

**Forest Carbon Partnership Facility (FCPF)  
Carbon Fund**

**Emission Reductions Program Idea Note (ER-PIN)**

**NEPAL**

Country: \_\_\_\_\_

**People and Forests– An SMF-Based Emission Reduction  
Program in Nepal's Terai Arc Landscape**

ER Program Name: \_\_\_\_\_

**March 7, 2014**

Date of Submission or Revision: \_\_\_\_\_

***Please refer to separate document for annexes***

***Disclaimer***

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**Guidelines:**

1. The FCPF Carbon Fund will deliver Emission Reductions (ERs) from activities that reduce emissions from deforestation and forest degradation, conserve forests, promote the sustainable management of forests, and enhance forest carbon stocks in developing countries (REDD+) to the Carbon Fund Participants.
2. A REDD Country Participant interested in proposing an ER program to the Carbon Fund should refer to the selection criteria included in the Carbon Fund Issues Note available on the FCPF website ([www.forestcarbonpartnership.org](http://www.forestcarbonpartnership.org)) and to further guidance that may be communicated by the FCPF Facility Management Team (FMT) over time.
3. ER programs shall come from FCPF REDD Country Participants that have signed their Readiness Preparation Grant Agreement, using this ER Program Idea Note ('ER-PIN') template.
4. The completed ER-PIN should ideally not exceed 40 pages in length (including maps, data tables, etc.). If additional information is required, the FCPF FMT will request it.
5. Please submit the completed ER-PIN to: 1) the World Bank Country Director for your country; and 2) the FCPF FMT ([fcpfsecretariat@worldbank.org](mailto:fcpfsecretariat@worldbank.org)).
6. As per Resolution CLFM/4/2012/1 the Carbon Fund Participants' decision whether to include the ER-PIN in the pipeline will be based on the following criteria:
  - i. **Progress towards Readiness:** The Emission Reductions Program (ER program) must be located in a REDD Country Participant that has signed a Readiness Preparation grant agreement (or the equivalent) with a Delivery Partner under the Readiness Fund, and that has prepared a reasonable and credible timeline to submit a Readiness Package to the Participants Committee;
  - ii. **Political commitment:** The REDD Country Participant demonstrates a high-level and cross-sectoral political commitment to the ER program, and to implementing REDD+;
  - iii. **Methodological Framework:** The ER program must be consistent with the emerging Methodological Framework, including the PC's guiding principles on the methodological framework;
  - iv. **Scale:** The ER program will be implemented either at the national level or at a significant sub-national scale, and generate a large volume of Emission Reductions;
  - v. **Technical soundness:** All the sections of the ER-PIN template are adequately addressed;
  - vi. **Non-carbon benefits:** The ER program will generate substantial non-carbon benefits; and
  - vii. **Diversity and learning value:** The ER program contains innovative features, such that its inclusion in the portfolio would add diversity and generate learning value for the Carbon Fund.

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## 1. Entity responsible for the management of the proposed ER program

### 1.1 Entity responsible for the management of the proposed ER program

Please provide the contact information for the institution and individual responsible for proposing and coordinating the proposed ER program.

<b>Name of managing entity</b>	REDD Forestry and Climate Change Cell (REDD Cell), on behalf of the Ministry of Forests and Soil Conservation (MoFSC) of Nepal.
<b>Type and description of organization</b>	<p><b>Type:</b> Governmental</p> <p><b>Description:</b> MoFSC is the highest-level forestry sector authority mandated for sustainable management of Nepal's forests and watersheds including biodiversity conservation and non-timber forest products (NTFPs). The MoFSC strives to promote participatory approaches in forest management and to reduce poverty through promotion of forest based enterprises and employment generation.</p> <p>MoFSC is the principal actor in Nepal's REDD+ architecture with four technical divisions (Planning, Foreign Aid Coordination, Environment and Monitoring and Evaluation) and five departments: Department of Forests (DoF), and five Departments- Department of Forest Research and Survey (DFRS), Department of National Parks and Wildlife Conservation (DNPWC), Department of Soil Conservation and Watershed Management (DSCWM), and Department of Plant Resources (DPR) – responsible for formulation and implementation of forestry sector policy, strategic and development interventions .</p> <p>MoFSC has been accredited as a national entity for REDD+ by Ministry of Science, Technology, and Environment (MoSTE), which serves as a focal point for UNFCCC. The REDD- Cell, established under the Ministry of Forests and Soil Conservation, is the lead REDD institution in Nepal, and serves as the REDD+ Focal Point for the FCPF and UN-REDD. The REDD Cell is headed by a Joint-Secretary<sup>1</sup> from the Ministry. The REDD Cell is responsible for coordinating the readiness process at the national and sub-national levels among diverse stakeholders, and implementing the proposed Emissions Reduction program in Nepal.</p>
<b>Main contact person</b>	Mr. Resham Bahadur Dangi
<b>Title</b>	Joint Secretary, Chief of the REDD Cell
<b>Address</b>	Babarmahal, Kathmandu
<b>Telephone</b>	977-1-4239126, 977-1-4215261
<b>Email</b>	<a href="mailto:info@mofsc-redd-gov.np">info@mofsc-redd-gov.np</a>
<b>Website</b>	<a href="http://www.mofsc-redd-gov.np">www.mofsc-redd-gov.np</a>

<sup>1</sup> A Joint Secretary is the second ranking position after Secretary in the government system of Nepal. A Joint Secretary level staff heads all five departments of MoFSC.

<b>1.2 List of existing partner agencies and organizations involved in the proposed ER program</b> <i>Please list existing partner agencies and organizations involved in the development of the proposed ER program or that have executive functions in financing, implementing, coordinating and controlling activities that are part of the proposed ER program. Add rows as necessary.</i>		
Name of partner	Contact name, telephone and email	Core capacity and role in the proposed ER program
Department of Forests (DoF)	Mr. Bishwa Nath Oli Director General Phone : 977-1- 4227574 Email : <a href="mailto:info@dof.gov.np">info@dof.gov.np</a>	Implement the ER program at district level through district forest offices
Department of Forest Research and Survey (DFRS)	Mr. Sahas Man Shrestha Director General Phone : 977-1- 4233510 Email : <a href="mailto:sahasman2011@hotmail.com">sahasman2011@hotmail.com</a>	Measure and monitor carbon and non-carbon benefits, liaising with DoF
Department of National Parks and Wildlife Conservation (DNPWC)	Mr. Megh Bahadur Pandey Director General Phone : 977-1-4227926 Email : <a href="mailto:info@dnpsc.gov.np">info@dnpsc.gov.np</a>	Implement the ER program in the protected areas within ER program boundary, through the Warden's offices.
Multi-Stakeholders Forestry Program (MSFP)	Mr. Ram Pd. Lamsal Program Coordinator Tel: 977-1-4239501 Email: <a href="mailto:rplamsal1@yahoo.com">rplamsal1@yahoo.com</a>	Provide financial and technical support to the government on ER program implementation, including harmonization of synergistic program activities, particularly in districts where MSFP and ER Program overlap
Nepal Federation of Indigenous Nationalities (NEFIN)	Ms. Pasang Dolma Sherpa National Coordinator Tel: 977-1-4379726 Email: <a href="mailto:pdsherpa@nefinclimatechange.org">pdsherpa@nefinclimatechange.org</a>	Support the government in implementing the ER program by mobilizing IPs, advocate IPs' rights and safeguards at policy level, and build capacity of IPs on REDD+ at ground level
Federation of Community Forestry Users, Nepal (FECOFUN)	Mr. Birkha Sahi Phone : 977-1-6616408  Email : <a href="mailto:fecofun@wlink.com.np">fecofun@wlink.com.np</a> Website : <a href="http://www.fecofun.org.np">www.fecofun.org.np</a>	Support the government in implementing the ER program by mobilizing CFUGs, advocate CFUGs' rights and safeguards at policy level, and build capacity of CFUGs on REDD+ at ground level
Association of Collaborative Forest Users Nepal (ACOFUN)	Mr. Ram Rup Kurmi Chairperson Tel: 977-51-621819 E-mail: <a href="mailto:info@acofun.org.np">info@acofun.org.np</a>	Support the government in implementing the ER program by mobilizing CLFUGs, advocate CLFUG's rights and safeguards at policy level, and build capacity of CLFUG on REDD+ at ground level
Dalit NGO Federation (DNF)	Mr. Gajadhar Sunar Chairperson Tel: 977-1-4413589, Email: <a href="mailto:dnf@dnfnepal.org">dnf@dnfnepal.org</a>	Support the government in implementing the ER program by mobilizing dalits, advocate dalits' rights and safeguards at policy level, and build capacity of dalits on REDD+ at ground level
Himalayan Grassroots Women's Natural Resource Management	Ms. Rama Ale Magar Program Director Email: <a href="mailto:nhimawanti@gmail.com">nhimawanti@gmail.com</a> Tel: 977-1-5536245	Support the government in implementing the ER program by mobilizing women, advocate women's rights and safeguards at policy level, and build capacity of

Association(HIMA WANTI)		women on REDD+ at ground level
WWF Nepal	Mr. Santosh Mani Nepal Director, Policy and Support Tel: 977-1-4434820 Email: <a href="mailto:santosh.nepal@wwfnepal.org">santosh.nepal@wwfnepal.org</a>	Provide technical and financial support to the government in developing and implementing the ER program.
USAID	Mr. Netra Sharma Sapkota Programs Specialist Tel: 977-1-4007200 Email: <a href="mailto:nsharma@usaid.gov">nsharma@usaid.gov</a>	Represent REDD+ donors in Nepal, and liaise/coordinate with the Government of Nepal and REDD+ donor partners on REDD+ readiness and ER program design and implementation issues.
Hariyo Ban Program	Ms. Judy Oglethorpe Chief of Party Tel: 977-1-4434820 Email: <a href="mailto:judy.oglethorpe@wwfnepal.org">judy.oglethorpe@wwfnepal.org</a>	Provide financial and technical support to the government on ER program implementation and ensure harmonization of program activities.

See Section 7.3 and Annex M for core capacity and role of all institutions and partners.

<b>2. Authorization by the National REDD+ Focal Point</b> <i>Please provide the contact information for the institution and individual who serve as the national REDD+ Focal Point and endorses the proposed ER program, or with whom discussions are underway</i>	
<b>Name of entity</b>	REDD-Forestry and Climate Change Cell (REDD Cell)
<b>Main contact person</b>	Mr. Resham Bahadur Dangi
<b>Title</b>	Joint Secretary, Chief of the REDD cell
<b>Address</b>	Babarmahal, Kathmandu
<b>Telephone</b>	977-1-4239126, 977-1-4215261
<b>Email</b>	<a href="mailto:rbdangi@mofsc-redd.gov.np">rbdangi@mofsc-redd.gov.np</a> ; <a href="mailto:info@mofsc-redd.gov.np">info@mofsc-redd.gov.np</a>
<b>Website</b>	<a href="http://www.mofsc-redd.gov.np">www.mofsc-redd.gov.np</a>

**2.1 Endorsement of the proposed ER program by the national government**  
*Please provide the written approval for the proposed ER program by the REDD Country Participant's authorized representative (to be attached to this ER-PIN). Please explain if the national procedures for the endorsement of the Program by the national government REDD+ focal point and/or other relevant government agencies have been finalized or are still likely to change, and how this might affect the status of the attached written approval. ER program) must be located in a REDD Country Participant that has signed a Readiness Preparation grant agreement (or the equivalent) with a Delivery Partner under the Readiness Fund, and that has prepared a reasonable and credible timeline to submit a Readiness Package to the Participants Committee*

The institutional bodies established for REDD+ in Nepal – the REDD Working Group (RWG) and chairperson of the Apex Body and Honorable Minister for MoFSC– have endorsed the proposed ER program from a ministerial level decision.

In June 2013, the 12-member RWG led by the Secretary (MoFSC) approved the concept of this ER program, decided on a program boundary, and asked the REDD Cell to develop the ER-PIN to submit to FCPF. The RWG also formed a committee to help the REDD Cell prepare the ER-

PIN, which includes Rajesh Koirala (World Bank), Dr. Narendra Chand (REDD Cell), Dr. Yadav Kandel (WWF Nepal) and Tunga Rai (NEFIN, representing IPOs and CSOs). The REDD Cell facilitated and oversaw the development of the ER-PIN. On March 13, 2014, the RWG approved the ER-PIN for submission to the FCPF, which has been endorsed by the ministerial level decision. The commitment letter from Secretary, MoFSC and the chair of the RWG is attached to this document (Annex B).

The Apex Body, which is an inter-ministerial institution of 11 ministries including the Ministry of Finance with additional representation from IPs, civil society and private sector, will also discuss the ER-PIN in its next meeting probably in the 1<sup>st</sup> week of April 2014. The endorsement letter signed by the Minister (MoFSC), who also chairs the Apex Body, is attached to this document (Annex A). The letter expresses the government's commitment to REDD+ and to the ER program development and execution.

## **2.2 Political commitment**

*Please describe the political commitment to the ER program, including the level of support within the government and whether a cross-sectoral commitment exists to the ER program and to REDD+ in general.*

Government of Nepal (GoN) has demonstrated consistent commitment to conserve and manage Nepal's natural heritage and, more recently, to the opportunities presented by REDD+. This commitment to REDD+ was initially demonstrated through Nepal's establishment of a three-tiered institutional structure that includes the Apex Body, the RWG and the REDD Cell, supplemented by two informal structures, the REDD Multi-Stakeholder Forum and REDD CSO and IPO Alliance (formed by the Alliance itself). These groups meet routinely to address major issues and decisions. The GoN has also engaged consistently in international trainings and negotiations including the UNFCCC, where Nepal as the coordinator of Least Developed Countries (LDCs) has played a very important role in coordinating among all 49 LDCs on climate change issues. Nepal has also been an active participant in both FCPF funds and a resource to its neighboring countries Bhutan and Pakistan in their recent bids to the FCPF.

The GoN has considered REDD+ as one of its highest-priority programs (referred to as P<sub>1</sub>), and its progress is monitored by several sectors beyond MoFSC up to the level of Minister, and by the National Planning Commission (NPC), and the Office of Prime minister and the Council of Ministers. Five ministries have expressed their commitment and strong support to the ER program. These include, the Ministry of Forests and Soil Conservation, Ministry of Finance, the Ministry of Agriculture Development, the Ministry of Energy, and the Ministry of Science, Technology, and Environment (MoSTE) (letters from the respective ministries are attached in Annexes A, B, C, D, E, and F). By connecting carbon finance with specific programs and initiatives that deliver results, the GoN expects that development and implementation of the ER program in Nepal will build even further political support and advance Nepal's national readiness efforts, laying the foundation for additional results-based programs.

Ministry of Finance has also forwarded the ER-Program Idea Note with recommendation to The World Bank Country Director in Nepal, reflecting their interest and ownership in this process and the program.



### 3. Strategic context and rationale for the ER program

#### 3.1 Brief summary of major achievements of readiness activities in country thus far

*Please briefly provide an update on REDD+ readiness activities, using the component categories of the R-PP as a guide. If public information is available on this progress, please refer to this information and provide a link.*

Nepal has been getting ready for REDD+ since 2010 by undertaking activities as envisioned in the R-PP, under the support of World Bank Readiness Grant and other donors active in Forestry sector in Nepal. In December 2013, Nepal became the third REDD Country to present a Mid-Term Report (MTR) to the FCPF. For details, please refer to the publicly available report and presentation at the FCPF and REDD Cell Websites:

Report:

<http://www.forestcarbonpartnership.org/nepal> or <http://mofsc-redd.gov.np/>

Presentation:

[https://forestcarbonpartnership.org/sites/fcp/files/2013/Nov2013/Nepal%20MTR\\_edited\\_Nov%201%202013\\_MoF.pdf](https://forestcarbonpartnership.org/sites/fcp/files/2013/Nov2013/Nepal%20MTR_edited_Nov%201%202013_MoF.pdf)

The MTR reflected progress in several areas (national arrangements and management; assessment of land use and drivers; forest law and governance; and National Forest Monitoring Systems) but recognized that several other areas require additional focus nationally (consultations; REDD+ Strategy options; social and environmental impacts; and information systems for multiple benefits and safeguards). In most cases, progress in the proposed ER program area is significantly advanced relative to the national level, and will continue to serve as a model and “engine” for additional national progress. For example, the development of the ER-PIN reference level (RL) included multiple technical consultations with the team tasked with developing a national RL. Similarly, the ER-PIN stakeholder process included multiple national and district-level workshops with civil society and IP representatives. Comments received on the MTR presentation were positive and commended GoN for its transparent approach, including its acknowledgement of slow progress initially and discussion of improvements that resulted in expedited progress later. GoN is considering all feedback including a few notable points:

- Begin the development of Monitoring & Evaluation for non-carbon benefits;
- Continue integration of the REDD+ strategy into the national low-carbon economic development strategy;
- Maintain and enhance the openness and inclusiveness of the process, especially with respect to the development of an ER program;
- Take advantage of bilateral technical expertise offered from donors; and
- Focus activities during the grant extension period more strategically on the development of the ER program.

GoN is operating under an extension of the Readiness Grant until June 2015.

#### 3.2 Current status of the Readiness Package and estimated date of submission to the FCPF Participants Committee (including the REL/FRL, REDD+ Strategy, national REDD+ monitoring system and ESMF).

The readiness activities under way will be building blocks for development of the R-Package. The REDD Cell has completed a Terms of Reference and will launch a consultancy in late 2014

to prepare the R-Package, and facilitate a multi-stakeholder self-assessment of national REDD+ readiness. The report is expected to be completed for presentation at the Participant Committee (PC) meeting in June 2015.

### **Tentative timeline for preparation of R-Package**

Complete Terms of Reference – May 2014

Signing of the contract – January 2015

Report from the consultant – April 2015

Submission to FCPF – June 2015

#### **3.3 Consistency with national REDD+ strategy and other relevant policies**

*Please describe:*

- a) *How the planned and ongoing activities in the proposed ER program relate to the variety of proposed interventions in the (emerging) national REDD+ strategy.*
- b) *How the proposed ER program is strategically relevant for the development and/or implementation of the (emerging) national REDD+ strategy (including policies, national management framework and legislation).*
- c) *How the activities in the proposed ER program are consistent with national laws and development priorities.*

The ER-Program constitutes following five major intervention strategies (which are explained in details in Section 5.3).

1. Increasing supply of forest products, conserving forests and enhancing carbon stocks through sustainable management of forests (SMF), improvement in forest law enforcement and governance (FLEG), and maintenance of conservation in protected areas.
2. Reducing demand of fuelwood with expansion of alternative energy e.g. biogas plants and cooking stoves.
3. Integrated land use planning to reduce forest conversion while advancing needed infrastructure.
4. Increasing supply by engaging the private sector in sustainable production and value chain of forest products to bring new forest production to degraded lands.
5. Enhancing alternative livelihood opportunities to address underlying drivers

To implement these strategies, a lot of investment is required. Some of the largest cost will be covered from the regular government budget; and the others from ongoing forestry projects: Hariyo Ban, MSFP and TAL program (Detail financial plan is presented in Annex N). Still there will be some funding gap, for which MoFSC will seek support from other potential donors.

These interventions will be thoroughly considered during the development of national REDD+ strategy and most likely be included in the National REDD+ Strategy. The outline framework for national REDD+ strategy has already been approved by the RWG, and the full strategy document will be completed in 2014. According to the guiding principles of this framework, the national strategy will:

- 1) Be consistent with the overall development strategy of Nepal in its dual objectives of sustainable management of forests (SMF) and poverty alleviation;

- 2) Follow effective participatory and consultative processes;
- 3) Fully value and capture the benefits of Nepal's diverse forest ecosystems in the context of REDD+;
- 4) Recognize that forest ecosystems play a vital role in adaptation to climate change and the climate change mitigation through REDD+;
- 5) Ensure multi-stakeholder involvement in all aspects of REDD+, utilize relevant stakeholder capacity and contribute to further capacity enhancement in the context of REDD+;
- 6) Ensure social, environmental and economic safeguards in REDD+ implementation;
- 7) Ensure equity in benefit sharing by seeking to clarify issues related to forest use rights and carbon ownership rights;
- 8) Establish mechanisms for effective coordination at local, sub-national and national levels among the relevant beneficiaries and sectors, and at the international level with development partners and financing agencies/institutions;
- 9) Ensure that double counting of carbon credits is avoided;
- 10) Develop appropriate National Forest Information and Monitoring Systems; and
- 11) Focus on non-carbon benefits.

Activities in the ER program will be consistent with these principles and therefore serve as a model for activities in the emerging national REDD+ strategy. However, continued political support for REDD+ in Nepal will also depend on visible results beyond readiness processes, including planning and cross-sectoral integration and successfully attracting scaled-up finance to Nepal to support these activities. The timing of the proposed ER program is therefore important in order to maintain current interest and momentum in Nepal. The ER program will pilot innovative policies and practices within forestry and related sectors that can potentially be expanded in other landscapes under the completed national REDD+ strategy.

Activities proposed in the ER program are well harmonized with recently articulated development priorities of the government. Notably, Nepal's Low Carbon Economic Development Strategy (2014) aims to identify key approaches to drive Nepal towards a low carbon development path while fostering economic growth opportunities. It lists forestry as one of six leading sectors to promote low carbon growth. The National Land Use Policy (2012) supports classifying land in the country to plan for optimized long-term use and commits to maintaining 40% forest cover nationally. Nepal's Agro-biodiversity Policy (2007) also spells out to conservation and sustainable utilization of agri-related bio-resources. Draft Agriculture Development Strategy, which is yet to be endorsed officially, has also fully integrated REDD+ agenda in agriculture sector. Nepal's Three Year Plan (2013-2015) includes as a priority "to develop institutional infrastructure to capture the benefits of REDD+ implementation". The Approach Paper (2013), and MoFSC's vision of Forestry for Prosperity envision an expansion of sustainable forest management practices, as proposed in the ER program.

As Nepal develops a new constitution, there are several indications that support for REDD+ will continue. For example, the Constitutional Committee on Natural Resources, Financial Power, and Revenue Sharing, of the first Constituent Assembly, endorsed inclusion of carbon marketing issues on the list of federal affairs. In addition, the committee recommended that the federal government make arrangements for engagement of local communities, local governments, and

provincial governments to share benefits accrued from the performance-based carbon initiatives. The committee has also proposed a new body called the National Natural Resource Commission to address difficult issues that may arise among federal bodies with respect to distribution and management of natural resources. Numerous other national policies are relevant to the ER program and are summarized in Annex G.

#### 4. ER program location and lifetime

##### 4.1 Scale and location of the proposed ER program

*Please present a description and map of the proposed ER program location and surrounding areas, and its physiographic significance in relation to the country. Indicate location and boundaries of the proposed ER program area, e.g., administrative jurisdiction(s).*

The proposed ER program area is comprised of 12 districts in the Terai Arc Landscape (TAL), a landscape conservation area of the Terai physiographic region<sup>2</sup> encompassing 2.3 million ha and approximately 15% of the country's total land area (Figure 1). The fertile Terai region is described as the rice bowl of Nepal. The ER program area is home to 7.35 million people from numerous ethnic and indigenous groups (see Economic and Cultural Significance below), and continues to face immigration from the north and emigration of working age males to urban centers in Nepal and India.

Along its total length, the ER program area is mostly settled in the south and forested in the north. According to DoF (2005), about 1.18 million ha (51.5%) of the total land area was under forest cover in 2001. About 79% (0.9 million ha) of the forest is located outside of protected areas and 21% (0.3 million ha) is within protected areas. In 2013, about 241,484 ha of forest were under the community forest management regime (i.e., 20.5% of the total forest area) and about 45,154 ha of forest were under the collaborative forest management regime (i.e., 3.8% of the total forest area) (DoF, 2013). The remaining forests are mostly government-managed forest. Sal (*Shorea robusta*) is the dominant species found in most of the Terai region, and is the dominant species in the program area. In the recent forest resource assessment (FRA) project, the Terai forest was classified into four major types: Sal Forest, Terai Mixed Hardwood Forest, Sal Mixed with Terai Hardwood Forest, and Khair-Sissoo Forest (referred to as Riverine forest in the Reference Level technical document).

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<sup>2</sup>Nepal is divided into three geographic regions: the Terai (below 300m elevation), the hills (300-3000m elevation) and the mountains (above 3000m elevation). The Terai is an extension of the Gangetic Plains of India and makes up approximately 18% of Nepal's total land area.

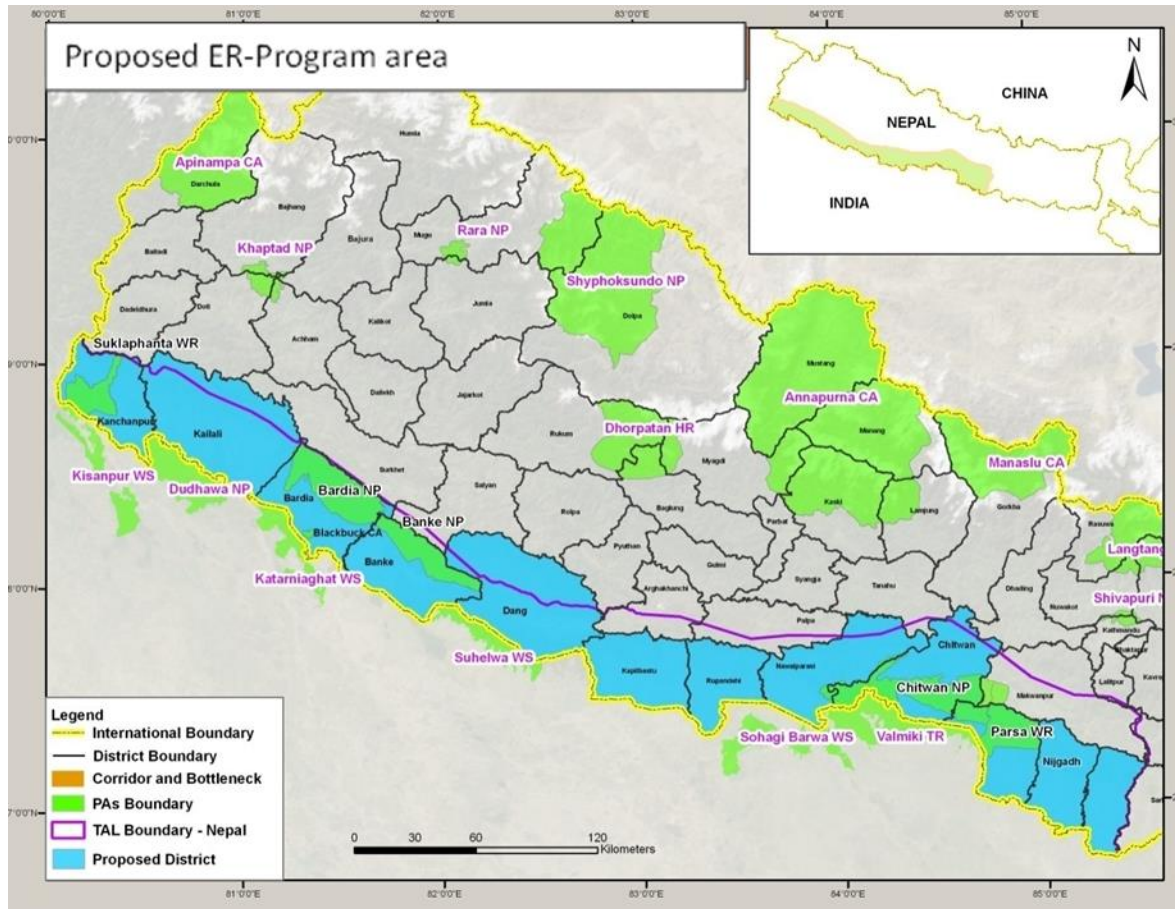


Figure 1. Map of Nepal showing ER program area (blue) and Terai Arc Landscape boundary (Source: WWF Nepal)

**Biodiversity significance:** The TAL is a globally significant area for biodiversity conservation and has been established as a model of landscape conservation by GoN with the support of WWF Nepal and other partners. Highly productive alluvial grasslands and subtropical forests support some of the highest Royal Bengal Tiger densities in the world, the second largest population of the Greater One-horned Rhinoceros and the largest herd of Swamp Deer. The ER program area is also home to endangered and protected species like Asian Elephant, Gangetic Dolphin, Gharial Crocodile and Sarus Crane. Bardia National Park has been designated as a Learning Site for Protected Area Learning Network (PALnet) by IUCN. The GoN identified TAL as a priority program for biodiversity conservation and sustainable development in Nepal (5-year plan of Government of Nepal; 2003-2007). The ER program area also includes three Ramsar sites, Tiger's preferred habitat, a Bird Diversity Hotspot and two World Heritage sites – Chitwan National Park and Lumbini, the birthplace of Lord Buddha.

**Livelihood significance:** Livelihoods and forests are inextricably linked in the TAL. Forests are used by some households for production and by others for subsistence livelihoods like gathering fuel wood, fodder and non-timber forest products (NTFPs). Forests also provide timber essential for housing, farm buildings, fences, irrigation canals, and agricultural tools. For these reasons,

sustainable management of forests is a critical component of both livelihood improvement and poverty reduction.

**Economic significance:** The forests in the ER program area include high value timber species such as Sal (*Shorea robusta*), Saj (*Terminalia tomentosa*), Sissoo (*Dalbergia sissoo*) and Khair (*Acacia catechu*). These species generate substantial revenue for the government, though much of this revenue has historically not been invested back into forest management. The forests in the watersheds in the Chure hills north of the Terai play an important role in regulating ground water recharge and surface water supply to Terai inhabitants, as well as in mitigating flood risks. In addition, they produce indirect benefits including soil and water conservation, carbon sequestration, and nutrient cycling for downstream farmlands. The protected area system in the ER program area attracts approximately 182,000 tourists each year, generating USD \$14.2 million in revenue for the area (DNPWC, 2013). Finally, the TAL area is important both economically and politically.

**Cultural significance:** The TAL is also known for its rich cultural heritage. Indigenous peoples (Tharu community) have been living in the TAL for generations, and their cultural and traditional values associated with natural resources and forests contribute to the conservation and protection of the forest. Numerous other ethnic communities also live in the area, which continues to draw migrants from the Mid Hills region.

#### 4.2 Expected lifetime of the proposed ER program

Please describe over how many months/years the proposed ER program will be:

- a) prepared; and
- b) implemented (including expected start date of the proposed ER program).

The lifetime of the proposed ER program is 15 years (2015-2030). Upon acceptance into the Carbon Fund “pipeline,” it is estimated that about 18 months will be required to fully develop the program design and complete the ER Program Document (ERPD). It is expected to take up to five years to appreciate significant emission reductions, but given accelerating rates of forest loss (see Section 8), it is essential that these activities are put in place immediately to stem additional loss of the TAL’s forests.

#### Tentative timeline for ER program

- Signing of an Emission Reductions Payment Agreement (ERPA) – 2015
- First MRV and performance based payment –2019-2020
- Second MRV and performance based payment–2025 or sooner
- Third MRV and performance based payment–2030 or sooner

## 5. Description of activities and interventions planned under the proposed ER program

### 5.1 Analysis of drivers and underlying causes of deforestation and forest degradation, and conservation or enhancement trends

*Please present an analysis of the drivers, underlying causes and agents of deforestation and forest degradation. Also, describe any policies and trends that could contribute to conservation and enhancement of carbon stocks. Please distinguish between both the drivers and trends within the boundaries of the proposed ER program, and any drivers or trends that occur outside the boundaries but are affecting land use, land cover and carbon stocks within the proposed ER program area. Draw on the analysis produced for your country's Readiness Preparation Proposal (R-PP) and/or Readiness Package (R-Package).*

### 5.1 Analysis of drivers and underlying causes of deforestation and forest degradation

The ER program area has experienced steadily increasing emissions from deforestation and forest degradation over the last decade (See Section 8). Several analyses conducted in recent years reveal a complex mix of inter-related drivers and underlying conditions (See summary table, Annex H). Mostly, these stem from a supply-demand deficit for fuel wood and timber, combined with insufficient resources and capacity to implement improved land use planning and weak forest monitoring and law enforcement. The situation has been exacerbated by rapid political transformation and high expectation of people for economic opportunities. In addition, the TAL is experiencing a growing and heterogeneous population base, as many continue to emigrate from the Mid Hills in search of better livelihoods by taking advantage of productive soil, and relatively better development infrastructure. Amidst the dynamic change of recent decades, Nepal has successfully advanced a legacy of community-based forest management that provides security on tenure rights to local communities. It is upon this legacy that Nepal will build the ER program by combining community-based forest governance with increased knowledge and technical resources to improve forest management.

For the ER-PIN, REDD Cell synthesized the R-PP drivers analysis and other studies on the drivers in the TAL, and discussed them in depth at several district and national level consultations (Section 6.1). At the workshops, participants were asked to identify and rank drivers of deforestation and forest degradation on the basis of significance (i.e., geographic spread), feasibility (e.g., ability to address technically, financially and socially) and emission reduction potential. Participants identified the following four drivers to be prioritized by the ER program, each of which is discussed in more detail below:

1. Unsustainable and illegal harvest of forest products
2. Overgrazing
3. Forest fires
4. Conversion of forests to other land uses (encroachment, resettlement, and infrastructure)

#### 5.1.1 Unsustainable and illegal harvest

Unsustainable harvest of forest products is a major driver of forest degradation and contributes to deforestation in the TAL. Unsustainable harvest is fueled by both increasing demand due to population growth and immigration from hills and weak supply chain. On the demand side, most TAL communities rely heavily on forest biomass to meet their basic needs for household energy, construction timber, furniture, forage and farm equipments. A recent study estimated demand for

fuel wood region-wide (20 districts, including the ER program area) at 5.3 million tons/year, more than twice the estimated 2.58 million tons of sustainable supply (REDD Cell, 2012). The same study estimated annual timber demand at 1.46 million m<sup>3</sup>, approximately 30% above estimated supply (1.1 million m<sup>3</sup>). Based on per capita estimates of demand from this analysis, total demand is estimated to be 2,939,400 tons of fuel wood (0.4 tons/person/year) and 808,335 million m<sup>3</sup> of timber (0.11 m<sup>3</sup>/person/year) in the ER program area in 2011.

In many communities of the ER program area, planned wood product supply chain has not been possible due to inaccessibility to community based forest management regimes and lack of planned wood supply depot in rural villages. In those areas, accessible forests are under high risk of illegal harvesting. Such risks are particularly severe in those places where local communities do not have opportunity to satisfy their needs for fuel wood and fodder from their private farmlands or community managed forests. In many rural areas, timber is not available in local market due to difficult geography and weak market infrastructure; and/or low household income to afford timber price. Therefore, high value trees species in the program area do have potentiality to offer private incentives. If livelihood opportunities are limited and forest monitoring is weak then both could provide favorable environment to illegal harvesting.

There are several well-established forest management models currently in place in the TAL ranging from community managed to government-managed forests (Section 5.3). However, few of these regimes are currently implemented in a way to optimize sustainable yields. For example, Community Forest User Groups (CFUGs) have limited technical training on determining annual allowable harvestable (AAH) volumes or optimizing productivity of forest units. As a result, in some areas, overharvesting is common due to lack of technical knowhow and ill motive to generate income, leading to deforestation and forest degradation; while in others, under harvesting leads to deterioration of old trees while blocking the regeneration and growth of prominent young seedlings.

Several other issues contribute to the supply problem, such as unorganized markets, weak infrastructure including limited sales outlet for timber and fuelwood, weak institutional arrangement for selling of timber and fuelwood, unregulated access to forests, and inefficient supply and delivery mechanisms to get sustainably harvested products to consumers. Most of these challenges stem from inadequate investment in forest planning, forest monitoring, innovative technology, sustainable forest management or SMF activities; and research for forest development.

### **5.1.2 Overgrazing**

Overgrazing and unmanaged grazing in the ER program area also contribute significantly to forest degradation in the TAL, destroying understory and seedlings and causing erosion. More than four million livestock including cattle, buffalos, goats, and sheep freely graze in the ER program area (MoFSC, 2004). Data from Department of Livestock Services show district-level variation in total “Livestock Units” (LUs), including an increase of about 15,000 LUs across the ER program area from 2010 to 2011 (Department of Livestock, 2011). At present, the agriculture sector constitutes about 35% of the GDP (MoAD, 2012). However, the Department of Livestock Services aims to increase livestock production in its effort to boost the contribution of livestock



sector to Agriculture Gross Domestic Product (AGDP). This initiative suggests that grazing pressure will continue to increase.

Some of the underlying causes of unmanaged grazing include poor understanding of the ecological impacts, weak policy and enforcement (e.g., allowing unmanaged grazing in forests), unproductive livestock, and poor coordination in grazing management systems. For example, some community forests have restricted grazing which then result in more pressure elsewhere. Agriculture, forests, and livestock are integral part of farming system in Nepal, so appropriate interventions will be integrated in the context of improved forest management regimes.

### **5.1.3 Forest fires**

Excessive forest fire degrades the TAL's forests by killing or damaging vegetation. In most cases, people start fires, intentionally or accidentally. MODIS forest fire data for the ER program district provided by ICIMOD estimated 193 forest fires in the ER program area in 2013. According to IFFN (2006) more than half of the forest fires in the Terai were deliberately lit by grazers, poachers, and hunters. People clear forest to support new agricultural growth, create grazing areas for livestock, or for other subsistence needs. Approximately 40% of fires were considered accidental due to negligence (IFFN, 2006).

### **5.1.4 Conversion of forests to other land uses (encroachment, resettlement, and infrastructure)**

Illegal conversion of forests to agricultural land and unplanned conversion related to resettlement, infrastructure and unregulated development projects are two major drivers of deforestation in Nepal. According to available records in the DoF, 66% of the forest area lost between 1964 and 1991 was due to conversion to agriculture, and the remainder resulted from infrastructure development (e.g., roads, urban development, and irrigation canals) (Adhikari, 2002). The problem is even more serious in the Terai, particularly in the far western region, and has been identified by MoFSC as a major obstacle to sustainable forest development (REDD Cell, 2012).

The reasons driving conversion of forests to agricultural land are multi-layered. The high number of landless people in the Terai, inadequate agricultural intensification to maximize production per unit area, and lack of off-farm employment opportunities drive the conversion of forest land to agricultural land. Many families also lose their land due to flooding, riverbank erosion, and landslides. In 2001 and 2002, over 2,000 ha were lost due to flooding and landslides (DWIDP, 2002), and impacted people often resettle in forest areas. In turn, policy initiatives for resettlement and/or compensation are limited to agricultural based livelihoods, putting more pressure on the forests. In some cases, these initiatives have been ineffective due to weak institutional arrangement, and insufficient allocation of resources, among many others.

With regard to infrastructure and development projects, insufficient coordination among different government line agencies is another challenge. Although MoFSC has a compensation policy according to which any agency that develops infrastructure should do plantation in the equivalent area elsewhere, implementation of this policy is at initial stage and its real impacts are yet to be observed. Data provided from the DoF show that about 13014 ha of forest have been

officially permitted for development through council of minister-level decisions in the last 25 years (DoF, 2013).

A recent analysis showed that forest conversion for agriculture and development in the ER program area is widespread, but varies in magnitude by district. Conversion has been particularly widespread in Kailali (area wise). A closer analysis of this conversion to be done in the anticipated ER Program design phase will help to focus intervention activities where they will have the greatest impact.

**5.2 Assessment of the major barriers to REDD+**

*Please describe the major barriers that are currently preventing the drivers from being addressed, and/or preventing conservation and carbon stock enhancement from occurring.*

The major barriers to addressing drivers of deforestation and forest degradation in the Terai include the following: 1) limited financial resources to implement SMF rigorously; 2) limited research and access to information on best management practices; 3) weak cross-sectoral coordination in governance and infrastructure planning (which also ties to weak law enforcement); 4) inadequate technical capacity among forest officials, user groups and local institutions; 5) ambiguity on use of forest resources by IPs and marginalized communities; and 6) insufficient alternative livelihood opportunities and poverty. With respect to limited financial resources, there is often community interest and political will to transfer government-managed forests to CoFM and CF models. However, communities and DFOs have insufficient financial and technical resources to commission development and full implementation of a management plan. Many CFUGs appear to be interested and open to new management techniques, but they have not had access to training to understand the medium and long-term benefits of alternative management.

The ideas proposed in the next section do not ignore these barriers but attempt to address them directly as much as possible. Most importantly, the program seeks to expand models of local control, empowerment, and accountability, and combine this with improved knowledge sharing. Nepal's global recognition for community involvement presents a framework from which to catalyze management changes broadly to improve the supply-demand deficit for forest products. The last few years have also shown considerable progress in the national governance situation in Nepal with significant steps toward promulgating a new constitution. It is expected to continue this progress, which would facilitate efforts in the land-use planning component, as REDD+ activities can be a catalyst for improved collaboration, particularly when there are clear benefits to be gained.

**5.3 Description and justification of planned and ongoing activities under the proposed ER program**

*Please describe the proposed activities and policy interventions under the proposed ER program, including those related to governance, and justify how these activities will address the drivers and underlying causes of deforestation and forest degradation and/or support carbon stock enhancement trends, to help overcome the barriers identified above (i.e., how will the ER program contribute to reversing current less sustainable resource use and/or policy patterns?)*

The discussion in Section 5.2 on the major drivers in the TAL reflects a culturally and biologically diverse and complex landscape to address the drivers. The TAL's rich soils support

substantial agricultural output and forest growth, and the forests and grasslands continue to support globally unique wildlife like the Royal Bengal tiger. However, the demands on the land increasingly exceed its production capacity under current circumstances and its ability to meet the basic needs of local communities due to inadequate agricultural intensification to maximize production per unit area. The result is clear in the continued poverty, declining forests, and increasing emissions represented in the reference level (Section 8).

On the other hand, there is much experience to build from in the region, both from its people and an accompanying legacy of conservation efforts from the government, development partners, international organizations, and local communities. There are strong traditions and values from the IPs, and local communities that place a high priority on Nepal's natural resources. This is reflected in the designation of almost one-third of the forest area in the ER program area as protected. Most importantly, there is an existing forest governance infrastructure in the Terai that is fueled by active participation of thousands of households organized as villages, wards and districts that provides a foundation for advancing improved land management practices (see Box 1: Nepal's community based forest management models).

GoN and its stakeholders will take the opportunity and visibility of the proposed ER program to leverage this unique community-driven infrastructure, bring improved planning, coordination and sustainable production to the Terai, and achieve a green growth trajectory that can be a model for other parts of Nepal and other countries. The key cross-cutting themes are expanding models of local control and natural resource governance, sharing knowledge about improved practices with existing community-based networks, engaging with technical partners across sectors to offer the latest science driven best practices, and complimenting existing initiatives to provide livelihood alternatives.

The GoN proposes the following primary interventions, in all types of forest management regimes, subject to further development in the anticipated program design phase:

1. Increasing supply of forest products, conserving forests and enhancing carbon stocks through sustainable management of forests (SMF), improvement in forest law enforcement and governance (FLEG), and maintenance of conservation in protected areas.
2. Reducing demand of fuelwood with expansion of alternative energy e.g. biogas plants and cooking stoves.
3. Integrated land use planning to reduce forest conversion while advancing needed infrastructure.
4. Increasing supply by engaging the private sector in sustainable production and value chain of forest products to bring new forest production to degraded lands.
5. Enhancing alternative livelihood opportunities to address underlying drivers

Importantly, these activities will build off and synergize with ongoing conservation and forestry activities in the region (discussed in Section 7). Some examples are described along with activity descriptions below.

### **BOX 1: Nepal's community based forest management models**

**Community forest management (CF):** After nationalization of all forest management rights in Nepal (Forest Nationalization Act 1957), significant deforestation continued. There were limited provisions to meet local demand for wood products and the government had limited capacity to manage vast forest areas actively. In 1991, GoN instituted the community forestry model, whereby management rights and benefits were delegated to community forest user groups (CFUGs) upon approval of forest management plans by District Forest Officers. This approach was highly successful, particularly in the Mid -Hills, because users had greater access to their forest resources and responsibility for their stewardship. On average, community forests began to show higher densities of tree cover and higher rates of regeneration, and these improvements increased with time. The CFUGs, with a legal authority, have demonstrated that they are able to move beyond simple delivery of forest benefits, to and have become institutions that can play a transformative role in redistributing the benefits from the natural capital to bring about changes in the livelihoods of the poor and socially excluded. They have also been remarkably resilient to political change. Currently, there are 1,637 community forests (totaling roughly 241,418 ha) in the proposed ER program area (DoF, 2013).

**Collaborative forest management (CoFM):** The government has also established the CoFM model whereby management of larger blocks of forest in the Terai is jointly shared between local communities, local government, and the GoN. CoFM groups are the key governance unit, made up of representatives selected from multiple wards (including women, dalit and janajati). Under CoFM, 50% of the production revenue goes to the National Treasury and 50% goes to the represented communities. There are currently about 15 Collaborative Forests in the ER program area totaling 45,154 ha.

**Pro-poor Leasehold forestry:** Chitawan is only one of the ER program districts in which the Leasehold Forestry and Livestock program has been implemented. Under this program, about 586 ha of degraded forests have been handed over to 199 leasehold forestry groups formed of comprising 1,519 households in Chitawan until as of FY 2011/12 (<http://www.lflp.gov.np/resource.html#>).

Apart from the forest management regimes, various indigenous peoples and local communities in Nepal used to have some traditional and customary forest management practices, which were historically very effective in the protection and sustainable use of forest products.

### **5.3.1 Increasing supply of forest products, conserving forests and enhancing carbon stocks through sustainable management of forests (SMF), improvement in forest law enforcement and governance (FLEG), and maintenance of conservation in protected areas.**

The ER program builds on and greatly expands Nepal's successful community-based forest management model and addresses key gaps in resources for enforcement and scientific management of forests. This intervention proposes to gradually transition management of all government managed forests in the program area – approximately 300,000 ha<sup>3</sup> – to either CF or CoFM management regimes, and to provide resources required for initial implementation of best

<sup>3</sup> This is an indicative figure for now; detail feasibility assessment will be carried out during ERPD stage, and the figure will be confirmed.

management practices to both increase supply and enhance carbon stocks. This will result both in reduced deforestation as stewardship is moved to more local levels, and improved productivity as improved silvicultural practices are put in place. In addition, depending on the change of management regime, the intervention proposes to improve enforcement of existing laws on nationally managed forests and to maintain and strengthen the management of about 300,000 hectares of forests within protected areas in the program area.

Implement sustainable management of forest (SMF) and carbon enhancement practices on existing CF and CoFM forests. The management plans for all existing community forests (approximately 240,000 ha) and collaborative forests (approximately 40,000 ha) in the ER program area will be revised to include improved forestry management practices with initial implementation starting within five years. The plans will be developed with collaboration and full and effective participation and engagement of local communities and IPs. The plans will be based in part on the District Forest Management Plans and the provisions of updated Operational Forest Management Plans (OFMPs) developed by the Department of Forests with broader district-level consultation processes. Approximately 50,000 ha of the CF lie in the Terai of the program area where it is expected to achieve the full benefits of SMF and carbon enhancement, while the remainder of the CF are in the hill areas where Nepal expects partial benefits of SMF/carbon management due to different forest conditions. The CoFM forests lie exclusively in the areas most appropriate for intensive SMF and carbon enhancement.

Transfer government-managed forests to either CF or CoFM management models. The ER program proposes to expedite forest hand over rate transferring approximately 300,000 ha of government managed forests to local or collaborative management over a seven-year period, beginning in year two, with improved specifications for SMF/carbon enhancement. This will require substantial outreach and planning from district forest offices in close collaboration with local communities across the program area. Approximately 220,000 ha of government managed forests lie in the Terai where full carbon benefits of SMF/carbon enhancement can be realized, and the remainder will be in the hill areas where partial carbon benefits can be achieved.

Improved enforcement of forest laws. Nepal's Forest Act of 1993 imposes significant penalties for illegal activities in government-managed forests as well as forests under other management regimes. This includes unlicensed logging, unregulated grazing, fire setting, and deforesting for infrastructure or agriculture. The ER program proposes increasing access and tenure rights of local communities over accessible forests to empower them to regulate against drivers of deforestation and forest degradation in these forests.

Maintain and strengthen management effort of existing protected areas. The ER program proposes to maintain a significant management effort in existing protected areas that requires extensive on-the-ground capacity. While the ER program does not include carbon enhancement in estimated benefits within the protected areas, the protection of these areas will result in additional carbon benefits through avoided deforestation and forest degradation.

For these SMF activities under the ER program, the GoN will seek limited up front finance (from Carbon Fund and/or bilateral agreements) to provide needed finance to CF and CoFM groups to initiate improved management. In addition, the government will work with technical partners to

set up regional training centers to improve understanding about the benefits of best practices among representatives from the different user groups. Experience suggests that communities will adopt new forestry practices if they understand the increased benefits they can derive. Trainings will also include important gender and ethnicity components. However, many working age men are emigrating to India or nearby cities for better opportunities, increasingly leaving women in roles of leadership. Similarly, opportunities under CF and CoFM have not been equitable in the case of indigenous peoples.

**Carbon benefits:** The benefits of these interventions will be realized gradually, but will increase over time as improved management regimes become common practice. TAL forests do have high potentiality of fast growth and long rotation cycle, which contributes to both sequestration and sink capacity respectively. Mostly these forests do exist in plain area where surface forest fire is common, but it does not damage standing wood biomass like the one crown fire does in hills. As these forests are put under improved management practices, carbon benefits can be increased. The benefits will also vary geographically and by management regime with greater carbon benefits realized in the lowlands where intensive carbon enhancement practices are suitable. Studies for the Department of Forests estimate silviculture practices proposed in the OFMPs would increase the growth increment of forests by 5-6 times over a 20-year period (OFMP, 1995). Until more detailed baseline/intervention analysis is possible, the GoN has used the IPCC default value of 1.75 tons C/ha/year for forestland management in dry tropical forests (Section 4.4.1, *IPCC Special Report on Land-use, Land-use Change and Forestry*, 2000) for lowland areas where the most intensive SMF will be conducted. On the other hand, the government has used half of this amount, or 0.875 tons C/ha/year, for the hill areas where less intensive SMF will be conducted. Similarly, 1.0 tons C/ha/year for management of protected areas, and 0.5 tons C/ha/year for increased enforcement of forest laws on government-managed forests are used to arrive at CO<sub>2</sub>e benefits for the first five years of 9.9 m tons (see Annex I for calculations). Please refer to Section 16 for full discussion of non-carbon benefits.

### **5.3.2 Reducing demand of fuelwood with expansion of alternative energy e.g. biogas plants and cooking stoves.**

As discussed in Section 5.1, the demand for forest products in the TAL has outpaced the capacity of the forests to provide adequate supply. Improved forest management practices and growth of private forestry will increase supply considerably over the long-term, but must be coupled with efforts to address the demand side. In this regard, GoN and WWF have extensive experience in the TAL, which they can build on in the proposed ER program, specifically with the acceleration of efforts to install biogas units and improved cook-stoves (ICS) across the region. Biogas units replace the need for fuelwood, and their success has already been proven, including under a Gold Standard VER project in TAL (2009 Gold Standard validation based on project design document). Similarly, technology demonstrates significant efficiency improvements relative to open cooking fires, is readily installed, and can also benefit households who do not keep livestock. Both technologies have the distinct advantage of directly and sustainably addressing the underlying driver and both carry significant additional social and environmental benefits. Some of the social benefits include time saving for women to use for other productive work, significant reduction of respiratory and eye infections, increased agricultural productivity due to

usage of organic fertilizers derived from cattle waste slurry, and increased enrollment rates for children due to extra income earned by parents.

The necessary institutional and policy framework is already in place to make this intervention feasible. The GoN established the Alternative Energy Promotion Centre (AEPC) in 1996 under the Ministry of Science, Technology, and Environment to promote access to renewable energy technologies. AEPC subsequently developed Rural Renewable Energy Subsidy Policies to improve access to renewable energy technologies for people living in rural areas, minimize pressure on forests, and bring about multiple benefits. Under these programs and WWF's Gold Standard VER project in TAL, approximately 90,000 biogas units have been installed in the program area. However, a national analysis suggests that only 15% of demand for biogas has been met. The reason for this is that resources have not been adequate to support installations, as biogas plants in particular require significant upfront costs. However, a revolving financing mechanism under the ER program could expand and accelerate this important activity in the face of increasing rates of forest loss.

Under the proposed ER program, the GoN will expand existing initiatives and install an additional 12,000 biogas plants per year of performance. Each biogas plant replaces the need for approximately 4.5 tons of fuel wood/year, or roughly 5.1 tons of CO<sub>2</sub>e/year, for a total benefit of approximately 924,840 tons CO<sub>2</sub>e reductions after 5 years (see Annex J for calculations). CO<sub>2</sub>e emission reductions from plants installed independently of the ER program or under the Gold Standard project will not be claimed under the program unless additionality can be clearly demonstrated. In addition, the substantial climate benefits of reduced methane emissions resulting from the biogas units will not be claimed under the ER program and will therefore represent a significant climate co-benefit of this activity.

Biogas plants do require significant up-front capital to install, and they will not directly benefit households without livestock. To complement the biogas plants and reach more households, the GoN will build on its Clean Cook Stove Initiative and install approximately 2,000 ICS per district per year in each of the ER-PIN districts, or a total of 24,000 ICS/year program wide. Cook stoves are estimated to increase fuel efficiency as compared to an open hearth by approximately 30%. Given an estimated annual demand of 0.4 tons of fuelwood/person (REDD Cell, 2012) converted to 1.94 tons of fuelwood/household, it is estimated that a savings of approximately 45,560 tons of fuelwood/year, or 290,664 tons of CO<sub>2</sub>e/year after the stoves are installed (see Annex J for calculations).

### **5.3.3 Integrated land use planning to reduce forest conversion while advancing needed infrastructure.**

A combination of policy and legal instruments, institutional strengthening (coordination, raising awareness, provision of resources and increased political commitment) and mobilization of human capacity is necessary in order to tackle the problems of legal and illegal forest conversion. These approaches will be complemented by expanding existing initiatives that gradually provide alternative livelihood opportunities in the program area.

Among proposed policy instruments, land use planning approaches that incorporate economic and ecosystem values of forests are key to controlling further conversion. The GoN's Ministry of Land Reform and Management recently developed a national land use policy. However, additional resources and capacity building of relevant government staff are required to translate the policy into land use plans at district levels and adhered to across sectors. Similarly, the World Bank-supported Global Tiger Initiative developed SMART infrastructure guidelines to help countries develop tiger friendly infrastructure in the tiger landscapes. The ER program provides an opportunity for the GoN to implement these guidelines and minimize the loss of essential tiger habitat to large infrastructure development projects. In addition, a coordination mechanism between the forestry sector and other development sectors at national, regional and local level will be explored to make sure that goals across sectors are better harmonized (e.g., better siting of infrastructure projects).

From the reference level calculations (see Annex K) and supplementary data on illegal forest conversion in Nepal, it is estimated that approximately 86,000 ha of forest, or on average, 7,000 ha/year, were lost during the reference period due to direct and indirect consequences of infrastructure development and legal resettlement, e.g., after floods and landslides. From land use planning interventions, it is expected to prevent at least 10,000 ha from being deforested due to resettlement and infrastructure development in five years of the ER program implementation period. This will reduce the emission of about 2.7 m tons of CO<sub>2</sub>e (see Annex K for calculations).

Complimentary initiatives by the government of Nepal such as through the Rastrapati (President) Chure Conservation Program and through other development partners are already underway to reduce disaster risks and the need for relocating people following frequent flooding or landslide events.

#### **5.3.4 Increasing supply by engaging the private sector in sustainable production and value chain of forest products to bring new forest production to degraded lands.**

Despite the rich soils in the TAL, privately run forestry operations have never been extensive, in part because forest crops take many years for providing financial return. In contrast, other agricultural commodities can be grown seasonally and quickly brought to market. Other factors that contribute to private forestry not progressing well despite huge potentiality include (1) high land fragmentation; (2) increased monitoring costs of plantation forests; (4) lack of quality seedling; and (5) limited market information on commodity price/ quality and demand structure to farmers.

Some efforts have been made to counter this trend, and it is also expected that the new forestry sector strategy will include policy measures to incentivize commercial forestry nationally. MoFSC is planning to take necessary policy measures to engage private sector actively in forest investment. For example, in coordination with ongoing forestry initiatives by the government and development partners such as Rastrapati (President) Chure Conservation Program, government has again begun small-scale nursery operations so that seedlings can be distributed to small farmers for forestry and agro-forestry purposes tree planting outside forests, product supply and value addition. The GoN will also explore increased use of the Leasehold Forestry



Program, which has been successful in providing employment opportunities to economically disadvantaged communities in other parts of Nepal. An inventory of barren or degraded lands could help to identify sites that could be placed into lease-based forestry operations. In the long term, these activities will improve the supply of forest products, and create employment opportunities in the development of forest-based enterprises. In the ER program area, this will ultimately reduce the pressure on government forests and help reduce the emissions from forest degradation.

It is roughly estimated that efforts to promote private forestry initiatives under the ER program will help establish about 12,000 ha of commercial private forests in the area (1,000 ha in each district) in five years. This will sequester 118,000 tons of CO<sub>2</sub>e in five years (based on an emission factor (EF) of 1.46 tons/ha, the average from the IPCC default value (0.55 t C/ha/year) and EF estimated from the RL analysis (2.4tC/ha/year). See Annex L for calculations.

### 5.3.5 Enhancing alternative livelihood opportunities to address underlying drivers

While several activities described above are essential to reduce conversion of forests into other land uses, they are not sufficient if local communities do not have opportunities for alternative livelihoods. The proposed ER program, in coordination with ongoing poverty reduction initiatives such as the Poverty Alleviation Fund, and Rastrapati (President) Chure Conservation Program, will seek to expand initiatives to reduce socio-economic based pressures on forests. The main beneficiaries of this intervention are expected to be the most socially and economically disadvantaged rural households in the program area, namely women, *dalit* and *janajati* (indigenous peoples) and the poor who depend on forests to make their living. Some activities in this category will include:

1. Access for economically disadvantaged households to micro credit facility and financial institutions (e.g., seed money to start small businesses)
2. Alternative and more productive skill based income generating activities
3. Agriculture activities associated with forestry, and improved agriculture practices (e.g., cash crops)
4. Vocational training (e.g., in building trade, bamboo crafting, animal husbandry, and food sector) paired with microfinance opportunities

#### 5.4 Risk/benefit analysis of the planned actions and interventions under the ER program

Please explain the choice and prioritization of the planned actions and interventions under the ER program identified in 5.3 taking into account the implementation risks of the activities and their potential benefits, both in terms of emission reductions and other non-carbon benefits.

Multi-stakeholder consultations held over the last six months focused on several analyses of drivers of deforestation and forest degradation in the TAL and prioritized those activities that would: 1) generate significant emission reductions, 2) generate non-carbon benefits for local communities, 3) provide long-term solutions in the face of fundamental drivers, and 4) were practically feasible for implementation. Additional analysis and subsequent focusing of priorities will be necessary in the design phase, but an initial summary of risks and benefits is provided in Table 1 below.

Table 1. Risk/benefit analysis of the proposed ER interventions

Intervention	Emission reductions potential	Non-carbon benefits	Sustainability against drivers	Risk
<b>Improved forest management practices with CF and CLFM approaches</b>	Moderate (large areas with moderate gains/ha) but increasing over long-term	High (local empowerment, better access to resources, biodiversity conservation and ecosystem services)	Moderate to high (improved access and improved supply over long-term)	Low (demonstrated models with high feasibility of expansion; no regrets)
<b>Accelerated installation of biogas plants and ICS</b>	Moderate (building off extensive experience and demonstrated benefits)	High (improved health, contained livestock reduces grazing pressure, improved soil fertility, biodiversity benefits from reduced pressure on forests)	High (effectively replaces need for fuelwood harvest)	Low (demonstrated models with clear benefits)
<b>Land use planning to reduce conversion</b>	Low to moderate (changes will take time but will have additive impacts)	Moderate (integrated governance, more sustainable and legal settlement alternatives)	Moderate (will mitigate impacts, but drivers expected to persist)	Medium (no regrets; however, feasibility not proven)
<b>Expanded plantations/nurseries focused on degraded lands</b>	Low to moderate (requires additional work to determine extent of available lands)	Low to moderate (job and economic opportunities, ecosystem services)	Moderate to high (intervention will go directly to increasing supply)	Low
<b>Diversify livelihood opportunities</b>	Low (indirect, long-term benefits for emission reductions)	High (improved and more sustainable economic circumstances)	High	Low

## 6. Stakeholder information sharing, consultation, and participation

**6.1 Stakeholder engagement to date on the proposed ER program**  
*Please describe how key stakeholder groups have been involved in designing the proposed ER program, and summarize issues raised by stakeholders, how these issues have been addressed in the ER program to date, and potential next steps to address them.*

In the ER-PIN development phase, the REDD cell led two national stakeholder workshops, five subnational stakeholder consultations (one each in Dhangadi, Nepalgunj and Butwal, and two in Hetauda), and an additional multi-stakeholder consultation in Kathmandu. In addition, the core team reached out on several occasions to representatives of civil society and indigenous peoples for their inputs. In these consultations, many valid concerns were raised. For example, IP representatives explained that their constituencies have not benefitted equally from community forestry models. There was widespread interest in benefit sharing systems, and views that the majority of benefits should go directly to communities and not to excessive technical consultations. It was also pointed out that district-level consultations are useful, but not a

replacement for community-level outreach. There were also many questions about REDD+, what future prospects are for a REDD+ mechanism, and the need to coordinate many different activities in the Terai so that stakeholders are not confused by multiple separate initiatives.

Early discussion of these issues was valuable, and it was agreed that substantial additional consultations and analysis of options would be necessary in the design phase to address them. Much relevant work is forthcoming under the readiness grant, including consultations, addressing feedback and grievance mechanisms, and the SESA and ESMF.

#### **6.2 Planned outreach and consultation process**

*Please describe how relevant stakeholder groups will participate in further design and implementation of the proposed ER program and how free, prior and informed consultation leading to broad community support for the ER program and key associated features, including the benefit-sharing arrangement, will be ensured. Please describe how this process will respect the knowledge and rights of Indigenous Peoples and local communities, by taking into account relevant international obligations, national circumstances and laws.*

The GoN is committed to continuing a robust consultation process, building on earlier consultations during the formulation of the R-PP, to inform the full design of the ER program. Following the introductory phase of ER-PIN development, thorough analytical work (including on details of implementation arrangements and benefit sharing) will take place during the design phase and before the ERPA is signed, in part with funds made available from the FCPF for program development. Extensive consultations will be carried out during this phase, including at the community level, following the “Guidelines on Stakeholder Engagement in REDD+ Readiness” on topics ranging from institutional arrangements, benefit sharing, roles of stakeholders, and implementation strategies. Looking ahead to the implementation phase, the GoN will build on models designed under the R-PP. For example, the REDD Cell will strengthen a partnership with the REDD+ CSO and IPO Alliance to provide resources to conduct targeted consultations on FCPF supported activities. This will include using their existing networks and decentralized structures to enhance participation, communication and outreach.

## **7. Operational and financial planning**

#### **7.1 Institutional arrangements**

*Please describe the governance arrangements anticipated or in place to manage the proposed ER program (committee, task force), and the institutional arrangements among ER program stakeholders (i.e., who participates in this ER program, and how, including the roles of civil society organizations and forest dependent communities).*

The institutional arrangements for the proposed ER program will ensure that:

- 1) The government, local communities, indigenous peoples, and other stakeholders can effectively participate in, contribute to, and benefit from the program activities;
- 2) The program activities are planned and implemented in an efficient and coordinated manner across sectors and the twelve districts of the program area;
- 3) The program priorities and oversight are effectively bridged to a national finance mechanism; and
- 4) The program is synergistic with the emerging national REDD+ framework.

Additional stakeholder consultations during the design phase, and ongoing work under the Readiness Grant, will further inform the final institutional arrangements for the ER program. However, the GoN currently envisions an approach that utilizes existing forest governance structures in the MoFSC at the national and district levels, focuses strategic and integrative planning at the national level, and places detailed program planning and implementation at the district level.

National level –

- **REDD+ Entity under MoFSC (next phase of current REDD Cell):** A new institution will be developed/upgraded/adjusted for REDD+ matters, which will function as the primary operational body to provide national program leadership, coordinate ER program-wide planning, and bridge district-level planning and priorities to the national REDD+ strategy. This entity would work closely with the existing REDD Working Group on overall strategic planning and priorities, with the Planning Division to ensure close coordination of activities across districts, and with the Foreign Aid Coordination Division to ensure harmonization of the ER program with other finance streams. There would likely be a few staff dedicated to national-level coordination of the proposed ER program.
- **REDD+ Apex Body:** The existing Apex body is an inter-ministerial institution that will directly synchronize REDD related activities with national plans and policies, and promote cooperation at the highest level. It includes members from the Ministry of Finance, Ministry of Science, Technology and Environment, Ministry of Forests and Soil Conservation, Ministry of Tourism and Civil Aviation, Ministry of Energy, Ministry of Agriculture Development, Ministry of Land Reform and Management, Ministry of Industry, Ministry of Federal Affairs and Local Development, Ministry of Physical Planning and Transport, and representatives from the private sector, civil society and government organizations totaling 49 members.
- **REDD Working Group:** The RWG is expected to proactively provide innovative ideas, monitor program activities, and help integrate program priorities with the national REDD strategy. In addition, the members of the RWG will advocate and lobby at the political level to guarantee that stakeholders in their local constituencies are represented in the regional planning process.
- **REDD+ Multi-stakeholder Forum:** The REDD Multi-Stakeholder Forum functions as the principal consultation, outreach and communication platform.
- **REDD+ CSO and IPO Alliance:** The Alliance functions as a platform to discuss and develop a common understanding on REDD+ on behalf of Civil Society Organizations and Indigenous Peoples Organizations.

District level – detailed program planning and implementation

**District Forestry Sector Coordination Committee (DFSCC):** In each district, the DFSCC will play a similar role as that of the Apex Body at the national level. As per the DFSCC guideline issued by the MoFSC, DFSCC has 30 percent representation from government line agencies including District Forest Office (DFO), followed by 22 percent from local government (DDC, municipality and VDC associations), 29 percent from civil society (NGOs, Community Based Organizations and user groups), 15 percent from political parties (nationally recognized political parties at the district level), and four percent from the private sector (business federations and forest based industries).

**District REDD Working Group (DRWG):** A committee under DFSCC will be formed as a DRWG. There will be 12 DRWGs (one in each district). It will have 15 members, representing from district level government agencies, community based organizations, IP, women, and dalit. The DRWG will be chaired by coordinator of agriculture, forestry and environment committee in District Development Committee (DDC).

The DRWG is expected to proactively provide innovative ideas, assist in implementation of ER program activities/strategies, and monitor program activities. In addition, the members of the DRWG will advocate and lobby at the political level to guarantee that other stakeholders in their constituencies are aware of and support the emission reduction program. The DRWG reports its activities to the DFSCC. Disclosure of its activities and achievements will be made through publication on the web, production and distribution of extension materials, discussion in REDD Multi-Stakeholder Forum at the district level, and other consultative workshops.

Table 2. Composition of District REDD Working Group (DRWG)

Representation	Position	Number
DDC member who looks after Agriculture, Forestry and Environmental affairs	Chairperson	1
District Forest Officer	Member	1
District Agriculture Office	Member	1
District Livestock Services	Member	1
District Development Committee Office	Member	1
District Soil Conservation Office	Member	1
National Park and Wildlife Reserves	Member	1
FECOFUN and ACOFUN	Member	2
NEFIN District Chapter	Member	1
Dalit Organization	Member	1
Women's Organization	Member	1
Private Forestry Network	Member	1
District NGO Federation	Member	1
Forest Officer (DRPMU)	Member Secretary	1
Total		15

**District REDD+ Program Management Unit (DRPMU):** A unit at the District Forest Office will be established, which will be the lead institution to implement emission reduction activities in the district and is responsible for coordinating the ER program implementation at the district level among diverse stakeholders and other ongoing programs like Hariyo Ban, MSFP, etc. It will convene a DRWG meeting every two months. The unit will have a forest officer, two rangers, and one account keeper. The DFO will provide guidance and supervision to the unit.

**Regional REDD+ Focal Office:** To coordinate ER program implementation among districts, a REDD+ Focal Office (RFO) will be created under the Regional Directorate Office (RDO). The RFO will have three staff: one Under Secretary, one forest officer, and one ranger. The RFO will have five main functions:

- 1) Ensure coordination among districts on ER program implementation
- 2) Provide advice and guidance to District REDD+ Program Management Unit
- 3) Liaise with REDD Cell and RFO at DoF and DNPWC, as needed, for technical guidance and advice.
- 4) Monitor ER program implementation to the districts
- 5) Report to REDD Cell and DoF/DNPWC on ER program implementation management in the districts.

To complement the role played by the RFO, there will also be a REDD+ Focal Office at the Department of Forest and DNPWC, which will liaise with the REDD Cell and the Regional REDD+ Focal Offices. It can also communicate directly with DRPMU as needed.

In addition to the aforementioned formal institutional arrangement for ER program implementation, a REDD multi-stakeholder's forum will be created which will function as the principal outreach and communication platform in the district. The ER Program Management Unit will coordinate and provide secretariat services in organizing stakeholder forum activities. The forum includes representatives primarily from district chapters of the national REDD+ Multi-Stakeholder Forum involving the private sector, civil society, media, government organizations, community-based organizations, local and international NGOs, donors, academia, research organizations, and all stakeholders interested in climate change and REDD. The forum will increase access to information among stakeholders and enhance their role in the decision-making process. The involvement of different stakeholders ensures the transparency and accountability during the ER program management process. The forum will also provide feedback to the ER Program Management unit regarding the ER program management.

Similarly, the REDD Cell will facilitate the creation of a District Alliance of REDD+ CSO and IPO in each district. This will serve as a platform for CSO and IPOs interested in REDD+ to pursue the following:

- Discuss and develop a common understanding on REDD+ on behalf of CSOs and IPOs in the districts
- Empower and build capacity of CSOs and IPOs on contemporary issues of REDD+ in the district
- Provide support and advice to DRPMU in the district on ER program management  
Provide suggestions/feedback on REDD+ policy processes through DRPM and REDD+ CSO and IPO alliance.

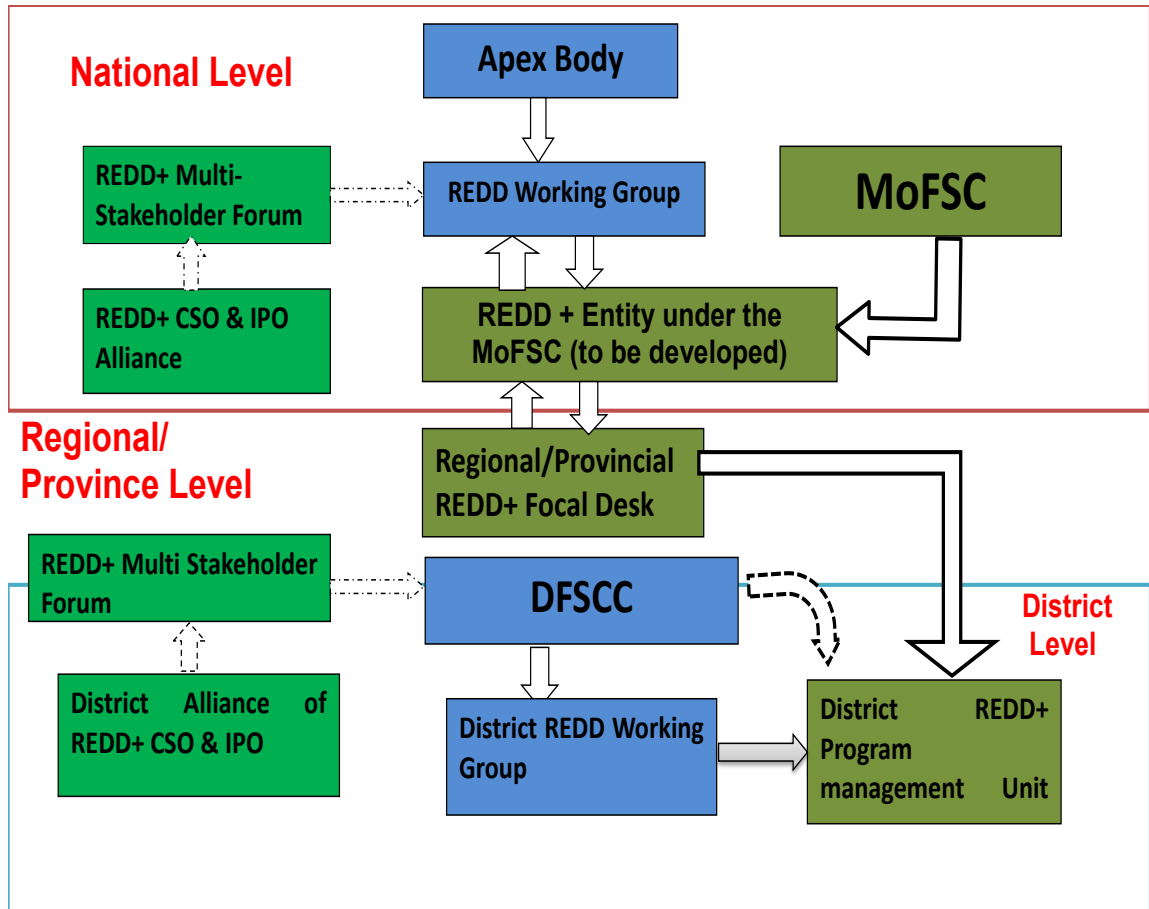


Figure 2. Schematic diagram of institutional arrangement at national, regional and District level

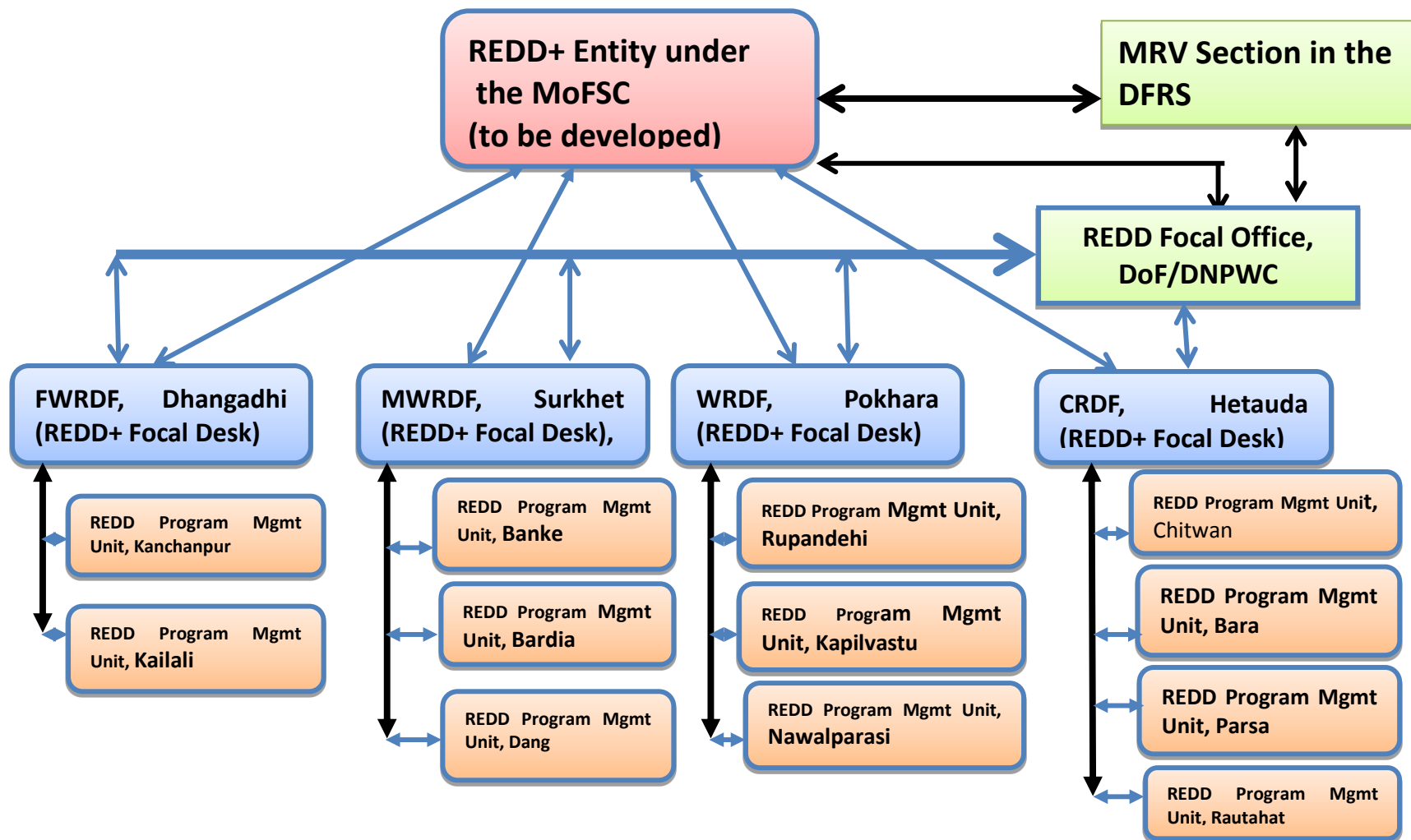


Figure 3. Schematic diagram showing linkage between REDD Cell and REDD+ Focal Offices



**7.2 Linking institutional arrangements to national REDD+ implementation framework**

*Please describe how the institutional arrangements for the proposed ER program fit within the national REDD+ implementation framework.*

The institutional arrangements described in Section 7.1 directly link the ER program to the national REDD+ implementation framework by centering strategic program planning under the anticipated REDD+ Entity under MoFSC to be developed/upgraded/adjusted for REDD+ matters (next phase of current REDD Cell), under oversight of the Apex Body and in close coordination with the national REDD Working Group. Links to programmatic implementation occur through the operating arms of the Ministries' departments in each of the districts, and in particular through the DFSCC.

**7.3 Capacity of the agencies and organizations involved in implementing the proposed ER program**

*Please discuss how the partner agencies and organizations identified in section 3.1 have the capacity (both technical and financial) to implement the proposed ER program*

Nepal's R-PP identified many stakeholders related to REDD+ activities, including 22 national, 15 regional and 7 local government institutions, 13 private sector organizations and 18 civil society/community based organizations. There are also many indigenous peoples groups and other forest dependent groups directly connected with forests for their livelihoods or subsistence. Agencies, institutions and organizations that may be actively involved in the proposed ER-program are listed in Annex M, along with descriptions of their core capacities relevant to the program.

**7.4 Next steps to finalize the proposed ER program implementation design (REL/FRL, ER program monitoring system, financing, governance, etc.). Provide a rough timeline for these steps.**

Table 3. Tentative timeline for ER program design

Year	2014												2015												2016	2017	2018	2019	2020	2025	2030	
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D								
ER-PIN Submission to FCPF			█																													
ER-PIN accepted by CF (HOPEFULLY!)				█																												
LOI signed between the WB and Nepal						█																										
R-Package development													█	█	█	█																
R-Package submission to FCPF																	█	█														
ER-PD development							█	█	█	█	█	█	█	█	█	█	█	█														
ER-PD Submission to FCPF																				█	█											
ERPA Signature																							█									
1 <sup>st</sup> MRV and ER payment																																█
2 <sup>nd</sup> MRV and ER payment																																█
3 <sup>rd</sup> MRV and ER payment																																█

**7.5 Financing plan (in US\$ million)**

*Please describe the financial arrangements of the proposed ER program including potential sources of funding. This should include both near-term start-up cost and long-term financing. If the proposed ER program builds on existing projects or programs that are financed through donors or multilateral development banks, provide details of these projects or programs, including their financing timeframe. Use the table in Annex I to provide a summary of the preliminary financial plan*

**Ongoing programs in the proposed ER program area**

The Ministry of Forests and Soil Conservation (MoFSC) is the principal line ministry of the Government of Nepal responsible for formulating and implementing policies to conserve and manage forests, wildlife and plants, and to provide regular supply of forest products from sustainable management and utilization of forests. In the ER program districts, government through MoFSC programs such as President Chure; Tiger conservation; National forest management, CF management, Leasehold forestry, watershed management is investing approximately US\$ 2 million each year, through MoAD US\$ 1 million, and through Ministry of Energy US\$ 4 million each year. Details on this are presented in Annex N. To support the government initiatives on conservation and management of natural resources, the following four initiatives are ongoing in the proposed ER program districts. These programs nicely complement the proposed ER program, specifically with respect to addressing the drivers of deforestation and forest degradation. Efforts to harmonize the activities being conducted by these programs and ER program will be carried out, thus reducing the overall cost of implementing the program and creating synergy for a greater impact.

The Terai Arc Landscape (TAL) Program is the first landscape level conservation initiative in Nepal. It has been jointly implemented by the GoN's Ministry of Forests and Soil Conservation and WWF since 2001. The TAL Program is focused on the restoration and community management of forests to preserve biodiversity, improve rural livelihoods, and enable local people to become resource managers, beneficiaries, and stewards of the forests in which they live.

The USAID-funded Hariyo Ban Program is a five-year initiative started in 2011 that has three interwoven components – biodiversity conservation, payments for ecosystem services including REDD+, and climate change adaptation. The Hariyo Ban Program is being implemented in Terai Arc Landscape and Chitwan Annapurna linkage (outside the REDD Program districts). Like the Terai Arc Landscape Program, Hariyo Ban is being implemented in small targeted areas of the REDD program districts.

The Multi-Stakeholder Forestry Program (MSFP) is funded jointly by the Government of Finland (GoF), Swiss Agency for Development and Cooperation (SDC), and UK Department for International Development (DFID). The indicative total budget for the MSFP will be up to US\$150 million over a ten-year period, with an indicative US\$ 100 million for the second phase that commences in 2015. The program will deliver four interrelated outcomes: i) Government and non-state actors jointly and effectively implement inclusive forest sector strategies, policies and plans; ii) Private sector (farmers, entrepreneurs, and financial institutions) increase job creation investments in the forestry sector; iii) Rural communities – especially poor, disadvantaged and climate vulnerable people and households – benefit from local forest

management and other investments; and iv) Forests and trees sustainably managed by the government, communities and private sector, and are climate resilient. According to the GoN's approach paper (2013) approved by NPC, a separate entity would be established and developed to prepare the necessary investment document, implement the action plan, and regulate and supervise the promotion of the public private partnership. Along these lines, MSFP is working on developing modalities for the exact nature, structure and functioning of the Multi-Stakeholder National Forest Entity, to be approved by the GoN. The phase two budget of the MSFP will be channeled through the entity, which will be finalized by the end of the first phase. It is likely that this entity will also look after REDD+ and ER program implementation, in which case part of the MSFP phase could also be invested in ER program implementation. These ideas will be further pursued during the ERPD phase.

### **Financial plan**

The table in Annex N provides a snapshot of the financial plan to implement the proposed REDD program. The cost of implementing the REDD program is estimated to be US\$288 million over ten years. The cost of implementing the major interventions identified to address the drivers of deforestation and forest degradation were estimated based on current costs and past experiences.

There are ongoing activities and projects supported by the government and other non-governmental organizations, which partly cover the cost of implementing the identified interventions under the proposed ER program. In the financial plan, the contribution from the government and other partners only reflects the budget related to the implementation of activities identified in the proposed ER program, and does not include expenses related to other activities, personnel costs, and management costs. For the purpose of this preliminary financial plan, it is assumed that for the period beyond Year 2 the current investment from the government and other development partners on activities related to the ER program will remain at least at the same level after adjustment. There will also be revenue generated from non-REDD+ carbon activities. For example, WWF is implementing a Gold Standard biogas verified emission reduction project. The project is generating revenue from the sale of emission reductions in the voluntary market, which is being used to construct more biogas units in TAL. Similarly, the proposed biogas construction under the ER program will also generate revenue from emission reductions from handling of animal waste. This emission reduction is on top of the reduction from saving firewood, and will be tracked separately to generate revenue from the carbon market outside of this ER program.

It is estimated that approximately US\$127 million over ten years will be contributed to the implementation of the ER program by the government, ongoing projects in the landscape. The GoN hopes to generate at least US\$160 million in revenue from ERs in ten years to close the gap. However, there is a need for an upfront investment of US\$45 million to implement the ER-program over the initial five years in order to generate the estimated emission reduction. We expect to raise about US\$30 million from bilateral and other donors, and expect Carbon Fund to provide the remaining US\$15 million as an upfront payment against the emission reduction that will be verified at the end of year five of the ER program.

The GoN would like to emphasize that this is a preliminary estimation of the cost and potential revenue. A detailed financial plan will be developed during the preparation of the ER program document.

## 8. Reference level and expected emission reductions

### 8.1 Approach for establishing the Reference Emission Level (REL) and/or Forest Reference Level (FRL)

*Please briefly describe how the REL/FRL for the proposed ER program has been or will be established. Describe how the approach for establishing the REL/FRL is consistent with UNFCCC guidance available to date and with the emerging Methodological Framework of the FCPF Carbon Fund, and with the (emerging) national REL/FRL (or with the national approach for establishing the REL/FRL).*

Preparation of the RL follows the principles of the Intergovernmental Panel on Climate Change (IPCC) for reporting of national emissions and removals of GHGs, which include: (1) transparency, (2) completeness, (3) consistency, (4) comparability, and (5) accuracy. The partners in the RL effort recognize the inherent difficulty in accurately analyzing historical deforestation and forest degradation, particularly in geographic areas where historical data is limited. RL calculation has attempted to mitigate these issues through conservative estimates, verification of results through multiple data sources, field verification studies, and statistical analysis of error and uncertainty. The RL is reported in CO<sub>2</sub>e following the guidance of the IPCC *Good Practice Guidelines (GPG) for National Greenhouse Gas Accounting*. It incorporates various tiers from the IPCC guidance but primarily Tier 2 and Tier 3. This effort is viewed as providing credible preliminary estimates of emissions in the TAL in support of the ER-PIN and as laying the foundation for development of a Tier 3 RL over the next five years. The sub-national RL will be uploaded to the UNFCCC REDD web platform for global knowledge sharing and feedback.

While the national RL and MRV frameworks for Nepal are still under development, the developers of the TAL RL have consulted with parallel efforts underway to develop the national frameworks in order to facilitate the eventual integration and conciliation of the sub-national effort with the national frameworks. The parameters for the development of the RL are consistent with the FCPF Carbon Fund Methodological Framework, and the RL accounts for all of the activities included in the ER program (Criterion 3), including deforestation, forest degradation, and regeneration. The emissions generated by forest degradation are 13% of total emissions and consequently are accounted for separately because this amount exceeds the Methodological Framework threshold of 10%. The Government of Nepal is also in the process of making publicly available detailed information about the methodological steps followed in developing the RL (Criterion 6).

The process utilized in developing the current TAL RL, LiDAR-Assisted Multi-Source Program (LAMP), is described in detail in the technical paper (see Annex O) and is based on the following data sets: airborne-collected LiDAR data covering 5% of the extent of the program area; best available Landsat and other satellite data; the 1998 GoN Topographic Base Maps; the 1984 GoN Land Resource Mapping Project (LRMP); field data collected in 2011 (738 plots of 12.6-meter radius) and 2013 (46 plots of 30-meter radius); and MDA Information Systems LLC's Persistent Change Monitoring global dataset. The Nepal LAMP process is based on the

generation of Activity Data (using the five activities defined by the IPCC) through analysis of land cover change for the period 1999-2011, and Emission Factors through the correlation of LiDAR-based mean carbon values for each of the strata in the study.

### **8.1.1 Development of Activity Data based on land cover/forest cover change analysis.**

The Nepal LAMP process involves the classification of the TAL forest into four different forest types (sal, sal mixed, other mixed, riverine) for the time periods 1999-2002, 2002-2006, 2006-2009, and 2009-2011. Change between forest structure classes is calculated for the time periods to generate Activity Data in hectares. The forest types were defined in the LRMP and updated and verified (Joshi, et. al., 2003) with satellite imagery, aerial photography, and field verification from 2001. In classifying forest structure, the process utilized IMG Tools and the Normalized Difference Fractional Index (NDFI) tools developed for assessing forest conditions in Brazil, and through the use of a decision tree modified for conditions in Nepal. Time-series analysis was then utilized to delineate regeneration from other forest structures, and logic rules incorporating the best available scientific information for rates of re-growth were used to calculate the extent of regeneration.

The TAL effort and the national effort led by CAMCO follow similar approaches in developing land cover change analysis (activity data), but the sub-national effort in the TAL is much more data intensive and has greater temporal resolution and field verification. Due to limited resources and time, the CAMCO national effort to date has relied on satellite coverage for 10-year intervals without field verification while the TAL effort is more robust and relies on country-specific data including extensive field measurements, high-resolution LiDAR data, and multi-date satellite analysis. The TAL RL and CAMCO teams have had significant discussions and agree on the broad principles about how to ensure compatibility between the two efforts. Since much of the CAMCO analysis is based on fractional indexes of ground cover, regrowth and regeneration can easily be confused with forest cover. With the greater temporal resolution of data analysis included in the TAL RL analysis (four intervals over a 12-year period), areas of regrowth/regeneration can be identified and not misclassified in subsequent time-periods.

### **8.1.2 Definition of forest**

The RL utilizes the 1998 GoN Topographic Base Maps to derive the forest/non-forest areas for the 1999 inception date of the reference level period. The GoN's recently-released Forest Resource Assessment data 2011 will be used to update the forest/non-forest areas for the 2011 end year of the reference level period for future monitoring. These maps defined “forests” as having crown cover >10% and area > 1 ha. The forest was further defined in various categories of structure in the process described above (Annex O) and these forest structures were further defined in terms of mean carbon density through a LiDAR-based regression modeling process.

### **8.1.3 Development of emission factors**

The Nepal LAMP process utilized a Sparse-Bayesian method to regress ground-truth plots with airborne discrete return LiDAR data and with the strata classified in the development of Activity Data to develop mean carbon value estimates for each of the strata. These mean carbon value estimates were then used to calculate Emission Factors for transitions between the classes. The allometric equations by Sharma and Pukkala (1990) were applied to estimate volume and

biomass for the field plots. These equations are considered the best available methodology but introduce modeling errors into the ground-truth biomass data as noted in the detailed technical paper (Annex O). For areas undergoing regeneration, the RL utilizes the IPCC default value for dry tropical forest regeneration of 6 tons biomass/ha, a number that the RL team believes is much higher than other scientific estimates and therefore results in a more conservative net RL.

#### 8.1.4 Calculation of emissions by transitions between strata for each of the time-periods

This process followed the IPCC *Good Practice Guidelines* and utilized the following formula to calculate the total net emissions:

$$\text{Reference Level} = \frac{\sum Em_{def1} + \sum Em_{def2} + \sum Em_{def3} + \sum Em_{deg} - \sum Seq_{reg}}{y}$$

Where,

- $\sum Em_{def1}$  - is the sum of emissions from deforestation of intact forest over “y” years,
- $\sum Em_{def2}$  - is the sum of emissions from deforestation of degraded forest over “y” years,
- $\sum Em_{def3}$  - is the sum of emissions from deforestation of regenerated forest over “y” years,
- $\sum Em_{deg}$  - is the sum of emissions from forest degradation over “y” years,
- $\sum Seq_{reg}$  - is the sum of sequestrations from regeneration over “y” years

Total carbon flux for each of the four intervals was calculated for each of the strata according to the IPCC guidelines, and flux in carbon was multiplied by the IPCC factor of 22/6 to derive the flux in CO<sub>2</sub>e.

#### 8.1.5 Assessment of accuracy and uncertainty of carbon estimates in the TAL.

Errors and uncertainty in carbon accounting from the LAMP process were assessed in the categories of error in emission factors, errors in classification and activity data, error in time resolution, and error in carbon pools. In addition, a Monte Carlo simulation was conducted consistent with the Methodological Framework to evaluate joint error validation of field sample measurement error, plot location error, sampling error and model error. The RL team also conducted an accuracy assessment of change analysis utilizing Olofsson et.al (2013). The detailed statistics for all tests of error and uncertainty are included in the technical paper in Appendix L of the ER-PIN. One key assessment was of the relation between above ground carbon values and LiDAR data, calculated from a LiDAR-based linear regression model independently calibrated with 46 large, 2,827 m<sup>2</sup> random field plots that gave the model a Goodness-of-Fit R<sup>2</sup> value of 0.9. The tests of error and uncertainty provide a very high level of confidence that the results are accurate when measuring carbon flux and emissions at the scale of the district and at smaller scales in most cases. In addition to the assessments of accuracy and uncertainty already conducted, the RL team plans to conduct field verification studies later in 2014.

#### 8.2 Expected REL/FRL for the ER program

*Please provide an estimate of the REL/FRL for the proposed ER program area. Even a very preliminary estimate would be helpful.*

The TAL RL analysis shows that during the 12-year period between 1999 and 2011, a total of 52,245,991 tons CO<sub>2</sub>e were emitted from the forest sector in the TAL, an average emission of

4,353,833 tons CO<sub>2</sub>e per year (Table 6). In the period 2006-2011, emissions averaged 6,879,686 tCO<sub>2</sub>e per year, an increase of 58% over the 12-year average, and in the period 2009-2011, emissions increased even more dramatically, averaging 11,412,396 tCO<sub>2</sub>e per year or 162% higher than the 12-year average (Figures 4 and 5).

In addition to the significant differences in rates of deforestation and forest degradation for the various time intervals, there are also significant geographic variations in the distribution of forest-related emissions. Three of the 12 districts – Kailali, Kachnapur and Dang – accounted for 51% of the carbon loss of the TAL during the RL period. On a percentage basis, the rate of loss of carbon stocks in the TAL during the RL period was 1.14% per year. The TAL RL accounts for all of the activities required by the Carbon Fund Methodological Framework including deforestation, forest degradation, and regeneration. The FRA report, which is yet to be endorsed by GoN, shows average annual carbon loss of 0.44% between 2001-2010 but this study only accounted for deforestation and not for forest degradation. The TAL analysis for deforestation only exclusive of forest degradation and regeneration, showed an annual rate of forest loss of .31%, but it should be noted that the ER program area is different from the one covered by the FRA study and does not include parts of the Eastern Terai.

Based solely on the average historical rate of net carbon flux of 4,353,833 tons CO<sub>2</sub>e per year, the RL projection shows that during the first five years of the ER program (2015 to 2020) would be 21,769,650 tons of CO<sub>2</sub>e in the case of the Business As Usual (BAU) scenario.

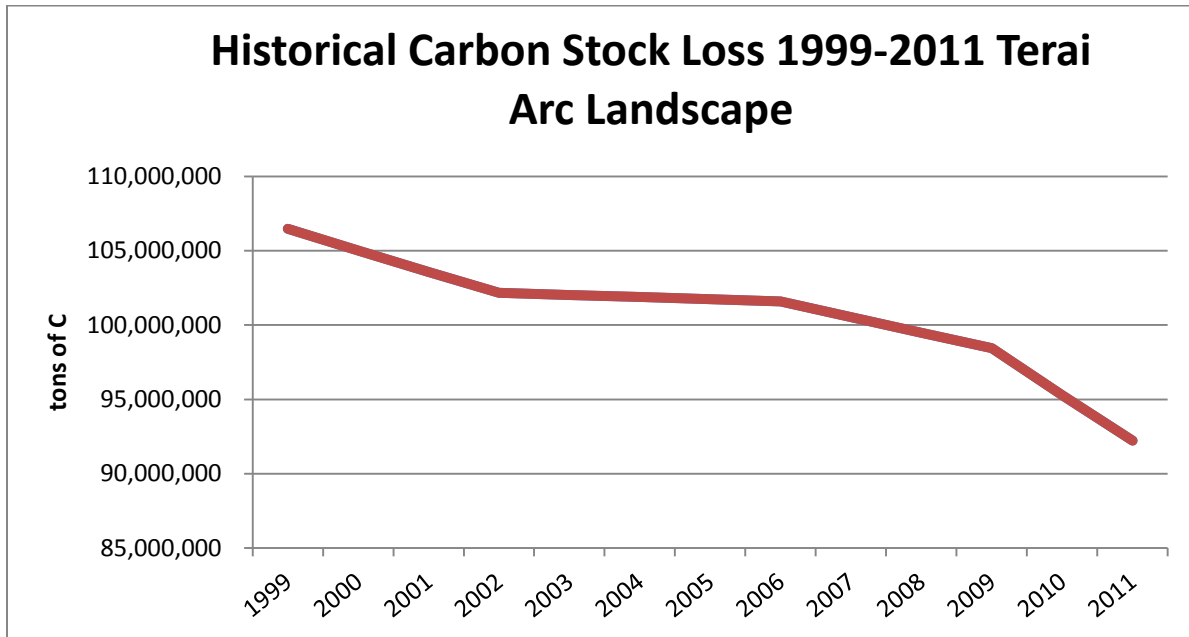


Figure 4. Historical carbon stock loss 1999-2011 from ER program area



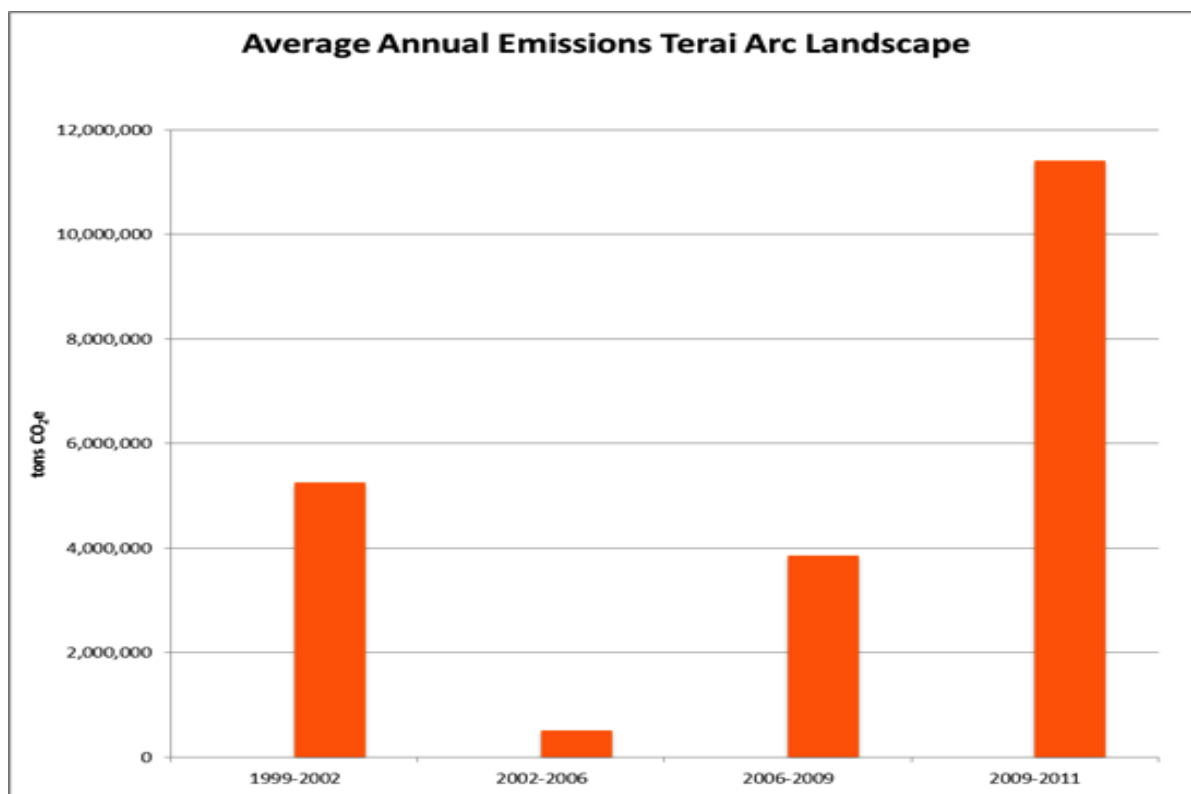


Figure 5. Average annual CO<sub>2</sub> Emissions (tCO<sub>2</sub>e) in TAL between 1999 and 2011

## 9. Forest Monitoring System

### 9.1 Description of approach and capacity for measurement and reporting on ERs

*Please describe the proposed approach for monitoring and reporting the emission reductions attributable to the proposed ER program, including the capacity of the proposed ER program entities to implement this approach.*

For REDD+ to be a credible mitigation strategy, a key component is the strengthening of national monitoring, reporting, and verification systems for greenhouse gas (GHG) emission reductions and removals. The MRV must be able to produce estimates that are results based, demonstrable, transparent, and verifiable, and can be estimated consistently over time. The Measurement component of the MRV system consists of data, procedures, protocols and tools to monitor human activities and their impact on forests, providing quantitative estimations of human-induced carbon stock changes.

#### 1) Estimation of Activity Data (AD)

The main elements of the AD pillar are the reference forest map used as benchmark, and a methodology (data, algorithms, procedures, and capabilities) to periodically assess land cover change and to detect changes in carbon stock in forest areas that remain forests. The same information on land cover is also used to stratify forestlands in the EF component, to define the REL/RL, to explore the drivers of deforestation and forest degradation, and to support the implementation of forest management policies. Remote sensing technologies, integrated with field measurements, can provide objective, practical and cost-effective solutions for monitoring

systems to detect human activities and their spatial extent. The approach in Nepal will provide spatially explicit land-cover change assessment and conversion between classes (“Approach 3” in the IPCC guidelines). The main parameters to be measured for activity data will be deforestation, forest degradation and forest enhancement/regeneration. In brief, the proposed methodology for measurement of activity data is as follows:

### ***Definition of a land cover baseline***

The land cover baseline will contain the land cover categories defined in the existing frameworks for the Land Use, Land Use Change and Forestry (LULUCF) sector under the UNFCCC, namely forest land, cropland, grassland, wetlands, settlements, and other land. Forest land will be further subdivided by species composition (broadleaved, coniferous, mixed forests) and density (closed, medium stocked and open). The threshold generally adopted for density classes are 10%, 40% and 70%. Moreover, the sub-division of forest type may be adapted to local conditions, if needed. In any case, the consistency with the six main land cover classes defined above will be ensured.

Method: Assessment and combination of automatic (segmentation, unsupervised classification) and analyst-based (visual interpretation, identification of classes, supervised classification) methods and processes to involve local actors for validation.

### ***Land-cover change monitoring***

Activity data (forest area reduction or increase, or forest degradation) are estimated for the accounting area and provide an estimate of the area change, calculated for each process over time, using transition matrices.

Method: Use of multi-temporal analysis based on automatic and semi-automatic techniques that are combined and interpreted by analyst with an object-based approach, and field verification.

### ***Ancillary information for forest degradation***

Method: Integration of remote sensing data on land cover and ground-based information. Remote sensing data typically can capture forest degradation at a macro level, e.g. transition from closed forest canopy to open forest. However, they are generally considered inadequate for capturing more specific elements of forest degradation like lack of regeneration or decrease in species diversity, soil depletion, etc. For monitoring specific forest degradation processes, only a Continuous Forest Inventory (CFI) approach is appropriate. For this reason, repeated field observation is proposed and will be implemented. However, frequency of the measurement can vary from 5 years to 7 years depending on the availability of resources.

## **2) Estimation of emission factors (EF)**

Monitoring the location and areal extent of change in forest cover represents only one of two components involved in assessing emissions and removals from REDD+ related activities. The other component is the emission factors, that is, the changes in carbon stocks of the forests undergoing change that are combined with the activity data for estimating the emissions. Estimation of carbon stocks will be generated through field inventory data, using appropriate stratified sampling design and the individual tree data will be converted into volumes per hectares by species using volume equation. Furthermore, volume data will be coupled with wood density by species and appropriate allometric equations to derive above ground biomass.

### **3) GHG inventory**

The GHG inventory will be based upon the work done under activity data and emission factors. Once these two pillars are established the GHG inventory is quite straightforward, following these steps:

1. Activity data (forest area reduction or increase, or forest degradation) are estimated for the accounting area and will provide an estimate of the area change, calculated for each process over time, using transition matrices;
2. Carbon stocks are made available for each vegetation class, using the stratified approach described above;
3. Finally, the two factors are multiplied to derive a GHG emission at accounting area level.

Finally, the ER program results are compared with the Reference Level, and the Emission Reduction (if any) is quantified. At this stage, emission displacement (leakage) will also be assessed, to compute the 'net' emission reductions.

### **4) Carbon pools to be measured**

The carbon pools to be measured will include total aboveground biomass (including trees, shrubs), and belowground biomass. These two pools constitute the great majority of GHG emission and can be measured in a sound statistical manner, with a level of uncertainty statistically determined. Soil Organic Carbon (SOC) will be excluded because:

- Its contribution to total carbon dynamics is marginal;
- Experiences carried out by other Projects in Nepal (e.g. FRA Nepal) showed that the correlation with land use dynamics is erratic;
- A sufficient precision is difficult to achieve; and
- The cost for including such measurements is high and the cost/benefit balance is negative

Similarly, the GHG to be included will be only CO<sub>2</sub>, given the absence of mangroves and peat swamps in Nepal.

### **5) Frequency of measurements**

MRV will be done every five years, the next one being in 2020. Regarding the capacity of the proposed ER program entities to implement this approach for Nepal's REDD+ architecture, R-PP and MRV emphasizes the following:

- Using existing institutional structures and arrangements to the extent possible;
- Using multi-stakeholder bodies at sub national, district and local forest management unit/community levels;
- Creation of a central clearinghouse/carbon registry to work as a repository of REDD related information, allow for enforcement of standards and engage in carbon transaction;
- Ensuring that information on measurement and reporting (MR) is readily available at all levels and to all actors, including GOs, NGOs, CSOs, federations, research institutions and the private sector;

- Ensuring that local stakeholders and forest managers in all forest management regimes (e.g. CF, CLFM, government managed forests and PAs) participate and engage in field based monitoring as required and scheduled;
- Ensuring the data generated through periodic monitoring of forests under REDD, through a tested and institutionalized internal verification system by the MRV implementing agency, namely the DFRS.

The main actors and their task for activity measurement data will be:

- **MRV Section (RS expert):** Acquisition, processing, classification and interpretation of remote sensing (RS) data.
- **Local authorities (DFO):** Data collection, verification of RS based maps, information on floristic composition, coordination with CBFM-UG, link of MRV with REDD+ actions implemented.
- **CBFM-UG:** Participation in data collection and local knowledge, connection with management practices, validation of results.
- **NGOs:** Support the liaison between local authorities, CBFM-UG and the central MRV Section.

Among these, the MRV Section will be responsible for executing MRV and building capacity of the relevant stakeholders to perform the tasks. Capacity building in field inventory, remote sensing, and GIS application as well as in IT, data management and data processing is required (see Section 9.2)

Table 4. Process for the implementation of MRV at Forest User Group (FUG) level

MRV Phases	Step	Responsible body	Output / Product
<b>Preparation</b>	Step 1: Preparation phase	FUGs / REDD Cell / MRV Section	A formal agreement between FUGs and the REDD cell / MRV on the establishment of REDD+ activities in given communities.
<b>Measurement of activity data</b>	Step 2: Delineation of project boundaries	FUGs / DFOs / MRV Section Jurisdictional boundary	A digital map with the boundaries of the project area.
	Step 3: Land use and land cover mapping	MRV Section/FUGs/Local forest officers	The baseline LULC map, and the changes that occurred in the recent past, prior to the project initiation.
	Step 4: Stratification of the project area	MRV Section / FUGs / Local forest officers	Project area stratification map
<b>Measurement of emission factors</b>	Step 5: Preparation for the field work and capacity building of local communities.	Local forests authorities / service providers/ NGOs	Local communities are trained for field work.
	Step 6: Pilot inventory for variance estimation	MRV Section / FUGs / local forest officers	Field sampling design established
	Step 7: Field work	FUGs, local forest authorities	Field inventory executed
	Step 8: Quality assurance	Local forest authorities	Validated field data

MRV Phases	Step	Responsible body	Output / Product
	and quality control		
	Step 9: Data processing and estimation of emission factors and GHG emission	MRV Section	Estimation of GHG emissions (REL)
<b>Reporting</b>	Step 10: Analysis of trends	MRV Section	Trends in carbon emission balance established
	Step 11: Detection of leakage	MRV Section and local forest officers	Quantification of leakage
	Step 12: Estimation of net (deducting leakage) carbon emissions	MRV Section	Net carbon emission balance established
	Step 13: Collating and presenting the information on GHG emissions/removals.	MRV Section	A report in a REDD+ standard and documented format.
<b>Verification</b>	Step 14: Verification	Independent authority	Certified net carbon emissions
<b>Payments of carbon credits</b>	Step 15: Payments of carbon credits	MRV Section and designated REDD+ authorities	Carbon transactions in place
<b>Follow-up</b>	Step 16: Follow-up	MRV Section / REDD Cell	Sustainable REDD mechanisms are in place

The procedures presented above for CFUGs approach are valid for any sub-national unit in general in terms of methodological approach, however there will be differences in the actors involved, depending on the management regime of the forests, as follows:

Table 5. Proposed MRV details for different forest management regimes

Forest management regime	Preparation phase	Measurement of activity data	Measurement of emission factors	GHG emission estimates and reporting	Verification, Carbon credits payment and follow-up
Community forests	CFUGs / REDD Cell / MRV Section	MRV Section Support: CFUGs / DFOs	CFUGs Support: Local Forest Officers / MRV Section	MRV Section	Independent authority and Designated REDD+ authorities
Collaborative forests	CFUGs / REDD Cell / MRV Section	MRV Section Support: CFUGs / DFOs	CFUGs Support: Local Forest Officers / MRV Section	MRV Section	Independent authority and Designated REDD+ authorities
Government managed forests	Local Forest Officers / VDC / REDD Cell / MRV Section	MRV Section Support: VDC / DFOs	Local Forest Officers / VDC Support: MRV Section	MRV Section	Independent authority and Designated REDD+ authorities

Protected forests	National Park Officers / Buffer Zone Council /REDD Cell / MRV Section	MRV Section Support: National Park Officers / Buffer Zone Council	National Park Officers / Buffer Zone Council Support: MRV Section	MRV Section	Independent authority and Designated REDD+ authorities
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**9.2 Describe how the proposed ER program monitoring system is consistent with the (emerging) national REDD+ monitoring system.**

The MRV system for the ER program area will be fully consistent with the national MRV system. The REDD Cell is currently developing a national MRV system. The proposed strategy for MRV implementation recognizes the REDD+ sub-national approach, attempts to intensify capacity building, and fosters multi-stakeholder participation.

The emerging structure for MRV, based on a nested approach, is as follows:

**The MRV system–management architecture**

**The MRV Section:** To manage the different functions of the MRV system, a centralized management office in the DFRS is proposed. Its main objective is to organize and manage the MRV experts at the national and local level, in order to maintain the MRV system and promote data dissemination. The same MRV Section to be established in DFRS for the national MRV will be responsible for executing MRV at ER Program level and building capacity of the relevant stakeholders to perform the tasks. To do so, the MRV Section is subdivided in to four independent but strictly connected units:

1. Database/IT/Metadata Unit (DBITME)
2. Satellite/Remote Sensing/GIS Unit
3. Forest Inventory Unit (FORINV)
4. Reporting Unit.

Each Unit has its own experts and IT software applications. An MRV Coordinator will manage the MRV Section.

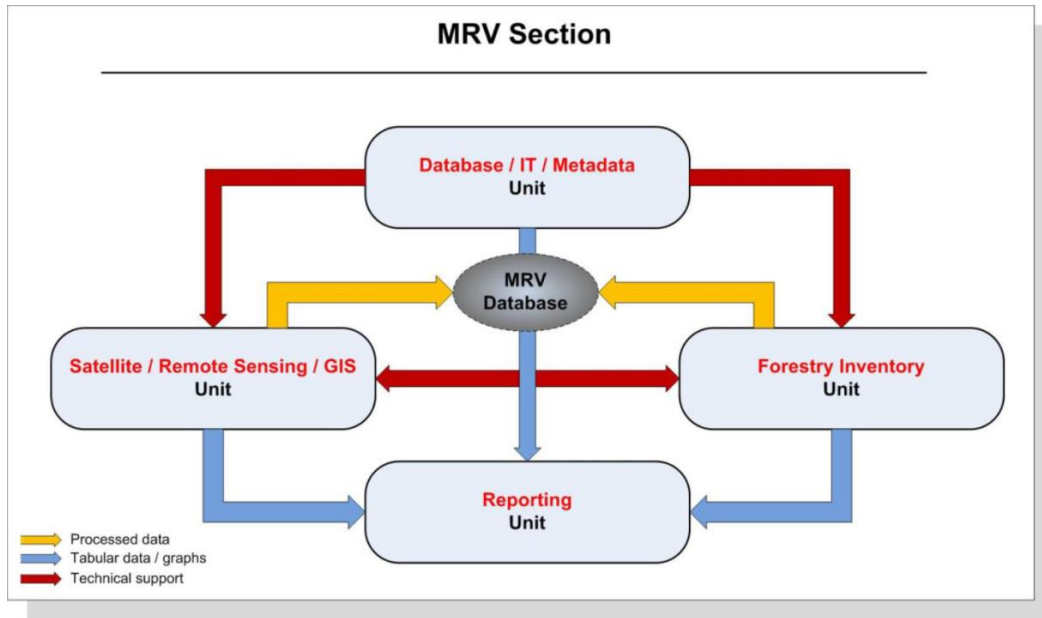


Figure 6. Interaction of different units in the MRV section

### ***The Satellite / Remote Sensing / GIS Unit (SATRSGIS)***

The main objective of the SATRSGIS Unit will be image processing and analysis to produce Land Use/Land Cover classification layers and perform GIS editing and analysis to ensure data integrity in the MRV database. Multi-temporal satellite images, DEM and eventually other ancillary data will be used to identify change detection in forestry classes. Once LU/LC layers have been produced and validated, they will be uploaded into the MRV database. Graphs and tabular data should be provided to the Reporting Unit upon periodical requests. This Unit, which should include two experts, could also take advantage of technical support from the DBITMET and FORINV Unit for specific tasks.

### ***The Forest Inventory Unit (FORINV)***

The main objective of the FORINV Unit will be forestry inventory production (also integrated by FRA Nepal data, if applicable) to estimate GHG emission using very specific algorithms and models applied to local data collected by DFOs/CFUGs. Once GHG estimates have been produced and validated, they will be loaded into the MRV database. The Unit could also take advantage of technical support from the SATRSGIS and DBITMET Unit for specific tasks. Graphs and tabular/aggregated data should be provided to the Reporting Unit upon periodical requests. The human resources needed to manage this unit includes one forestry expert.

### ***The Reporting Unit (REP)***

This Unit provides periodic standard MRV reports (consistent with the reporting requirements outlined in the UNFCCC guidelines) for dissemination of aggregated data and information, collecting the necessary info by the other three units. Reporting is a key element of MRV because it provides the means by which, in a future REDD+ mechanism, the performance of a country or program will be assessed compared to its commitments or reference scenario, and therefore will represent the basis for assigning incentives. The human resources needed to manage this unit is one REDDMRV expert.

**9.3 Describe how the proposed ER program monitoring system is consistent with UNFCCC guidance available to date and with the emerging Methodological Framework of the FCPF Carbon Fund.**

The proposed MRV structure has been briefly described above. Moreover, in order to ensure the consistency with the UNFCCC and the FCPF Carbon Fund, a web portal is under construction as part of the ongoing MRV prototyping phase, which will:

- **Collect** data at the local community level as well as at the national level
- **Aggregate** data to produce informative reports
- **Support** data validation processes
- **Share** documents among participants on REDD+ activities (privately)
- **Disseminate** project information, data and deliverables (publicly)
- **Manage** user access to documents, functionalities and information

The implementation of a web portal will be the main tool for applying the present ER proposal, in line with the UNFCCC, National SIS and Cancun Agreement on safeguards, and IPCC guidance, including:

- **Transparency:** The MRV web portal will be functional to fully document all methodological procedures adopted at the national and sub-national level. All the assumptions and the methodologies used in the inventory will be clearly explained and appropriately documented.
- **Consistency:** The same definitions and methodologies will be used overtime. For example, for the definition of forest, the FAO definition and forest destination of the land use will be used consistently throughout the activity data assessment, also in the time series data.
- **Comparability:** The land use/land cover classes defined for the present ER-PIN proposal will follow six LULUCF categories. Forest land will be further subdivided by species composition (broadleaved, coniferous, mixed forests) and density (closed, medium stocked and open). The threshold generally adopted for density classes are 10%, 40% and 70%. Moreover, the sub-division of forest type may be adapted to local conditions, if needed. The consistency with the six main land cover classes defined above must be ensured.
- **Completeness:** For the key land cover categories, the carbon stocks related to total aboveground and belowground biomass will be calculated, as well as the changes in carbon stock related to the transitions between the various classes.
- **Accuracy:** The accuracy of land cover data will be assessed through ground verification and confusion matrices for the key land cover categories. For emission factors, the confidence limits for the volume and biomass data generated from field inventories will also be calculated using statistical methods.

The proposed institutional architecture for the proposed ER program will ensure:

- **Effectiveness:** the MRV system is driven by the development and implementation of Nepal's REDD+ policy and activities;
- **Efficiency:** ensuring transparent, consistent and cost-effective data collection and procedures. It requires clear terms of reference of actors involved and their sustained



capacity to meet national and international REDD+ requirements and report forest carbon changes according to IPCC GPG; and

- **Equity:** the appropriate integration of local measurements with national monitoring, international requirements and independent reviews to ensure participation and transparency among all involved.

### **Consistency with the emerging Methodological Framework of the FCPF Carbon Fund**

In order to be consistent with FCPF CF MF (Criteria 2 to 18), the following points are considered:

- The ER program will measure emissions from deforestation, forest degradation, and regeneration/enhancement.
- For forest land, carbon stocks related to total aboveground and belowground biomass will be calculated, as well as the changes in carbon stock related to the transitions between the various classes.
- The ER program will fully follow IPCC guidelines, and the recommended methodological approach. The proposed ER program will use IPCC Approach 3 (explicit spatial reference for Activity Data) and Tier 2 for Emission Factors.
- A web portal will be developed for transparency of key data and methods relating to the construction of the Reference Level and measurement, monitoring and reporting.
- It is expected to achieve 85% accuracy for forest area and  $\pm 10$  percent at 95% probability for emission factors.
- A Continuous Forest Inventory (CFI) approach will be adopted for both activity data and emission factors estimations.
- The ER program will apply technical specifications of the National Forest Monitoring System where possible.
- The ER program estimates increased emissions from displacement. Repeated field inventories are also useful for the detection of leakage, which will form an integral part of the monitoring process. The definition of the extent and location the potential leakage belt will be determined on a case by case approach, defining the areas located outside the project area where the reduced emissions within the project area could be displaced. The potential leakage belt will be monitored over time for both activity data and emission factor.

In the end, the Reporting will contain the estimation of activity data, emission factors with their respective confidence limits and the amount of leakage, if any. If leakage exists, its corresponding emissions will be subtracted from the gross reduced emission, and the net reduced emissions will be calculated.

#### **9.4 Describe any potential role of Indigenous Peoples or local communities in the design or implementation of the proposed ER program monitoring system.**

Nepal's national REDD+ strategy will build on community based forest management (CBFM) mechanisms that have been practiced over the past three decades. Over one third of Nepal's forests are under a CBFM regime, which clarifies the potential role of local communities and IPs in Nepal's REDD+ implementation. CBFM, particularly, CFUGs have evolved as robust

institutions with institutional arrangements and accumulated experiences of forest management planning, implementation, and monitoring. With the forest user groups' stake and role in REDD+, Nepal's R-PP justified the need of a hybrid (nested) approach, which will enable the country to go for early participation in REDD+ at the sub-national/local level, while engaging in continuous improvement of its MRV institution and capacity for MRV system strengthening.

The ER program envisages local level implementation of specific REDD+ activities wherever CBFM areas exist. REDD+ initiatives and regular carbon monitoring will be undertaken by respective CBFM communities, with capacity and technical support from local/national forest authorities. The data collected will be transferred to the subnational MRV system in a transparent manner, and the participating CBFM communities will be compensated for their contribution.

Nepal intends to share the carbon monitoring role with local bodies in government managed forests and buffer zone councils and groups in forests in protected areas, to the extent of its feasibility. The R-PP promotes community based ground inventory for all carbon pools in the long run, but emphasizes aboveground and belowground biomass and soil carbon in the initial stages.

**9.5 Describe if and how the proposed ER program monitoring system would include information on multiple benefits like biodiversity conservation or enhanced rural livelihoods, governance indicators, etc.**

Nepal's ER program emphasizes non-carbon benefits (see Section 16). The GoN is going to develop and finalize the criteria and indicators of the multiple benefits during the Readiness and ERPD development phase. The REDD cell has already developed the indicators based on the principles and criteria of CCBA (Climate, Community and Biodiversity Alliance).

## **10. Displacement**

### **10.1 Activities to address risks of reversal of greenhouse gas benefits**

*Please describe major risks of anthropogenic and non-anthropogenic reversals of greenhouse gas benefits (from e.g., fire, agriculture expansion into forest, changes in commodity prices). Also describe any activities or design features in the proposed ER program that are incorporated to minimize and/or mitigate the anthropogenic risks or reversals, and how these activities are consistent with the design features of the (emerging) national REDD+ strategy to address risks of reversal.*

Since Nepal and India have an open border, cross-border issues such as timber smuggling, wildlife trade, poaching and cross border grazing are rampant. In order to address those issues, there is mechanism in place to hold annual bilateral meeting on transboundary biodiversity conservation between Nepal and India since 2010. Similarly, Nepal and China have signed a Memorandum of Understanding for transboundary biodiversity conservation. Similarly, Nepal has a regional project financed by the World Bank to improve the effectiveness of wildlife and habitat conservation across Bangladesh, Bhutan, India and Nepal.

As part of ER implementation, the MoFSC will collaborate with the Government of India to develop a mutual understanding addressing any cross border issue. Through improved FLEG and trans-boundary coordination, international leakages and cross-border forest fire will be mitigated.

The risk of domestic displacement of emissions are minimized through improved supply of forest products in a sustainable manner and community based forest fire monitoring and control to significantly reduce leakage from forest fire incidence. Also, all the ER activities will be planned, developed and implemented with extensive consultation and active participation of all stakeholders including IPs, CBOs and local people at all levels, which will contribute to ownership feeling by all stakeholders and potential displacement is substantially mitigated,

While developing the ER-PD, Nepal will prioritize the most significant sources of displacement risk, assess their associated risk for displacement, and propose effective strategies to mitigate and/or minimize potential displacement to the extent possible. A procedure to estimate in-country displacement will also be developed, which may include, for example, the monitoring of potential areas where displacement occurs in the National Forest Monitoring System, or use of default factors of displacement appropriate for Nepal and drivers of deforestation and forest degradation, or other appropriate methods.

## 11. Reversals

### 11.1 Description of the potential risks of both domestic and international displacement of emissions(leakage)

*Please describe the potential risks of both domestic and international displacement of emissions from the proposed ER program activities. Then also describe how the proposed ER program activities will minimize the risk of domestic displacement and international displacement (if applicable), via the design of the proposed ER program and the ER program activities and the selection of locations. For sub-national programs, pay special attention to identifying domestic risks of displacement of emissions, the proposed ER program activities to mitigate these risks, which otherwise would contribute to fewer net emission reductions generated by the proposed ER program, and how these activities are consistent with the design features of the (emerging) national REDD+ strategy to address risks of displacement.*

The ER program in the TAL is viewed as a long-term commitment with a foundation in community-based management of forests and equitable sharing of benefits. With this strong local ownership of forest management, the risks of anthropogenic reversals within Nepal are significantly mitigated. The history of community-based forest management within Nepal has demonstrated that the benefits are long lasting once these local models are in place. There are also other factors mitigating the risks of reversal of greenhouse gas benefits: 1) improved enforcement of forest laws will help prevent displacement of deforestation and forest degradation; 2) the supply-demand deficit in the timber market within Nepal has resulted in most timber being consumed within Nepal with no export market other than illegal sales to India; 3) the silviculture interventions in the ER program area will result in increases in both carbon stocks and timber supply, reducing pressures on the forest; and 4) the TAL contains the most productive forests in Nepal so managing this area will result in the stewardship of the most significant forest resources in the country without significant risk of displacing deforestation and forest degradation to other areas of Nepal. Risks of forest fires is not so severe in the ER program area because surface fire is common there, which does not damage standing wood biomass like the one crown fire does in hills. As these forests are put under improved management practices, fire incidence can be reduced. There are risks of anthropogenic reversals resulting from illegal logging and unsustainable harvest of forest products, if the proposed

programs do not generate the local employment opportunities and forest products are not available in the market at a reasonable price.

The proposed ER program will be first developed in consultation with all stakeholders, including indigenous people, who are actively involved in the implementation of the programs. This will ensure that the risks of reversal of greenhouse gas benefits are minimized.

During the ERPD development phase, the REDD Cell will launch a study that includes the following:

- Undertake an assessment of the anthropogenic and natural risk of reversals that might affect ERs during the term of the ERPA, and the potential risk of reversals after the end of the term of the ERPA.
- Identify measures to demonstrate how effective ER program design and implementation will mitigate significant reversal risks identified in the assessment to the extent possible, and will address the sustainability of ERs, both during the term of the ERPA, and for a reasonable period beyond that term.
- Determine ways to account for reversals from ERs that have been transferred to the Carbon Fund during the term of the ERPA; and proposes, as feasible, how it has built or will build on arrangements put in place during the readiness phase and during the term of the ERPA to address the risk of reversals for the long term.
- Recommend reversal management mechanism to address potential reversals.

In the course of ER program implementation, any significant emissions in the Accounting Area or changes in ER program circumstances that the ER program considers could lead to reversals of previously transferred ERs by the next monitoring event, and will be reported to the Carbon Fund within the timeline prescribed in the Carbon Fund Methodological Framework.

## 12. Expected emission reductions

### 12.1 Expected Emission Reductions (ERs)

*Please provide an estimate of the expected impact of the proposed ER program on the REL/FRL (as percentage of emissions to be reduced). Based on this percentage, also estimate the volume of ERs, as expressed in tons of CO<sub>2</sub>e, that would be generated by the ER program:*

- a) up to December 31, 2020 (currently the end date of the FCPF)*
- b) for a period of 10 years; and*
- c) the lifetime of the proposed ER program, if it is proposed to continue longer than 10 years.*

Based on very preliminary estimates for the purposes of the ER-PIN, the proposed program is estimated to produce approximately 14 million tons CO<sub>2</sub>e after 5 years and up to 70 million tons after 15 years (Table 6; Please refer to Annexes I, J, K, and L for detailed calculations). These estimates will be significantly improved through the further development of the proposed activities. However, the total realized, verified volume will depend largely on what the true, but unknown, emissions baseline is at the beginning of the performance period. That is, if the average annual emissions through the reference period provides an accurate estimate of the baseline during the performance period, the program activities should be able to realize their full

potential because they would largely result in emission reductions below the historical average that are fully eligible for Carbon Fund finance (Figure 6, Scenario 1). However, it is observed an apparent spike in emissions late in the reference period that may reflect a sharp increase in the impact of drivers in the TAL. If these threats are realistically reflected in a trend that continues up to or beyond the start of the performance period, a significant portion of the program's benefits could occur above historical levels, reducing the volume eligible for Carbon Fund finance (Figure 6, Scenario 2). This scenario, of course, presents considerable concern to GoN, given the possibility that extensive investment resulting in significant reductions against a BAU scenario could possibly not be compensated. This possibility may in fact be a risk to many countries considering investing in REDD+ activities. It is expected that additional analyses of drivers (being conducted under the readiness grant) and more recent activity data in the design phase will help to clarify the total potential program volume.

Table 6. Estimated emissions reductions from ER program interventions

Intervention	Cumulative emissions reductions from BAU (millions of tons CO2e)		
	5 years	10 years	15 years
Improved forest management	9.9	29.2	49.0
Installed biogas plants	0.9	3.4	6.5
Improved cook stoves	0.3	1.1	2.0
Land use planning	2.8	8.3	13.9
Private forestry/tree nurseries	0.1	0.7	1.4
Total	14.0	42.7	72.8

### 12.2 Volume proposed for the FCPF Carbon Fund

Please explain the portion of the expected ERs that would be offered to the Carbon Fund, and if other carbon finance providers or buyers have been identified to date, the portions of the expected ERs that would be offered to them.

At this stage, the GoN is considering the FCPF Carbon Fund as the primary buyer of emissions reductions from the ER program area, but will be exploring options for supplemental finance in the coming year.

## 13. Preliminary assessment of the proposed ER program in the context of the national Strategic Environmental and Social Assessment (SESA) and the Environmental and Social Management Framework (ESMF)

### 13.1 Progress on SESA/ESMF

Please describe the country's progress in the implementation of SESA and the development of the ESMF, and their contribution or relationship to the proposed ER program.

Nepal has several existing laws, policies, and institutions that address environmental and social safeguards in forestry operations and development activities. However, in order to address recent developments on REDD+ social and environmental safeguards at national and international

levels, including the UNFCCC Cancun decision and World Bank requirements, two areas of work are ongoing in Nepal.

Under the FCPF Readiness Fund, Nepal selected a consultancy consortium led by ICEM to conduct a study on SESA/ESMF, and has made substantial progress. Since Nepal's REDD+ Strategy is not yet completed, the SESA team developed ten national "Strategic Options" to form the basis for this work and have conducted analysis of the social and environmental impacts (both positive and negative). Once the REDD+ Strategy is finalized there will be additional work to identify and address gaps. Similarly, to provide a platform for analysis, the team prepared five contributing theme papers on (i) baseline assessment of social situation, (ii) environmental situation in the forestry sector, (iii) review of all regulatory and policy instruments relevant to REDD+ and forest management, (iv) institutional needs and capacity analysis for implementing the ESMF, and (v) linkage of REDD+ strategy options with climate change mitigation and adaptation issues. These issues papers would be used as a basis for drafting the SESA report and the ESMF. In addition, the team reviewed the list of stakeholders identified during R-PP development and has categorized stakeholders from government, civil society/IPs and the private sector at local to national levels, and included those often marginalized in consultative processes and the most affected. The team conducted two national-level and three district-level stakeholder consultations (Chitwan, Makawanpur and Bara). Final reports on both SESA and ESMF will be publicly available by April 2014.

Nepal has been an early pilot country for REDD+ Social and Environmental Standards (SES), and has demonstrated consistent commitment to using these standards through a country-led, multi-stakeholder process. Nepal views the REDD+ SES process to complement SESA/ESMF, both in terms of articulating country-specific needs for safeguard information systems in addition to World Bank safeguards requirements, developing a foundation for what could be shared under UNFCCC requirements, and for providing information to national and international stakeholders on non-carbon benefit, benefit sharing and governance. Nepal has revised country specific REDD+ SES indicators first developed in 2011 through local, regional and national level consultations and the final version is currently under review by experts. The English and Nepali version of Nepal specific REDD+ SES indicators are available at [www.redd-standards.org](http://www.redd-standards.org) and [www.mofsc-redd.gov.np](http://www.mofsc-redd.gov.np). In addition, the CSO/IP Alliance has also developed social and environmental indicators for monitoring impacts on the ground. The intent of the ER program will be to take the indicators developed in the national stakeholder process to include, where feasible, the Alliance indicators and apply them in the Terai where possible, including as part of any possible monitoring arrangements that develops under ESMF. In addition, during the preparation/design phase of the ER program, a traditional social assessment and EIA would be conducted to identify the social and environmental impacts associated with each project/activity to be implemented.

### **13.2 Incorporation of SESA outputs and/or outcomes into the proposed ER program**

*Based on the progress outlined in 7.1, please describe how the proposed ER program is expected to make use of the outputs and/or outcomes of the SESA process. Provide an analysis of the ways in which activities planned under the proposed ER program will rely on the measures and procedures included or to be included in the ESMF. Are there likely to be any gaps or issues regarding the compliance of the proposed ER program activities with applicable safeguard standards, including the UNFCCC safeguards?*

Nepal's proposed ER program will integrate the outputs and outcomes of the SESA process described in section 13.1, particularly on risk mitigation measures that are relevant for the specific ER program context. According to agreed guidance in the Carbon Fund's Methodological Framework, it will comply with applicable World Bank safeguard policies and procedures and promote and support the safeguards included in the UNFCCC Cancun decisions. Safeguards plans will be prepared during the design phase, including appropriate monitoring arrangements, and will be publicly disclosed through the REDD Cell website: <http://mofsc-redd.gov.np/>

**13.3 Feedback and grievance redress mechanisms**

*Please describe the mechanism(s) that are or will be put in place to resolve any disputes regarding the proposed ER program.*

The feedback and grievance redress mechanism (FGRM) being developed during the readiness phase will build on mechanisms already in place in Nepal, including traditional and customary institutions of feud and grievance redress. Nepal will identify which are the most relevant to the implementation of REDD+ programs, and assess and improve accessibility at local levels. Importantly, they will include accountability mechanisms such as social audits and community score cards. Under the readiness grant, the GoN will commission a consulting firm to:

- Assess existing formal and informal FGRMs at local and national levels
- Assess the use of traditional and customary grievance and conflict resolution and management
- Characterize current grievance patterns and trends in forestry and REDD+
- Identify current institutional strengths and capacity gaps for grievance resolution
- Develop a framework for the FGRM, including a plan for closing remaining gaps
- Propose a plan to continuously improve FGRM and communicate to stakeholders.

The recommendations from this study will be implemented as a FGRM system for REDD+. This mechanism will be operational for the ER program.

**14. Land and resource tenure**

**14.1 Rights to territories and land, and mitigation benefits**

*Please describe the land use and land tenure context of the proposed ER program, and if and how rights to territories and land and mitigation benefits from REDD+ are reflected in traditional practices and codified in legal and/or regulatory frameworks.*

Under current law, the GoN owns all forestland except forests grown in private land (private forests) in the country. Therefore, tenure wise, there are only two types of forests in the country: national forest and private forest. The government has developed different management modalities for the national forests, such as government managed forest, protected area, buffer zone forest, protection forest, community forest, collaborative forest, religious forest, and leasehold forest. There are also protected area system under the National Parks and Wildlife Conservation Act 1973.

There are legal provisions in Nepal that clarifies biomass and land tenure rights issues in forests. The Forest Act 1993 and the Forest Regulations 1995 provide a framework to regulate and

manage all forest areas, except for protected areas. The National Parks and Wildlife Conservation Act 1973, and various subsidiary regulations, govern the protected area systems. Legally, the government holds the rights to land in all types of forest models except private forest (GoN, 1993). However, access and use rights vary across forest management models. Community-based regimes are endowed with certain rights to manage and use forest resources, whereas in government managed forest use rights to forest products remains with the government. According to the Forest Act, 1993, forest products are "all the products available in the forest including timber, leaf, branches, stones, sand, soil, minerals, wild animals and water". In this context, existing law provides, to a varying degree, rights to carbon for the community in community based forest management models (GoN, 1995). However, some modification regarding carbon rights in the context of government-managed forests might be essential as local communities do not have usufruct right, and it will be important to learn from other management regimes. The Proposed ER program area contains each of the aforementioned forest categories, but the area is predominately protection area, community, buffer zone, collaborative and protection forest.

There is widespread inequality in access to land in Nepal. The people most affected by this inequality are from socially and economically disadvantaged groups, including women, *dalits*, indigenous communities, landless peasants, and vulnerable groups (GoN, 2011). For this reason, the administration and management of land and land resources is a national priority. The interim constitution of Nepal (2007) adopted a policy to implement scientific land reform to minimize widespread inequality in the access to land. As land ceiling is tight in Nepal, land grabbing is not that much serious as elsewhere. Key issues are fragmentation of farmlands and dual ownership on farming lands. The Ministry of Land Reform and Management is responsible for ensuring efficient and effective administration and sustainable management of land resources. In its vision paper 2011, the ministry outlined nine objectives for land reform, one of which is directly related to land tenure security, displayed in Box 2.

**Box 2: Vision of Ministry of Land Reform & Management related to security of land tenure. The ministry is aiming to achieve this objective within next three years.**

Objective: To create enabling environment for rehabilitation and /or enhancing the access of socially and economically disadvantaged people to land.

*Strategy 1.1: Formulate National Land Policy and land reform policy to set long term vision on land and security of land tenure.*

• **Activities**

- Formulate proper land and land reform policy including the policy for abolition of dual ownership and right to the tenants.
- Implement the policy with adequate reform in existing legal system for policy implementation.

*Strategy 1.2: Explore proper plan for the rehabilitation of deprived and landless citizens.*

• **Activities**

- Identify actual number of people including muktakamaiya, haliya, among others, to be rehabilitated.
- Offer potential alternatives of rehabilitation like job opportunities, access to housing and labour market, etc.
- Explore and introduce proper plan for rehabilitation.
- Develop skill based training schemes and offer the trainings extensively.

(Source: GoN, 2011)



## 15. Benefit sharing

### 15.1 Description of envisioned benefit-sharing arrangement for the proposed ER program.

Please describe the benefit-sharing arrangements that are envisioned to be used for this proposed ER program.

The benefit sharing mechanism refers to the distribution of financial incentives generated from the forest amongst the respective stakeholders as per their cost involved for the sustainable management of the forest resources. The Forest Act (1993) has a clear provision for the benefit sharing arrangement for forest products under all forest management regimes, which is consistently implemented, and forms a solid basis for designing the benefit-sharing arrangement under REDD+. Table 7 displays the current revenue sharing arrangement under different forest management regimes. It is envisioned that the benefit sharing mechanism for the benefits generated from the carbon will be built on the existing benefit sharing mechanism. The sharing of benefits among respective stakeholders is contingent on the costs a particular stakeholder bears.

Table 7. Existing benefit sharing arrangement under different forest management regimes

Forest management regimes		Forest benefits		
		State share (%)	Community share (%)	Individual share (%)
Government managed forest		100%	0	0
Collaborative forest		50%	50%	-
Community forest	Normal	0	100	-
	Selling of <i>Sal</i> and <i>Khair</i>	15	85	-
Religious forest		0	100	-
Leasehold forest	Ultra Poor	0	100	-
	Individual and organization	**	0	100
National Park and Wildlife reserve (excludes forest products from the core area)		70-50%	30-50%	-
Buffer zone community forest		0	100%	
Private forest		*	0	100

\*If forest products are sold in the market then sales tax and VAT are applicable per the regulations of the GoN.

\*\* Individuals or organizations shall pay the agreed royalty as per the regulations of the government.

The revenue generated from REDD+ will flow through different institutions (see Figure 7) viz. MoFSC, DFRS, DFO, National Parks (NP), local communities and local government. Proportion of benefits among various stakeholder institutions involved in REDD implementation will vary based on carbon tenure arrangement. It is intended that communities engaged in community forest will receive the highest proportion of the REDD revenue, on the other hand communities or local government engaged in management of government managed forest will receive the

least. The communities or institutions involved in other forest management regimes will receive proportion of the revenue in between government managed and community forest.

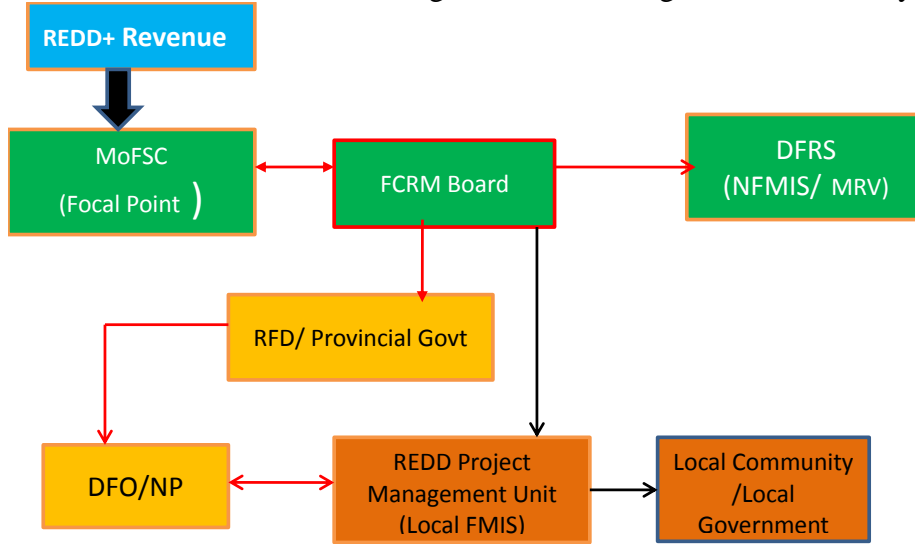


Figure 7. Tentative pathways for REDD+ revenue flow

Multiple actors are likely to be involved in carbon transactions, including actors at the national and international level. In addition, varying costs will be involved in different stages of the transactions. Hence, it is expected that the distribution of benefits will not only remain between the national government and local communities, but other actors such as the provincial government, and local government also will have stakes on benefits based on their contribution to the process. Taking this into consideration, designing a distinct benefit sharing arrangement is essential.

The key issues of REDD benefit sharing will emerge if benefit sharing follows same pattern like product distribution in CBFM because of multiple actors in REDD value chain. So, the REDD Cell is commencing a detail study, which will confirm or modify these ideas through broad consultation and suggest the exact sharing of benefits and costs among different actors involved in carbon transactions. The benefit sharing arrangement will follow Climate Change Policy (2011), which envisions to share up to 80% of climate change related fund with local communities.

**15.2 Link between the envisioned benefit-sharing arrangement and the activities in the proposed ER program.**

*Please explain how these benefit-sharing arrangements would support the activities identified in section 5.3 to address the drivers of deforestation and forest degradation. Identify, if possible at this stage, potential issues or constraints that may emerge in development of the ER program that could need additional progress in order to effectively implement the benefit-sharing mechanisms.*

There is a clear legal provision for the benefit sharing arrangement under different management regimes. Forest users are consistently practicing the benefit sharing arrangements. The community forest guideline has provision to expend 25% of income on forest management and 75% on local development activities (MoFSC, 2006). Large numbers of studies have revealed that the benefits generated from forests under different forest management regimes are used for

local development. This includes investment in activities which directly address the drivers of deforestation and forest degradation. For example, a study conducted by Chapagain and Banjade (2009) in 1,100 CFUGs indicated that 46% of the income generated from forest management was invested in community development activities, which include installing biogas plants and income generating activities in the communities.

There is already a mechanism for sharing revenues from protected areas with local communities residing within the buffer zone. Buffer zone management is focused more on meeting the needs of the people residing in and around the area, in order to decrease the pressure on the forest resources. There is a legal provision that 30 to 50 percent of the revenue collected should be shared with the local community. Studies have reported that the communities utilize those benefits in natural resource conservation, expansion of alternative energy programs, and human resource development (Bajimaya, 2006; Paudel et al., 2007). A study by UNDP (2004) in Chitwan National Park between 1999 and 2003 found that approximately 73% of total income from conservation activities was spent on community development activities, including poverty alleviation and alternative energy.

### **15.3 Progress on benefit-sharing arrangements**

*Describe the progress made thus far in the discussion and preparation of the benefit-sharing arrangements, and who has been participating in this process.*

Various agencies engaged in REDD+ have carried out studies to identify the benefit sharing arrangements in the wake of REDD interventions (WWF Nepal, 2011). In the study process, discussions with forest stakeholders at various levels, including national and regional, were conducted. In addition, various rounds of consultations were performed with policymakers. The benefit sharing mechanism as described in section 15 was developed by consulting various REDD+ stakeholders at regional and national levels. Dalit, indigenous people, women and other marginal groups of people were the main focus of the consultation.

A comprehensive study is being conducted by the REDD Cell to identify clear, effective and transparent benefit-sharing mechanisms with broad community support and support from other relevant stakeholders, and to develop institutional structures to manage the emission reductions program. Wider stakeholder consultations are envisioned in the terms of reference of the study, and the key objectives have been identified as the following:

- Identify key agencies that can contribute to implementation of the ER program in 12 districts of the TAL, analyze their existing capacity and potential role in the ER program.
- Propose the institutional arrangement and its linkage to the national REDD Cell in order to implement the ER program.
- Recommend a model of sharing cost of implementing emission reductions program and benefits out of the performance based payment from REDD+ that can apply to all forest types, viz. community forestry, government managed forest, national forest, collaborative forest or any other forests in 12 districts of TAL.
- Recommend a Benefit Sharing Plan developed through multi-stakeholder consultation and broad agreement.
- The plan should contain the following information:

- a) the categories of potential beneficiaries, describing their eligibility to receive potential Payment-Related Benefits under the ER program and the types and scale of such potential Payment-Related Benefits that may be received;
- b) Criteria, processes, and timelines for the distribution of Payment-Related Benefits;
- c) Monitoring provisions for the implementation of the Benefit-Sharing Plan, including, as appropriate (an opportunity for participation in the monitoring and/or validation process by the beneficiaries themselves).

## 16. Non-carbon benefits

### 16.1 Expected social and environmental benefits

*Please describe the environmental and social benefits, other than emission reductions, that the proposed ER program is planning to achieve; and any other ways in which the ER program would contribute to broader sustainable development.*

GoN believes that social and environmental benefits achieved at the local level are core elements of a sustainable REDD+ program, and the proposed program in the Terai will model this principle. Nepal submitted an idea note on co-benefits to the UNFCCC prior to the 38th session of SBSTA, in which Nepal has identified six types of co-benefits from REDD+, their indicators and means of verification. Through the ER program, Nepal seeks to achieve all of these six co-benefits as priority Non-Carbon Benefits, as described below.

**A. Enhancement of local livelihoods:** Through improved management of different types of forests and forest resources, REDD+ activities and the ER program will contribute to generating employment opportunities in forest based industry, provide food and nutrients from forests, enhance quality of water and provide wood fuel for meeting energy requirements.

**B. Increase in the value of biodiversity:** Implementing REDD+ activities and the ER program will contribute substantially to conserving biodiversity and wildlife habitat. This translates to increased local and national income, from, inter alia, wild flora and fauna.

**C. Better ecosystems services to people and environment:** As the state of forests improves with the ER program, the resulting ecosystem goods and services such as provisioning, regulation, cultural and supporting functions will benefit both the people and environment.

**D. More resilient ecosystems for climate change adaptation:** With effective and efficient management of forests, the local environment and associated ecosystems will be less vulnerable to adverse impacts of climate change. Ecosystem based adaptation measures can provide sufficiently resilient ecosystems that will mitigate climate change impact on people and ecosystems.

**E. Improved governance, institutional setup and policies for natural resource management at local to national levels:** The ER program and the effective implementation of REDD+ activities strive for a compliance process that is transparent and promotes participatory decision making methods as well as equitable benefit sharing mechanisms at various levels,

which can contribute to improved forest governance and the formulation and revision of necessary policies.

**F. Contributions to MEAs:** Implementing REDD+ activities and the ER program will also contribute towards meeting the objectives and targets of many international conventions and agreements such as the Aichi targets and other provisions of CBD, Ramsar, CITES, and UNCCD.

As an example, one of the most fundamental and long-term benefits of the proposed program will be to increase and strengthen localized forest governance structures under community and collaborative forest management models. These models already exist in the Terai, but they will be leveraged by working with existing user groups to increase knowledge and best practices of sustainable forestry, and significantly expanded as more forests currently under national government management are placed partially or entirely under more local management. This type of transformation is arguably one of the most sustainable and locally valuable social and economic changes that a REDD+ program can promote.

The proposed ER program is also positioned to achieve exceptional benefits for biodiversity conservation. As described in Section 4, the Terai is home to some of the highest Royal Bengal Tiger densities in the world, as well to the Greater One-horned Rhinoceros, the Asian Elephant and many other rare and endangered species. Though significant areas in the region are already designated as “protected,” these protected areas and the program area more broadly are seriously threatened by increasing forest loss that threatens the long-term viability of these populations. By reducing forest loss broadly, improving forest monitoring and enforcement, and demonstrating community-level benefits associated with increasing the local value of forests, the ER program will help to develop a more sustainable landscape that supports its globally unique wildlife and continues to attract ecotourism to the area.

There are numerous other social and environmental benefits that will be more fully developed in the program design phase, along with methodologies to monitor these benefits. For example:

1. Sustainable forest management activities will generate local forest-related jobs and opportunities that will increasingly incentivize forest monitoring and enforcement and disincentive illegal harvest.
2. There will be extensive capacity building, including for women, IPs and economically disadvantaged groups, to improve local forest management, facilitate more equitable participation in community-based models, and to equitably distribute the benefits of improved management.
3. Expanded biogas plants and improved cook stoves improve household air quality and health while also increasing time available for women to pursue alternative livelihood options and provide additional community leadership.
4. Biogas plants will also provide extensive and measurable non-carbon climate benefits in reduced methane emissions that will not be claimed under the Carbon Fund program.
5. Proposed activities on land use planning will help translate the national land use strategy to district and local levels, including measures to increase cross-sectoral collaboration on issues such as siting of infrastructure projects.

**16.2 Diversity and learning value**

*Please describe the innovative features of the proposed ER program and what learning value the proposed ER program would bring to the FCPF Carbon Fund.*

There are several ways in which the proposed ER program in Nepal's TAL will provide substantial learning value for the FCPF and REDD+ countries globally, including the following:

**Testing the community-based forest management model as a building block for scaled REDD+ programs:** There is considerable evidence that community-based forest management delivers multiple benefits, including reduced forest loss and improved forest stewardship. However, this model has not been tested as a core intervention area in a scaled subnational REDD+ program. The proposed ER program aims to build on Nepal's historical commitment to community-based models and a community-government collaborative model to facilitate improved forest management practices and the local benefits that can result. In effect, the program will test the magnitude of emissions that can be achieved through more localized forest governance. Importantly, the program will also take steps to improve participation and benefit sharing under community-based models, including capacity building for IPs, women and other economically disadvantaged groups.

**Multi-stakeholder process and ownership of the program:** Nepal has demonstrated strong multi-stakeholder processes and governance mechanism in REDD+ since the R-PP formulation stage. This continues to be the case in ER program. Nepal intends to strengthen cross-sectoral and multi-sectoral coordination, as the ER program area possess multiple jurisdictions (i.e., involves multiple land areas, landowners or managers within one or several jurisdictions), and reflects a variety of interventions from the national REDD+ strategy in a coordinated manner. Working with multi-stakeholders is not easy task for many countries. Nepal can offer some valuable lessons on working with multi-stakeholders.

**Nepal's commitment to gain lessons that could be applicable elsewhere in the world:** The forest in the Terai is very significant and suffering a lot of pressure from all social, economic, and political fronts. Whether REDD+ can succeed in addressing drivers from so many other sectors and fronts can be tested on a small scale in Nepal; whatever the results, this– can provide valuable lessons for the global community to replicate elsewhere. Nepal could have selected the Mid Hills region to pilot REDD+, where drivers are straightforward and easier to implement the ER program. However, by choosing a challenging landscape, Nepal demonstrates its commitment to the value of learning.

**New methodologies in advanced carbon accounting:** Carbon accounting is a rapidly advancing science, in part due to increased accessibility to remote sensing technology and data. At the same time, capacity needed to deliver REDD+ reference levels and MRV is extremely limited in most forest countries. Nepal is showing leadership on both of these issues in association with the proposed ER program. The reference level described in Section 8 resulted from a collaboration between the Ministry of Forest and Soil Conservation, Government of Nepal and its line agencies, namely DFRS, DoF, DNPWC and the FRA Project, WWF Nepal, WWF US, WWF Finland, Arbonaut Ltd, ICIMOD and other partners in close communication with the national reference level initiative. The reference level presents a novel approach to integrating LiDAR technology with Landsat data to account for changes in landscape-wide

emissions including from forest degradation. This work is being presented with 100% transparency of data and methodologies, and will be separately submitted for peer-review and publication. Nepal also aims to collaborate with WWF Nepal, academic institutions and technical partners to provide in-country training in advanced carbon accounting so that this work can increasingly be country-led.

**Wildlife Premium initiative:** The proposed program will explore an initiative to test “wildlife premium” payments for local communities charged with conserving and restoring forests, using the same distribution systems as REDD+ finance to ensure that funds are monitored and equitably distributed. The concept is not based on a variable price per unit of emission reductions, but rather a paired benefit through a co-financing mechanism to incentivize achieving measurable biodiversity benefits in addition to emission reductions. A top priority of the premium market will be for funds to reinforce the forest conservation efforts of REDD+ while simultaneously helping to improve livelihoods of rural communities.

**Learning and Sharing Platform for the Region and Globe on REDD+:** With the package deal agreed on REDD+ at COP 19, Warsaw, Poland, the advancement of work on REDD+ in Nepal through the ER program will also be a showcase to the regional and global audience as to what the challenges and opportunities are in implementing REDD+ from all angles: social, economic, environment and technical. Nepal could be one of the pioneer countries to share its learning on the REDD+ process in a holistic manner through the REDD+ Web platform under the UNFCCC. Nepal could then further share its experiences across the region in South-Asia and globally so that other countries that are also interested in the REDD+ process could deliver effective programs, learning from Nepal's experience.

## 17. Progress on registries

### 17.1 National registry

*Please include a short description of the relationship of the proposed ER program to national REDD+ activity management arrangements, and if the proposed ER program will be part of any system to track REDD+ or other emissions reduction activities (e.g., a REDD+ registry).*

The GoN is developing a comprehensive REDD+ Program and Projects Database necessary to avoid having multiple measures claiming the same ER. A consulting firm will be hired whose principal task will be to develop an Emission Reduction Transaction Registry, which will avoid the same ER being created (issued) more than once, or the same ER being sold to more than one buyer. Although this study will be funded under the readiness fund, the focus of the studies will be ER program area. Objectives of the study include the following:

- Develop mechanism for REDD+ information system or registry to make it operational and comprehensive of all relevant information (e.g., information on the location, ownership, carbon accounting and financial flows for sub-national and national REDD+ programs and projects), and publicly accessible.

- Prepare operational guidance clarifying the roles and responsibilities of entities involved in the Emission Reduction transaction registry, as well as rules for operation of the registry.
- Organize training and workshop to build capacity of REDD Cell staff and other institutions that is proposed to be involved in managing the registry.

The final report from the study is expected by May 2014. Then by July 2014, arrangements for the national registry for the ER program will have been finalized.

**18. List of acronyms used in the ER-PIN**

*Please include an explanation of any institutional or other acronyms used. Add rows as necessary.*

<b>Acronym</b>	<b>Meaning</b>
ACOFUN	Association of Collaborative Forest Users, Nepal
AEPC	Alternative Energy Promotion Centre
ANSAB	Asia Network for Sustainable Agriculture and Bio-Resources
CBD	Convention on Biological Diversity
CFUG	Community Forestry User Group
CoFM	Collaborative Forest Management
CSOs	Civil Society Organizations
DFID	Department for International Development
DFO	District Forest Office
DFRS	Department of Forest Research and Survey
DFSCC	District Forestry Sector Coordination Committee
DNF	Dalit NGO Federation
DNPWC	Department of National Parks and Wildlife Conservation
DoF	Department of Forests
DRPMU	District REDD+ Program Management Unit
DRWG	District REDD+ Working Group
EIA	Environmental Impact Assessment
ERPA	Emission Reductions Payment Agreement
ERPD	Emission Reductions Program Document
ER-PIN	Emission Reduction Program Idea Note
FCPF	Forest Carbon Partnership Facility
FECOFUN	Federation of Community Forestry Users, Nepal
GHGs	Greenhouse gases
GoN	Government of Nepal
GPG	Good Practice Guidelines
HIMAWANTI	Himalayan Grassroots Women's Natural Resource Management Association
ICIMOD	International Centre for Integrated Mountain Development
IPCC	Intergovernmental Panel on Climate Change
IPOs	Indigenous People Organizations
LAMP	LiDAR-Assisted Multi-Source Program



LRMP	Land Resource Mapping Project
LULUCF	Land Use, Land Use Change and Forestry
MoFSC	Ministry of Forests and Soil Conservation
MSFP	Multi Stakeholder Forestry Program
MTR	Mid-Term Report
NAFAN	National Forum for Advocacy, Nepal (NAFAN)
NDFI	Normalized Difference Fractional Index
NEFIN	Nepal Federation of Indigenous Nationalities
PC	Participants Committee
REDD	Reducing Emissions from Deforestation and Forest degradation
REDD Cell	REDD Forestry and Climate Change Cell
RL	Reference Level
RWG	REDD Working Group
SDC	Swiss Agency for Development and Cooperation
SMART	Scientific, Marketable, Affordable, Reliable and Time-saving
SMF	Sustainable Management of Forest
TAL	Terai Arc Landscape
WWF	World Wildlife Fund

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**20. List of Annexes (Please see separate document)**

- Annex A: Letter of Endorsement from Honorable Minister for Forests and Soil Conservation and Chair of the Apex Body**
- Annex B: Letter of Endorsement from Secretary, Ministry for Forests and Soil Conservation and Chair of the REDD Working Group**
- Annex C: Commitment and support to the ER program from Ministry of Finance**
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