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Analysis of Drivers of Deforestation and Forest Degradation and Identification of Response Strategies

A. Background

Bhutan is a small landlocked country located in the Eastern Himalayas. It has a geographical area of 38,394 square km and a population of 0.734 million. The country is characterized by fragile mountainous ecosystems with elevations ranging from about 130 masl in the foothills to over 7,500 masl along the main ridge of the Himalayas, within a distance of just 170 km. The most dominant land cover is forest, making up 80.89% (including shrub forest) of the land area. The Constitution of Bhutan enshrines protection and conservation of the environment and mandates to maintain 60% forest cover in perpetuity. Over the years, a set of strong laws and policies have evolved to ensure the protection, management and sustainable use of forests. The policies are translated and implemented by the Royal Government of Bhutan (RGoB) through Five Year Plans (FYP). The 11th FYP began implementation in August 2013 after being endorsed by the National Assembly. The Department of Forests & Park Services (DoFPS) will implement three programs in the 11th FYP:

- Sustainable Management of Government Reserve Forests (GRF)
- Sustainable management of forest landscapes and conservation of biodiversity
- Integrated watershed management to ensure sustainable environmental service delivery

REDD+ activities cut across all three programs of DoFPS and are explicitly mentioned in program 3 under output 1, which is titled “REDD+ Readiness activities initiated to implement climate change adaptation in watersheds”. DoFPS expects to be ready for implementing REDD+ activities by the end of the 11th FYP in 2018. The Gross National Happiness Commission (GNHC) is the central government body for coordinating and spearheading planning and policy formulation. The National Environment Commission (NEC) is a high-level policy decision making body on matters related to environmentally sustainable development and the development of measures to integrate environmental management into the overall development process. DoFPS is the main agency responsible for developing and implementing strategies and policies for conservation and sustainable management of GRFs. DoFPS implements its various GRF-related programs through its functional division and field division offices located across the country. The field offices of the DoFPS in consultation with local government will implement REDD+ activities.

Two Non-Governmental Organizations (NGOs), Bhutan Trust Fund for Environment Conservation (BT FEC) and the Royal Society for Protection of Nature (RSPN) and Tarayana Foundation which are non-profit organizations will be involved in all programs related to REDD+. RSPN and BT FEC are represented in the Technical Working Groups (TWGs) while the Tarayana Foundation is represented in the National REDD+ Task Force.

B. Objectives of the Assignment

The broad objective of this assignment is to contribute to Bhutan’s REDD+ readiness program. The national consultant will work closely with an international consultant and support the identification of the nature and extent of the drivers of deforestation and forest degradation, as well as the barriers to sustainable management, conservation and enhancement – the “+” activities under REDD+ – and explore the relevance of these drivers and barriers in policy development and implementation.

The specific objectives of this assignment are to:

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- i. Support the identification and analysis of all critical (both direct and indirect/underlying) drivers and agents of deforestation and forest degradation, and assess the emissions contributed by each driver with reference to key forest types;
- ii. Support the identification of barriers (and agents) to forest conservation, forest enhancement and sustainable management, at the national and subnational level;
- iii. Support the identification and prioritization of strategic options and key interventions (REDD+ policies and measures) to address these causes and barriers (including through cost analysis);
- iv. Evaluate the impact of drivers at all levels (local, regional, national), looking beyond the forest sector and in particular at sectors that impact on forests such as agriculture, energy, infrastructure and fast urbanization. Estimate the magnitude of current and potential future consumption of wood products (timber and fuelwood);
- v. Assess the potential for increased carbon removals through natural regeneration, forest conservation, sustainable forest management and afforestation and reforestation.

Brief Description of the Proposed Expertise Needed

The DoFPS is seeking a highly capable national consultant to carry out a detailed analysis of the drivers of deforestation and forest degradation and barriers to sustainable forest management, forest enhancement and forest conservation in Bhutan. This work will form an important foundation of Bhutan's REDD+ readiness efforts, and specifically underpin the development of nationally appropriate policies and measures for REDD+ implementation in Bhutan.

C. Specific Tasks

The national consultant will carry out the following tasks:

- Support an in-depth comprehensive spatial and socio-economic analysis of past, present and future **proximate and underlying causes of deforestation and forest degradation, and barriers to forest conservation, enhancement and sustainable management**, taking into consideration potential effects of key interventions (policies and regulations, etc), and in doing so identify hotspots where these process are particularly active.
 - The analysis of deforestation and forest degradation should be **spatially disaggregated** by sub-region and forest type, and calculate the **quantitative contribution** of each proximate cause to overall deforestation and forest degradation and to national GHG emissions, to the extent possible.
 - The consultant will support the organization and delivery of stakeholder consultations and field site visits to deforestation hotspots to better understand the local socio-economic dynamics leading to deforestation and/or degradation.
- Support the development, in agreement with DoFPS, an appropriate methodological approach (**see section 4 for details on the proposed methodology**) to assess the barriers

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to forest conservation, enhancement and sustainable management that includes spatially explicit analyses and quantification of emissions/removals. The national consultant will consider the following elements when supporting the development of a tailored methodology for this assignment:

Figure 1: Proposed Flowchart for the Methodology

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- **Model future deforestation and forest degradation at the national scale**, taking into account the main explicative variables to Deforestation and Forest Degradation and their evolution. The RPP document for Bhutan highlights the drivers of deforestation and forest degradation, but flags forest degradation as the main area of concern affecting forest quality. However, it is presumed that deforestation has increased considerably following the construction of major hydropower projects along with associated high-tension power lines as these heavy infrastructure projects were initiated mostly after acquiring the most recent satellite data on forest cover. The key processes, acting at landscape scale that are considered as drivers of forest degradation and/or forest cover changes are: loss of forest to development activities, Tsamdo and livestock, Tseri or slash-and-burn agriculture, forest fires, firewood, timber, poaching and illegal logging, harvesting of Non-wood Forest products (NWFPs) and leaf litter collection.
- Support the identification of the main **agents** of deforestation and forest degradation and conduct a socio-economic analysis of their engagement in those activities leading to forest cover reduction. Analysis should clearly distinguish between commercial and subsistence activities.
- Assess the role of local communities in deforestation and forest degradation with an analysis of their degree of dependency on forest resources. Commercial drivers of deforestation, including potential future pressure from new drivers and/or enhancement of existing drivers, should also be analysed.
- Support the analysis of the **underlying causes of deforestation and forest degradation**, such as international markets and commodity prices, national and regional markets and policies; poverty, population growth; food insecurity, etc., establishing, to the extent possible, the link between these underlying causes and the identified proximate causes. Analysis should consider the role of key variables in encouraging (or discouraging) deforestation and forest degradation: examples may include: i) rule of law and associated deforestation, ii) land tenure, iii) law enforcement and government capacity on the ground, iv) demographic change, including migration patterns; v) macroeconomic context; vi) government policies; and vii) land licensing and certification process.
- Support the assessment of the current **enabling environment with regards to REDD+**. Identify policy, legal and institutional gaps that would hinder effectiveness of REDD+ implementation, and identify strategies to address these gaps.
- Support the assessment of the likely **future scenarios of deforestation and forest degradation, and forest conservation, enhancement and sustainable management**, based on the identified drivers in the past and conduct a scenario

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- analysis of which drivers are likely to be most important in the future (including new drivers) and their geographical distribution. The study will analyse relevant Government plans in different sectors – for example in agriculture, infrastructure, energy sectors, etc. and estimate the likely impact on future deforestation and forest degradation in the areas of interest.
- Support the assessment of the potential for increased carbon removal through natural regeneration, reforestation and afforestation of previously degraded lands within the area of interest.
 - Support the design of potential **strategic options (policies and measures for REDD+ implementation)** to address the identified present and future (quantified preferably through modelling) drivers of deforestation and forest degradation and for increased carbon removals through forest conservation, enhancement and sustainable management. These strategic options should consist of policies, programs and activities and address the identified drivers. These options should, to the extent possible, be based on national or international best practices on policies / programs and activities targeted at reducing deforestation and forest degradation and/or enhancing removals.
 - Help develop **criteria for prioritizing the identified strategic options** and classify them according to these criteria (social, feasibility, risks, costs, etc.).
 - Support the delivery of a **SWOT analysis of the priority options identified**, and detail how these could be implemented on the ground, including possible institutional arrangements to implement them.
 - Support the organization and delivery of consultations¹ with different stakeholders and relevant national-level organizations on the issues identified in these ToRs. If a stakeholder map does not exist, the national consultant will help develop one as part of the exercise.

D. Deliverables

The national consultant will support an international consultant to produce:

- a. An inception report detailing the methodology adopted and the timeline (work plan) for conducting the study;
- b. A mid-term progress report. At this stage, the identification of drivers of deforestation and forest degradation should be completed and reported. The consultant will build in a series of consultation workshops with the key stakeholders throughout the assignment ensuring that their feedback is duly reflected;
- c. A list of strategies (policies and measures) to address identified drivers and barriers, and criteria for prioritizing identified strategies;
- d. Workshop reports relevant to the study;
- e. A final report clearly presenting the drivers of deforestation and forest degradation, and barriers to enhanced removals through forest conservation, enhancement and sustainable

¹[Taking into consideration elements of the 'Stakeholder Engagement and Consultation Guidelines for REDD+ Program in Bhutan'](#)

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management, and REDD+ policies and measures in a (tentatively) prioritized way. This final report should also contain a detailed synthesis of all public consultations held.

E. Proposed Methodology

The consultant shall support the following:

- Literature review of existing work on drivers of deforestation and forest degradation (and barriers to enhanced removals) in Bhutan.
- Spatial analysis of land use change in Bhutan, seeking to correlate land use change to specific drivers of deforestation and forest degradation and their socio-economic context;
- Field visits to deforestation and/or forest degradation hotspots, and/or to sites for potential enhanced removals (through conservation, enhancement and/or sustainable management) and focus group discussions with local stakeholders;
- Deliver targeted multi-stakeholder consultations throughout the study;
- Consultations, and surveys to collate inputs and data;
- Consultations to solicit feedback on findings.

F. Duration of the Assignment

1. The assignment is expected to be finalized within 6 months after contract signature. The inception report should be delivered thirty (30) days after contract signature; the mid-term progress report within three(3) months of contract signature; and the final report on or by close of the contract date.

| Analysis of Drivers of Deforestation | | |
|---|---|----------------|
| Period | Product | Payment |
| 30 days | Inception Report detailing the methodology adopted and the timeline for conducting the study; | 10% |
| 3 months | Mid-term progress report identifying the drivers of deforestation and forest degradation; | 40% |
| 6 months | A final report clearly presenting the causes of deforestation and the strategic REDD+ options (at the national scale) in a prioritized way to address the major drivers of deforestation. This final report should also contain the detailed reports from all public consultations held | 50% |

G. Expected Qualifications of the Individual Local Consultant

The national consultant will manage aspects of the tasks involving comprehensive collation of data, surveys, consultations and meetings to solicit feedback from stakeholders and will report to the international consultant (Lead Consultant). The national consultant should have a master's degree in field of forest science, natural resources management, international development, political and/or social science, or a related field, with more than 10 years of experience in areas such as:

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- Forestry with knowledge of land use and land use change dynamics in montane/high altitude regions;
- Forest ecology, soil science, plant physiology, morphology and silviculture;
- Rural economy and social development/issues with experience in other developing countries including from South Asia;
- Natural resources management and governance;
- REDD+, particularly on the economics of REDD+;
- High quality consultative skills with experience conducting consultations and surveys in Bhutan;
- Good quality organizational skills, data analysis and report synthesis;
- Client orientation, interpersonal skills, ability to work with all levels of staff, managers, clients and partners;
- Ability to communicate effectively, in writing and orally (in English).

H. Reporting and Supervision

The local consultant will report to the Lead (international) Consultant, under the overall coordination of the Chief Forestry Officer, WMD

The WMD, Department of Forests and Park, Ministry of Agriculture will be the final owner of the report(s), data, maps, consultations records, etc. and all documents generated as part of the consultancy