Ministry of Forests and Soil Conservation

REDD Implementation Centre

Forestry Complex, Babarmahal, Kathmandu

Terms of Reference for

Develop a data base of basic attributes of all forest management regimes for Eastern development region and update national forest information system (budget head: 2.12.1.57)

Background

Almost 45 percent of Nepal's land area is covered by forests. Various policy documents, including Nepal's Nationally Determined Contributions (NDC) recognize the need to sustainably manage forest resources since forests are an important part of the national economy and the fight against climate change. Nepal is globally known for its community-based approach to sustainable resource management which has significant potential to be expanded and benefit additional communities and forest-enterprises. Other opportunities for enhancing the role of forests in Nepal include watershed management for securing water quality and quantity in the long-term and nature-based tourism which will contribute to the local and national economy.

The World Bank, through FCPF, has been supporting the Government of Nepal on its efforts to reduce emissions from deforestation and forest degradation, and foster conservation, sustainable management of forests, and enhancement of forest carbon stocks (REDD+). Under the Readiness Fund of FCPF, a grant of $3.6 million was signed with the government in 2011 to help the country get ready for REDD+ through technical studies, consultations and capacity building activities. Since then, the government through the REDD Implementation Center (REDD IC) in the Ministry of Forests and Soil Conservation (MoFSC) has completed preparation of reports on national reference emissions level; national measurement, reporting, and verification (MRV) system; national REDD+ strategy; draft Strategic Environmental and Social Assessment (SESA) and Environmental and Social Management Framework (ESMF); REDD+ implementation framework; feedback and grievance redress mechanism; and so on. The full suite of studies completed to date is publicly available on the Internet (www.mofsc-redd.gov.np).

The REDD+ Readiness Grant ended in August 2015. To continue national REDD+ readiness, the government requested the FCPF for additional US$5 million in November 2015. Based on the self assessment report (i.e. R Package) of the progress achieved under the readiness grant that was approved by the 9th Participant's Assembly and 22nd Participant committee meeting of the FCPF held in Accra Ghana in 2016, the World Bank decided to provide additional grant of US$ 5 million. The Bank entered into the grant agreement with the Government of Nepal in early 2017 for this additional financing.

The success of a national REDD+ program will depend much on a robust yet transparent information system that can link to relevant databases on carbon and other social and environmental aspects. The

existence of information and internet technology can be used for rapid and robust data entry, data management and analysis and output generation. The National Forest Database (NFD) will incorporate comprehensive data on themes related to forest resources, forest management, carbon stocks, forest users and REDD+ activities. Ideally the database should cover all forest types including community forests, collaborative forests, leasehold forests, national forests, government managed forests, forests under protected areas and buffer zones, private forests and religious forest. The National Forest Information System (NFIS) will provide necessary infrastructure, interface, tools and links to the NFD database as well as other external databases to provide user requested information necessary for exploration, analysis, reporting and visualization on forest resources, carbon stocks and flows, management and users. A web-based information system enables easy access and updating of data and information.

A functional information system is crucial for monitoring and reporting on REDD+ program and activities at both national and international levels. The system helps in making information decisions at policy and field implementation levels. Although the current effort is focused on REDD+, NFD and NFIS will be valuable for the whole forestry sector with potential link to agriculture and land use planning in future. REDD IC aims to develop the NFD and NFIS as an integrated system to be housed in one forestry institution. Establishment of computer hardware and software and capacity building of staff are essential to ensure continued operation and updating of NFD and NFIS.

REDD IC has started developing NFD and NFIS since 2015 by developing a comprehensive framework of National Forest Database (NFD) and National Forest Information System (NFIS). Further, basic attribute data of all forest management regimes were collected from Western development region and fed into the system in 2015. Developing NFD and NFIS was continued in 2016 by adding basic attribute data of all forest management regimes from three other regions (i.e. Far Western, Mid Western and Central region) into the system. With this assignment by adding attribute data from Eastern Region the process of developing NFD and NFIS framework will be completed. The NFIS is currently defunct, perhaps due to lack of access to external users and limited manpower and budget. The NFIS should be able to link to the databases developed by other departments (such as Department of Forests, National Parks and DFRS) and provide differential access to different categories of users (system administrators, data managers, government officials, senior managers, partner institutions and the general public).

Objectives

- To develop database of basic attributes of all forest management regimes in Eastern region
- To feed data into existing National Forest Database and link with the NFIS
- To update existing NFIS established in the MFSC

Scope of the assignment

- **Update National Forest Database (NFD) by adding data from Eastern region**

The National Forest Database (NFD) will integrate and incorporate existing data collection mechanism at the management regime level. NFD model developed in 2015 and tested in Western development region through comprehensive consultations with stakeholders will be the framework for this assignment. The database will incorporate data required for various forestry thematic applications related to forest resources, forest carbon accounting, forest management, forest users and beneficiaries, LULUCF/Activities, REDD+ Safeguards, etc. It should incorporate spatial data related to the management regime unit boundaries and the linked with the related information in the database. The database structure should be sufficiently flexible to incorporate additional thematic data in future. Developed database will be used to update the open source database platform along with spatial component hosted in a secure centralized system in Ministry of Forest and Soil conservation.

Two activities will be undertaken in this assignment (i) database development for Eastern development region including update of existing NFIS, and (ii) Capacity building of forest officers (one from each DFO/NP/WR/RD) in data entry, database update and data feed into the National Forest Information System (NFIS) and upgrade.

- **Update National Forest Information System (NFIS)**

The NFIS framework developed/established in Ministry of Forest and Soil Conservation premise need to be updated by feeding database from Eastern districts. The NFIS is functioning as an overarching information management system that includes tools and protocols for system managers and interfaces for accessing data, information and maps from the NFD and other relevant databases, links to and between these databases, analysis, synthesis, tabulation and other thematic tools. The system is accessible for the general public through internet; web-based applications are available. The NFIS includes tools for decision support modules and user friendly graphical user interfaces for data query and reporting, GIS analysis and mapping. GIS module includes standard web mapping interfaces and tools. The information system was developed using open source application platforms with industry standard administration and management interfaces and deployed in the web as a “software-as-a service (SAS)” system. Key modules includes forest resources, forest carbon, working plan and programs, users and beneficiaries, remote sensing, Land use, Land-use Change, and Forestry (LULUCF), REDD activities and social and environmental safeguards (SES) indicators. The NFIS is deployed through hosting in a dedicated web application server to be based in GIDC which has facilities for space, continuous power supply, high speed internet connectivity, security and technical support.

This component includes activities related to operate, maintain and update of the established NFIS incorporating database from Eastern districts.

Approach

The approach for developing NFD and updating NFIS could involve:

- Data framework and checklists preparation
- Team orientation
- Communication/coordination with related experts/institutions from center to district level
- Field visit and data collection (participatory)
- Data entry to feed into the existing NFD
- update existing NFIS
- Capacity building

Expected Output

Following outputs are required:

- A comprehensive database of basic attributes of all forest management regimes in the districts under Eastern region;
- Upgraded National Forest Database and Information System incorporating data from 16 Eastern districts;
- Skilled human resource to operate database and NFIS in each district under Eastern region;
- Final completion report including suggestions/recommendations;
- Updated and functional NFIS.

Team composition

A consultancy firm/consortium with related national experts is expected to undertake the assignment. The following is the list of required experts for the assignment.

Key Experts

A. Team Leader cum REDD+ specialist forester

The REDD+ specialist forester should have a post-graduate degree in forestry with minimum 10 years of work experience in forest management and five years in REDD+. Experience of designing forest and REDD+ related databases and information systems will be beneficial. A proven experience of leading multi-disciplinary and multi-national teams is essential.

B. Database specialist and programmer

The database specialist and programmer should have a post-graduate degree in relevant subject with minimum 5 years and preferred 7 years of work experience on data base development and programming. Experience of designing forest and REDD+ related databases and information systems will be beneficial. A proven experience of leading multi-disciplinary and multi-national teams is essential.

C. Information Technology/GIS/RS Expert

The Information Technology/GIS/RS Expert should be an expert in operating information system, analyzing remote sensing data in GIS environment. The IT/GIS/RS expert should have minimum of BSc and preferably MSc degree in geo-information/GIS and work experience of minimum 5 and preferably 7 years in designing and developing database and GIS, GIS based forest information system, web based GIS, integration of GPS data into GIS. Experience in land use land use change and forestry analysis, MRV analysis, development of training curricula and conducting trainings will be preferable.

D. Data Collectors

Data collectors (national/local)Data coordinators should have a minimum BSc degree in forestry with at least 3 years of experience in questionnaire design, field surveys, data collection, data compilation, data entry in the database, and data analysis. Understanding on all types of forest management regimes implemented in Nepal, REDD+ process and progress, carbon assessment, forest governance, existing forest policies and stakeholders is desirable.

Qualification and competency of consulting firm/consortium

The consulting firm/consortium for this assignment should have a demonstrated ability and relevant experience in successfully completing similar assignments including database development, capacity building in the field of the assigned assessment and operate information system.

Failure to meet the eligibility criteria- minimum three years of experience, intact tax payment status- means automatic disqualification.

Experience Criteria:

- Development and management of databases and information systems-familiarity with forest management in Nepal, forest inventory, and preferably more than 3 projects completed;
- Design and development of national database and information system for natural resource sector-at least 2 and preferably more than 3 projects completed
- Development of information system and GIS based applications in forestry sector-at least 2 and preferably more than 3 projects completed;
- Design and development of database for climate change adaptation and REDD-at least 2 and preferably more than 3 projects completed.

Work plan

The team is required to prepare and submit an inception report with a detailed work plan before the assignment formally starts. The work plan should describe how the assignment will be conducted; it should include a work schedule, methodology for each task. The work plan will be reviewed by the REDD IC and later finalized jointly by the team and the REDD IC.

Duration of work

Component I (NFD) of the assignments hould be completed within two months after signing the contract. It is expected to start in January 2018 and complete by February pril 2018. Component II (update NFIS) will go for one more months (March 2018).

Reporting requirement

The following reports are mandatory. The delivery time of these reports will be clearly specified in the full proposal.

- Inception report including detail plan and database framework
- Final report with a comprehensive data base and updated/fuctional NFIS

A comprehensive and fully referenced final report including detailed recommendations must be submitted at the end of the assignment. Recommendations on institutional management of NFD and NFIS including manpower, computer hardware and software must be included.

Both hard copy and soft copies of all reports should be submitted to REDD-Forestry and MoFSC.All reports should be in English. An executive summary should be included in English and Nepali in the final report.

Deliverables

The following deliverable must be provided. The proposed deadline for each deliverable should bespecified in the full proposal and finalized in the inception report.

1. A comprehensive database of basic attributes of all forest management regimes for the targeted region and upgraded NFIS being operated in the MFSC
2. Staff training on data entry and database management at regional level

Selection procedure

A consulting firm will be selected using World Bank's Quality and Cost Based Selection (QCBS) procurement procedures.

Payment schedule

REDD IC plans to provide lump sum payments in agreed numbers of installment, each linked to a particular deliverable. Three time payments could be made - first installment of 20% of the contract amount against an acceptable inception report, second 40% against a draft final report and third and final 40% against an acceptable final report after the completion of all the activities listed in the ToR. There will be a provision of 10% mobilization advance against the bank guarantee.

Contact person

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