



# **Terms of Reference (ToR) and Expression of Interest (EOI) Document**

**Hiring consultancy firm for “Feasibility Study on the assessment of forest department’s capacity for forest resource management through the digitalization of forest land database and improvement of e-efficiency” project**

**Office of the Project Director  
‘Feasibility Study on the assessment of forest department’s capacity for forest resource management through the digitalization of forest land database and improvement of e-efficiency’ project  
Development Planning Unit, 3rd Floor, Room no: 432,  
Forest Department  
Ban Bhaban, Agargaon, Dhaka-1207**

## Government of the People's Republic of Bangladesh

Office of Project Director, 'Feasibility Study on the assessment of forest department's capacity for resource management through digitalization of forest land database and improvement of e-efficiency" project,  
Development Planning Unit,  
Forest Department  
Dhaka-1207

Memo no: 22.01.0000.009.29.333.23.01

Date: 29.11.2023

Request for Expression of Interest (Firm)		
01	Ministry/Division	Ministry of Environment, Forest and Climate Change
02	Agency	Bangladesh Forest Department
03	Procuring Entity Name	Office of Project Director, 'Feasibility study on the assessment of forest department's capacity for resource management through digitalization of forest land database and improvement of e-efficiency" project, Banbhaban, Agargaon, Dhaka
04	Procuring Entity District	Dhaka
05	Expression of Interest for selection of	Consulting Firm (national) (Lump-Sump)
06	EOI Reference No	22.01.0000.009.29.333.23.01
07	Date	29/11/2023
Key Information		
08	Procurement Method	Quality and Cost Based System (QCBS)
09	Budget and Source of Fund	GoB
10	Development Partner (if applicable)	Not applicable
Particular Information		
11	Project/Programme Code	22017000
12	Project/Programme Name	"Feasibility Study on the assessment of forest department's capacity for resource management through digitalization of forest land database and improvement of e-efficiency" project
13	EOI Closing Date & Time	17/12/2023
Information for Applicant		
14	Brief Description of the Assignment	Usually, Forest Department (FD) manages state forest lands based on the gazette notification and mouza/sheet maps. The project wishes to hire the consulting firm to develop GIS forest land database, forest land record database using RoR, sheet map, gazette and khatian; assessment of the FD's capacity to improve the e-efficiency for forest land management; and demarcate the digital boundary points using DGPS for Dhaka Forest Division and Wildlife Management and Nature Conservation Division, Dhaka. With all background and necessary information, a feasibility study report and a DPP for implementation of a pilot project at Dhaka Forest Division and Wildlife Management and Nature Conservation Division, Dhaka. Detailed Terms of Reference of the assignment can be collected from PD Office, 3 <sup>rd</sup> floor, Room: 432, Forest Department, Banbhaban, Agargaon, Dhaka during office hour till 14.12.2023. The documents are also available in FD website ( <a href="http://www.bforest.gov.bd">www.bforest.gov.bd</a> ).
15	Experiences, Resources and capacity required	The interested Consulting firm must have the followings on the basis of which the EoI will be evaluated: <ul style="list-style-type: none"> <li>• Minimum 15 years of general experience in the relevant field of the consultancy firm in Bangladesh and 10 years of specific experience in digitizing mouza sheets (CS/RS/BS maps), creation of mouza database, geo-referencing of mouza map/sheets, validation of GIS data/maps in the field, training samples collection using DGPS, map preparation and related activities for carrying out the work;</li> </ul>

		<ul style="list-style-type: none"> <li>• GPS and DGPS based advanced survey and data collection techniques; data integration in GIS, database management; training data collection for geo-correction/validation of maps in field;</li> <li>• Experience in completing/engaging similar assignments in last 10 years;</li> <li>• Experience in analyzing remote sensing data and integration in GIS;</li> <li>• Experience in the delivering high-quality outputs within the time and budget;</li> <li>• Availability of the necessary equipment and appropriate staff to conduct the assignment;</li> <li>• Experience in working with the government of Bangladesh for developing the feasibility study and DPP using the format of the Ministry of Planning;</li> <li>• Valid and up-to-date trade license, VAT registration, TIN certificate, and Company Brochure must be provided;</li> <li>• Bank statement for last 6 months/Bank Solvency Certificate;</li> <li>• The Consulting Firms must have Audited Financial Reports of the previous 3 years by the Government-authorized Audit Firms;</li> <li>• Yearly annual turnover shall be at least BDT 03 (three) crore for the last three years counting backward from the date of advertisement.</li> </ul> <p>The Consulting Firms having technical and legal competency for performing such an assignment can submit EOI independently or in joint ventures with other experienced firms. They must have a legal agreement between them, according to the provision of RFP before submission.</p>
16	Other details (if applicable)	Duration for the assignment: 15 months
17	Association with foreign firm is	Not applicable
18	Type of name	Not applicable
19	Name of the Official Inviting EOI	Dr. Mariam Akhter
20	Designation of the Official Inviting EOI	Assistant Chief Conservator of Forests
21	Address of the Official Inviting EOI	Development Planning Unit, Forest Department, 3rd floor, Room: 432, Forest Department, Bana Bhaban, Agargaon, Dhaka-1207.
22	Contract Details of the Official Inviting EOI	phone: +88-02-55007108; Fax: +88-02-55006781; fsldfd23@gmail.com;
23	The procuring entity reserves the right to reject all applications	



29/11/2023

Dr. Mariam Akhter  
Project Director

'Feasibility Study on the assessment of forest department's capacity for resource management through digitalization of forest land database and improvement of e-efficiency" project,  
And  
Assistant Chief Conservator of Forests  
Development Planning Unit,  
Forest Department, Dhaka-1207

## Background:

State forest land in Bangladesh is 0.25 million hectares of which the Forest Department (FD) is managing approx. 0.18 million hectares. Forest land including Hill Forest, Sal Forest, Swamp Forest and Mangrove Forest (Natural and Plantation) and covers about 12.74% of the country's total land. The forest lands are fragmented and distributed in 35 districts in the country. **Error! Reference source not found.** is showing the tentative location of the forest lands in Bangladesh. The legal definition of forest land is as follows:

“বন ভূমি বলিতে সরকার সময় সময় যে সকল ভূমি বা এলাকা বন হিসাবে গেজেট বিজ্ঞপ্তি জারী করিয়াছে, বা সরকার গেজেট বিজ্ঞপ্তির মাধ্যমে নতুন জেগে ওঠা চর ও অন্যান্য যে কোন ভূমি বা এলাকা বন ব্যবস্থাপনার নিমিত্তে বন বিভাগের নিকট হস্তান্তর করিয়াছে বা ন্যস্ত করিয়াছে, বা যে ভূমি বন হিসাবে ব্যবস্থাপনার জন্য অধিগ্রহণ করিয়াছে, এইরূপ এলাকাকে বুঝাইবে”।

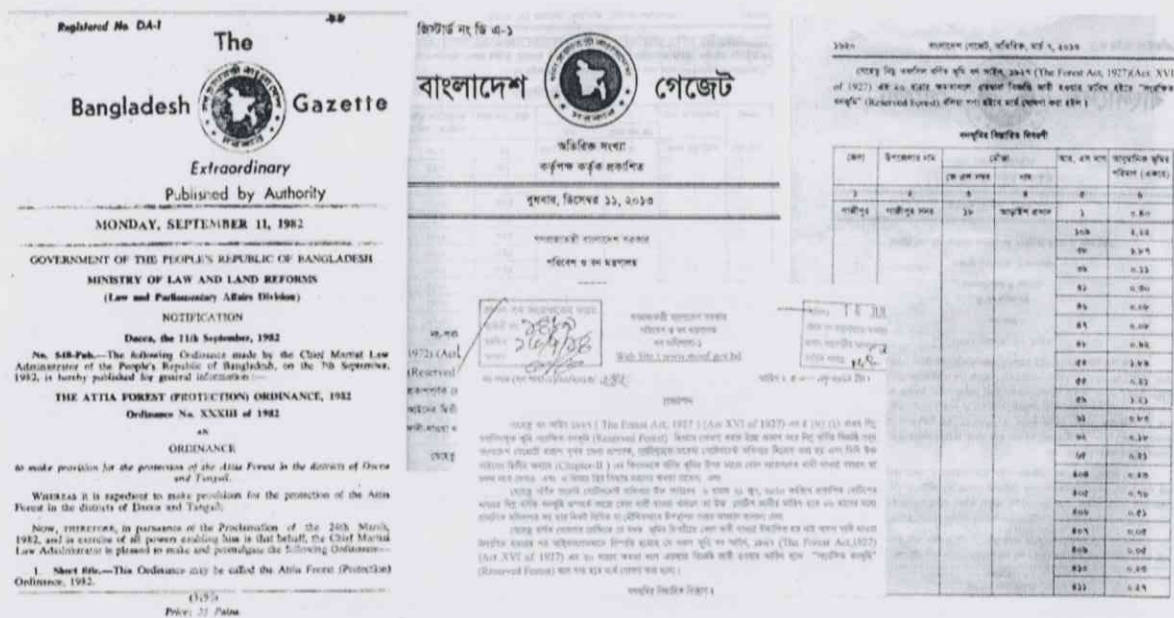


Figure 1: Sample gazette notification of forest land

There are surveyed and un-surveyed forest land under the jurisdiction of the Forest Department. Surveyed lands are the sal forest areas of Dhaka, Mymensingh, Gazipur, Tangail and north part of the country, hill forests of Chittagong, Cox's Bazar districts, some patches are in Sylhet and coastal forests situated in south part of the country for which survey maps are available. Un-surveyed forest lands are the reserved forests situated in the three districts of Chittagong Hill Tracts, greater Sylhet districts, the Sundarbans reserved Forests and some are in coastal forest areas. Forest Department manages state forest lands based on the gazette notification and maps. Specifically, maps are the mouza/sheet maps prepared after the Cadastral Survey (CS), Revised Survey (RS), and Bangladesh Survey (BS). These are hard copy maps and archived at the local forest offices.

It is important to visualize the location of forest land, and identification of the status of forest land. Digitalization of forest land information involves the process of defining the geographical limits of forest land/areas, which is essential for effective forest management, conservation, and protection of natural resources. Digitalization of the land information will ensure the effective management and protection of the country's valuable forest resources. Subsequently, these will support the planning and monitoring of activities such as forest plantation, afforestation in coastal areas, reforestation,

restoration efforts to achieve the Annual Performance Agreement (APA), Sustainable Development Goal (SDG) and implementation of 8th five year plan.

Bangladesh Forest Department manages forest lands under 47 Forest Division offices. One district may have several forest division offices depending on the forest land and resources that exist in the district. Forestlands have different legal status e.g Reserved Forest (RF), Protected Forest (PF), Vested Forest (VF), Acquired Forest, Transferred Forest etc. Forest lands are fragmented into different districts and managed under different forest divisions. The below table is showing the forest lands located in different districts of the country.

জেলা ভিত্তিক বনভূমির তথ্যাদি (২০১৯-২০২০)

ক্রমিক নং	ফোরস্টার নাম	সংরক্ষিত বন (একরে)		প্রাকৃতিক বন (একরে)	অধিকৃত/অর্পিত বন (একরে)	অশ্রেণীকৃত (বন বিভাগ নিয়ন্ত্রিত) (একরে)	বন বিভাগের নিয়ন্ত্রণাধীন বনভূমির পরিমাণ	অশ্রেণীকৃত (বন্যে বন বিভাগ নিয়ন্ত্রিত)	মোট বনভূমির পরিমাণ (একরে)
		২০ মাসের খেতি (একরে)	৪ ও ৬ খেতি খোঁজ (একরে)						
১	২	৩	৪	৫	৬	৭	৮	৯	১০
১	ঢাকা	০.০০	৯০৪.৭৪	০.০০	০.০০	০.০০	৯০৪.৭৪	০.০০	৯০৪.৭৪
২	পাবনা	৪৪,১৮৯.৯০	২০,৯৮০.০১	০.০০	০.০০	০.০০	৬৫,১৬৯.৯১	০.০০	৬৫,১৬৯.৯১
৩	ময়মনসিংহ	৩৪,৫৫৫.১১	৪,০০৫.০০	০.০০	০.০০	০.০০	৩৮,৫৬০.১১	০.০০	৩৮,৫৬০.১১
৪	শ্রীমঙ্গলপুর	০.০০	১০,৩০৪.৩৯	০.০০	০.০০	০.০০	১০,৩০৪.৩৯	০.০০	১০,৩০৪.৩৯
৫	নেত্রকোণা	৬,৩২৪.৭০	১০,৭৫৯.৪৫	০.০০	০.০০	০.০০	১৭,০৮৪.১৫	০.০০	১৭,০৮৪.১৫
৬	কুমিল্লা	৫৯১.৯৭	১,৫৫১.৬০	০.০০	০.০০	০.০০	২,১৪৩.৫৭	০.০০	২,১৪৩.৫৭
৭	টাঙ্গাইল	৭০,৮১৫.৬৯	৪৯,০৬১.২১	০.০০	০.০০	০.০০	১১৯,৮৭৬.৯০	০.০০	১১৯,৮৭৬.৯০
৮	সিলেট	২০,৯০০.৬০	২৫,৫৩৮.৮৫	০.০০	০.০০	০.০০	৪৬,৪৩৯.৪৫	২৮৮.৮৮	৪৬,৭২৮.৩৩
৯	হবিগঞ্জ	৩০,৮৮৫.৭০	২৭৪.০০	০.০০	০.০০	০.০০	৩১,১৫৯.৭০	২,২০০.০০	৩৩,৩৫৯.৭০
১০	মৌলভীবাজার	৫৯,০০২.৬২	৪০.৭০	০.০০	১০,৯০২.০০	০.০০	৭০,০০৫.৩২	১,০৭৬.৪১	৭১,০৮১.৭৩
১১	সুনামগঞ্জ	৬,৪০৪.১২	১১,৫৭৮.১৬	০.০০	০.০০	০.০০	১৮,০১২.২৮	০.০০	১৮,০১২.২৮
১২	ফরিদপুর**	২১০,৬২৬.০৪	১৫২,৬২৪.৮৬	৪৯,৪৩২.৪৬	১৬,৪০২.৮২	০.০০	৪২৯,০৮৬.১৬	০.০০	৪২৯,০৮৬.১৬
১৩	ভুল্লাহাঙ্গর**	১২২,৯৮০.৪০	২২,৬৬৭.১৪	৩০,৫২১.৪২	০.০০	০.০০	১৭৬,১৬৯.৯৬	০.০০	১৭৬,১৬৯.৯৬
১৪	নাগরকানন	২৪২,৮৬৬.৪০	২১,৮০০.৮০	০.০০	০.০০	০.০০	২৬৪,৬৬৭.২০	৪৯৯,০৭২.৪৪	৭৬৩,৭৩৯.৬৪
১৫	বামনাগাতি	৫৭০,২৬১.২১	৪১,৪০১.৮৮	০.০০	১.৫০	০.০০	৬১১,৬৬৪.৫৯	৭৬০,৮৬০.৫৪	১,৩৭২,৫২৫.১৩
১৬	বগুড়াহাতি	৮৮,৪৯২.৮০	৭,০৫২.৬৭	০.০০	০.০০	০.০০	৯৫,৫৪৫.৪৭	৪৫৪,০৭৭.৯৫	৫৫৯,৬৩২.৪২
১৭	কুমিল্লা	০.০০	১,৭২০.৬২	০.০০	০.০০	০.০০	১,৭২০.৬২	০.০০	১,৭২০.৬২
১৮	কুমিল্লা**	২,১৬১.৪০	১৮,০০০.০০	০.০০	০.০০	০.০০	২০,১৬১.৪০	০.০০	২০,১৬১.৪০
১৯	খাগড়াহাতি	৫৬৬,৫১২.৯৫	০.০০	০.০০	০.০০	০.০০	৫৬৬,৫১২.৯৫	০.০০	৫৬৬,৫১২.৯৫
২০	কুমিল্লা	৫৪৬,০৮২.৬১	০.০০	০.০০	০.০০	০.০০	৫৪৬,০৮২.৬১	০.০০	৫৪৬,০৮২.৬১
২১	সাতক্ষীরা	৩৭০,৩৫৪.১৮	০.০০	০.০০	০.০০	০.০০	৩৭০,৩৫৪.১৮	০.০০	৩৭০,৩৫৪.১৮
২২	বগুড়া	১,৬৭৮.৪৭	১,৭৪৬.০০	০.০০	২১.৫৪	০.০০	৩,৪৪৬.০১	০.০০	৩,৪৪৬.০১
২৩	বিলতামারী	০.০০	০.০০	৬৪৮.৫৬	৫৫১.৪৬	০.০০	১,২০০.০২	০.০০	১,২০০.০২
২৪	কুমিল্লা	১২৮.৫৬	০.০০	০.০০	০.০০	০.০০	১২৮.৫৬	০.০০	১২৮.৫৬
২৫	লাসখানিয়াহাতি	৮২.৬২	০.০০	০.০০	০.০০	০.০০	৮২.৬২	০.০০	৮২.৬২
২৬	সিমান্দপুর	১৪,০০৯.৭৬	০.৪৫৫.৫৮	০.০০	০.০০	০.০০	১৪,৪৬৫.৩৪	০.০০	১৪,৪৬৫.৩৪
২৭	সাতক্ষীরা	১,৫৭১.৬০	০.০০	০.০০	০.০০	০.০০	১,৫৭১.৬০	০.০০	১,৫৭১.৬০
২৮	কুমিল্লা	৫০১.৫৮	৪,০৪৬.৪৬	০.০০	০.০০	০.০০	৪,৫৪৮.০৪	০.০০	৪,৫৪৮.০৪
২৯	কুমিল্লা	৪৭০.৬৫	০.০০	৫,৯৬১.৭০	৬৬১.৬৬	০.০০	৭,১৯৩.০১	০.০০	৭,১৯৩.০১
৩০	খোন্দাবাদী**	৭২,১৩২.০৬	৩০৭,৮৬৭.৬৬	৪,৭৮৪.৭২	০.০০	০.০০	৩৮৪,৭৮৪.৭২	০.০০	৩৮৪,৭৮৪.৭২
৩১	লাসখানিয়াহাতি**	০.০০	৫০,০০০.০০	০.০০	০.০০	০.০০	৫০,০০০.০০	০.০০	৫০,০০০.০০
৩২	গুণ্ডাখানিয়াহাতি**	৫৮,৭২০.৮৭	৯১,২৭৬.১০	০.০০	০.০০	০.০০	১৫০,০০০.০০	০.০০	১৫০,০০০.০০
৩৩	বরগুণা*	৩০,৫০০.৩০	৪৪,৪৬৬.১০	০.০০	০.০০	০.০০	৭৫,০০০.০০	০.০০	৭৫,০০০.০০
৩৪	শিয়ালপুর**	০.০০	৫৪০.৬৬	০.০০	০.০০	০.০০	৫৪০.৬৬	০.০০	৫৪০.৬৬
৩৫	কুমিল্লা**	৯৪,২৪৫.৫৬	২৬৫,৭৫৬.৬১	০.০০	০.০০	০.০০	৩৬০,০০০.০০	০.০০	৩৬০,০০০.০০
মোট বনভূমি (একরে)		৩,৩১০,৯০৭.৫২	১,১৭২,৬৭১.৭৫	৯১,০৮১.৮৮	২১,৫২১.৩৪	৪২,৮৪৬.৫১	৪,৯৬৬,৭০০.০১	১,৭১৬,৬০৬.০২	৬,০৮৩,০০৬.০০
মোট বনভূমি (মোট)		১,৩৩৬,৯০৫.৯২	৪,৭৪,৬৬৫.১৬	৩০,৯৬১.৭৪	১১,৫৭০.৭৬	১৭,০৪০.১৫	১,৮৮০,৪৩০.৭০	৬৬৪,৭০২.২৭	২,৫৪৫,১৩৬.০১

\*\* অর্থাৎ ০ প্রক্রিয়াক্রমে বিক্রিত বনভূমি-এলাকার ভূমি খেতি নিয়ন্ত্রিত মাঠের বন বিভাগের নিয়ন্ত্রণে, নতুন বনভূমি খেতি জেলা ইন্ট্রিবি এবং বন বিভাগের নিয়ন্ত্রিত মাঠের বনভূমি।

FD under the project will collect or procure CS/RS/BS maps for all forest types and conduct GIS processing to develop GIS databases for the forest lands of all forest types of the country. Besides, a



forest land database needs to be developed using the gazette notification, khatian etc. Hard copy maps (CS/RS/BS), gazette notifications, khatians etc. need to be collected from, respective field offices of Forest Department, respective DC offices, Land Record and Survey Departments and Management plan Unit of Forest Department. All mouza maps where forest department lands are available map need to be digitized for developing the GIS data base for the forest lands in the country. At the same time, a study needs to be conducted to identify IT requirements of the national and field division offices of the Forest Department to improve the usability of forest land databases through information systems and database management.

This forest land database finally will be linked with the GIS database of forest land and integrated in the Bangladesh Forest information System as modules to support the forest management and conservation, policy decision making, planning, and improve of e-efficiency and governance at the Forest Department.

For the management, the demarcation of forest land in the field is crucial. Identification of demarcation points using DGPS for Dhaka Forest Division and Wildlife Management and Nature Conservation Division, Dhaka through analyzing the GIS forest land database and high-resolution satellite imageries that are free along with field visits/experiences is planned under the project. A feasibility study will be prepared for the two forest divisions and a DPP will be developed considering the feasibility study following the format of Planning Commission for the establishment of RCC pillar at Dhaka Forest Division and Wildlife Management and Nature Conservation Division, Dhaka. A stakeholder analysis and the challenges/conflicts are also need to be identified for including in the feasibility study and DPP.

### ***Objective and purpose of the consultancy***

The objective of the consultancy is to develop GIS/spatial forest land database, forest land record database, assessment of the FD capacity to improve the e-efficiency, and demarcate the boundary points digitally for establishing RCC pillar in the field. The proposed work will assist in the preparation of a feasibility study report which will support the preparation of a DPP for implementation of piloting at Dhaka Forest Division and Wildlife Management and Nature Conservation Division, Dhaka. The objective of the study is to

- Prepare GIS/spatial forest land database, forest land record database, and visualize the digitized geographical locations of forest lands in maps
- Prepare forest land database using gazette notification, khatian etc.
- Identify the current status and problems of forest lands in the country
- Develop modules using those databases and integrate in the Bangladesh Forest Information Systems
- Assess the IT capacity of the FD
- demarcate the digital boundary points of Dhaka Forest Division and Dhaka Wildlife Management and Nature Conservation Division using DGPS
- prepare a feasibility study report for establishing RCC pillars at Dhaka Forest division and Dhaka Wildlife Management and Nature Conservation
- develop a DPP for implementation of the pilot project for establishing RCC pillars at Dhaka Forest division and Dhaka Wildlife Management and Nature Conservation

### ***Scope of Work:***

- Digitalization of forest land records

- a) Collect all forest land related hard copy documents for data entry for all forest divisions
- b) Data entry using gazette notifications and other hard copy documents/data conversion of all textual/land records including mutation records and other land attributes data
- c) Meeting/workshops at different levels
- d) Database of forest administration
- e) Digital archive of hard copy records
- f) Develop forest land database
- g) Database managed at the central level
- h) data catalog/index
- Digitization of mouza maps (for surveyed forest lands)
  - a) Collect, procure, scan & archive CS/RS/BS mouza maps/documents
  - b) Prepare GIS/spatial database of the forest land of all forest types using the CS/RS/BS map
  - c) Integration of Excel/access land record database and GIS/spatial forest land database with the forest administration data and prepare map
  - d) National-level data and information system
- Translate gazette notifications into map (for un-surveyed land)
  - a) Identify the features as described in the gazettes (e.g. reserved forests of CHT and greater Sylhet district)
  - b) collect GPS points
  - c) prepare GIS database and map
- Field validation/Survey and updating/correction of GIS forest land database

This includes ground-truthing, and validation of digitized CS/RS/BS maps should be implemented using the following options.

- a) ground control point collection by DGPS/RTK GPS
- b) ground-truthing by DGPS/RTK GPS/High-Resolution Satellite Imagery as appropriate
- Module development for Bangladesh Forest Information System
  - a) Databases accessed through the Bangladesh Forest information system
  - b) Forest land record and GIS based forest land module at BFIS
- Assess the IT capacity of Forest Department
  - a) IT capacity related to HR, logistics, skills of FD offices to manage the forest land data (National and field offices)
- Training & capacity building
  - a) Conduct Training and workshops
  - b) ToT for strengthening the capacity of RIMS and MP unit of FD
- Boundary demarcation point of two forest divisions of FD
  - a) digitized CS/RS/BS sheet maps for two FD, geo correction, edge matching, editing, and analysis.
  - b) Dag level administrative map of beat, range, and division offices by geo-referencing of CS/RS/BS maps with DGPS/RTK GPS points/high-resolution satellite imagery



- c) collection of suitable location points by DGPS/RTK GPS for digital demarcation of Dhaka Forest Division and Wildlife Management and Nature Conservation Division and prepare the map
- d) Field data collection and stakeholder analysis for finalizing the digital demarcation points of the forest lands of two forest divisions for the establishment of RCC boundary pillar
- e) Preparation of feasibility study report for establishing RCC pillar at Dhaka Forest Division and Wildlife Management and Nature Conservation Division, Dhaka.
- f) Preparation of DPP for the implementation of a piloting at Dhaka Forest Division and Wildlife Management and Nature Conservation Division, Dhaka.

### ***Brief description of the assignment***

The firm will collect information/maps and prepare databases for the all-forest types of the country and stakeholder analysis, collection of DGPS/RTK GPS boundary points, prepare feasibility study and DPP for the two forest divisions for establishing the RCC pillar to demarcate the forest land boundary. All the details are explained in the activities and sub-activities. The client will facilitate the consulting firm's activities e.g. sheet map collection, DGPS/RTK GPS/data collection, field verification of GIS/data, arrangement of meetings or seminars, and other arrangements for the assignment but the cost will be borne by the consulting firm. PD can be communicated for any clarification of the ToR during office time.

Activity 1: Collect hard copy documents and develop a forest land record database for the country

Sub-activities need to be accomplished to complete the activity. They are

- a) Collect all the official orders of land records from all respective divisions;
- b) Coordinate with MP, RIMS unit, and other respective forest division offices to collect digital databases that were developed in different formats and harmonize for integration with land record database;
- c) prepare the forest land record database for the country and;
- d) update the forest administration data for the country and integrate with forest land data;
- e) Collect the existing land status and integrate it with the database;
- f) Organize workshop/meeting with FD officials/stakeholders to collect information;
- g) Digital archive of hard copy records and prepare catalog;
- h) Review existing land record module, update, and host in Bangladesh Forest Information System (BFIS);
- i) Prepare a report on the forest land record database, status, and submit.

Activity 2: Develop spatial/GIS data for forest land

Sub-activities need to be accomplished to complete the activity. They are

- a) Inventory of geospatial, digital, and hardcopy CS/RS/BS mouza sheet maps of forest land at RIMS Unit and assess the status;
- b) identify the required CS/RS/BS mouza sheet maps for forest divisions to be procured for geospatial database development;
- c) Collect adequate ground control points using DGPS/RTK GPS for geometric correction;



- d) Edit, edge match, and geo-correction of the existing spatial/GIS databases of the CS/RS mouza sheet maps;
- e) Develop the spatial database of forest land, integrate the land status as an attribute and establish the link with the forest land record database;
- f) Collect/procure CS/RS/BS mouza sheet maps and digitize;
- g) Analyze spatial forest land data and prepare maps for the divisions to verify in the field;
- h) Field validation of CS/RS/BS based forest land database with high-resolution remote sensing data and field;
- i) Organize meetings and workshops to collect forest land information;
- j) Digital archive and hard copy catalog of the CS/RS/BS mouza sheet maps;
- k) Develop a module at BFIS using the GIS database of forest land;
- l) Finalize and submit GIS database for forest land.

Activity 3: Assess e-efficiency capacity of Forest Department

Several of the sub-activities is considered under the activity. They are as follows:

- a) Assess and identify the technical capacity needed at different levels of FD;
- b) Recommend set up to improve the e-efficiency at FD.

Activity 4: Identify the digital boundary points of forest lands in Dhaka Forest Division and Wildlife Management and Nature Conservation Division, Dhaka using advanced geo-spatial technology

Several of the sub-activities is considered under the activity. They are as follows:

- a) Analyze the GIS forest land database, forest land record databases, and gazette notifications of the Dhaka Forest Division and Wildlife Management and Nature Conservation Division, Dhaka;
- b) Visit the area and collect point locations using DGPS/RTK GPS survey;
- c) Identify conflicting types/areas, and non-conflicting types/areas and prepare maps with the tentative digital demarcation points;
- d) Identify the stakeholders/other requirements that need to be considered for boundary demarcation;
- e) Engage stakeholders in meetings, and workshops to compile the recommendations, and suggestions;
- f) Finalize the DGPS demarcation points based on the field validation and based on the suggestions from the stakeholders of forest lands of Dhaka Forest Division and Wildlife Management and Nature Conservation Division, Dhaka.

Activity 5: Prepare feasibility study report and DPP

Several of the sub-activities is considered under the activity. They are as follows:

- a) Compile all the database developed and boundary points collected under the previous activities;
- b) prepare the design of RCC pillar to be added to the feasibility study and DPP
- c) Prepare feasibility study report to implement a pilot project for the establishment of RCC pillars for forest land demarcation in Dhaka Forest Division and Wildlife Management and Nature Conservation Division, Dhaka, following the format of the Planning Commission;

- d) Prepare DPP based on the feasibility study, following the format of the planning commission.

### ***Equipment, Materials, and Work station***

There are many issues related to CS/RS/BS map digitization, correction; collection of hard copies of CS/RS/BS map, land records, and their digitalization that will arise while implementing the tasks which would be necessary to take correct and immediate decisions for developing the GIS database and land record database of forest land. Therefore, Data Entry Operator, GIS and RS Analyst, Data Management Expert and Spatial Data Management Expert will work at RIMS Unit of FD of the selected firm and regularly report to PD and GIS expert of Project Management Unit about the day-to-day progress of the assignment. This is also to support the better coordination with national and field offices of FD and consultants which will support prompt decision making regarding the project implementation. All the related equipment, material and incidental necessities/costs for conducting the assignments mentioned in the activities shall be provided by the firm.

### ***Duration of the consultancy***

All the work shall be completed and output shall be handover within 15 months from the date of award of the contract. It can be extended up to 18 months subjected to the extension of the project by the competent authority.

### ***Experiences, Resources, and Delivery Capacity Required of the consulting firm***

For GIS forest land database preparation using the CS/RS/BS maps, digitization, geo-correction, land record database preparation using gazette notification, khatian etc., assessment of the current capacity of FD, digital demarcation of boundary points of Dhaka Forest Division and Wildlife Management and Nature Conservation Division, Dhaka, and preparation of a feasibility study and a DPP, the interested firms must have the following capacities:

- Minimum 15 years of general experience in the relevant field of the consultancy firm in Bangladesh and 10 years of specific experience in digitizing mouza sheets (CS/RS/BS maps), creation of mouza database, geo-referencing of mouza map/sheets, validation of GIS data/maps in the field, training samples collection using DGPS, map preparation and related activities for carrying out the work;
- GPS and DGPS based advanced survey and data collection techniques; data integration in GIS, database management; training data collection for geo-correction/validation of maps in field;
- Experience in completing/engaging similar assignments in last 10 years;
- Experience in analyzing remote sensing data and integration in GIS;
- Experience in the delivering high-quality outputs within the time and budget;
- Availability of the necessary equipment and appropriate staff to conduct the assignment;
- Experience in working with the government of Bangladesh for developing the feasibility study and DPP using the format of the Ministry of Planning;
- Valid and up-to-date trade license, VAT registration, TIN certificate, and Company Brochure must be provided;

- Bank statement for last 6 months/Bank Solvency Certificate;
- The Consulting Firms must have Audited Financial Reports of the previous 3 years by the Government-authorized Audit Firms;
- Yearly annual turnover shall be at least BDT 03 (three) crore for the last three years counting backward from the date of advertisement.

### ***Professionals required for the work***

Sl. No.	Type of the professionals	Educational qualification/requirements	Responsibilities	No.	Month
1	Team leader	<ul style="list-style-type: none"> <li>○ M.Sc. or Ph.D. in, geospatial science/Natural resource management/Forestry/geography/environmental science/Civil engineering/urban planning/ Development studies, and other related disciplines</li> <li>○ 10 years of experience in working with geospatial/data</li> <li>○ Experience in GIS-based project implementation in Bangladesh will be preferred</li> <li>○ Good interpersonal skills.</li> </ul>	<ul style="list-style-type: none"> <li>○ Supervise the consultants</li> <li>○ Guide the team members for timely completion of the assignments</li> <li>○ Coordinate with PMU and different offices of FD at the national and field level</li> <li>○ Deliberation of different spatial/databases and reports as mentioned in the ToR</li> <li>○ Computer skills and report writing ability</li> </ul>	1	18
2	Spatial Data Management expert	<ul style="list-style-type: none"> <li>○ M.Sc. in geo-spatial science/Natural resource/management/geography/environmental science/Civil engineer/urban planning and other related disciplines</li> <li>○ 7 years of experience in geospatial data preparation, processing in management</li> <li>○ Experience in CS/RS map digitization, geo-referencing, DGPS/RTK GPS data collection and integration in GIS, map preparation using ArcGIS</li> </ul>	<ul style="list-style-type: none"> <li>○ Inventory at RIMS and collect the mouza databases for developing the spatial database</li> <li>○ Identify the gaps and list down mouza maps to be collected/procured that are required as of the description of the assignments</li> <li>○ Prepare data catalogue and archiving system</li> <li>○ Guide and supervise the GIS Analyst's for GIS processing, edge matching and geo/correction of the existing and digitization of mouza databases</li> <li>○ processing GIS data for developing the spatial database of mouza using CS/RS maps</li> <li>○ identify the suitable location for boundary demarcation of</li> </ul>	1	17



Sl. No.	Type of the professionals	Educational qualification/requirements	Responsibilities	No.	Month
			forest land in the field ○ conduct necessary field visits to collect DGPS data for geo-spatial data correction ○ Guide to integrating the land record database with geo-spatial database ○ Prepare report and maps as required for the assignment ○ Support IT expert for hosting the mouza database module to BFIS		
3	Data Management Expert	○ B. Sc (Hons) CSE/EEE/Physics or other related subjects ○ At least 5 (Five) years' experiences in on-line database development (e.g. PostgreSQL, MySQL, SQL query language and efficient use of views, materialized views, functions, triggers and procedures. ○ Demonstrated knowledge in similar designing or developing applications/systems and training. ○ S/he will lead the assignment to develop data collection and functionalize the interface, training, documentation, and coordination to roll out the project implementation. ○ Experience in management of information system ○ Attention to detail and good problem-solving and analytical skills.	○ Inventory of the hard copy and soft copy data and related resources at RIMS and MP Unit ○ Review the existing database and information systems ○ Collect hardcopy land record data from field offices ○ Prepare data catalog and archiving system ○ Develop the database and reporting structures ○ Supervise the data entry of the land records ○ Analyze data and prepare reports as appropriate ○ Develop a land record database and integrate it with the administrative database of FD ○ Guide to integrating the land record data with the spatial database of CS/RS mouza ○ Coordinate with IT Consultant for hosting the land record and spatial database to BFIS	1	17
4	Land Management Expert	○ Masters in any related subjects ○ At least 10 years of experience in working with land survey and management with the government will be preferred	○ Coordinate with DLRS/DC and other stakeholders if necessary to Finalize the Forest Land data ○ Guide/suggest identifying the un-surveyed forest land and database development engaging the stakeholder	1	9



Sl. No.	Type of the professionals	Educational qualification/requirements	Responsibilities	No.	Month
		<ul style="list-style-type: none"> <li>○ Experience in coordination among the stake holder organizations e.g. DLRS/zonal settlement office and other government organization</li> <li>○ Knowledge of land management and survey</li> </ul>	<ul style="list-style-type: none"> <li>○ Support the digital location data collection using DGPS/GPS.</li> </ul>		
5	IT Expert	<ul style="list-style-type: none"> <li>○ B. Sc (Hons) CSE/EEE/Physics or other related subjects</li> <li>○ At least 5 (Three) years' experience in IT sector</li> <li>○ Proficient in several programming languages and experience in writing code.</li> <li>○ Any IT certification will be preferred.</li> <li>○ Good knowledge about software, hardware and networking.</li> <li>○ Excellent writing and communication skills.</li> <li>○ Efficient troubleshooting abilities</li> </ul>	<ul style="list-style-type: none"> <li>○ Assess the existing IT requirements for preparing/hosting the geospatial and land record database to RIMS server and BFIS</li> <li>○ Suggest IT related equipment to procure and prepare the specifications</li> <li>○ Assess the existing field offices and identify requirements to support establishing the e-Efficiency</li> <li>○ Field visit and organize related meetings/workshops</li> <li>○ Support RIMS unit for maintaining/management of the LAN and WAN at FD</li> <li>○ Prepare report as required by the assignment</li> <li>○ Maintain network documentation as directed</li> <li>○ Maintain spreadsheets of hardware Assets and IP addresses</li> <li>○ Monitor antivirus, active directory, and other server activity</li> <li>○ Resolve network and computer issues</li> <li>○ Assist the IT Database development expert in the deployment of various IT systems as needed.</li> </ul>	1	10
6	GIS and RS analyst	<ul style="list-style-type: none"> <li>○ Degree in computer science, geography, surveying, engineering, or related field.</li> <li>○ 3 years of experience with mapping tools such as ArcGIS, QGIS and ERDAS</li> </ul>	<ul style="list-style-type: none"> <li>○ Develop geospatial database using CS/RS mouza map</li> <li>○ Edge matching, geo correction of the existing geo-spatial database, and digitizing CS/RS maps for geospatial database</li> </ul>	4	15



Sl. No.	Type of the professionals	Educational qualification/requirements	Responsibilities	No.	Month
		<p>imagine etc.</p> <ul style="list-style-type: none"> <li>○ Experience in data collection using DGPS/GPS will be the added advantage</li> </ul>	<p>development</p> <ul style="list-style-type: none"> <li>○ Identify the locations for DGPS/GPS data collection for geo correction</li> <li>○ Develop master/database using DGPS/GPS points for geo-spatial data correction</li> <li>○ Field visit to validate the geospatial data</li> <li>○ Use high-resolution satellite imagery to validate the geospatial data</li> <li>○ Identify suitable locations using the land record and geo-spatial data for forest land boundary demarcation for pillar establishment</li> <li>○ Prepare maps using geo-spatial data and DGPS/GPS locations.</li> </ul>		
7	Data entry operator	<ul style="list-style-type: none"> <li>○ B.Sc. in any subject/ Diploma in CSE</li> <li>○ Basic Computer literacy is necessary for Data Entry (MS Word, Excel, PowerPoint, Internet &amp; Emailing.)</li> <li>○ 2 years of experience in compiling, verifying the accuracy, and sorting information according to priorities to prepare source data for computer entry.</li> <li>○ Experience in Reviewing data for errors, correcting any incompatibilities, and checking the output.</li> <li>○ Basic knowledge of GIS (ArcGIS software) will be preferred.</li> </ul>	<ul style="list-style-type: none"> <li>○ Check and correct the forest administration database</li> <li>○ Organize the hard copy records of the forest administration and develop a data catalog for checking the data entry and archiving</li> <li>○ Entry the land record data and develop the database</li> <li>○ Coordinate with database consultant for database development and data entry</li> <li>○ Support report preparation using the databases</li> <li>○ Support the integration of geospatial and land record databases</li> <li>○ Other assignments to complete the development of land record database and module in BFIS.</li> </ul>	3	15
8	DPP preparation Expert	<ul style="list-style-type: none"> <li>○ M.Sc. in Development studies, social studies, or other related subjects.</li> <li>○ 5 years of experience in DPP development using the feasibility study report and format of the Planning Commission of the government of Bangladesh.</li> </ul>	<ul style="list-style-type: none"> <li>○ Computer skills and report writing ability</li> <li>○ Prepare DPP in Bangla using the output of the feasibility study of the piloting.</li> <li>○ Incorporate the design and cost estimate of the pillar.</li> </ul>	1	5



Sl. No.	Type of the professionals	Educational qualification/requirements	Responsibilities	No.	Month
		<ul style="list-style-type: none"> <li>○ Experience in procurement-related (PPA, 2006/PPR, 2008) will be given preference.</li> </ul>			
9	Financial and Economic analysis Expert	<ul style="list-style-type: none"> <li>○ M.Sc. in Economics, Accounting, Development study, Mathematics, or other related subjects</li> <li>○ 10 years of experience in DPP development using the format of the Planning Commission of the government of Bangladesh.</li> </ul>	<ul style="list-style-type: none"> <li>○ Computer skills and report writing ability.</li> <li>○ Support the DPP development consultant and provide financial and economic analysis part of the DPP for the pilot project.</li> </ul>	1	1

#### **List of Reports and Schedule of deliveries**

No.	Deliverables	Timelines
1	Submission of Inception Report	Due 3 weeks after project commencement (soft and hard copy required)
2	Inception workshop	Scheduled after the submission of the inception report
3	Submission of Monthly Progress Reports (covering monthly progress)	Every calendar month (hard copy and soft copy required)
4	Regional, national and final workshops	discussion with PD
5	Single GIS database using CS/RS/BS maps for all forest types of the country and report and archive	During the 11 months period of the contract duration, scope for finalization
6	Forest land record database using gazette notification, khatian etc. and archived	During the 09 months period of the contract duration, scope for finalization
7	GIS-based and forest Land record module in Bangladesh Forest Information System	During the 12 months period of the contract duration, scope for finalization
8	IT assessment report	During the 6 months period of the contract duration
9	Reports and maps related to forest land should be delivered from time to time as required for sharing with MoEFCC, stakeholders, field offices etc.	Contract period
10	Submission of the feasibility Study report following the format of the Planning Commission	During the 12 months period of the contract duration (hard copy and soft copy required), scope for finalization
11	Submission of the DPP following the format of the Planning Commission	During the 13 months period of the contract duration, scope for finalization
12	Submission of project completion report including explaining the assignment of the ToR.	During the 14 months period of the contract duration, scope of revision

## ***Other Details***

- Late submission of EoI will be rejected;
- Interested applicants may obtain further information from the office of the project director on any working day during office hours;
- Only shortlisted applicants shall be invited to submit proposal;
- The consulting firm has to give the list of equipment & logistics of the firm to access the capability;
- The consultant has to provide the organization and support staff details of the firm to access the organizational capability. Moreover, PEC will assess physically about the availability of proposed experts and support staff if necessary;
- The consulting firm has to be submitted a technical approach and methodology responsive to TOR;
- The consulting firm has to submit a work plan to conduct the assignment;
- Work order will be issued to the qualified consulting firm;
- The qualified consulting firm will complete the collection of field information/maps, preparation of database, map, validation of database, assessment of IT capacity of FD, Stakeholder analysis to prepare the feasibility study, feasibility study report, modules for the information system of FD, cost estimate preparation for DPP preparation, design preparation of the RCC pillar and DPP within 13 months after signing the work order. The firm has to submit 5 copies draft & 10 copies final reports following the deliverable. The firm has to present the final feasibility study report and DPP to the competent authority and provide answer to all the queries raised by the authority. Acceptance of final feasibility study report and draft final DPP by competent authority is subject to the clearance of bills. The firm will support to present the deliverables in meetings, workshops and address queries regarding the deliverables for three months after the completion of the project;
- In financial proposal the firm has to quote the price in number and word clearly and overwriting will disqualify the firm;
- The procuring entity reserves the right to reject the proposal or increase/reduce the volume of work and it is bound to show cause in this regard;
- This terms and condition of the proposal 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 proposal;
- All correspondence and documents and subsequent contract shall be written in English;
- The payment will be made on the basis of the fund availability through crossed cheque after receiving invoice from the firm as mentioned in the contract agreement;
- Consulting firm will be selected in accordance with the rules and regulations of the Public Procurement Act 2006 and Public Procurement Rules 2008 and these will be considered as parts and parcel of terms & conditions and Contract;
- The procuring entity reserves the right to accept or reject any or all EOI without assigning any reason whatsoever.

