



IFAD-Project Implementation Unit  
**Program Management Unit (PMU)**  
Ministry of Agriculture  
University of Liberia Campus, Fendell



REQUEST FOR EXPRESSION OF INTENT (REOI) FOR DEFORESTATION MONITORING OF  
RESTRICTED AREAS IN PROJECT COMMUNITIES IN EIGHT (8) DISTRICTS OF INTERVENTION IN  
NIMBA COUNTY

Reference Number: LIB/TCEP/IFAD/PMU/REOI/002//2019

**COUNTRY:** Liberia

**PROJECT:** Tree Crop Extension Project (TCEP)

Assignment TITLE: Deforestation Monitoring of Restricted Areas in project communities in Eight (8) Districts of intervention in Nimba County.

**Context:**

The Ministry of Agriculture (MOA) is implementing the tree Crop Extension project (TCEP) with funding from the International Fund for Agricultural Development (IFAD) and the adaptation for Smallholders Agriculture Program (ASAP). The project is designed to reach 11,000 beneficiaries including 8,000 smallholder cocoa producers who are members of kuu groups and Farmers Field Schools (FFS); 2,400 farmers who will benefit from access to roads, input supply and market linkages and 600 farmers who will benefit as a result of job creation along the value chain. The objective of the project is to improve income and climate change resilience of smallholder cocoa producers, particularly women-headed households, youths and Farmers Based Organization (FBOs). The project is composed of four components; Component 1-Revitalization of cocoa plantation; component 2 Rehabilitation and maintenance of existing farm-to-market Roads; component 3, Capacity building for service provision; and component 4-project management and coordination. Under capacity Building for service provision, provision is made for deforestation monitoring in project communities across eight (8) districts in Nimba County where farms revitalization is expected to take place.

The project intends to apply part of the proceeds of the loan to contract the services of an experienced NGO/ Firm to undertake a comprehensive study and analysis of Reducing Emission from Deforestation and Degradation (REDD) for the development of a county level REDD strategy for sustainable management of the forest by the community dwellers. This study will assist the GIS Officer in the development of a monitoring Reporting and verification (MRV) system that will track the temporal and spatial and statistics data will assist in driving the policies directed at enhancing sustainable development through sustainable forest management.

The NGO/ Firm will hold initial meetings with each community that intends to participate in the project to agree on zero-deforestation of old-growth and protect the forest. The community will then be responsible for ensuring that no encroachment of agriculture into these forest areas occur. Monitoring of the forest will be done through periodic visit by the NGO/ Firm Staff. Maps of the protected forest area will be developed by the NGO/Firm and GIS Officer with the community Participations.

**Timing of the Assignment:**

The duration of the contract is three (3) calendar years based on performance, subject to amendments as required by the TCEP project Coordinator. The commencement of the assignment shall be the effective date as of contract signing.

**Objective of the Assignment**

To provide a compliant baseline for land degradation activity monitoring that will assist in mainstreaming climate change resilience approaches and procedures that will be used by IFAD-TCEP in the eight (8) project Districts of Nimba County ensuring that no encroachment of agriculture into these forest areas occurs. Maps to be developed shall be adapted under the direct supervision of the IFAD Project Coordinator to be incorporated into the new forest definition through the following steps:

- a) Mapping of existence cocoa farms with a thematic reclassification fitting Liberia's forest definition and ensuring compatibility to UNEP/FAO land cover classification scheme.



IFAD-Project Implementation Unit  
Program Management Unit (PMU)



Ministry of Agriculture

University of Liberia Campus, Fendell

- b) Aggregation of forest areas form 0.5ha to 1ha MMU, as defined in Liberia's forest definition.
- c) Update of 10m width road network to the year 2019.
- d) Conduct consistent forest area change assessments for the period 2019-2025, along with the required field verification activities.
- e) Develop detailed documentation enabling consistent national forest area change assessments for future monitoring activities.

Specific task for the NGO/ Firm will be:

**a) TASK 1: Preparatory work including:**

- Preparation and approval of technical specifications of the updated map and the forest area change assessments according to MRV requirements;
- Collection and pre-processing of required satellite image data, existing area/location information on restricted forest areas around the project communities in Nimba County as well as related georeferenced information on the location of community forest
- Planning of field studies to verify satellite identified forest changes
- Conduct planning workshops with the communities participating in the project,

**b) TASK 2: On the basis of the agreed technical specifications, carry out map production in collaboration with the Project GIS Officer for the upgrading activities of project maps aimed at fulfilling the following components:**

- Mapping of Protected areas around IFAD project communities (>5ha) Old cocoa farm based on freely available SAR (ie.Sentinel-1) and optical (ie.Sentinel-2) satellite data from 2015.
- Aggregation of forest areas to the 1 ha MMU that involves several steps<sup>1</sup>.
- Combining of all classes into one single temporary forest / non-forest map, thereby providing two separate layers to quickly provide forest cover (forest without plantations, but with intact forests in IFAD intervening areas) and non-forest areas;
- Applying the 1 ha MMU filter to this forest/ non-forest map;
- Reclassifying all resulting forest areas into the separate forest classes of the intermediate full legend map;
- Reclassifying all non-forest areas into the separate non-forest classes of the intermediate full legend map;

**c) TASK 3: In accordance with agreed specifications (Task 1) deliver:**

- Update, digital Land Cover and Forest Map dataset for the IFAD project
- Product specification document, including accuracy validation report

**d) TASK 4: In accordance with agreed specifications (Task 1) perform forest change mapping and assessment**

- Change mapping of forest areas according to the nomenclature and technical specifications of the upgraded baseline map and characterization of new non-forest areas using full seasonal freely available SAR (ie.Sentinel-1) and optical (ie.Sentinel-2) satellite imagery archive.
- Conduct forest change assessments and statistical analysis of change areas between 2019 and 2022, indicating
  - Total forest area 2019 and 2022 and forest area change 2019-2022
  - Deforestation in hectares and % (change from forest >80%/30-80% crown cover density to non-forest including old cocoa farms in the project areas)
  - Forest degradation in hectares and % (change from forest >80% crown cover density to forest 30-80%), as well as
  - All newly formed land cover types in hectares and % where deforestation took place (grassland & shrubs, bare soil, rocks & sand, settlement, surface water bodies)

**e) TASK 5: Field verification**

The task verification will include key stakeholders in the forest sector monitoring. A based field survey (point sampling and GPS-supported reference data collection at sample locations) taking into account a technically and economically viable survey design along nonrandom triangular clusters. The survey and validation scheme shall follow the internationally accepted standard for a probabilistic sampling design with non-zero exclusion probability for sampling, in accordance to the CEOS Cal/Val and QA4EO guidelines;

- Perform in-situ and VHR imagery sample based validation of improved baseline map 2019 as well as 2019-22 change assessment
- Deliver accuracy metrics on overall thematic accuracy (at least >85% for status and >80% for change)

**f) TASK 6: Develop step-by-step guidelines as baseline to conduct a capacity building training for IFAD staff to independently perform consistent national forest area change assessments according to MRV reporting requirement for future monitoring activities.**

**g) Task 7: Submit quality report(s) in a timely manner.**

- Inception report including work plan
- Progress and Final Reports per agreed work plan



IFAD-Project Implementation Unit  
Program Management Unit (PMU)



Ministry of Agriculture  
University of Liberia Campus, Fendell

### **Methodology and Approach**

The project intent to adopt Remote Sensing in GIS as a methodology to assess and monitor the categories of forest covers change resulting from deforestation, degradation and fragmentation within TCEP-IFAD project communities in Nimba County. As an approach, Digital image will be process in conjunction with spatial analysis using the Geographic Information System as the effective means for quantifying deforestation. Additionally, during the monitoring stages, the NGO/Firm shall incorporate the selection of appropriate satellite data, image preprocessing including geometrical rectification and image registration, as well as Radiometric and atmospheric correction, and topographic correction since most parts of the project areas are mountainous.

### **Qualification and Experience:**

- The Organization/ institution should have proven experience in working on forest digital mapping of Liberia, involvement in Liberia's forest definition as well as knowledge about the forestry sector in Liberia.
- At least 5 years of relevant professional experience in forest mapping, remote sensing and training of staff in key institutions for transfer of technology for ownership.
- Proven participation or working experience with key stakeholders in the forest sector in Liberia's development efforts toward REDD+ reporting within last 4 years.
- Demonstrated experience of working with national agencies and diverse stakeholders, preferably in REDD country/ies in Africa.

### **Furthermore, the consultant (s) or company should:**

- Be a legally registered company (in Liberia or outside the country).
- Have relevant human capacities for the organization and implementation of activities for carrying out forest management planning and implementation of training and other activities.
- Have relevant specialists with at least 5 years' experience in the field of forestry, especially tropical rain forest, remote sensing and Geographical Information Systems (GIS) as well as knowledge of REDD+ in particular in areas concerning monitoring and MRV.
- Have experience in donor-funded projects preferably related to the forestry sector in Liberia.
- Previous experience of forest and land use mapping in Liberia and understanding of land use policy (concessions in mining, agriculture, forests) in Liberian context.
- Have vast knowledge of Liberia's forestry sector, its social-economic and cultural dimensions.
- Be able to work in close concert with existing civil society organizations involved in the forestry and environmental sectors in Liberia.

Please send a soft copy of your expression of interest by **Thursday October 24, 2019 by 4.00pm** to:

hnorman@moa.gov.lr  
IFAD PIU/PMU/MOA  
Ministry of Agriculture Annex, University of Liberia  
Fendell, Montserrado County  
Telephone: 0880512173

The subject line should read: **EOI to conduct Deforestation Monitoring of Restricted Areas in Project Communities in Eight (8) Districts of Intervention in Nimba County**

Only pre-selected firms/consultants will be contacted.