary Towns Integrated Flood Protection
32.	Address of the Official Inviting EOI	Project Director, Secondary Towns Integrated Flood Protection (Phase-2) Project, Bangladesh Water Development Board (BWDB) 62, West Agargaon, (4th floor), Sher-e-Bangla Nagar, Dhaka-1207
33.	Contact Details of the Official Inviting EOI	Telephone No. 02-9128154 Fax No. +88-02-9136128 E-mail: stifpstwo@gmail.com
The procuring entity reserves the right to accept or rejects all EOI's		

Fields Marked With * are Required

Version: August 2004

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**Government of the People's Republic of Bangladesh
Ministry of Water Resources**



Bangladesh Water Development Board

**Terms of Reference (ToR)
for
Feasibility Study for Secondary Towns Integrated Flood
Protection Project, Phase- III**

**June 2010
Dhaka, Bangladesh**

TERMS OF REFERENCE FOR FEASIBILITY STUDY FOR SECONDARY TOWNS INTEGRATED FLOOD PROTECTION PROJECT, PHASE- III

A. General

1. Following the success of STIFPP II Project, STIFPP III is designed to promote economic growth and reduce poverty in the towns by providing a flood-free and secure living environment within the frame work of integrated flood protection to be identified on the basis of some criteria. Such criteria might include: susceptibility to internal and external flooding, damage caused by such flooding in the last five years, population, economic and administrative importance, recent and firmly planned interventions by GOB/development partners, interest in response to a questionnaire from pourashavas, including commitment to O &M.

B. Study Objective

2. The main objective of the study is to selection of Towns, Data Collection and Preparation of Indicative Investment Program to assess the feasibility of the proposed Project for investment decision including preliminary design and cost estimates, and evaluation in terms of technical, economical, financial, social and environmental aspects; propose options for institutional and financial arrangements for implementation, operation and management of project components and the Project as a whole and, out of these, make recommendations for the most appropriate arrangements for the Project; assess the planning and management capabilities of Government agencies concerned and make specific recommendations for support in these respects; and assess the need for expert advisory (consultancy) services during implementation of the Project and prepare the terms of reference for such services.

C. Review of Lessons Learned and Preparation of Work Plan (6 weeks)

3. **Review of Lessons Learned.** Prepare a comprehensive stand-alone report (at least 20 pages including the field visit report as Appendix) on the lessons learned from STIFPP I & II; visit at least six out of the 15 municipalities covered under the two previous projects and discuss with all concerned (BWDB, LGED, Pourashavas, local stakeholders) various aspects of the project design, implementation arrangements, sustainability of the investment, O &M activities, etc; review the final report of previous PPTA consultants, ADB loan documents, BTORs of the ADB review missions, PCR, BME reports and other relevant information. In the comprehensive report, assess the performance of the two previous projects in each town and validate the experiences of all 15 towns.

4. **Data Collection on Flood and Related Sectors.** Collect and review essential data relating to (i) GOB's policies, laws and regulations, guidelines and plans concerning water resources management and flood protection, including 1999 National Water Policy, 1999 National Policy for Safe Water Supply and Sanitation, draft Water Code, 2000 Guidelines for Participatory Water Management, Flood Action Plan, National Water Management Plan, among others; (ii) feasibility studies carried out for the protection of secondary towns from flooding, (iii) information concerning the involvement of external agencies in flood protection and urban development (past, ongoing as well as planned projects); examine the strategies and policies of the BWDB to protect secondary towns from floods (including FAP) and review the criteria set by the SWDW to determine the investment priorities: and recommend changes in the priorities introduced in the Government's FAP.

5. **Urban Governance Improvement Action Program.** Review the implementation arrangements for the ADB Urban Governance and Infrastructure Improvement Project Phase 2 (UGIAP 2) and consider applying the same approach for the Project in terms of capacity building and institutional strengthening; carry out close consultation with Urban Management Wing of LGED to coordinate the activities for local governance reform under the Project with the initiatives under the UGIIP 2.

6. Preparation of Work Plan. Prepare a detailed Inception Report covering the detailed work plan, approach, and methodologies to be used in preparing the feasibility study, including individual consultant inputs and logistic plans for office space, communication, transport, secretarial support, and accommodation requirements; in preparing the work plan, thoroughly review ADB policies on social safety guards (as detailed in Handbook on Poverty and Social Analysis), environmental protection and poverty reduction and reflect these requirements in the work plan. With approval of ADS, assist in selecting and engaging domestic individual consultants required for the TA following ADB guidelines for recruiting individual consultants.

7. Inception Workshop and FAP Review Discussion. Prepare and organize an Inception Workshop to discuss the Inception Report and revise the Report based on the comments received. The workshop will include a half-day program to review the experience of the FAP exercises in general and FAP9 in particular to incorporate the lessons learned in the project design. The program will be attended by relevant government agencies, external donors and renowned experts in the country for water resources management and flood control.

D. Selection of Towns, Data Collection and Preparation of Indicative Investment Program (6 weeks)

8. Selection of Towns. In consultation with ADB and EAs, finalize the selection of the Project towns (which should not be limited to district but may also include important upazila towns at risk from floods and satisfying the selection criteria) based on the objective selection criteria developed under the previous projects; review the criteria and update the information, including the size and functions of the towns; severity and frequency of flooding; severity of soil erosion; drainage and solid waste management problems; availability of prior studies and essential data; costs of flood protection works envisaged in order of magnitude; *prima facie* technical feasibility of protecting the town; and *prima facie* cost effectiveness or viability of necessary works: if required, assess the eligibility of other towns based on the same criteria. The number of towns will be limited by the value of the loan funds earmarked by GOB and the concerned development partners. (A list of important towns in Bangladesh is attached as ready reference in Appendix-A).

9. Socioeconomic survey. Once the selection is confirmed by ADB and GOB engage a local institution (or NGO) to conduct socioeconomic surveys of the selected towns: collect baseline data on income and expenditures, demographic trends, gender issues, health, welfare, sanitation and urban environmental situations, and other related social circumstances; and analyze the poverty incidence in each town, including the projected growth in the incidence of urban poverty and describe the nature and characteristics of poverty in proposed towns; the survey will also assess the attitude of local people about the embankment and potential adverse socioeconomic impact of the new flood control measures.

10. Town Information. Assess and collect essential data relating to the selected towns. (i) topographic maps, aerial photographs and related drawings; (ii) soil, logical and geographical data; (iii) population, land use and regional development plans; (iv) existing road networks; (v) hydrological and hydraulic conditions; (vi) existing flood control and storm-water drainage facilities; (vii) past floods and flood damages; and (viii) other related data and information; and assess the requirements for additional data to undertake a full feasibility study.

11. Data on Infrastructure and Municipal Services Delivery. Collect and assess the data covering the towns' assets (e.g. infrastructure system, land uses, economic infrastructure, residential and other superstructure and essential planning data); pay particular attention to the levels of environmental infrastructure in the selected towns (such as drainage, solid waster management, slum improvement); and evaluate quality of municipal service delivery and the levels of O &M capabilities (budget. staff, and equipment)

12. Investment Program and Project Framework. In the context of flood and related environmental systems, prepare a medium term action plan for flood protection (embankment. bank protection, river training, etc.), drainage systems improvements, improvement of flood-prone slums and squatter areas, solid waste management and sanitation; based on such action

plan~ develop preferred packages' in draft for each town prior to undertaking a full feasibility study; in particular, 'study and recommend to what extent the implementation of various flood protection and related components needs to be integrated and implemented simultaneously and to what extent these components can be implemented later under separate packages; also prepare draft project framework to facilitate conceptualization of the design of the project, monitoring of project implementation, and evaluation of project benefits and impacts; and identify distinct scope for utilizing the financing from the Japan Poverty Reduction Fund.

13. Workshop for Mid-term Review. Prepare a draft Mid-term Report and organize a review workshop to be attended by all stakeholders to discuss the draft Report; while organizing the workshop, include a full-day program for Gender and Development to be attended by female commissioners, Pourashavas officials, and staff of LGED and BWDB.

E. Detailed Feasibility Study (16 weeks)

14. Based on the investment framework provided in the Progress Report, the consultants will assess the feasibility of the proposed Project for investment decision, including preliminary design and cost estimates, and evaluation in terms of technical, economic, financial, social and environmental aspects; propose options for institutional and financial arrangements for implementation, operation and management of project components and the Project as a whole and, out of these, make recommendations for the most appropriate arrangements for the Project; assess the planning and management capabilities of Government agencies concerned and make specific recommendations for support in these respects; and assess the need for expert advisory (consultancy) services during implementation of the Project and prepare the terms of reference for such services.

15. Project Design. (i) Prepare preliminary/outline engineering design of the proposed Project components; (ii) prepare detailed cost estimates in ADB format using the COSTAB software; (iii) include the costs for consulting services (for detailed design, implementation of the Project, and institutional support), studies and training programs, interest charges on loan financing, physical and price contingencies at rates used by ADB; (iv) examine flow of funds under the Project and examine the requirements for and availability of the counterpart fund; and (v) propose procurement modes and packages based on cost-effective bid packages;

16. Field Survey: The field surveys should include: (a) field reconnaissance; (b) supplemental topographical surveys for preparation of accurate base maps; (c) longitudinal and cross sectional surveys for drainage channels and rivers; (d) supplemental geo-technical surveys for proposed major flood control and drainage facilities; (e) flood and flood drainage surveys and (f) water quality tests.

17. Implementation Arrangements. (i) Assess the options for implementation arrangements in respect of financial, technical and managerial capabilities of the EAs and the Pourashavas and recommend appropriate measures to facilitate Project implementation, including staffing and training of staff of Project implementation units, supervision of construction works, monitoring and reporting of the subprojects and provision of consulting services during implementation; (ii) propose appropriate financial and managerial arrangements for proper operation and maintenance of all Project facilities and estimate the costs and manpower requirements thereof; (iii) propose cost recovery mechanisms (including necessary institutional arrangements through taxes, user charges, and innovative land management techniques (e.g., advance land acquisition, land readjustment) for operations and maintenance and recovery of initial investments; (iv) prepare an implementation schedule for detailed engineering, tendering and construction of Project components; and (v) in particular, identify the requirements for key advance actions to avoid the delay in project implementation.

18. Capacity Building and Institutional Strengthening: (i) Review the ongoing and planned reform programs for BWDB and prepare a list of recommendations for inclusion in the loan covenants to ensure that O & M requirements for the completed project facilities will

be fully met through increased efficiency of BWDB; (ii) consult with other donor agencies (such as the Netherlands and World Bank) in recommending the reform measures that are specifically targeted at improving the O & M of the flood facilities maintained by BWDB; (iii) in consultation with the social experts in the team, recommend specific measures to ensure the participation of local beneficiaries (especially those staying near embankment and the urban poor) in regular O & M activities of BWDB; (iv) after reviewing the TOR and business plan of the Urban Management Support Unit (UMSU) of LGED, develop a clear interface through which the project municipalities will receive adequate training from UMSU; estimate the budget requirements capacity building and training; and (v) develop the Urban Governance Improvement Action Program to be adopted by the participating municipalities and design incentive (and penalty) systems to reward the good performance in implementing the UGIAP; organize workshops to be attended by Pourashava chairpersons, ward commissioners and officials to incorporate their inputs in designing the UGIAP.

19. Financial and Economic Analysis. (i) Review past and present financial performance of the selected towns; (ii) prepare financial projections for operations 10 years after project completion; (iii) compute relevant financial indicators of each town to assess its financial viability; (iv) review cost-recovery policies and user charges in each town; (v) assess the affordability of current services and the ability to increase the user charges in the short and medium term, giving special attention to the potential impact on low-income households and marginal business activities, and develop specific measures to reduce the impact of the increase in user charges: where necessary; (vi) evaluate the need for subsidies to ensure affordability of the poor; (vii) quantify the subsidy element and identify the targets of the subsidy; (viii) examine feasible cost recovery approaches to ensure full O & M and sustainability of the initial investments; (ix) estimate the financial internal rates of return (FIRR), economic internal rates of return (EIRR) for the various components, as relevant, following ADB guidelines (economic benefits will be estimated in terms of changes in property values, damages avoided or the value of developed land as the case may be; external costs and/or benefits should be identified and quantified where possible); (x) carry out sensitivity analyses, including the computation of sensitivity indicators and switching values; and (xi) study and recommend mechanisms for initial contributions from the beneficiaries as well as the local and central governments for financing a reasonable share (i.e., 30 percent in the case of Bangladesh) of investment costs for urban infrastructure and services; in conducting economic and financial analyses, refer to ADB Framework for the Economic and Financial Appraisal of Urban Development Sector Projects.

20. Environmental Examination. Prepare an initial environmental evaluation (IEE) or environmental impact assessment (EIA) for each town, and a summary IEE (or EIA) for the whole project in accordance with ADB's Environmental Guidelines for Selected Infrastructure Development Projects and environmental assessment requirements and review procedures; address the impacts on urban social infrastructure services during project implementation, construction, and operation; and propose measures to mitigate the adverse impacts identified.

21. Poverty and Social Analysis. Following ADB Guidelines in the Handbook on Poverty and Social Analysis, conduct detailed poverty and social analysis as required; in particular, conduct gender analysis, and identify constraints on women participation in project design, O & M, and training; review the Gender Action Plan (GAP) developed under ADB UGIIP and incorporating the implementation of GAP under the Project; on the basis of the socioeconomic survey, assess the socioeconomic benefits of the Project as well as its possible negative impact; and prepare an overall framework for peoples participation in the project preparation, implementation and post-project O & M activities.

22. Land Acquisition and Resettlement. Based on the identified subproject design in each town, prepare appropriate resettlement plan (RP) in accordance with ADB Policy on Involuntary Resettlement and Handbook on Resettlement, including the following: (a) review and assess the key policies, laws, and guidelines regarding land acquisition, resettlement and compensation; (b) identify and enumerate the people likely to be affected through a

census/survey/interview and asset inventory that identifies all types of loss, and consult the affected persons to ascertain their preference for relocation, compensation, and livelihood restoration, with an establishment of an entitlement cutoff date supplementing the records with video taping (if necessary); estimate the requirements for financial resources and validate the amount with resources available from the national and state governments; (c) identify and establish options for relocating housing and other structures including measures required to assist with transfer and establish new sites, options to restore or enhance livelihoods, and mechanisms for redress of grievances; and (d) specify the main responsibilities for approving, implementing, managing, financing and monitoring the RP capacity building programs as required, implementation schedule, financial plan including resettlement budget, annual financing plan, and plan for internal and external monitoring and evaluation for the RP.

23. Implementation Assistance. The requirements of the Project to improve skills in engineering, planning, project management and other essential disciplines should be estimated and, based on existing availability, recommendations need to be made for additional recruitment/ upgrading of skills and expertise. The institutional strengths and weakness of the executing/ implementing agencies should be assessed and recommendations made to strengthen the institutional capabilities through organizational changes, new implementation arrangements, staff recruitment and training and utilization of local and international consultants for specialized requirements.

24. Final Workshop. Prepare a draft Final Report and organize a final workshop in close consultation with BWDB, LGED and ADB.

25. Key Personnel and Qualifications

Input of professional staff as shown below:

SI No.	Position	Number	Person-month
	International Consultants		
1	Flood Control and Planning Engineer/Team Leader	1	7
2	Environmental	1	1.50
3	Drainage Engineer	1	2
4	Social Development Specialist	1	2
5	Project Financial Analyst/Economist	1	2
6	Unallocated		2.50
	Sub-Total	5	17
SI No.			
	Domestic Consultants		
1	Flood Control and Planning Engineer/ Deputy Team Leader	1	8
2	Design Engineer(Flood Control)	1	4
3	Drainage System Engineer(Urban Drainage)	1	4
4	Structural Design Engineer	1	4
5	Hydraulic Engineer	1	6
6	Solid Waste Management Specialist	1	2
7	Resettlement Specialist	1	4
8	Environmental	1	3
9	Gender Development Specialist	1	3
10	Economist	1	5
11	Institutional Specialist	1	2
12	Municipal Specialist	1	3
13	Unallocated		5
	Sub Total	12	53

E. Tasks and Qualifications for International Consultants:

E.1 Flood Control and Planning Engineer/Team Leader

Task:

The responsibilities of the expert will include but not limited to the following:

- (i) Prepare a comprehensive stand-alone report (at least 20 pages including the field visit report as Appendix) on the lessons learned from STIFPP I & II
- (ii) Visit at least three out of six municipalities covered under the first project and discuss with all concerned (BWDB, LGED, Pourashavas, local stakeholders) various aspects of the project design, implementation arrangements, sustainability of the investment, O &M activities, etc;
- (iii) Review the final report of the PPTA consultants, ADB loan documents, BTORs of the ADB review missions, PCR, BME report and other relevant information; in the report, assess the performance of the first project in each town and also consolidate the experiences of all six towns.
- iv) Collect and review essential data relating to
 - a) GOB policies, laws and regulations, guidelines and plans concerning water resources management and flood protection, including 1999 National Water Policy, 1999 National Policy for Safe Water Supply and Sanitation, draft Water Code, 2000 Guidelines for participatory Water Management, Flood Action Plan, draft National Water Management Plan, among others;
 - b) Feasibility studies carried out for the protection of secondary towns from flooding during the 1990s,
 - c) Information concerning the involvement of external agencies in flood protection and urban development (past, ongoing as well as planned projects); examine the strategies and policies of the BWDB to protect secondary towns from floods (including FAP).
- v) Review Urban Governance Improvement Action Programs I and II
- vi) Preparation of work plan
- vii) Preparation of inception report, interim report and final feasibility report and organize a workshop following the guideline of Aide Memoire.

Qualification and Experience: He/she shall have at least an M. Sc Degree or equivalent in Civil/Water Resources Engineering having 20 years professional experience with at least 5 years experience in the relevant field. The consultant should have extensive experience in design planning implementation and monitoring of Flood control/protection project and preferably recent experience in Bangladesh.

E.2 Environmentalist

The responsibilities of the expert will include but not limited to the following:

- (i) Prepare an initial environmental evaluation (IEE) for each town and summary EIA for the whole project.
- (ii) Prepare a medium term action plan for flood protection (embankment, bank protection, river training etc), solid waste management and sanitation, according to ADB and GOB procedures and standards:
- (iii) Assist with preparation of investment plan and feasibility report

Qualification and Experience: He/she shall have at least MSc Degree in civil/ environmental Engineering, at least 20 years of professional experience having at least 5 years experience in the field of environmental impact assessment of water resources project.

E.3 Drainage Engineer

The responsibilities of the expert will include but not limited to the following:

In the context of flood and related environmental system, the above expert will:

- (i) Prepare a drainage systems improvements plan for each town
- (ii) Recommend to what extent the implementation of various flood protection and related components needs to be integrated and implemented simultaneously.
- (iii) Assist the design engineer in selecting design option.

Qualification and experience: He/she shall have at least a BSc Degree in Civil/Water Resources Engineering having 15 years professional experience with at least 5 years experience in the relevant field, and preferably recent experience in Bangladesh.

E.4 Social Development Specialist

The responsibilities of the expert will include but not limited to the following:

- (i) Prepare an indicative plan for capacity building and Institutional strengthening
- (ii) Prepare a guideline for beneficiaries' participation as a part of feasibility study.
- (iii) Development of Urban Governance Improvement Action program.
- (iv) Identify the measures for poverty reduction
- (v) Participate & organize workshops and participatory town hall meeting.
- (vi) Prepare a Gender Action Plan for the project.
- (vii) Reflect all the social development requirements in the work plan and feasibility study report.

Qualification and experience: The specialist will have Masters Degree/PhD Degree in social science and at least 20 years of professional experience with at least 5 years experience in the relevant field.

E.5 Project Financial Analyst/Economist

The responsibilities of the expert will include but not limited to the following:

- (i) Prepare financial projections for operations 10 years after project completion.
- (ii) Compute relevant financial indicators of each town to assess its financial viability
- (iii) Review cost-recovery policies and user charges in each town.
- (iv) Assess the affordability of current services and the ability to increase the user charges in the short and medium term, giving special attention to the potential impact on low income households and marginal business activities, and develop specific measures to reduce the impact of the increase in user charges where necessary.
- (v) Evaluate the need for subsidies to ensure affordability of the poor.

- (vi) Quantify the subsidy element and identify the targets of the subsidy.
- (vii) Examine feasible coast recovery approaches to ensure full O&M and sustainability of the initial investments.
- (viii) Estimate the financial internal rates of return (FIRR), economic internal rates of return (EIRR) for the various components, as relevant, following ADB and GOB guideline.
- (ix) Carry out Sensitivity analysis, including the computation of sensitivity indicators and switching values
- (x) Study and recommend mechanisms for initial contributions from the beneficiaries.

Qualification and experience: The Expert will have Masters Degree/PhD Degree in Economics and at least 20 years of professional experience with at least 5 years experience in the relevant field.

F. Task and Qualifications of Domestic Consultants

F.1 Flood Control and Planning Engineer/Deputy Team Leader

Tasks:

The responsibilities of the expert will include but not limited to the following:

- (i) Prepare a comprehensive stand-alone report (at least 20 pages including the field visit report as Appendix) on the lessons learned from STIFPP I & II
- (ii) Visit at least three out of six municipalities covered under the first project and discuss with all concerned (BWDB, LGED, Pourashavas, local stakeholders) various aspects of the project design, implementation arrangements, sustainability of the investment, O &M activities, etc;
- (iii) Review the final report of the PPTA consultants, ADB loan documents, BTORs of the ADB review missions, PCR, BME report and other relevant information; in the report, assess the performance of the first project in each town and also consolidate the experiences of all six towns.
- (iv) Collect and review essential data relating to:
 - a) GOB policies, laws and regulations, guidelines and plans concerning water resources management and flood protection, including 1999 National Water Policy, 1999 National Policy for Safe Water Supply and Sanitation, draft Water Code, 2000 Guidelines for participatory Water Management, Flood Action Plan, draft National Water Management Plan, among others;
 - b) Feasibility studies carried out for the protection of secondary towns from flooding during the 1990s,
 - c) Information concerning the involvement of external agencies in flood protection and urban development (past, ongoing as well as planned projects); examine the strategies and policies of the BWDB to protect secondary towns from floods (including FAP).
- (v) Review Urban Governance Improvement Action program (UGIAP)
- (vi) Preparation of work plan
- (vii) Preparation of inception report, interim report and final feasibility report and organize a workshop following the guideline of Aide Memoire.
- (viii) Assist the TL in day to day work

Qualification and experiences: The Engineer will have B.Sc. Engineering (Civil Water Resources) with at least 20 years of professional experience having at least 5 years experience on relevant field. He/She should have experiences in design, planning, implementation and monitoring of flood control project.

F.2 Design Engineer (Flood Control)

The responsibilities of the expert will include but not limited to the following:

- (i) Based on an assessment of background information and data that will be collected during field survey, design of flood control, storm water drainage, sanitation and bank protection works etc. project components for each town.
- (ii) The various options should be assessed and evaluated using criterion which incorporates technical, social, financial and environmental aspects. This evaluation will enable an informed decision on what option or combination of options should be adopted.
- (iii) Consult with experienced BWDB/LGED Engineers for cost effective flood protection for each town.
- (iv) Prepare feasibility designs and engineering drawings for the specific alternatives (if any).

Qualification and experience: The Engineer will have B. Sc Engineering (Civil Water Resources) degree with at least 20 years of professional experience having at least 5 years experience on design of Hydraulic structures and protective works.

F.3 Drainage System Engineer (Urban Drainage)

The responsibilities of the expert will include but not limited to the following:

- (i) Assess the overall drainage situation in the towns including the existing coverage of effective drains
- (ii) Identification of the primary drainage channels/khals drainage system for each town and work together with the international drainage engineer to prepare drainage system improvement plan for each town.
- (iii) Assist design engineer in selecting design option for the various structures required.

Qualification and Experience: He/She shall have at least B. Sc degree in civil/water resources engineering having 15 years professional experience with at least 5 years experience in the relevant field.

F.4 Structural Design Engineer

The responsibilities of the expert will include but not limited to the following:

- (i) Review the performance of structures designed and constructed under STIFPP I and II and prepare recommendations for necessary improvements
- (ii) Prepare outline designs for all types of structures in sufficient detail to enable accurate estimates to be prepared

Qualification and Experience: He/She shall have at least B. Sc degree in civil/water resources engineering having 15 years professional experience with at least 5 years experience in the relevant field.

F. 5 Hydraulic Engineer

The responsibilities of the expert will include but not limited to the following:

- (i) Analysis of flood frequency, severity of erosion and requirement of flood protection for each town.
- (ii) Hydraulic analysis for municipal drainage structures for each town.
- (iii) Initiate and establishment of a database which records all sources of Hydraulic and Hydrological information for each town.
- (iv) Assist in preparation of feasibility report.

Qualification and Experience: He/She shall have at least M. Sc /PhD degree in water resources engineering/hydrology having 15 years professional experience with at least 5 years experience in the relevant field

F.6 Solid Waste Management Specialist

The responsibilities of the expert will include but not limited to the following:

- (i) Assess the experience gained under previous projects, including STIFPP I & II and UGIP I & II
- (ii) Review the present solid waste collection and disposal arrangements in the selected towns and make proposals for appropriate improvements in conformity with current 'best practice' in Bangladesh
- (iii) Prepare outline designs and cost estimates for the proposed arrangements

Qualification and Experience: He/She shall have a relevant bachelor or master degree in a relevant subject and at least 5 years professional experience in a relevant field

F.7 Resettlement Specialist

The responsibilities of the expert will include but not limited to the following:

- (i) Prepare Terms of Reference and supervise the carrying out of a socio economic survey in all the towns by a suitable organization
- (ii) Identify stakeholders who will be affected by project interventions and assess resettlement requirements for each town.
- (iii) Collect data required to prepare a RAP; identify project Affected persons (PAPs) and consult closely with them to determine resettlement effects.
- (iv) After selection of the final option of the project, prepare the Resettlement Action Plan (RAP).
- (v) Using data collected in the socio-economic survey undertake any further survey data collection required on all the PAPs and establish a baseline of household incomes, occupational profiles use of common property resources, social organization, leadership pattern, community organization and cultural parameters
- (vi) Video tape all residential, commercial and social infrastructure in the area to be resumed for the future works to provide safeguards and minimize the risk of unfounded claims in the future.

- (vii) Identity strategies and potential interventions that would minimize or reduce any adverse impact on stakeholders.

Qualification and Experience: The expert will have Master Degree/PhD Degree in social science and at least 15 years of professional experience on relevant field.

F.8 Environmentalist

The responsibilities of the expert will include but not limited to the following:

- (i) Collection of existing environmental data for each town as per guideline of the Aide Memoire.
- (ii) Prepare on initial environmental evaluation (IEE) for each town, and a summary EIA for the whole project.
- (iii) Prepare a medium term action plan for flood protection (Embankment, bank protection, river training etc), solid waste management and sanitation, according to ADB and GoB procedures and standards;
- (iv) Assist with preparation of investment plan and feasibility report.

Qualification and Experience: He/She will have Masters Degree in related subject with at least 20 years of professional experience having at least 5 years experience in the field environmental impact assessment of water resources project.

F.9 Gender Development Specialist

The responsibilities of the expert will include but not limited to the following:

- (i) Plan to increase awareness of citizen, especially women.
- (ii) Identify the gender issues related to integrated flood protection project for each town
- (iii) Formulate a gender development plan for all towns and to fit it in feasibility study
- (iv) Assist the DTL/TL in preparation of feasibility study report.

Qualification and Experience: He/She will have Masters Degree in Social Science related subject with at least 15 years of professional experience having at least 5 years experience the field of gender planning and the preparation of Gender Action Plans.

F.10 Economist

The responsibilities of the expert will include but not limited to the following:

- (i) Prepare financial-projections for operations 10 years after project completion.
- (ii) Compute relevant financial indicators of each town to assess its financial viability
- (iii) Review cost-recovery policies and user charges in each town
- (iv) Assess the affordability of current services and the ability to increase the user charges in the short and medium term, giving special attention to the potential impact on low-income households and marginal business activities, and develop specific measures to reduce the impact of the increase in user charges where necessary.
- (v) Evaluate the need for subsidies to ensure affordability of the poor
- (vi) Quantify the subsidy element and identify the targets of the subsidy.

- (vii) Examine feasible coast recovery approaches to ensure full O&M and sustainability of the initial investments
- (viii) Estimate the financial internal rates of return (FIRR), economic internal rates of return (EIRR) for the various components, as relevant, following ADB and GoB guideline.
- (ix) Carry out sensitivity analysis, including the computation of sensitivity indicators and Switching values
- (x) Study and recommend mechanisms for initial contributions from the beneficiaries.
- (xi) Assist the Financial Analyst/Project economist in preparing feasibility study report

Qualification and Experience: He/She will have Masters Degree in Economies at least 20 years of professional experience with at least 5 years experience in project economic and financial analysis and preparation including the use of COSTAB.

F.11 Institutional Specialist

The responsibilities of the expert will include but not limited to the following:

- (i) Prepare on indicative plan for capacity building and institutional strengthening.
- (ii) Development of Urban Governance Improvement Action Program.
- (iii) Prepare a guideline to improve operational efficiency of BWDB/LGED for sustainable maintenance of the completed flood protection and drainage facilities.
- (iv) Assist the TL in preparing feasibility study report.

Qualification and Experience: He/She must have an appropriate bachelor or master degree and at least 15 years of professional experience on the relevant field.

F.12 Municipal Specialist

The responsibilities of the expert will include but not limited to the following:

- (i) Collect and assess the data on the town's assets (e.g. infrastructure system, land uses, economic infrastructure, residential and other super structure and essential planning data).

Qualification and Experience: He/She must have an appropriate bachelor or master degree and at least 15 years of professional experience on the relevant field.

G. Expected Output

- 26. The output of the assignment will be a Project Preparation Report of sufficient detail to support a Loan Application to ADB or similar development partner.

H. Duration of Study and Reporting

- 27. The study period is estimated to be 7 months. The consultant will prepare and submit the following reports for review and approval by BWDB, LGED and ADB.

Inception Report: An Inception Report (15 Copies) will be submitted within 6 weeks after the start of the study, reviewing the lessons learned from the first project and the FAP exercise, outlining the detailed work plan, and setting priorities for the national Flood Action Plan.

Mid-term Report: A Mid-term Report (15 Copies) will be submitted within 12 weeks after the start of the study, comprising the Integrated Flood Protection Plan for the selected towns and proposals for priority investment components, together with preliminary analysis for the town selection, socio-economic surveys and the project framework.

Draft Final Report: A Draft Final Report (20 Copies) will be submitted within 25 weeks after the start of the study presenting detailed findings on the feasibility of the proposed investments.

Final Report: A Final Report (20 Copies) will be submitted within 30 weeks after the start of the study, incorporating comments made by BWDB, LGED and ADB

I. Duties and Responsibilities

28. Owners Responsibility

The consultants shall work under the direct supervision of the Project Director/(s). The Project Director shall check and verify that all the works and services as specified in ToR has been completed within the agreed time schedule and recommendations of the study are acceptable to GoB as well as ADB. The Project Director/(s) will organize regular meeting with the consultants, concerned BWDB/LGED officials. Any unresolved technical or other issues arising in course of the study should be discussed in the regular or steering committee meetings and should be taken up at appropriate level.

29. Consultant's Responsibility

The consultants shall carry out the services as detailed in "Job description of professionals" in consistent with ToR in the best interest of the project with due care, skill, diligence and with sound engineering, administrative and financial practices. Consultants shall be responsible to the executive agencies for discharging their responsibilities.