

# **TERMS OF REFERENCE (TOR)**

**For**

Architectural and Engineering Consulting Firm

## **1. Background of the Project:**

Bangladesh Forest Department (BFD) under the Ministry of Environment, Forest and Climate Change has been implementing GoB funded “Protection of Sundarbans Mangrove Forests Project” for the period of 4 years (01 January, 2021 to 31 December, 2024). Total project cost is 15787.51 Lakh in BDT. The overall objectives of the project are to improve efficiency of Forest Department officials who are engaged in Sundarbans Forest management, improvement of infrastructure and communication facilities, use of information technologies, creation of proper work environment, strengthening forest management through strong patrolling, survey on wildlife and their habitat and diseases, status of protected areas and ecological condition, measurement of aquatic resources, survey on climate change impact through analyzing soil, salinity and other parameters, develop monitoring system and scientific Forest management.

Through scientific Forest Management and introduction of improved monitoring system, sustainable use of fishery resources, forest resources and other services have to be ensured for future generation and sustainable livelihood of local communities.

Mitigation of Climate change impacts through raising green belt in coastal areas, landscape development; meet the local fuel wood demand through plantation program.

Project will implement a number of activities which are grouped under following four components:

Component-1: Strengthening Management Capacity.

Component-2: Scientific Forest Management and Observation.

Component-3: Mitigation of climate change impact, landscape development and fulfill the demand of fuel wood through creation of greenbelt.

## **2. Major activities under the project:**

Training of Forest Department officials who are working in the Sundarbans to increase their efficiency on wildlife crime control, Wildlife (conservation and security) Act 2021, primary treatment, SMART patrolling, wildlife habitat observation, wildlife sanctuary management, wildlife rescue and tranquilizing, GPS, computer data entry and networking, sustainable livelihood, Co-management and PA Rules, engine boat driving and maintenance etc.

Training of tour operators, tour guides, co-management organizers and resource users of Sundarbans to increase their efficiency and socio economic development.

Establishment of GIS lab and provide health facilities. Up to date the Integrated Resources Management Plan of Sundarbans for 10 years for scientific management of the Sundarbans.

Conduct research works and survey activities by engaging researchers and research firms. Excavation of river and canals of Sundarbans, construction of infrastructures in the Sundarbans, procurement of water vessels, vehicles, constructions of pontoon and gangways, automation of pass permits and identity cards of Sundarbans resources users, different plantation programs etc.

### 3. Objective of the assignment:

The main objective of the assignment is to:

- i. Conduct survey and prepare design, working drawing, estimates, technical specification and bill of quantities, bid documents of the physical works under the project..
- ii. Assist the Project Director/DFO in every stage of procurement process.
- iii. Ensure high standards of quality assurance in execution and completion of work within stipulated time limit,
- iv. Comprehensive fulltime supervision of project implementation activities carried out by the contractor(s) to ensure complete compliance with the design, working drawings, technical specifications, bill of quantities and various stipulations in the contract documents.
- v. Prepare Site specific Plan, supervision of infrastructures, repair and renovation works, design & estimate of new water vessel, pontoon and gangway, water vessel repair, etc.

### 4. Scope of Services:

- a) The Consulting firm will work under the direct control and supervision of the Project Director (PD), collaboration with DFOs and will be responsibilities for plan, design, estimation, bid document preparation and supervision of the following construction works:

Sl No.	Description of Works	Unit	Quantity
1	Construction of Mangrove Adaptation and Knowledge Center( 1200 sq.m)	Nos.	1
2	Archeological Site Conservation and renovation	No.	1
3	Construction of Field office cum staff Barrack	No.	28
4	Construction of Office Building.	No.	2
5	Excavation/re-excavation of Pond	cum	15000
6	Repair of office building	LS	LS
7	Repair of residential Building	LS	LS
8	Repair of other buildings and structures( pontoon and gangways, jetty etc.)	LS	LS
9	Repair of roads and culverts	LS	LS
10	Repair of water vessels	LS	LS
11	Desalinization Plants	No.	10
12	Others	LS	LS

- b) The services to be provided by the consultant mentioned in the above (a):

- i) Preparation of layout plan, design and drawing;
- ii) Submission of all drawings in printed form at least 5 sets along with soft copy;
- iii) Estimate preparation and submission 5 sets along with soft copy;
- iv) Preparation of tender document at least 15 sets for each package;
- v) Site survey and investigation report as per instruction of supervising officer;
- vi) Supervision of different construction works and submission interim progress report including preparation of bill.

**c) Review of Contractor(s) Implementation Schedule:**

The contractor(s) proposed the consulting firm should review implementation schedule thoroughly. Interrelations between the various activities shall be carefully reviewed particularly with respect to time allocation, commencement and completion dates. At the end of this procedure, the contractor to the satisfaction of all parties should provide an agreed implementation schedule.

**d) Supervision of Construction Works :**

- The consulting firm should provide the necessary supervisory staff to be employed during the period of implementation in execute and supervisory capacities in respect of the construction contracts. The consulting firm will be delegated with all normal duties and powers of the "Engineer" for the implementation of the project.
- It will be the responsibility of the consulting firm to supervise all operations on behalf of the client and to ensure that the work of the contractor(s) carried out in a proper workmanship and expeditious manner and in accordance with the contract documents.
- The consulting firm will check, approve, reject and record, as the case may be the following:
  - i. Contractor(s)' construction plant and equipment
  - ii. Materials of construction
  - iii. Concrete testing, procedures and results
  - iv. Construction of site works: concrete structures, steel structures, finishing, electrical works and other utilities as required.
- Review and approve all methods proposed by the contractor(s) for permanent and temporary works, formwork etc. to ensure conformity with construction contracts and that the work can be carried out safely and in accordance with recognized and accepted practices.

**e) Issue of Instructions to the Contractor(s) :**

These services will relate to the fulfillment of the contractor(s)' duties from drawing up and approval of the work program till the completion of works. The services will include issuing field instructions in writing as required relating to:

- a) Quality of materials used in the works.
- b) Equipment and methods of construction
- c) Supervision, checking and testing of works carried out.
- d) Clarification of drawings and specifications.
- e) Progress of works to ensure that the work program is adhered to.

The consulting firm shall not give any instructions which in his opinion are likely to increase the cost of works without the prior approval of the client.

#### **f) Inspection and Testing of Works:**

At all stages of implementation, the consulting firm shall carry out regular inspection of materials, workmanship and acceptance tests on his own cost to ensure compliance with the specifications. Where work on site at any time during the implementation does not meet the requirements of the specifications, it shall be removed or rectified.

Carry out inspection at time of substantial completion of the works and arrange, for issue of the Initial Hand-Over Certificate in coordination with the client.

Undertake periodic inspections during the defects liability period and notify the client and contractor of any defect on the construction works and supervising their repair. Following the expiry of the defects liability period, arrange for issuing the Final Hand-Over Certificate in coordination with the client.

#### **g) Approval of Payment Certificates:**

The consulting firm shall, in parallel with the contractor(s), make field measurements of all works done, which will be required for checking and certifying the contractor(s)' invoices.

The consulting firm shall certify all of the contractor(s)' monthly statement and final statement within the time specified in the contract and forward to the client for arranging payment.

The consulting firm shall, during the course of works, keep accurate records of all dates and quantities of work carried out, all payments made to the contractor(s), all materials and equipment supplied to the site.

#### **h) Reporting / Meeting**

The consulting firm will keep the client continually informed on the progress of the works, all budgetary and financial matters pertaining to the project, by submitting to him the following reports:

Monthly progress reports including: information on measurements of works executed, equipment and material supplied to site, used and/or stored – quality tests on earthworks, concrete works, construction materials and equipment – labor force - variation orders if any - payments made to the contractor(s) – acceptance tests of structures - problems encountered and recommendation made by the consulting firm - photographs recording the progress of work.

1. Final report on completion of works and/or consulting firms' assignment. The consulting firm will prepare and advice on the issue of the Initial and final hand-over certificates.
2. Arrange site meetings with contractor(s) at regular intervals to discuss progress and quality of works, and resolve any pertaining problem.

The consulting firm if necessary or if applicable shall issue variation order and claims for extension of time or any change in works according to the contract after obtaining the approval of the Client. The consulting firm shall also monitor the contract costs relative to the client's budgetary provisions.

#### **4. Duration of the Services:**

The duration of this assignment is up to **30 December 2024/duration of Project period** and expected to commence from **July, 2022**.

## 5. Qualification and experiences of the Firm:

Interested consultants must fulfill the following qualification, experience and requirements:

- (i) The consultant should be experienced in designing environment friendly and conducive to Sundarbans /National parks/Safari parks infrastructures.
- (ii) At least one such environment friendly and conducive to Sundarbans/ National Parks/ Safari parks infrastructure developed in last 5 years.
- (iii) Proven record of financial and institutional soundness of the firm. (Please Provide Bank document)
- (iv) Proven record of Plan, designing, drawing and supervising of the professionals in the regular payroll of the firm.

## 6. Key Professionals:

Interested consulting firm must be able to make available the following key professionals in their payroll: Team Leader-1, Architect-1, Structural Design Engineer-1, Mechanical Engineer-1, Electrical Engineer -1, Marine Engineer -1, Estimator-1, Site Engineers-2 (Diploma in civil-1, electrical-1)

### 1. Experience and Qualification of the key professionals:

Sl No.	Description	Qualification	Experience
1	Team Leader	B.Sc. Engineer (civil)	Minimum 15 years
2	Architect	Bachelor in Architecture	Minimum 07 years
3	Structural Design Engineer	B.Sc. Engineer (civil)	Minimum 07 years
4	Mechanical Engineer	B.Sc. Engineer (Mach.)	Minimum 07 Years
5	Electrical Engineer	B.Sc. Engineer (elec.)	Minimum 07 years
6	Marine Engineer	B.Sc. Engineer (Marin)	Minimum 05years
7	Estimator	Diploma Engineer (civil)	Minimum 05 years
8	Site Engineer	Diploma Engineer (civil)	Minimum 05 years
9	Site Engineer	Diploma Engineer (elec.)	Minimum 05 years

2. The consulting firm has to give the list of office /Survey /drawing equipment & logistics of the firm to access the capability of the firm whether they are self sufficient with equipment and logistics.
3. The consulting firm has to give the clear picture about the organization and support staff of the firm to access the organizational capability.

### General Information:

1. The successful consulting firm will be expected to complete the delivery of the service in accordance with the schedule indicated in work plan and performance of the consultant under each phase must be to the client satisfaction.
2. The Qualified consulting firm has to work in consultation with the PD/DFOs for making proposal, drawing plan, design, estimate etc.

3. This terms and condition of the tender is applicable subject to the approval of competent authority and such authority if add any other terms and condition it will also be included as terms and condition of the tender.
4. The procuring entity reserves the right to reject the tender or increase/reduce the volume of work and is it bound to show cause in this regard.
5. Consultant will be selected in accordance with the rule and regulation of the public procurement Regulation 2008 and public procurement act 2006 and these will be considered as parts and parcel of terms and conditions and Contract.



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