

**Terms of Reference (ToR) for Consultancy Services for
Emission Estimation from Illegal Timber Harvest
(Budget head: 2.5.3.20)**

1. Background

Nepal is one of the leading REDD+ countries under the World Bank's Forest Carbon Partnership Facility (FCPF) whose Emission Reduction Program Documents (ER-PDs) have been included into the Carbon Fund portfolio. Nepal completed implementation of the first phase of the REDD+ readiness project in 2015. Nepal's request for an additional readiness grant was approved by the 21st Participants Committee meeting of the FCPF in 2015. Nepal and the World Bank signed the grant agreement for additional readiness funding of USD 5.2 million in January 2017. During the second phase, Nepal is implementing different program and activities relating to REDD+ readiness. Among other readiness activities, improvement of the national forest inventory and monitoring system for a robust and functional MRV system is one of the focused areas. It is expected that Nepal will enter into implementation phase of the REDD+ in 2020 after negotiation and signing of the Emission Reduction Payment Agreement (ERPA) between the government of Nepal and the World Bank.

Nepal's Readiness Preparation Proposal (R-PP) for REDD+ has identified nine main drivers of deforestation and forest degradation and unsustainable (often, illegal) timber harvesting has been categorized as the third major driver. Most of the other studies and reports/documents including Emission Reduction Program Idea Notes and ER-PD have discussed and supported that "Unsustainable harvesting" of forest products especially timber is one of the major drivers of deforestation and forest degradation in Nepal. However, none of the previous studies have provided any empirical evidence to support their claims. Therefore, there is a lack of information about the actual contribution of unsustainable timber harvesting to the overall GHG emissions of the country.

Nepal has already submitted its national Forest Reference Level (FRL) to the UNFCCC for its review and technical assessment in the context of results-based payments for REDD+ in 2017. In the submission, emission contribution due to fuel-wood collection as a driver of forest degradation has been included but contribution due to other drivers such as illegal/unsustainable harvesting, forest fires and grazing have not been included because reliable data were not available for these drivers. Therefore, it is now very important to conduct an empirical study to find out the actual contribution of illegal harvesting of timber, as one of the drivers of forest degradation, to the carbon emission to include in the revised version of the FRL in coming years.



Under the second phase of REDD+ readiness, REDD IC is supporting an empirical study on the contribution of illegal timber harvesting to carbon emission, which is critical to update the national FRL in coming years and claiming the REDD+ results-based payments for the emission reduction credits generated from implementation of various REDD+ interventions.

This ToR is developed for the service providers who are interested in this assignment to conduct a study on the contribution of illegal timber harvesting to carbon emission.

2. Objective of the assignment

The main objective of this assignment is to evaluate, analyze and quantify emissions from illegal timber harvesting in Nepal. Specific objectives include:

- To review existing data, methods and approaches related to emissions through illegal timber harvest.
- To develop emission factors due to damages from logging, skidding and infrastructural causes to estimate total emissions from illegal timber harvest.
- To quantify the total emission due to illegal timber harvest in ERPD area.

3. Scope of the work

The study should be conducted throughout the ERPD districts. Following tasks need to be undertaken for successful completion of the assignment:

3.1 Desk review and analysis

- Thorough review and critical analysis of several published and unpublished articles/reports on illegal harvesting practices of timber and its contribution to the emissions in Nepal and around the globe is very important.
- Review and analyze key documents such as Nepals' FRL, Emission Reduction program document and National Forest Inventory reports relating to illegal timber harvest and emissions.
- Review and analysis of other national and international study reports and policy documents on various aspects of forest management, principles of SMF, REDD+, drivers of deforestation and forest degradation is also critical.

3.2 Consultation and field survey

- Consultations with all the stakeholders including government authorities, civil society organizations and local communities throughout the ERPD is required.
- The consultants should visit and observe some of the potential illegal harvesting sites in ERPD area to get a clear understanding about illegal harvesting practices.

- Consultants should obtain the data on biomass removal, measure representative area such as sample plots and forest pathways to collect different variables for GHG emissions due to illegal timber harvest.
- In addition to the main removal of biomass from trees and branches, the consultant should also assess the loss incurred during logging, skidding and infrastructural development for the purpose of illegal timber harvest. This assignment should involve visiting several tree harvesting sites throughout the ERPD districts, mapping felling gaps and skid trails; estimating roundwood timber extracted, fuelwood and emissions from tree felling including the portions of felled tree left in the forest (e.g., crowns, roots and branches); measuring felling collateral damage; assessing damage from skidding (transportation of timber from felling site to the roadside and/or grading yard); estimating area of forest clearing from newly constructed haul roads; estimating emissions from conversion of log to wood products and the subsequent emissions from retired products; calculating proportion of fuelwood used for timber or any other products that is stored in permanent long-lived wood products (e.g., furnitures, house construction, handicraft items etc.); the proportion of fuelwood that is burned; and the proportion of fuelwood that is decayed/decomposed; and estimating below ground biomass and stump volume/biomass that is left at the forest.

3.3 National level workshop

- The consultant should organize a national level workshop involving related stakeholders and experts to share the draft results and collect feedback for finalization of report. REDD IC will facilitate to identify the participants of the workshop.

4 Reporting and deliverables

The selected firm and REDD IC will agree on the specific activities and accordingly detail a plan of actions and deliverables. The work plan should be developed in close collaboration with REDD IC. The team leader will report to the focal person and chief of REDD IC and work in close coordination with REDD IC as a focal point. Besides, a technical committee shall be formed to technically assist the whole program.

4.1 Inception report with detail action plan and timeframe

Inception report with detail action plan, consultation plan and timeframe as well as methodology shall be submitted within two week of signing of the contract for the assignment. This should be presented at the inception workshop. After incorporating all the feedbacks, suggestions and inputs from the participants of the workshop, the inception report must be finalized and submitted to the REDD IC within the one week of the inception workshop.



4.2 Intermediate reporting

The firm shall submit monthly progress report within first week of following month from the start of the contract.

4.3 Draft report and national level workshop

The firm shall submit two hard copies with a digital copy of draft report to REDD IC before the national workshop.

4.4 Final report

Three hard copies of the final report along with digital copy after incorporating all the comments and suggestions from national level workshop shall be submitted to REDD IC. The firm should submit electronic copy of field data in excel sheet, photographs and other relevant documents to REDD IC.

5. Team composition and qualification of the firm and experts

5.1 Qualification of the firms

Firms legally registered with the concerned authorities with clear mission, vision and objectives and registered in national VAT system are eligible to apply. The firms should have relevant experience in forest degradation, biomass, modeling, forest inventory, REDD+ and /or related fields in Nepal. The firm must have valid registration, Tax/VAT clearance, demonstrated annual transaction, audit report and renewal.

5.2 Team composition, responsibilities and qualifications of the team members

The assignment will be executed from a team of experts including a team leader cum forestry expert, forest biometry expert, GIS/RS expert and a few teams of field enumerators. The firm needs to ensure that the proposed team composition possesses required qualifications, skills and experiences to deliver desired high-quality result. In addition to this, the firm can propose supporting staff for field consultation and other activities as required.

A. Team Leader cum Forestry Expert

Roles and responsibilities: The National Team Leader cum Forestry Expert will lead the team in close coordination with the focal person of the REDD IC. The team leader will:

- Review, study and analyze related published and unpublished literature, policy documents, working documents, databases and develop a firm foundation for estimating historical emissions reference level from illegal timber harvest in Nepal;



- Estimate historical trend of deforestation and forest degradation caused by illegal timber harvest in Nepal;
- Estimate historical emissions from illegal timber harvesting in Nepal;
- Develop a plan of actions with timeline of each of the actions in coordination with the REDD IC and the technical committee;
- Visit tree harvest sites, train field enumerators, develop data forms, consult Division Forest Offices and ensure the quality data are collected in the field;
- Coordinate the team and make sure that all of the experts are preparing correspondence reports and harmonizing the efforts;
- Conduct an inception workshop and national level workshops for comments on study methods and final results respectively.
- Prepare final report (with the help of other team members) and submit to the REDD-IC.

Required qualification: The Team Leader cum Forestry Expert must be Nepali national with following qualification and experiences:

- Hold at least Master's Degree in forestry or relevant subject;
- At least 10-year experiences in forestry sector in Nepal including forest biomass and carbon, timber value chain and REDD+ process;
- Knowledge on principles of SMF, demand and supply dynamics of timber, forest law enforcement, governance and illegal timber harvesting;
- Good understanding on drivers of deforestation and forest degradation, biomass inventory, issues on climate change, carbon trading policies, emission estimation and REDD+ process.
- A proven experience of leading a team is preferred.

B. Forest biometry expert

Responsibilities: The forest biometry expert will help the team leader in his/her works and responsible for the technical part of the sampling and estimation of emissions due to illegal timber harvest.

Required qualification: The forest biometry expert must have minimum qualification and experience as below:

- Hold at least MSc in forestry with specialization on forest biometry or related field;
- Have at least 5 years working experience in the forestry sector including REDD+ process and biomass/carbon estimation;
- Good understanding of forest types, forest biometry, biomass and carbon modeling/estimation, species distribution, sustainable management of forests, forest governance and drivers of forest degradation in Nepal;



- Knowledge and skills of GIS and RS tools and techniques, especially in mapping illegal timber harvest sites and handling spatial data;
- Good understanding of climate change, REDD+, biomass and carbon trading policies and related issues;

C. Field Crew Leader – Three persons

Field crew leader should be responsible for conducting field studies and measuring and collecting field data required to estimate different factors/variables related to this assignment. Field enumerators will help the team leader in his/her works and responsible for sample design, data collection and data analysis. Field crew leader should have at least B.Sc. Forestry degree. The field crew leader should have relevant experience in field surveys, data collection, data compilation and data entry. Good understanding on forest management regimes implemented in Nepal, REDD+ process and progress and carbon assessment is preferred.

D. Field Enumerator – Three Persons

Field enumerator should be responsible for field data collection. S/he should help field crew leader in conducting field studies, measurement and collection of field data throughout the ERPD districts. Field enumerators must have Intermediate Degree in Forestry or relevant subject. Prior experience and training on field data collection in forestry projects is preferred.

The consulting firm should hire necessary support staff in the field, as per requirement.

6. Inputs to the firm

- REDD IC will provide access to background documents especially various study reports developed from the REDD IC during the readiness phase to carry out the assignment;
- REDD IC will support for necessary communication for consultation process at all levels;
- REDD IC will support the firm to coordinate and attend the national level and field level consultations process as and when necessary;
- REDD IC and the World Bank will provide regular input and suggestions to the consultant(s).

7. Selection Process and Criteria

Selection process of the qualified firm/s will start from advertising for “Expression of Interest (EoI)”. The shortlisted firms based on EoIs submitted will be requested to submit the full proposal following The World Bank Procurement Regulations for IPF Borrowers, July 2016 Revised November 2017 and August 2018.

8. Work Schedule



The assignment is expected to start from March, 2020 and should be completed by 15th June, 2019.

9. Application Procedure

Eligible firm/consortium of the firms should submit “Expression of Interest (EoI)” in a sealed envelope with the following documents:

- Letter of EoI,
- Profile of the firm with showing the general and specific experience related to the assignment,
- Copy of company/firm registration and renewal certificates,
- Copy of the VAT Registration,
- Copy of annual audit report for last three years and tax clearance certificate,
- CVs of potential experts,
- Letter from partnering firm/institution if joint venture is proposed.

The shortlisted firms will be requested to submit the full proposal along with following documents:

- Full technical proposal for the assignment in a sealed envelope. The proposal should include commitment letters from the proposed experts along with duly signed CVs;
- Detail financial proposal for the assignment in a separately sealed envelope.

Contact Information

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