



Forest Carbon Partnership Facility (FCPF)  
Carbon Fund

Emission Reductions Program Idea Note (ER-PIN)

Country: **Lao People's Democratic Republic**

ER Program Name: **Promoting REDD+ through Governance,  
Forest landscapes and Livelihoods  
in Northern Lao PDR**

Date of Submission: 11 September 2015

***Disclaimer***

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***The Facility Management Team and the REDD Country Participant shall make this document publicly available, in accordance with the World Bank Access to Information Policy and the Guidance on Disclosure of Information for the FCPF (FMT Note CF-2013-2 Rev, dated November 2013).***

## 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 CFM/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+ Division, Department of Forest Resources Management, MoNRE
<b>Type and description of organization</b>	Government office
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<b>Title</b>	National REDD+ Focal Point, DDG DFRM, MoNRE
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<b>Email</b>	<a href="mailto:inthavymrc@gmail.com">inthavymrc@gmail.com</a>

### 1.2 List of existing partner agencies and organizations involved in the proposed ER Program

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.

<b>Name of partner</b>	<b>Contact name, telephone and email</b>	<b>Core capacity and role in the proposed ER Program</b>
<b>Government Agencies</b>		
<i>REDD+ Division, DFRM, MoNRE</i>	Inthavy Akkharath <a href="mailto:inthavymrc@gmail.com">inthavymrc@gmail.com</a> Syphavanh Inthaphatha <a href="mailto:syphavan9@yahoo.com">syphavan9@yahoo.com</a>	Appointed focal point of the ER Program Working Group.
<i>REDD+ Office, DoF, MAF</i>	Khamsene Ounekham <a href="mailto:khamseneok@gmail.com">khamseneok@gmail.com</a> Kinnalone Phommasack <a href="mailto:kinnalone.ph@gmail.com">kinnalone.ph@gmail.com</a>	Appointed members to the ER Program Working Group. Act as liaison for the FCPF readiness process.
<i>REDD+ Task Force, DG, DFRM, MoNRE</i>	Vongdeuan Vongsihalath <a href="mailto:vd22209215v@hotmail.com">vd22209215v@hotmail.com</a>	Coordinates and controls REDD+ at the national level, including the ER Program
<i>Bokeo province Director General of PoNRE</i>	Somphone Vannasy  Bounthane Sati +856 20 55666239	Selected province for the ER Program
<i>Luang Namtha province Deputy Director General PoNRE</i>	Som Sihathiep +856 20 56162577 Oukeo Xayatham <a href="mailto:Oukeo80@yahoo.co.th">Oukeo80@yahoo.co.th</a>	Selected province for the ER Program
<i>Luang Prabang province Director General of PoNRE</i>	Chanthavong Phonnasith <a href="mailto:Chanthavong4s@gmail.com">Chanthavong4s@gmail.com</a> Kattiya Vannasak +856 20 22131319 Xang Sanaphon +856 20 54007777 Bounmy Savath	Selected province for the ER Program

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<i>World Bank</i>	Robert Davis <a href="mailto:rdavis1@worldbank.org">rdavis1@worldbank.org</a> Soudalath Silaphet <a href="mailto:ssilaphet@worldbank.org">ssilaphet@worldbank.org</a>	Focal points for the World Bank Lao Country Office
<i>CLIPAD project, GIZ</i>	Jens Kallabinski <a href="mailto:jens.kallabinski@giz.de">jens.kallabinski@giz.de</a> Sebastian Koch <a href="mailto:sebastian.koch@giz.de">sebastian.koch@giz.de</a>	National REDD+ policy support and implements field activities for REDD+ in the ER Program provinces
<i>FPREP project, JICA</i>	Noriyoshi Kitamura <a href="mailto:noriyoshi.kitamura@gmail.com">noriyoshi.kitamura@gmail.com</a> Eiji Egashira <a href="mailto:egashira.eiji@gmail.com">egashira.eiji@gmail.com</a>	National REDD+ policy support and implements field activities for REDD+ in the ER Program provinces
<i>SUFORD-SU project</i>	Paula Williams <a href="mailto:pjwilliams@att.net">pjwilliams@att.net</a>	Implements field activities for REDD+ in the ER Program provinces, including with FIP funds. Act as liaison for the FIP process.
<i>UN-REDD</i>	Akiko Inoguchi <a href="mailto:Akiko.inoguchi@fao.org">Akiko.inoguchi@fao.org</a>	Coordinates the drafting of the ER-PIN
<b>Private Sector and Consultants</b>		
<i>Forest Carbon</i>	Gabriel Eickhoff <a href="mailto:g.eickhoff@forestcarbon.com">g.eickhoff@forestcarbon.com</a>	Contributes to the drafting of the ER-PIN

## 2. Authorization by the National REDD+ focal point

*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*

<b>Name of entity</b>	REDD+ Division, Department of Forest Resources Management, MoNRE
<b>Main contact person</b>	Dr Inthavy Akkharath
<b>Title</b>	National REDD+ Focal Point, DDG DFRM, MoNRE
<b>Address</b>	Thongkhanhkhram Rd. Vientiane Capital, Lao PDR
<b>Telephone</b>	+856 21 261 187 / +856 205686 2279
<b>Email</b>	<a href="mailto:inthavymrc@gmail.com">inthavymrc@gmail.com</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*

A statement of commitment by the Minister of MoNRE is appended to this ER-PIN, as focal ministry for REDD+ in Lao PDR. Procedures for national endorsement of the ER-PIN have been completed including through consultation with the National REDD+ Task Force (RTF) and the Forestry Sector Working Group (FSWG), and through consultations with the six provinces selected as the Accounting Area for the ER Program.

## 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.*

Political commitment to the ER Program and the ER-PIN comes from the level of the Prime Minister, through the Government Office of Lao PDR. The ER-PIN has is also politically supported by the highest level of the REDD+ institutional arrangement in the Government of Lao PDR; from the Minister of MoNRE, who is also the head of the National Environmental Committee (NEC), as well as from the focal point ministry for the World Bank, Ministry of Finance (MoF).

A **letter of commitment from the Minister of MoNRE** is appended. Under the leadership of MoNRE, the ER-PIN has been consulted and supported for submission through the National REDD+ Task Force represented by 24 members of different sectors including, MoNRE, MAF, Ministry of Planning and Investment (MPI), Ministry of Energy and Mines (MEM), Ministry of Justice, Ministry of Finance (MOF), Ministry of Defense, National Agriculture and Forestry Research Institute (NAFRI), National University of Laos (NUOL), Lao Front for National Construction (LFNC), Lao Women's Union (LWU) and the National Chamber of Industry and Commerce.

**MOF** in consultation with the Government's Office has confirmed its commitment to the ER-PIN and ER Program through a letter to the World Bank, also appended to the ER-PIN.

**Provincial governors of the six proposed provinces** of the ER Program have also expressed their commitment to participate in the Program, as demonstrated through letters promptly following the submission of the ER-PIN, signed by the Governors of the six provinces.

Once accepted into the Carbon Fund pipeline, the ER Program will be discussed further through the National REDD+ Task Force and raised to the National Environmental Committee, led by the Minister of MoNRE, for guidance.

## 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.*

The Government of Lao PDR signed the REDD+ Readiness Preparation Grant Agreement with the World Bank in August 2014. Following the agreement, MAF assigned the Project Management Team (PMT) consisting of the REDD+ Office under the Department of Forestry (DoF) and the REDD+ Division under Department of Forest Resource Management (DFRM) of MoNRE. The Government recognizes that REDD+ readiness preparation under the FCPF support has been a slow process. The main problems included lack of experience managing World Bank supported programs (e.g. procurement plan process), long process of hiring competent international firms, and insufficient human resources in the NRTF Secretariat team. Now that all the essential steps for the smooth functioning of the program have been established, the Government will expedite the national level REDD+ readiness process. Lao PDR remains committed to demonstrate significant progress on readiness by the time the country is ready to submit an ERPD to the Carbon Fund.

Notwithstanding the delayed progress under FCPF Readiness, REDD+ in Lao PDR has made significant progress through other initiatives, namely bilateral and multilateral projects working at national and provincial levels on REDD+. These activities have ultimately contributed to Lao PDR gaining targeted experience across all components of the R-PP and beyond.

### **Component 1: Organize**

The National REDD+ Task Force (RTF) originally established by the MAF in 2008 has changed hands and is now led by the Director-General of DFRM of MoNRE as chairperson following the establishment of MoNRE and the reform of the forestry sector in 2011. The RTF is responsible for coordinating, facilitating and promoting REDD+ activities in the country. After a period of dormancy following the ministerial restructuring, the RTF has been reactivated and has met four times since 2014, recently agreeing on the establishment of the six Technical Working Groups (TWG), which includes TWGs on legal framework, land use coordination, safeguards, enforcement and implementation of mitigation, REL/MRV and benefit sharing. Details terms of reference for the TWGs are being prepared, but their principal role will be to provide technical advice on their area of expertise to the RTF and the REDD+ Division under DFRM. The RTF also discussed the structures for implementing REDD+ at the provincial levels. (See section 7.1 for more information.)

Progress on consultations include the following:

- Consultation meetings at the national and sub-national levels were organized (one meeting in central and eight meetings in provinces) to inform the relevant stakeholders on REDD+ Readiness activities and proposed action plans;
- Consultation with the two Readiness pilot provinces (Houaphan and Champasak) over provincial REDD+ institutional arrangement are under way (Houaphan province has already established a Provincial REDD+ TF), and it is expected that the establishment of both Provincial REDD+ TF and Provincial REDD+ Office (Unit) will be completed by October 2015; and
- Consultation with the six proposed provinces for the ER Program undertaken in August 2015 (see more information in Section 6.)

### **Component 2: Preparation of the REDD+ Strategy**

A number of studies have been implemented to analyze national and local drivers of deforestation and forest degradation, primarily through projects working at various levels on REDD+. As a result, there is general consensus on the main drivers at the national level, and growing understanding of how these drivers may be addressed, or improved.

Review and assessment of national level institutional capacity for implementing REDD+ has also been conducted resulting in clearer terms of references for the REDD+ Division and key agencies and positions within the central Government (see Section 7.3 for more information.)

### **Component 3: Develop a reference scenario & Component 4: Monitoring, Reporting and Verification**

With support from FIP (SUFORD-SU) and JICA's NFIS (National Forest Information System) project, draft results of wall-to-wall LULUCF maps for 2000, 2005 and 2010 have been made available, and the same is underway for 2015. Through the course of this work, issues such as forest definition and stratification have been discussed thoroughly among the related Government agencies. Based on this and data from the 1<sup>st</sup> National Forest Inventory (NFI), a preliminary forest reference level has been prepared for the ER Program. The plan is to generate a national reference level using updated activity data (i.e. finalized maps for 2000, 2005, and 2010 and the addition of a 3<sup>rd</sup> time period map for 2015) and emission factors informed by the next (i.e. 2<sup>nd</sup>) NFI, to be conducted in 2016. In addition to updated biomass stocks, the 2<sup>nd</sup> NFI will also provide Lao PDR with country-specific allometric equations. The institutional arrangement for the National Forest Monitoring System is centrally located within the Forestry Inventory and Planning Division (FIPD) of DoF, MAF. For more information, see Sections 8 and 9.

#### **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).**

While elements of the Readiness Package are already underway, the Readiness Package preparation has yet to be addressed. It is planned for the FCPF Readiness process to address this in the second half of 2016 and submission to the FCPF Participants Committee during the first quarter of 2017.

#### **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.*

While the **National REDD+ Strategy and/or Action Plan of Lao PDR** is still under discussion, it is anticipated to be one of the main areas of work under the FCPF Readiness process in 2016. Since the Government reform took place in 2011, the administrative units in charge of REDD+ have been split between the ministries MAF and MoNRE, making opportunities for national dialogue on strategies for REDD+ for Lao PDR ad hoc and limited to national and provincial workshops held by initiatives aiming to demonstrate REDD+ piloting. With the renewed establishment of the National REDD+ Task Force (RTF, reconvened in 2014 with meetings as recently as early July and September 2015) and the operational start-up of the FCPF, 2016 is envisaged to be a landmark year for the operationalization of REDD+, starting with the engagement of stakeholders on REDD+ discussions through the REDD+ strategy preparation process.

In this context, development of the ER Program is anticipated to directly reflect the interventions and priorities identified in the National REDD+ Strategy. A variety of issues which have not been concretely discussed in the context of the emerging national program can now be mainstreamed in the context of the ER Program, including results-based payments and consultation with national stakeholders on the tangible effects of REDD+ in order to gain wider buy-in.

It is anticipated that beginning with the processes of the ER-PIN as through the ER-PD development (if/when the ER-PIN is accepted by the Carbon Fund), the ER Program will be an important impetus for directly providing actionable interventions for the national REDD+ Strategy and for drawing together the lessons gained from the various on-going initiatives into a cohesive REDD+ framework for the country. Likewise, the ER Program is also seen as a learning feedback mechanism for the evolution of the REDD+ Strategy, to ensure that it is relevant and able to change with the national context.

At the time of the ER-PIN preparation, key policy and legal documents were undergoing review. Many of these, including the Land Policy, Land Law and Forestry Law are key to the development of a strong national policy framework for the national ER Program. Once developed, the REDD+ Strategy is anticipated to be mainstreamed into emerging national strategies and policy documents, including the **National Socio-Economic Development Plan (NSEDPP)**. The NSEDPP is one of the broadest national level planning instruments. At the time of writing, the NSEDPP of 2016-2020 was under planning and development. The 8<sup>th</sup> NSEDPP (2016-2020) refers to an overall objective including the effective management of natural resources, and further stipulates carrying forward from the 7<sup>th</sup> NSEDPP the target of reaching a national forest cover of 70% by 2020. This target is echoed throughout national forest development strategies and policies of Lao PDR, including the **Forestry Strategy 2020** and the draft **Natural Resources Strategy 2016-2025** (being drafted at the time of the ER-PIN preparation). The means through which this target should be achieved is identified as conservation of existing forests, regeneration of temporarily un-stocked forests as an integral part of the rural livelihood support system, and reforestation.

Aside from the three major REDD+ related demonstration projects in the country (i.e. PAREDD funded through JICA, CliPAD funded under BMZ of Germany, SUFORD-SU with FIP and other financing) and, which aside from their practical demonstration values have policy and legal framework supporting functions, a number of smaller parallel initiatives also exist which play key roles in the proposed ER Program. Integrated spatial planning, a key approach of the national ER Program is also mainstreamed into the Natural Resources Strategy as a key intervention. In August 2014, a Notice was issued by the National Assembly to propose to the Government to direct/instruct relevant Ministries to survey and re-delineate all boundaries of the three forest management zones/categories (i.e. production, protection and conservation) of Lao PDR, with a focus on comprehensive and accurate borders. MoNRE is currently responding to this Notice initially through a pilot. Throughout the review processes, efforts have been made to promote certain critical enabling issues for REDD+ such as secure rural land tenure and forest classification.

It is also important to note that as cited in the country's **second National Communication to the UNFCCC**, the land use and land use change and forestry (LULUCF) sector is the single biggest source of GHG emissions (>70% of all emissions in 2000) in Lao PDR – a trend that has emerged only since around 2000. In this regard, REDD+ activities are a central intervention option among the **Intended Nationally Determined Contributions (INDCs)** of Lao PDR, submitted to the UNFCCC. As such, the interventions proposed under the ER Program have been mainstreamed into the National Climate Change Strategy (2010) and will continue to inform it through the National REDD+ Strategy development process.

#### 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 Accounting Area, e.g., administrative jurisdiction(s).*

The proposed Accounting Area of the ER Program straddles across six of the northern provinces of Lao PDR, constituting **approximately 35% of the national territory**. The proposed Accounting Area is a contiguous landscape, covering the entire administrative areas of **Luang Namtha, Bokeo, Sayabouri, Oudomxay, Luang Prabang and Houaphan provinces**. Each province shares an international border with one of the surrounding countries of Thailand, Myanmar, China and Viet Nam. The Northern region of Lao PDR is characterized by **hilly topography, remote accessibility and limited public and industrial infrastructure, unique ethnic minority communities, and a persistent prevalence of poverty**. Within the Northern region, the provinces overall are alike.

**Shifting cultivation** practices are particularly characteristic to this region. The Northern region of Lao PDR has historically been the **poorest and most rural** region of the country, despite having been the target of many poverty reduction programs and projects (e.g. the National Growth and Poverty Eradication Strategy, northern Uplands Development Program, and others). Recently, poverty rates in the north have improved, but recent statistics still show that the annual per capita income is the lowest among the three regions in the country, estimated at approximately \$1,200 for 2013-2014. The proportion of “poor” households was reported at approximately 14% for the same period, and while on par with the Southern region, it is considerably higher than the Central region of the country (8<sup>th</sup> NSEDP). Houaphan province, one of the 6 Provinces proposed has the highest proportion of poor households in the country.

It should be understood that in selecting this area, Lao PDR envisages the rollout of REDD+ across the entire national territory, thus issues of domestic leakage are only a temporary concern. These provinces are relevant as the Accounting Area of the ER Program in that each currently host one or more projects that are working on REDD+ or REDD+-relevant actions, and are considered to be more likely and quicker (i.e. within the time period of the ERPA) to embrace REDD+ as part of their provincial development framework, and thereby generate ERs.

In terms of drivers, the northern uplands of Lao PDR and the selected provinces in particular display **all of the main direct and underlying drivers** identified elsewhere in the country, all of which can attribute **underlying poverty, shifting cultivation practices and limited local governance capacities** to be at the core of historical land use change. **Rural poverty and livelihood improvement** will be central to addressing any land use related issues in Lao PDR. Where change can be successfully demonstrated in the Northern region it can act as a guide towards successful implementation in the rest of the country. The proposed ER Program will support the implementation of key national strategies and development plans including the draft 8<sup>th</sup> National Socio-Economic Development Plan, Forestry Strategy 2020, Natural Resources and Environment Action Plan 2016-2020 and Vision to 2030 (as aforementioned under Section 3.)

The area of annual deforestation and forest degradation in the six provinces proposed as the ER Program area between 2000-2010 was approximately 60,169 ha/year compared to a national average of 138,602 ha/year; **approximately 45% of the deforestation and degradation took place within the selected provinces**.

The proposed Accounting Area presents a suitable landscape for testing different strategies for REDD+. Regionally, the proximity of these provinces to growing regional economic growth centers, namely China and Viet Nam make the region particularly prone to regional markets and businesses acting as the agents behind the scene of deforestation and degradation, and local communities and authorities playing a more visible role in the land use change dynamics. The landscape is a key crossroads for the development of Government interventions that help the region to adapt to increasing domestic land-based commodity demands and underlying cross-border drivers.

Aside from emission reductions through mitigation interventions, northern Lao PDR has vast potential for **forest enhancement activities**. Compared to the other regions in the country, the Northern region has a high occurrence of area zoned for forest management, which are in fact currently highly degraded, in some stage of regrowth or are comprised of un-stocked production forests (See Table 4.1a below).

Figure 4.1a below displays the total spatial extent of the 6-province ER Program based on a draft, but most up-to-date results of a 2010 land cover mapping exercise applying 5m resolution satellite imagery for analysis (2010 National Level Forest Type Map FIPD/JICA, implemented in 2015). Data on total provincial area and the extent of provincial forest cover is expressed in Table 4.1a. The results of the draft 2010 National Level Forest Type Map FIPD/JICA updates the 2010 National Forest Cover Assessment<sup>1</sup> (FCA 2010), completed in July 2010. The two datasets are largely similar, with several underlying methodological differences, including generally, the use of higher resolution imagery for the revision done in 2015. It is important to note that for both mapping exercises, classes of “bamboo” and “Regenerating Vegetation (RV)” were considered key categories, the latter of which are predominantly degraded or unstocked forests following shifting cultivation practices with a vegetation structure that currently fall below, but in situ could potentially reach the forest definition of Lao PDR (see Section 8 for the forest definition of Lao PDR). Adhering to the forest definition of Lao PDR, these areas are not defined as forests, but for the purpose of REDD+ MRV including the ER Program and ER-PIN, they are accounted as degraded forest, and form an important part of the REDD+ interventions for Lao PDR. This is consistently reflected in the MRV and FREL/FRL of Lao PDR, and considered conservative in terms of baseline emissions because forest areas which undergo shifting cultivation and have gone into a state of regrowth will be considered as degradation, rather than deforestation and thus have an overall lower emission factor.

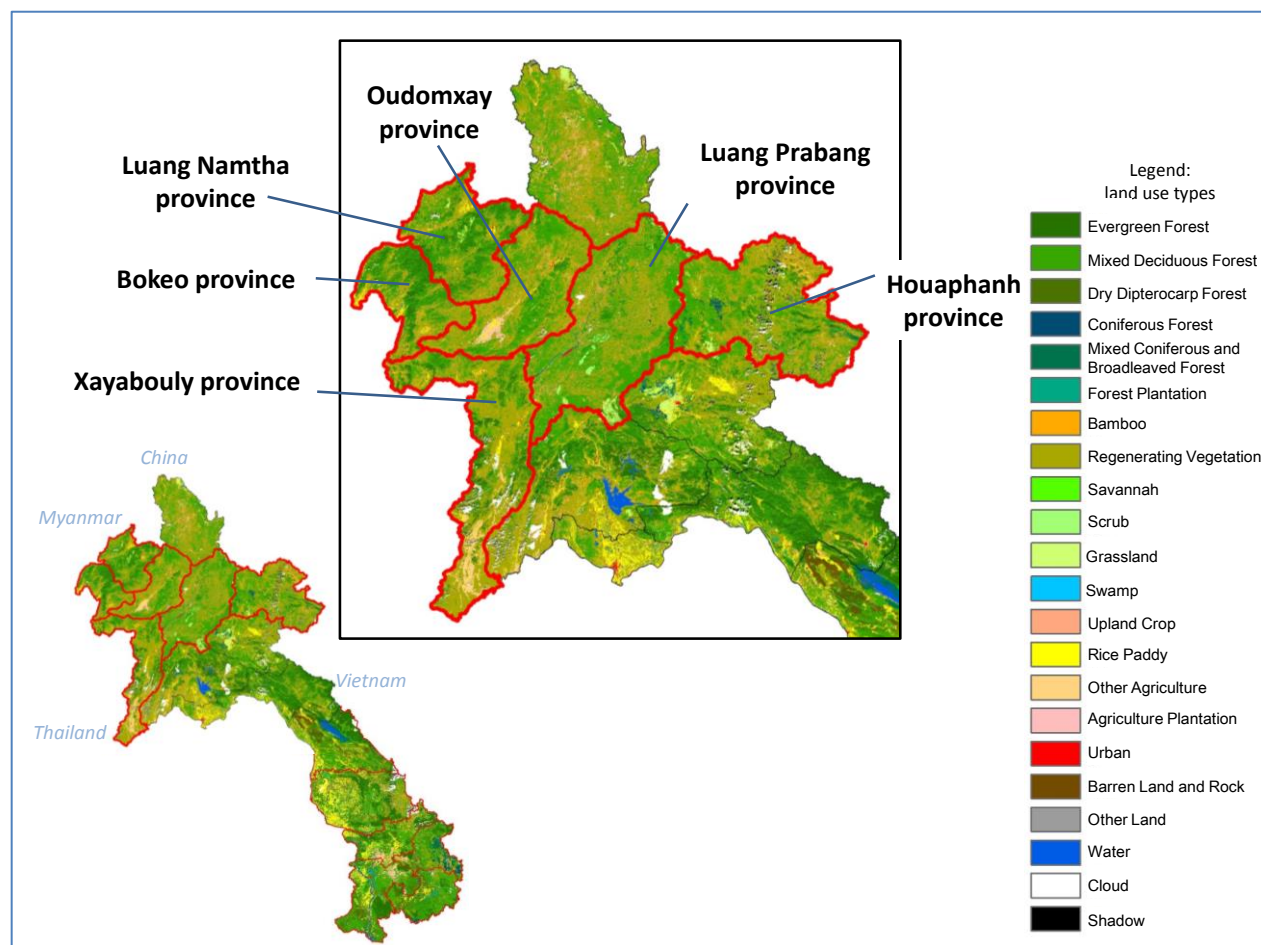


Figure 4.1a: Map of forest cover of Lao PDR 2010 with six provinces of the ER Program

<sup>1</sup> Forest Cover Assessment, July 19<sup>th</sup>, 2010. Forest Inventory and Planning Division, Ministry of Agriculture and Forestry, Lao PDR.

Table 4.1a: Forest cover per province 2010 – draft<sup>2</sup>

Province	Provincial area (ha)	2010 forest cover not including RV and bamboo (ha)	2010 forest cover not including RV and bamboo (% of provincial area)
Bokeo	709,697	417,048	59%
Houaphan	1,737,128	907,427	52%
Luang Namtha	953,265	591,230	62%
Luang Prabang	1,975,505	881,609	45%
Oudomxay	1,186,704	568,377	48%
Sayabouri	1,560,798	909,791	58%

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

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

- prepared; and*
- implemented (including expected start date of the proposed ER Program).*

If accepted into the Carbon Fund pipeline, Lao PDR is ready to start work on the ER Program Document development immediately, for completion within 2017. It is also expected that the Readiness Package will be prepared and made presentable by early 2017. Based on this expectation, the proposed duration of the ERPA would be approximately five years from 2018 to 2022. In order to secure cash flow, it is proposed for at least two timings of payments during the time of the ERPA.

The intention of the Government of Lao PDR is for REDD+ to be rolled out nationally and for as long as the international community is committed to REDD+. In this respect, after the expiration of the ERPA, it is envisaged that the ER Program will be merged into the National REDD+ Program and will be continuously implemented with a prospect for performance and results-based payments from a variety of other fund and/or market sources. Institutionally, one of the key lessons to be gleaned through the initial phase of piloting REDD+ at the sub-national level will be about how to integrate the unique aspects of REDD+ planning and monitoring into the existing planning and monitoring institutions. This process of integration will allow the mainstreaming of REDD+ into existing planning and monitoring, and to reduce costs and time needed for REDD+ planning and monitoring.

## 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 Accounting Area. Draw on the analysis produced for your country's Readiness Preparation Proposal (R-PP) and/or Readiness Package (R-Package).*

At the national scale, a drivers study conducted for the R-PP preparation (Mekong Maps 2010) and others (Lestrelin et al. 2013, Fujisaki 2013) identify several drivers of both deforestation and forest degradation, and a complex dynamics of interplay among these direct and underlying drivers that ultimately result in forest loss and degradation. It is difficult and often misleading to separate out these complex dynamics, and requires addressing the different direct and indirect drivers simultaneously for impact.

A list of the main direct and indirect drivers of deforestation and forest degradation are presented below (Table 5.1.a), identifying the different indirect factors at play behind the direct contributor. **Weak governance and limited institutional capacity** are identified as an underlying driver behind all of the direct drivers. Though there is limited structured analysis conducted, various studies and anecdotal evidence point to prevalence of weak governance in

<sup>2</sup> (Source: Draft 2010 National Level Forest Type Map, FIPD/JICA)

the forestry sector and limited resources and capacity to address this, resulting in overall loss of forests. It is notable that Lao PDR is the first regional country to have undertaken a self-assessment on forest governance applying the PROFOR governance framework (FCPF 2014). **Poverty** and associated issues of **food security, forest and land tenure security** are also important underlying drivers that need to be taken into account in designing interventions. What significantly adds to the complexity of the issue are the **cross-border nature** of some of the key drivers; notably, the **demand for timber, agricultural products, minerals and energy**.

Table 5.1a: List of main direct and indirect drivers of deforestation and forest degradation

Activity	Indirect/underlying	Direct
<b>Forest degradation</b>	<ul style="list-style-type: none"> <li>Weak governance, limited resources and institutional capacity</li> <li>Poverty (Lao PDR is an LDC)</li> <li>Population growth</li> <li>Shift in rural livelihoods from subsistence-based to market-based</li> <li>Limited trade/market access for non-shifting agroforestry and fruiting crop commodities</li> <li>Displacement of subsistence agricultural plots into natural forests</li> <li>Food security requirements of rural population at risk</li> <li>Issues of land tenure and forest access insecurity</li> </ul>	<b>Pioneering shifting cultivation for expansion of agricultural area</b>
	<ul style="list-style-type: none"> <li>Weak governance, limited resources and institutional capacity</li> <li>High international demand for timber</li> <li>Quotas allowed for salvage logging alongside infrastructure projects etc.</li> </ul>	<b>Legal and illegal selective logging</b>
<b>Deforestation</b>	<ul style="list-style-type: none"> <li>Weak governance, limited resources and institutional capacity</li> <li>International demand for agricultural crops as food and other inputs</li> <li>incomplete land use zoning and titling</li> </ul>	<b>Concessions and contract farms converting forests (or once shifting cultivation sites) into agricultural areas</b>
	<ul style="list-style-type: none"> <li>Weak governance, limited resources and institutional capacity</li> <li>International demand for agricultural crops as inputs (feed, paper, rubber etc.) and national development strategies in support</li> </ul>	<b>Concessions and contract farms converting forests (or once shifting cultivation sites) into industrial tree plantations</b>
	<ul style="list-style-type: none"> <li>Weak governance, limited resources and institutional capacity</li> <li>International demand for minerals and national development strategies in support</li> </ul>	<b>Mining projects converting forests</b>
	<ul style="list-style-type: none"> <li>Weak governance, limited resources and institutional capacity</li> <li>International demand for electricity and national development strategies in support</li> </ul>	<b>Hydropower infrastructure converting forests</b>

It is also important to note that deforestation and forest degradation are often not separate incidents, but rather a dynamic of forests subject to degradation eventually giving way to deforestation. As evident from the table above, weak governance and limited institutional capacity is a critical gap and underlying driver for each and every main driver. The gap is prevalent for all levels of Government, central and local, in processes of planning, monitoring, law enforcement, and particularly in inter-sectoral coordination. This is discussed further in the section below.

The dynamics of deforestation and forest degradation on the national scale are relevant also for the Northern region and for the six provinces proposed for the ER Program of Lao PDR. All drivers of deforestation and forest degradation identified above are present in the region, with a significant incidence of shifting cultivation occurring in this region, as compared to the rest of the country. A number of studies have been conducted with different geographical coverage within the six provinces of the ER Program. The findings of these studies corroborate the national-level drivers analysis mentioned above.

## Drivers of Forest Degradation

### ***Pioneering shifting cultivation***

Domestically, pressure on land comes from growth in population (at approximately 2.2% p.a. nationally as of 2010, 8<sup>th</sup> NSEDP) combined with the more direct drivers of shift in rural livelihoods from subsistence based agriculture to market-based commercial agriculture expanding cultivation area through pioneering shifting cultivation. The Agricultural Census reports a rapid increase in farmers producing primarily for non-subsistence purposes, from a mere 6% in 1998-98 to approximately 30% by 2010-211. The Government's Forestry Strategy 2020 mentions that shifting cultivation occurs on about 500,000ha (or, roughly 2.2% of forest lands, as of 2005). Whereas traditional shifting cultivation practices were rotational and based on longer fallow periods of seven to twelve years, allowing recovery of soil productivity, recent practices have adopted shorter fallow, sometimes of less than three years. This results in rapid loss of soil and vegetation and proliferation of species such as *Imperata cylindrica* grass, also very prone to fires. Spread of such fires is also a driver of forest degradation, and in the context of this document, is addressed within this driver. In contrast to such rotational shifting cultivation practices (*hay moun vien*), encroachment that does not return to the original plot advancing continuously into the forest (*hay kheuan nhai*) also take place (Higashi 2015).

Reduction and eventual complete termination of shifting cultivation practices have been part of the Government's policy for some time. One of the main Government approaches for curbing shifting cultivation has been its Land Use Planning and Forest Allocation Program first piloted then rolled out nationally since 1996, involving the steps of land use zoning, planning and resettling as necessary. According to the Forestry Strategy 2020, households engaged in shifting cultivation have reduced from 210,000 in 1990 to 43,000 in 2005. However, land use patterns can be very dynamic and an accurate understanding of practices of shifting cultivation is a challenge in itself. While shifting cultivation may have reduced with Government and donor supported programs on land and forest allocation, it is also possible that the trends will change when and if local conditions change or are not considered suitable for meeting local food security requirements and cash flows. There are reports of temporary impacts of the Land Use Planning and Forest Allocation Program and subsequent return to shifting cultivation practices opening up new frontiers of natural forests as local communities struggle to make ends meet (Higashi 2015).

The Northern region (ie the proposed ER Program area) has a particularly strong association with the practice of shifting cultivation due to its hilly topography and as home to many ethnic minority communities. Also, generally speaking, villagers or rural households to play a larger role in land use changes in this region, whereas in the South main agents are more often businesses. In all studies, it is identified that agricultural expansion is widely occurring as a major threat to forests, transitioning from subsistence-based agriculture to accommodate commercial agriculture and industrial tree plantations and competing for land with rice and other subsistence agriculture, and therefore risks displacing pioneering shifting cultivation into natural forests. Local development plans also support the transition to commercial agriculture. In response, practices of shifting cultivation are also changing, adopting shorter fallow periods for crops such as maize to meet market demands. Whereas previously shifting cultivation areas were predominantly under fallow, this is changing to a prolonged status as upland crop fields, which marginalizes the idea of shifting cultivation sites as "temporary un-stocked forests"<sup>3</sup>. Government's Land Use Planning and Land Allocation Program of the late 1990s was intended to counter the expansion of shifting cultivation area by allocation of land to rural households, including land for rice cultivation and forests for rotational shifting cultivation. However, the thinly-funded Program has resulted in many conflicts over the allocated land and land use, and is seen to be adding to the problem.

### ***Legal and illegal logging***

Increased demand for timber for feeding the furniture and other wood-based industries of regional countries is also driving forest degradation. The high profitability of timber combined with weak governance and law enforcement drives unsustainable and illegal logging of timber.

Agents involved are said to include businesses (domestic and foreign), the military, sometimes Government officials, with local communities often engaged as the direct agents conducting the logging operations (RPP 2010).

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<sup>3</sup> In fact, according to the Government's forest definition, fallow lands largely fall outside of the overall category of "current forests". The Government also employs an administrative system of land use management, whereby any land regardless of its actual cover, is considered forest land, if zoned as forest land. These two need to be understood as separate concepts.

According to UN COMTRADE, the value of imports on wood and wood-related articles from Lao PDR to China have dramatically increased from annually US\$1-2 million in the early 1990s to reach over US\$1 billion by 2014. Imports by Viet Nam also show an increase trend. Comparing data from the early 2000s, import by value grew by more than 10 times, reaching over US\$459 million in 2013. Viet Nam and China have reported the largest values of wood related imports from Lao PDR in the recent past, and projected to continue with strong demands into the future. The source and legality of wood materials within Lao PDR is difficult to trace. Lao PDR applies a quota system and a licensing system for timber harvesting, with several layers of quotas and licensing, making the monitoring of actual harvests against the quota and licenses difficult. The Government has three systems of quotas allocated annually primarily (but not exclusively) for Production Forest Areas (PFAs – for which there is currently a temporary moratorium on logging), and for salvage logging in various infrastructure sites such as dams, mining sites and road construction areas. There are also the provincially allocated quotas under a locally regulated quota system for local infrastructure projects and village forest use areas. Logging licenses are also issued by both national and provincial Governments including for salvage logging in infrastructure construction sites. Significant volumes of timber are harvested through permits issued from the local Government to serve as a locally regulated quota (EFI 2012.) The difficulty of monitoring these quota systems gives rise to the question of sustainability of the harvest, and blurs the legal status of such timber.

The Northern region is no exception for forest degradation from legal and illegal logging practices. For the survey on land concessions conducted 2011-2012, the total area of land concessions granted in the Northern region out-scaled that of the Central and Southern regions, though not all of these concessions may have involved forest conversion (Schoenweger et al. 2012). Reducing degradation from logging will require close coordination with the infrastructure and other projects for which logging quotas and licenses are issued, and for improvement of implementation and monitoring of the quotas and licensing schemes mentioned above.

## **Drivers of Deforestation**

### ***Industrial agriculture and tree plantations***

Regional demand for food crops and other agricultural inputs, such as feed, fertilizers, and rubber, also play a significant role in the land use dynamics of Lao PDR. The main trade partners for the country are the neighboring countries of China, Thailand and Viet Nam. The value of food and agricultural imports from Lao PDR into these three countries particularly over the last five years has been substantial. Major crops include; rubber, which has grown more than fivefold in the last five years (COMTRADE); maize, also displaying a dramatic increase in area of production and export, particularly from 2004-2008 (WCS 2014); coffee, more than tripling in value in the three years between 2010 and 2013 (COMTRADE); and cassava growing over sevenfold over the same three years. Increases in the last few years are considerable, and largely attributed to increased imports into China and Viet Nam. In terms of production of banana, cassava, maize and coffee within Lao PDR, the cultivation area has expanded from less than 100,000ha in 2000, to almost 350,000ha in 2013 (FAOSTATS), and assumed to have involved conversion of forests in many instances (including subsistence-based agricultural plots displaced by plots for these commercial crops).

Agents involved include foreign or joint-ventures working through different tenure forms, including large-scale concessions more common in the past (particularly up to the first moratorium on land concessions in 2007), and more recently the form of contract farming (Dwyer et al. 2015). The engagement of local farmers in the contract farming modality often conceals the underlying pressure from the cross-border markets and their businesses as agents behind the scene of conversion of forests into agricultural plots. For example, a case of local government's decision to offer land to an FDI thereby, displacing a villager's subsistence-agriculture plot into a natural forest, if analyzed purely through forest change maps would appear as if the agent of the driver were the local villager, as opposed to the business.

According to the results of the State Land Leases and Concessions Inventory conducted in 2011-2012, the area of concessions and leases for agriculture and forestry purposes amounted to approximately 450,000ha, with average concession/lease sizes of 453ha for agriculture, and 885ha for forestry projects (Schoenweger et al. 2012). According to the Agricultural Census of 2010-2011, main crops for the Northern region include maize and rubber; the latter has expanded to roughly 52,000ha, and accounted for more than 80% of the area in the whole country by 2011. Since 2011, fall of market prices for rubber have significantly impacted the appetite for rubber production in the Northern region. The same Census reports the highest rate of farmer households producing primarily for non-subsistence purposes of 37%, compared to the average 30% for the whole country, and 79% of farmers in the North reporting sales of at least parts of their production.

**Infrastructure development (including hydropower, mining and roads)**

Major mining and hydropower infrastructure investments also account as major drivers of deforestation, but overlap as cornerstones of national economic growth. Hydropower and mining are two of Lao PDR's key cornerstones for economic growth; together accounting for one fourth of total GDP growth for the period 2001-2015, and major foreign currency earner. Minerals and mining products accounting for over 58% of the total export value during the period 2011-2015 (draft 8<sup>th</sup> NSEDP).

**Hydropower**

Currently, the Government is investing or conducting feasibility studies for over 70 hydropower projects around the country (Ministry of Energy and Mines website 2015). Thirteen became operational within the last five years. The Ministry of Energy and Mines identifies that exploitable hydropower potential in the country is approximately 18,000MW and one-fifth has been developed so far (as of 2014.) The maximum reservoir area of dams in operation since 2000 accounts for over 80,000ha, and is suggestive of the magnitude of the area that may have undergone deforestation<sup>4</sup>.

The 8<sup>th</sup> NSEDP sets out a target to complete fifteen hydropower plants by 2020, and to start another 24 in the next five years. Electricity generated from these plants will serve Lao PDR's population (for which electrification rate was reported at 84% in 2013: 8<sup>th</sup> NSEDP) as well as neighboring Thailand and Viet Nam.

Among the provinces of proposed ER Program, there are at least another 14 hydropower projects planned for development, of which 10 are already in the construction phase. The total capacity of these 14 projects could amount to over 5,000MW if completed (Ministry of Energy and Mines).

**Mining**

Main projects and investments in mining include copper, bauxite, and gold among other minerals. According to the draft 8<sup>th</sup> NSEDP, 69 exploration contracts have been awarded to domestic and foreign companies, including 19 of which are for preparation and construction of processing facilities, and 50 which have engaged in extracting, processing and exporting. According to the State Land Leases and Concessions Inventory 2011-2012, concessions and leases for mining exploitation purposes amounted to nearly 550,000ha, and another roughly 1 million ha for mining exploration purposes. This constitutes the largest type of land investment in area at the time, also with the largest average concession/lease size of 1,155ha for mining exploitation, and 9,333ha for exploration (Schoenweger et al. 2012).

**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.*

As mentioned above, underlying and indirect drivers play a very important role in the trends of deforestation and forest degradation. Often, these factors, while overshadowed by the direct drivers create enormous constraints on the ability to efficiently and effectively address the direct drivers, and do not receive the necessary attention. Some of the key underlying and indirect factors are identified as below.

**National priorities for social and economic growth and climate change mitigation**

Hydropower and mining are two of Lao PDR's key cornerstones for economic growth. The Government plans on expanding the generation, transmission, distribution and off-grid development to increase domestic electrification and to fulfill its power supply commitments with neighboring countries (namely with Thailand, Viet Nam and Cambodia). Within the next five years, the draft 8<sup>th</sup> NSEDP sets out a target to complete fifteen hydropower plants. The development plans of the country also identify mining as a priority development area.

In addition to being a key source of economic development, as proclaimed through its national climate change strategy, hydropower is also seen as an important element of the country's climate change strategy, in promoting renewable energy choices (Strategy on Climate Change 2015, Lao PDR Second National Communications to the UNFCCC 2013). In this regard, Lao PDR in its 7<sup>th</sup> NSEDP positioned itself to become the "battery of ASEAN" through hydropower generation, thereby promoting renewable energy nationally and also for the ASEAN region.

<sup>4</sup> The aforementioned State and Land Leases and Concessions Inventory excluded hydropower from their scope, thus no comparative statistics can be determined.

With the continued prioritization of national economic growth through these two sectors, deforestation will inevitably take place. The scope for REDD+ to impact these drivers will be through indirect means of improving investment management and mitigating carbon and other negative impacts as far as possible, including carbon offsetting through reforestation projects in other locations (c.f. R-PP).

### ***Land tenure***

Since acquisition of land and exclusion of customary rights holders is a potential risk in the country, the ER-PIN intends to contribute towards creating clarity surrounding tenure arrangements so that people who have depended on forests for their livelihoods for generations are recognised as having legal title.

### ***Weak governance***

Also mentioned above in the section identifying the main drivers, weak governance has significant implications on forest management. There are three key areas which are inter-related and particularly important;

#### ***Planning and monitoring – cross-sectoral planning and coordination***

Forests in Lao PDR are up against several key competing pressures. Hydropower and mining investments, industrial agriculture including tree plantations, rural subsistence livelihoods and infrastructure development are some of the main pressures. Each of these are managed under different provincial agencies including the Department of Energy and Mining, the Department of Agriculture and Forestry, the Department of Natural Resources and Environment, and the Department of Transport. While each may be undergoing a due process of planning, cross-sectoral and spatial planning is often weak, and results in overlapping plans on the ground.

At the provincial level, the Provincial Office of Planning and Investment has the overall mandate to coordinate, but the current lines of reporting and planning structure does not lend to a strong coordinated inter-sectoral planning process. It is also often the case that even with an approved plan in place, rule of law is weakly applied, thus unplanned activities occur without going through a due process and approved at sub-provincial levels on ad hoc basis. More recently, there is renewed intention for the implementation of integrated spatial planning to be applied at all levels, and is mainstreamed through the sector strategy of the Ministry of Natural Resources and Environment (NRE Strategy 2016-2025). It is noted that REDD+ adds another layer to the already complex planning and implementation processes, thus requires careful attention particularly from the international development partners to integrate and mainstream through existing Government processes in order to succeed.

Overall monitoring of plans is also weak, particularly at the local levels, as budgets and capacity for monitoring wanes. As in the case described above, without a strong culture of monitoring policy, plans and projects, plans are likely to go unimplemented or ignored, and ultimately undermine the whole rationale for planning.

#### ***Forest law enforcement***

By and large the regulatory framework is adequate for managing the country's forest resources, but problems with implementation and enforcement of the laws means that the situation on the ground is generally quite different from what is planned. In 2007 the Department of Forest Inspection (DOFI) was created under MAF as an independent unit mandated to implement measures to address illegal logging, the smuggling of timber, non-timber forest products and wildlife, forestry-related corruption, and illegal land encroachment. DOFI is empowered to conduct forestry control operations, investigate allegations of illegal logging, make arrests and pursue prosecutions, collaborate with other agencies as well as the private sector and civil society in pursuit of forest law enforcement. DOFI is the largest dedicated forest law enforcement agency in Lao PDR with approximately 600 staff, including in all 18 provinces.

Progress, however, is severely hampered by inadequate allocation of funds in relation to the magnitude of the tasks and also by the lack of experienced staff, especially at local level. DOFI staff are predominantly from a forestry background, rather than a law enforcement background (UNODC, 2014). DOFI does receive support for operations and capacity building from the World Bank and FIPI via the SUFORD-SU project, GIZ, and a growing number of other development partners. The recent decision by the Government to take start negotiations on a voluntary partnership agreement with the EU on timber is expected to push the FLEGT work in the right direction.

#### ***Risk of corruption***

While the ER Program intends to strengthen weak and fragile governance structures and weak institutions, the lack of financial transparency and poor legal frameworks and/or enforcement capacity that could potentially result in inequitable distribution, elite capture and/or misappropriation of REDD+ payments will be present without adequate safeguards.

Activities are intended to enable improvements in governance capacity, especially in terms of monitoring and law enforcement, weaknesses in regulatory frameworks and local level resources. While these could lead to long-term opportunities, the program may fail due to the seizure of short-term opportunities in lieu of REDD+ benefits being realized. These may include carbon and/or tax fraud, money laundering and the displacement of illegal logging to areas not covered by REDD+ activities.

### **High opportunity costs of industrial agriculture**

While the issues above are more to do with the side of the Government, the high opportunity costs of industrial agriculture are largely a market-driven trend. Though there is not much scope for selection, the ultimate determination of land use is at the hands of a few actors, including the rural upland population. The growing demand from neighboring economies for agricultural crops as food and inputs (feed, rubber, paper etc.) and the organized network of businesses and middlemen provides an obvious alternative to the default option of a largely subsistence-based economy of the rural poor. REDD+ alone as a financial mechanism will not be sufficient to compete with such highly attractive alternatives.

### **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 emerging National REDD+ Strategy will undergo a process of mainstreaming into provincial-level planning processes aligned with the Government planning phases occurring every five years. **Provincial REDD+ Plans** will be the framework and process to ensure a consistent and coherent REDD+ Strategy from the central to the provincial level, with buy-in from both levels of Government.

For the ER Program, the approach to implementation will fit directly within the national system as part of the system, not separate to it. Provincial REDD+ Plans will be the framework through which national policies, strategies and action plans will be channeled into local-level plans and implementation. Based on the drivers identified, a number of interventions to reduce emissions and enhance carbon stock will be identified and planned for each province. While it is envisaged that Provincial REDD+ Plans will each be unique to respond to the respective drivers and circumstances of each province, several general packages of interventions will be common among provinces such as:

- 1) **Governance and law enforcement:** as above, weak governance and law enforcement is considered to be a prevalent cause and an underlying driver for all direct drivers of deforestation and degradation. Work in this regard will need to be wide in approach, as well as in the target audience – spanning from national to local levels. Improved coordination and implementation of planning and monitoring in processes of land use, land allocation and registration as well as concession grants, improved monitoring and data reporting of logging quotas and trade are among the key areas for improving governance and law enforcement. The Government's recent decision to strengthen work on FLEGT and to enter into negotiation with the EU on a Voluntary Partnership Agreement as well as the bilateral agreement with the Government of Viet Nam to collaborate on FLEGT and REDD+ provide a strong foundation to build on in this regard.
- 2) **Forest landscape management planning, and integrated spatial planning:** The importance of taking a landscape approach to management of forests is becoming evident, particularly in the context of Lao PDR where forest are divided in management according to their assigned functional category (i.e. production, protection, or conservation forests). Biodiversity corridors, watersheds, forest ecosystems often straddle across the assigned functional forest categories, and need to be integrated coherently into a management plan, before the different administrative agencies can implement these plans. Forest landscape management and improved spatial planning could reduce such impacts on forests, but will require close monitoring to ensure implementation adheres to plans. As mentioned above, several of the main drivers of deforestation including hydropower and mining are part of the national circumstances and cannot be removed without changing the entire national growth strategy. However, there is scope for improving the spatial planning, impact assessment and implementation monitoring process for such economic infrastructure, minimizing the potential loss of forest, and avoiding areas of high conservation value. Taking

on this intervention will address improved conditions for addressing control over the drivers of infrastructure development, industrial agriculture and tree plantations and pioneering shifting cultivation.

- 3) **Participatory land use planning and sustainable livelihood development:** To address drivers such as shifting cultivation (including resulting forest fires) and conversion to industrial agriculture and tree plantations, for which the main agents are the villagers, it will be critical to engage local communities from the planning stage, and to identify appropriate alternative livelihoods combined with training on farming, tree plantation, and agroforestry techniques to improve yield without expansion of farming area. Actual activities will entail participatory forest land use planning and management, capacity building and institutional development to promote appropriate farming, tree plantation, and agroforestry techniques, and technical support for improved access to market with assistance for alternative livelihood development. Issues of land tenure and registration will also be considered, to encourage village forestry arrangements in PFAs and uncategorized forests (forest areas that fall outside the three forest types of production, protection and conservation forests.)
- 4) **PES - Payment of Environmental Services:** In order to address forest degradation from pioneering shifting cultivation and legal and illegal logging, PES schemes will be introduced to collect funds from industries benefiting from forest ecosystems, such as hydropower and eco-tourism, to sustainably finance forest protection activities by local communities. Local communities will be mobilized to patrol their village forests, or protection and conservation forests through contracts. Existing national funds such as the Forest Resources Development Fund or the Environmental Protection Fund may be potential mechanisms to receive the collected PES payments, and for a benefit sharing mechanism to be devised to ensure sustainability.
- 5) **SFM certification:** As part of the strategy to address degradation from illegal logging and legal, but unsustainable wood extraction, SFM certification will be promoted for natural forests and small-holder plantations in production forest areas. It is currently envisaged that the current moratorium on logging in PFAs will be lifted in the future, as PFAs become equipped with improved management and inventory systems. Local communities will take on an active role in the silviculture management and harvesting of these forests. This intervention will also cater to enhancement of carbon stocks.
- 6) **Forest restoration and afforestation:** As mentioned above, the expanse of forestlands under the three forest categories that are currently not forested is significant. To meet the Government's target of reaching forest cover of 70%, areas will need to be regenerated, and provide substantial ground for forest restoration and afforestation activities. Natural regeneration, enrichment planting and gap planting will be promoted with the participation of local communities, combined with land allocation for local communities.

The main drivers to be addressed through the interventions fall outside the forestry sector (i.e. agriculture, energy, construction, transportation etc.) This being the case, multi-sectoral participation in REDD+ planning and monitoring will be critical. The role of the Ministry of Planning and Investment (MPI) at the national level, and the Provincial Office of Planning and Investment (PPI) at the provincial level to coordinate inter-sectoral planning, in hand with PONRE in coordinating integrated spatial planning will be extremely important. Mechanisms for strengthening inter-sectoral coordination will be carefully considered and piloted through the ER-PD stage. Capacity will need to be built among provincial staff (i.e. in the Department of Forest Inspection: DOFI, PONRE, PPI, etc.) for improved monitoring and enforcement including of environmental impact mitigation plans, land concession agreements, contract farming agreements etc.

Table 5.3a: Main drivers, agents and proposed interventions per forest strata

Forest management zone/category and management authority	Main drivers (by order of significance)	Agents	Proposed intervention
<b>Conservation Forest</b> (managed by MoNRE)	Infrastructure development (hydropower, mining, roads etc.)	Businesses Province	<ul style="list-style-type: none"> <li>Forest landscape management &amp; integrated spatial planning</li> <li>Governance and law enforcement</li> </ul>
	Pioneering shifting cultivation (including resulting forest fires)	Village	<ul style="list-style-type: none"> <li>Participatory land use planning and livelihood development</li> <li>Forest landscape management &amp; integrated spatial planning</li> </ul>

Forest management zone/category and management authority	Main drivers (by order of significance)	Agents	Proposed intervention
			<ul style="list-style-type: none"> <li>• Governance and law enforcement</li> </ul>
	Illegal logging (i.e. no legal logging in conservation forests)	Businesses Village	<ul style="list-style-type: none"> <li>• Governance and law enforcement</li> </ul>
	Industrial agriculture and tree plantations	Businesses Province Village	<ul style="list-style-type: none"> <li>• Forest landscape management &amp; integrated spatial planning</li> <li>• Governance and law enforcement</li> </ul>
<b>Protection Forest</b> (managed by MoNRE)	Pioneering shifting cultivation (including resulting forest fires)	Villages	<ul style="list-style-type: none"> <li>• Participatory land use planning and livelihood development</li> <li>• Forest landscape management &amp; integrated spatial planning</li> <li>• Governance and law enforcement</li> </ul>
	Infrastructure development (hydropower, mining, roads etc.)	Businesses Province	<ul style="list-style-type: none"> <li>• Forest landscape management &amp; integrated spatial planning</li> <li>• Governance and law enforcement</li> </ul>
	Illegal logging (i.e. no legal logging in protection forests)	Businesses Village	<ul style="list-style-type: none"> <li>• Governance and law enforcement</li> </ul>
	Industrial agriculture and tree plantations	Businesses Province Village	<ul style="list-style-type: none"> <li>• Forest landscape management &amp; integrated spatial planning</li> <li>• Governance and law enforcement</li> </ul>
<b>Production Forest (PFA)</b> (managed by MAF)	Pioneering shifting cultivation (including resulting forest fires)	Village	<ul style="list-style-type: none"> <li>• Participatory land use planning and livelihood development</li> <li>• Forest landscape management &amp; integrated spatial planning</li> <li>• Governance and law enforcement</li> </ul>
	Legal and illegal logging	Businesses Village	<ul style="list-style-type: none"> <li>• Governance and law enforcement</li> </ul>
	Infrastructure development (hydropower, mining, roads etc.)	Businesses Province	<ul style="list-style-type: none"> <li>• Forest landscape management &amp; integrated spatial planning</li> <li>• Governance and law enforcement</li> </ul>
	Industrial agriculture and tree plantations	Businesses Province Village	<ul style="list-style-type: none"> <li>• Forest landscape management &amp; integrated spatial planning</li> <li>• Governance and law enforcement</li> </ul>
<b>Other areas</b> (multi-ministry) and <b>Uncategorized forests</b> (managed by MAF)	Pioneering shifting cultivation outside zoned areas (including resulting forest fires)	Village	<ul style="list-style-type: none"> <li>• Participatory land use planning and livelihood development</li> <li>• Forest landscape management &amp; integrated spatial planning</li> <li>• Governance and law enforcement</li> </ul>
	Infrastructure development (hydropower, mining, roads etc.)	Businesses State	<ul style="list-style-type: none"> <li>• Forest landscape management &amp; integrated spatial planning</li> <li>• Governance and law enforcement</li> </ul>
	Industrial agriculture and tree plantations	Businesses State Village	<ul style="list-style-type: none"> <li>• Forest landscape management &amp; integrated spatial planning</li> <li>• Governance and law enforcement</li> </ul>
	Legal and illegal logging	Businesses Village	<ul style="list-style-type: none"> <li>• Governance and law enforcement</li> </ul>

#### 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.*

Interventions above have been identified through a process of drivers identification and applying the theory of change to ensure the main direct and indirect drivers are addressed. In the context of Lao PDR and in particular the context of the ER Program area, local communities play a significant role in forest resources use and management. The interventions to be applied in the ER Program area therefore needed to address non-carbon benefits, in particular benefits for livelihoods of rural communities. The below table provides an overview of the carbon and non-carbon benefits and risks and mitigation measures envisaged.

Table 5.4a: Risk/benefits for carbon and non-carbon benefits of proposed interventions

Intervention	ER benefit	Non-carbon benefit	Risk	Mitigation measure
<b>1) Governance &amp; law enforcement</b>	<b>Moderate:</b> Indirect contributions to all REDD+ activities	<b>Significant:</b> Contributes to creating enabling conditions for effective implementation of programs, policy reform, etc.	Requires long and sustained efforts for impact	Streamline into higher sector policies and programs
<b>2) Forest landscape management &amp; integrated land use planning</b>	<b>Moderate:</b> Indirect contributions to addressing Deforestation; Direct contributions to addressing Degradation	<b>Significant:</b> Potential contributions to biodiversity, ecosystem services, reduced conflicts on land use, etc.	Requires long and sustained efforts for impact	Streamline into higher sector policies and programs
<b>3) Participatory land use planning and livelihood development</b>	<b>Significant:</b> Direct contribution to addressing Degradation	<b>Significant:</b> Contributions to poverty reduction and rural livelihood enhancement	Dependent on market prices and preferences	Provide technical support to access market information
<b>4) PES</b>	<b>Moderate:</b> Direct contribution to addressing Degradation and Enhancement	<b>Moderate:</b> Contributions to poverty reduction, awareness of forest services	Requires consent and buy-in from industries benefiting from forest ecosystem services	Work with industry associations and others to raise awareness and understanding of values of forest ecosystem services
<b>5) SFM certification</b>	<b>Moderate:</b> Direct contribution to addressing Enhancement and Degradation in PFAs	<b>Moderate:</b> Potential contributions to poverty reduction	Assumes that logging moratorium in PFAs will be lifted  Assumes that certified timber will leverage a premium	Working with government to determine conditions for lifting logging moratorium in PFAs
<b>6) Forest restoration &amp; afforestation</b>	<b>Significant:</b> Direct contribution to addressing Enhancement	<b>Moderate:</b> Contributions to poverty reduction	Requires successful implementation of the re-delineation of three forest functional categories	Government now piloting the implementation before rolling out nationally

One of the key underlying issues to ensuring the success of these interventions will be land and resource tenure and access security among the forest dependent communities. The interventions will be designed taking this into account, and therefore with a clear intention to promote enhanced land and resource security for local communities. Benefits and risks associated to land and resource rights are analyzed in the table below.

Table 5.4b: Benefits and risks associated with land and resource rights

Intervention	Benefit	Risk	Mitigation measure
<b>1) Governance &amp; law enforcement</b>	Security of access to land and resources and compensation in the case of loss of access through resettlement by state.	n.a.	
<b>2) Forest landscape management &amp; integrated land use planning</b>	Enhanced, more secure, and more transparent access to land and resources.	<b>Moderate:</b> With revised planning and zoning, access to land and resources may change.	In hand with the intervention of participatory planning (below), any loss of access to land will be compensated through access to other suitable lands and other modes of compensation as appropriate. Grievance redress mechanism to be put in place.
<b>3) Participatory land use planning and livelihood development</b>	Access to land and resources in more appropriate locations, and agreeable terms.	<b>Moderate:</b> With revised planning, access to land and resources may change.	While there may be changes in the access, any loss of access to land will be compensated through access to other suitable lands and other modes of compensation as appropriate. Grievance redress mechanism to be put in place.
<b>4) PES</b>	Provides strong rationale for need of clearer land and resource rights.	<b>Moderate:</b> Elite capture of land and benefits.	Benefit sharing and rights to be negotiated and agreed (through FPIC) prior to implementation. Grievance redress mechanism to be put in place.
<b>5) SFM certification</b>	Provides strong rationale for need of clearer land and resource rights.	<b>Low:</b> Where any conflicts may over land and resource rights exist, there is risk of suppression of complaints.	Grievance redress mechanism to be put in place.
<b>6) Forest restoration &amp; afforestation</b>	Provides basis for access to land and resources.	<b>Moderate:</b> Unclear benefit sharing may lead to conflicts.	Benefit sharing and rights to be negotiated and agreed (through FPIC) prior to implementation. Grievance redress mechanism to be put in place.

## 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.*

The drafting of the ER-PIN was undertaken through the **ER Program Working Group** led by the National REDD+ Focal Point and Deputy Director General of DFRM, REDD+ Division of DFRM, involving the REDD+ Office of DoF, as well as international partners actively engaged in REDD+ in Lao PDR. These partners include GIZ, JICA, Finland, and UN-REDD.

#### National Level

Several workshops have been conducted at national and provincial level specifically to discuss and consult on the proposed ER Program. The Early Idea presentation was discussed within the Forestry Sub-Sector Working Group (FSSWG), an exchange platform between Government institutions, civil society organizations, private sector as well multi- and bilateral development partners, in June 2015. In addition, the proposed ER Program has also been discussed within the National REDD+ Task Force (RTF), which comprises members from 24 different ministries and departments at Director General and Deputy Director General levels as well as the Lao Front for National Construction (LFNC) and the Lao Women's Union (LWU), in July 2015.

The close to final draft of the ER-PIN was shared and discussed within the RTF on September 3<sup>rd</sup> 2015 as well as the FSSWG on September 4<sup>th</sup> 2015. Comments and feedback have been taken into consideration.

## Provincial Level

At provincial level two workshops were held to discuss the ER-PIN development with the proposed six provinces. On August 7<sup>th</sup> 2015 a joint workshop was organized in Houaysay where three participating provinces, namely Bokeo, Luang Namtha and Oudomxay provinces with high-level Government participants (i.e. Head of the Governor's Office, Head of Provincial Agriculture and Forestry Office, Head of Provincial Office of Natural Resources and Environment, Head of the Provincial Office of Planning and Investment, Head of Provincial Office of Forest Inspection, Head of Department of Energy and Mines, Head of Public Works and Transportation, Head of Lao Women's Union, and Head of LFNC). The same workshop was held in Luang Prabang with Luang Prabang, Houaphan and Sayabouri provinces on August 11<sup>th</sup> 2015. The provinces were introduced to the REDD+ process in Lao PDR, the proposed ER Program and the Carbon Fund. The participants then discussed the drivers of deforestation and forest degradation in their provinces, potential countermeasures and province-level strategies against forest loss, including existing Government activities and planned donor support. The provincial Government authorities highlighted the linkages of the proposed ER Program to Government strategies and action plans (e.g. increase in forest cover and rehabilitation of degraded forest landscapes).

Based on these consultations and further internal consultations within the provinces, the six provinces have expressed interest in the participation in the ER Program. **Expressions of interest to the ER Program from the six provinces is appended as supporting document to the ER-PIN.**

Overall, comments and suggestions from stakeholders at national and provincial levels have been received and where possible, reflected into the ER-PIN. Questions with regards sharing of the results-based payments from the Carbon Fund have been received. At the stage of the ER-PIN, discussions on benefit sharing can become extremely sensitive, as Lao PDR has yet to be received into the Carbon Fund pipeline, and all discussions are based on assumptions. Mechanisms for the allocation and distribution of REDD+ benefits will need to be discussed more generally for the country, and fed-back to the ER Program design during the ER PD phase.

### 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.*

In addition to the consultations for the ER-PIN, two of the six proposed ER Program provinces are already experienced with REDD+ as part of on-going projects; Namely, Houaphan province through the Lao-German Climate Protection through Avoided Deforestation (CliPAD) project and Luang Prabang province through the JICA supported Participatory Land and Forest Management Project for Reducing Deforestation in Lao PDR (PAREDD). A process of consultations and implementation of the principles of Free, Prior and Informed Consent (FPIC) has been rolled out in 70 villages in two districts of Houaphan province, for measures agreed upon in the Village Forest Management Agreements that include performance-based payments to reward rural communities for sustainably managing forest resources. Since these Village Forest Management Agreements can lead to access and use restrictions for forest areas, it is essential that villagers are fully aware of the terms. The FPIC process is designed to give communities the opportunity to give or withhold their consent, which is sought at different levels and stages of project planning and implementation by the villagers, based on an iterative process on participatory and open negotiation with the villagers. In order to elaborate a final agreement to implement the Village Forest Management Plans, the FPIC process will seek village consent on two main issues. First, will be consent sought at an early stage where villagers are able to give or withdraw their consent to continue the discussions on the Management Plans. Facilitator teams from the Lao Front for National Construction (LFNC) and the Lao Women's Union (LWU) provided villagers with all relevant information including possible impacts of the Management Plans and the final agreement. Second, consent will be sought through the signing of the final agreement to implement the Management Plans. The Village Forest Management Agreement process and the FPIC process intersect at these two key points because this is where important decisions and activities begin to have the potential for causing or seeking changes in behavior that require the understanding, willingness to participate and consent of villagers.

The commitment of all stakeholders and sectors in the selected provinces under the proposed ER Program is key to effectively reduce emissions from deforestation and forest degradation. During the ER PD phase the REDD+ Division in close collaboration with the DoF REDD+ Office and under the leadership of the National REDD+ Task Force will engage and consult with a broad range of stakeholders at all levels. The consultation process will have an integrated approach and reach across multiple sectors, not be isolated to the forestry and environment sector.

The consultation process will include both public and private sector actors, specifically where related to energy, transportation, defense, investment, and industry and commerce. These sectors outside the forestry and environment sectors have the ability to play a large role in creating forest-based ER performance due to the nature of their sector's activities.

Potential ER activities will be elaborated for each of the provinces in the ER Program initially at provincial levels through in a broad consultation process with relevant stakeholders and the Provincial REDD+ Office. This process will identify and consult with priority districts on potential interventions. Finally, where specific village-level engagement is envisaged, lessons from the Lao-German ClipAD project with FPIC in Houaphan province will be referenced to undertake similar consultations with villages and to freely seek their consent to participate. For planned activities with possible impacts for local communities on access to land and forest, the principles of free, prior, and informed consent will be applied.

The result of these multi-level consultations will be to incorporate findings and planning into the two key guiding documents for each province: a Provincial REDD+ Strategy and a Provincial REDD+ Action Plan. The Provincial REDD+ Strategies lay out the sectors, districts, scope and approach to achieving ERs, whereas the Provincial REDD+ Action Plans are the operational planning of programmatic activities related to ER policies and ground-based activities.

By undertaking such consultation processes, priority districts are mainstreamed into the planning process. Likewise, by knowing which provincial actors will participate, which districts will be prioritized and the scope of village participation, provincial REDD+ planners can begin to communicate to stakeholders the envisaged benefit-sharing and how it is linked to performance as measured and reported in their districts and provinces.

## **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).*

#### **National level REDD+ structures and responsibilities**

The National REDD+ Task Force (RTF) was originally established through the MAF Decision 1313 (dated 3/11/2008) in response to MAF's appointment as the national focal point of the World Bank FCPF Readiness Process, by the Office of the Prime Minister. The RTF was chaired by the Director-General of the DoF and was tasked to oversee the FCPF R-PP process. Decision 006/MAF (dated 7/1/2011) regarding the "Establishment of the REDD+ Task Force for the Implementation of REDD+ in Lao PDR" was signed by the MAF Minister extending the mandate and membership of the original RTF, and appointing the Director-General of DoF as chairperson. The RTF is provided with high-level cross sectoral coordination and policy guidance from the National Environment Council (NEC). The National Environmental Council (NEC) is the highest governmental body for policy guidance and decision making on issues related to the environment and climate change. The NEC is chaired by a Deputy Prime Minister and consists of members who are either Ministers or Vice-Ministers from concerned ministries such as MAF, MoNRE, Ministry of Energy and Mines (MEM), Ministry of Public Works and Transportation (MPWT), Ministry of Finance (MoF), and Ministry of Industry and Commerce (MOIC).

With the establishment of the new MoNRE in 2012, the RTF was restructured again following Decision 7176/MoNRE (dated 30/10/2014) and has since been led by MoNRE with the Director General of the DFRM as chairperson and the Deputy Director of DoF as deputy chairperson. The RTF is composed of 24 members (at DG/DDG levels) representing the following Government line agencies and Government institutions:

Table 7.1a: Members of the National REDD+ Task Force (RTF)

Name of agency	Departments and sections
Ministry of Natural Resources and Environment (MoNRE)	Department of Forest Resource Management (DFRM) Watershed Resource and Environment Administration (WREA) Department of Environment (DoE) Land Use and Development Department under the National Land Management Authority (NLMA)
Ministry of Agriculture and Forestry (MAF)	Department of Forestry (DoF) Department of Forest Inspection (DOFI)
Ministry of Energy and Mines (MEM)	Electricity Department (DOE) Mining Department (DOM)
Ministry of Justice	Law Department
Ministry of Planning and Investment (MPI)	Planning Department
Ministry of Finance (MoF)	International Finance Cooperation Division
Ministry of Defense	
National Agriculture and Forestry Research Institute (NAFRI)	
National University of Laos (NUOL)	Research Division, Faculty of Forestry (FOF)
Lao Front for National Construction (LFNC)	
Lao Women's Union	
National Chamber of Industry and Commerce	

Under both DFRM and DoF, REDD+ Offices have been established, with the vision towards consolidating into one REDD+ Division under DFRM in due course. At the first meeting after the renewed establishment of the RTF in January 2014, was confirmed that the REDD+ Division under DFRM will serve as national focal point for REDD+, with the exception of the FCPF Readiness process, for which DoF has already been assigned the task and is implementing this role, however, in close cooperation with DFRM. The two REDD+ Offices are therefore in frequent contact and consultation to ensure a coherent overall REDD+ process.

On July 10<sup>th</sup> 2015 the RTF agreed to set-up six Technical Working Groups (TWGs – as listed below), following up on discussions from previous RTF meetings. The REDD+ Division of DFRM is responsible for coordinating and following up the establishment of these TWGs. The TWGs will be responsible to provide technical input and support on specific REDD+ areas of work.

Table 7.1b: TWGs and chair and co-chair organizations

TWG area of work	Chair/Co-chair
<b>Legal framework</b>	Chair: DoF, MAF Co-chair: DFRM, MoNRE
<b>Land-tenure and land-use</b>	Chair: Department of Land Development and Planning, MoNRE Co-chair: Land Management Agricultural Planning, NAFRI
<b>MRV/REL</b>	Chair: Forest Inventory and Planning Division, DoF, MAF Co-chair: DFRM, MoNRE
<b>Social and environmental safeguards</b>	Chair: Lao Front for National Construction (LFNC) Co-chair: Lao Women's Union (LWU)
<b>Benefit sharing</b>	Chair: DFRM, MoNRE Co-chair: Department of State Property Management, MoF
<b>Enforcement and implementation of mitigation</b>	Chair: DoF, MAF Co-chair: DFRM, MoNRE

These TWGs will also advise the RTF for the preparation of Annual Work Plans on REDD+ work that will be submitted to the RTF for endorsement by the NEC.

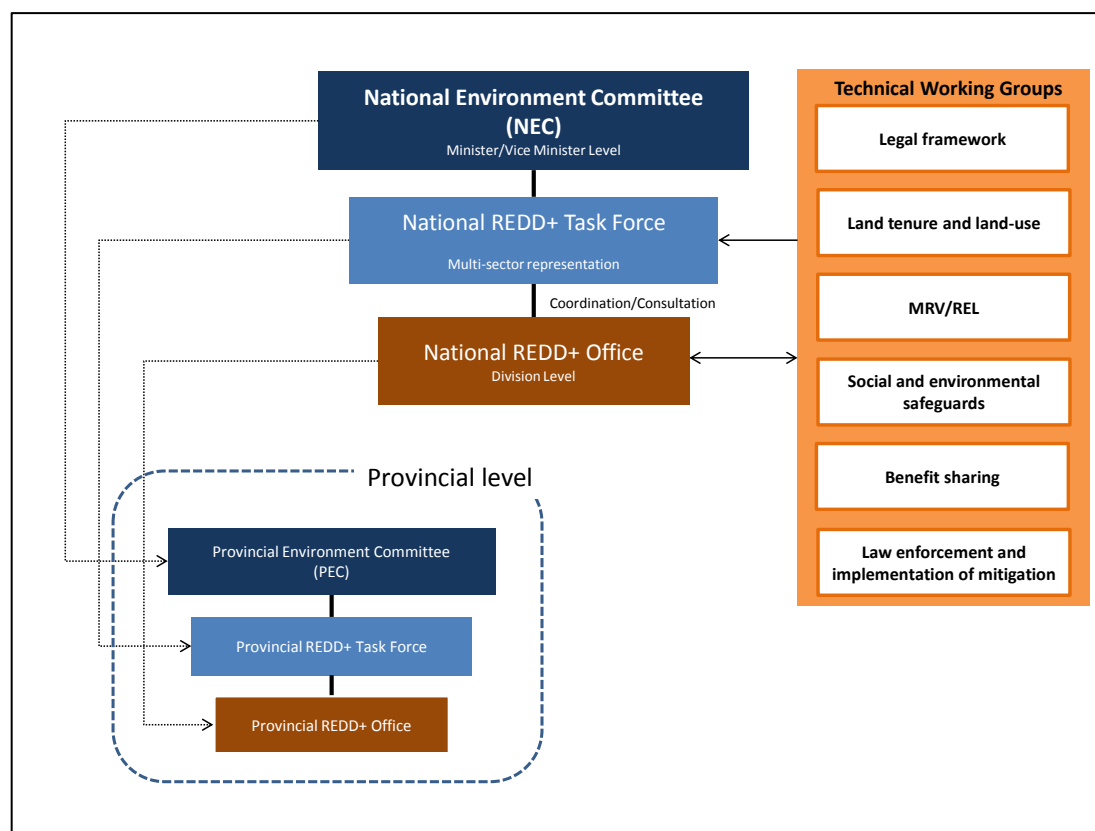


Figure 7.1a: Institutional structure of REDD+ at national and provincial levels

### Provincial REDD+ Structures and Responsibilities

REDD+ structures at the provincial level mostly echo those at the national level. The Provincial Environment Committee (PEC) is the leading body for policy guidance and decision making on issues related to the environment and climate change. According to the national REDD+ structure, a multi-stakeholder Provincial REDD+ Task Force needs to be established in each province to oversee the development of its REDD+ program. During the 3<sup>rd</sup> RTF meeting, the composition of the Provincial REDD+ Task Force for Houaphan province as one of the REDD+ pilot provinces was agreed upon, reflecting the discussions of previous meetings between the RTF and provincial leadership taking place 2014. According to this agreement, the Provincial REDD+ Task Force consists of representatives of related stakeholders in the province, including the Governor's Office, Provincial Office of Natural Resources and Environment (PONRE), Provincial Agriculture and Forestry Office (PAFO), Provincial Office of Planning and Investment (PPI), Provincial Office of Forest Inspection (POFI), Provincial Chamber of Industry and Commerce, Provincial Military, Lao Women's Union, Lao Front for National Construction etc. The Provincial REDD+ Task Force is chaired by the Head of the Governor's Office with the highest authority and oversight on all provincial matters. Provincial REDD+ Offices to be established echoing the REDD+ Division and should be chaired by PONRE. The Provincial REDD+ Offices would act as the secretariat to the Provincial REDD+ Task Force. Each Provincial REDD+ Office would be responsible for coordinating the development of the Provincial REDD+ Strategy in collaboration with the Provincial REDD+ Task Force. In addition, the offices would oversee all REDD+ related initiatives in the province and, therefore, manage and coordinate the REDD+ program as a whole.

As agreed in the first RTF meeting in January 2014, a special unit for safeguard management should also be established at the provincial level. However, the affiliation still needs to be discussed. Such a special unit may be responsible for providing transparent information on monitoring of social and environmental safeguards.

**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.*

Reflecting the notion of the ER Program as part of the emerging National REDD+ Program, the institutional arrangement of the ER Program is also directly situated within the national REDD+ program institutional arrangement. At the national level, the ER Program is managed and consulted through the NEC and RTF, and technically guided by the TWGs. At the provincial level, the respective provincial task forces, and REDD+ Offices will be coordinating the planning, implementation and monitoring of the work.

**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*

The establishment of MoNRE in 2012 has presented changes of responsibilities in the forestry sector. Among the three functional categories of forests in Lao PDR, namely, production, protection and conservation forests, MoNRE is responsible for protection and conservation forests and MAF is responsible for production forests (and other non-categorized forested land). Additionally, there are substantial changes in the context of a proposed devolution process being piloted in the country, capitalizing on villages, districts and provinces for implementation of strategies. This can be seen as a good opportunity to integrate emerging international trends and needs including REDD+, FLEGT and biodiversity conservation into the government's policy design and implementation framework. To assist this process a capacity needs assessment for the public forestry sector was undertaken in 2013. The assessment led to recommendations for a Capacity Development Strategy (CDS) for the public forestry sector of Lao PDR. The CDS identified that people involved in the Lao REDD+ process needed to develop general leadership and management skills, as well as specific technical skills in REDD+. These skills are required at all levels, with particular need to develop at the national level. At the national level, the key agencies identified for implementing REDD+ are DFRM of MoNRE including the REDD+ Division of DFRM and the REDD+ Office under DoF of MAF. A Capacity Needs Assessment (CNA) for these REDD+ agencies was undertaken in 2014. The CNA directly built on and addressed the recommendations from the aforementioned CDS, providing support for; development of TORs for national the REDD+ agencies; identification of detailed job requirements for each staff member of these organisations; development of personal development plans for staff members, and use of tools for monitoring and evaluating individual capacity development and overall capacity development progress of the key agencies. The main focus of the capacity development activities responding to the CNA targeted the REDD+ Division as they are tasked with the overall mandate for the Lao REDD+ process.

The results of the CNA are as follows:

1. Greater clarity and consensus reached regarding the TORs of the DoF REDD+ Office, and the REDD+ Division through the discussion process initiated;
2. The roles and functions of the REDD+ Division, DoF REDD+ Office confirmed;
3. Gaps within these functions were identified, for example, the need for the REDD+ Division to develop skills that would enable them to develop the capacity of other REDD+ organisations, particularly at provincial level;
4. Roles and responsibilities at an individual/position level were identified and agreed;
5. The REDD+ Division and DoF REDD+ Office defined detailed job requirements for each staff member/position and identified corresponding training needs;
6. Skill gaps and capacity needs were identified at an individual/position level,

The CNA tool is currently under development to be used to track training received and monitor the ongoing development of organizations and individuals.

**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.**

The proposed next steps for the ER PD phase would constitute largely of the following steps:

Central level:

- Continued work on overall REDD+ readiness (including the REDD+ Strategy, Coordination and consultation mechanisms, Safeguards information, National Forest Monitoring System)
- Construction and finalization of the REL/FRL for the ER Program
- R-Package preparation and submission

Provincial and sub-provincial level:

- Setting up coordination and program management mechanisms
- Planning of the Provincial REDD+ Plans and Strategies
- Consultations and agreements with villages

The overall implementation schedule is proposed as Table 7.4a.

Table 7.4a: Next steps for the ER Program

	2016												2017											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
<i>Provincial REDD+ Strategy &amp; Plan (Drivers analysis &amp; interventions Benefit sharing Monitoring plan)</i>																								
<i>Houaphan</i>																								
<i>Luang Prabang</i>																								
<i>Luang Namtha</i>																								
<i>Bokeo</i>																								
<i>Xayabouri</i>																								
<i>Oudomxay</i>																								
<i>Consultations - village planning &amp; agreements</i>																								
<i>Houaphan</i>																								
<i>Luang Prabang</i>																								
<i>Luang Namtha</i>																								
<i>Bokeo</i>																								
<i>Xayabouri</i>																								
<i>Oudomxay</i>																								
<i>FREL/FRL</i>																								
<i>R-Package</i>																								

**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

The expected uses of funds for developing and implementing the ER Program is estimated at US\$ 80,800,000 (i.e. US\$ 6.3 million for the ER-PD phase, and US\$ 80.8 million for the ERPA duration). This would cover the duration of ER PD preparation (2016-2017) and the ERPA duration (anticipated 2018-2022). This includes costs to be incurred at the national level (including for reference levels construction) and field level costs to be incurred within the proposed Accounting Area.

The total sources of funds for the ER Program (including potential sources still uncommitted) is estimated at US\$ 104,875,000 for the same duration as mentioned above (i.e. US\$23.1 million for the ER PD phase and US\$ 81.7

million for the ERPA duration). This includes finances for REDD+ and related projects that have been on-going or are uncommitted but under discussion for implementation in the proposed Accounting Area, as well as national level initiatives that will cater to the implementation of the ER Program.

The breakdown is available as Annex I.

## 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).*

#### Summary of the REL/FRL for the ER Program

- The REL/FRL is constructed intended to, and to enable nesting into the national REL/FRL,
- The REL/FRL is based on Approach 3 nation-wide land cover classification based on 5-meter resolution imagery,
- Tier-2 biomass data from NFI is used for the establishment of emission factors, with country-specific allometric equations to be used in combination with default values of IPCC for minor vegetation types,
- The REL/FRL to be in a manner consistent with the national MRV system,
- The stratification of the REL/FRL is based on the national land cover classification system,
- The REL/FRL methodology is appropriate for both the scale of the ER Program and the National REDD+ Program,
- Both emissions from forest degradation and deforestation as well as baseline forest stock enhancements have been included in the REL/FRL.

#### Forest definition and stratification

The forest definition of Lao PDR is: area  $\geq$  0.5 ha, crown density  $\geq$  20% of trees with DBH  $\geq$  10cm (no threshold for height)<sup>5</sup>.

This reflects the unique situation of forests and forest use in the country, and in particular, the prevalence of pioneering and shifting cultivation, and existence of vast areas of fallow land (categorized as “regenerating vegetation (RV)” in the classification system). This land use is seen throughout the country, but is particularly characteristic of the hilly and mountainous Northern regional landscapes where a significant amount of fallow shifting cultivation areas are found, re-growing and recovering through natural vegetative succession and in temporarily unstocked state.

The decision for the application of RV over a more conventional forest definition which includes a height threshold is to allow for better results in the identification of land cover classes through high resolution satellite imagery (~5 m resolution). This avoids overestimation of forest for old fallow, which would have been classified as forest if the height threshold is used but may not from the standpoint of a minimum average stand DBH of 10cm.

The other reason for the application of this forest definition is to do with trees in rice paddy landscapes in the flatland areas. In order to avoid misinterpretation of these paddy lands (which often have canopy cover of over 10%) as forests, the 20% crown density threshold has been adopted.

<sup>5</sup> Forest Cover Assessment report 2010, MAF; and confirmed through a minutes of meeting signed by DDG DOF (dated 24/10/2014).

The following national land cover classification system will serve as the basis for the ER Program stratification.

Table 8.1a: Land/Forest classification for Lao PDR

Table 3-1a: Land/Forest Classification for Lao PDR			
IPCC Definition	National Level Classification System for Lao PDR		
	Level 1	Level 2	
Forest Land	Current Forest	Evergreen Forest	EF
		Mixed Deciduous Forest	MD
		Dry Dipterocarp Forest	DD
		Coniferous Forest	CF
		Mixed Coniferous and Broadleaved Forest	MCB
		Forest Plantation	P
	Regenerating Vegetation	Bamboo	B
		Regenerating Vegetation	RV
Grassland	Other Vegetated Areas	Savannah	SA
		Scrub	SC
		Grassland	G
Wetlands		Swamp	SW
Cropland	Cropland	Upland Crop	UC
		Rice Paddy	RP
		Other Agriculture	OA
		Agriculture Plantation	AP
Settlements	Non Vegetated Areas	Urban	U
Other Land		Barren Land and Rock	BR
	Other Land	Other Land	O
Wetlands	Water	Water	W

**Deforestation** is defined as an event of any of the Level 1 or 2 categories that correspond to Forest Land under “IPCC Definition” of Table 8.1a, shifting to any of the categories corresponding under the five other IPCC land use categories.

**Degradation** has been estimated as areas where forest has transitioned from a higher carbon stock forest type to a lower carbon stock forest type, but still remaining within the definition of forest and of the same forest class. Through the application of this method, fallow land from shifting cultivation sites are largely captured within the RV category and occur most prominently in evergreen and mixed deciduous forests, accounting for the great majority of the degradation events.

It is anticipated that further stratification of the ER Program area will also take into account forest management type in order to take into consideration the differential impact timber production has within production Forests as compared to Protection and Conservation Forest Areas. Given the limitation of existing data in Lao PDR, degradation will be stratified and sampled through a combination of remote sensing and National Forest Inventory data. This will be used to identify and stratify degradation by degree of disturbance through:

1. the classification of bamboo and RV resulting in temporarily unstocked forests due to shifting cultivation followed by regeneration, and
2. the use of production forest inventory data for national and provincial production forests.

Both the expansion of RV and analysis of production forest data will be analyzed and used as primary data on degradation. It is acknowledged that this method will only account for the temporary conversion of forests into agriculture and carbon stock loss associated with PFAs. While it is recognized that illegal logging in conservation and protection forests are present, and pose a major threat, there is not yet the capacity to systematically sample or monitor this unmanaged degradation source at this time.

#### Maps for generation of Activity data

Wall-to-wall national land/forest maps with the Level 2 (c.f. Table 8.1a) classification for the years 2000, 2005 and 2010 are being developed by the Forest Inventory and Planning Department (FIPD) of DoF, MAF (with support from JICA). The maps are generated using 2010 as the bench mark map, and the maps for the other two years developed through applying a change detection method in order to maintain consistency of classification and interpretation.

The draft, but most up-to-date results of this process have formed the basis of this ER-PIN. The maps for 2000, 2005, and 2010 are anticipated to be finalized within the year. The 2015 map is currently undergoing development and will be available by May 2016 (also through support from JICA).

For the 2010 and 2015 maps, 5m resolution RapidEye imagery has been/will be used. For the 2005 map, SPOT 4&5 multi-spectral imagery and Landsat TM imagery for 2000 were used. Target accuracy levels applied are > 80% for forest/non-forest identification and > 70% for forest type identification (i.e. Level 2 of the Table 8.1-a) for the 2010 map, and, for the other years, only for forest/non-forests detection.

Given the large size of the proposed ER Program Area, which is more than one third of the total land area of the country, and in order to be consistent with the approach of the National REDD+ Program, the national land/forest maps will be used for identification of activity data for the Accounting Area.

### National Forest Inventory (NFI) and generation of Emission Factors

Lao PDR's 2<sup>nd</sup> NFI is being designed for implementation in the 2016-17 dry season. The main purpose of the proposed NFI is to collect the biomass stock data throughout the country as a basis for estimating the total carbon stock. It has a supplementary role to collect quantitative data (e.g. timber volume) and qualitative data (e.g. forest disturbances such as logging and fire wood collection, NTFPs).

The sample design has been agreed and various documents for implementation and results compilation have been developed as follows:

- NFI for forest carbon sampling – Guidance document
- Standard operating procedures manual for terrestrial carbon measurement
- Sample plot calculator Excel tool (to estimate the number of plots)
- Tablet based application for field data collection
- Manual on calculations for estimating carbon stocks
- Statistical software 'R' script to transform field data collected on tablets into analyzed data
- Allometric equation evaluation guidance document
- Training materials (Field SOPs, Tablet application for the field inventory)

With further review the results from previous piloting of the field inventory, technical soundness for rolling out nationally will be considered and the 2<sup>nd</sup> NFI method will be finalized.

Lao PDR has implemented a number of related inventory surveys at different scales in the past. The following field survey results and methods are used to inform the design of the 2<sup>nd</sup> NFI.

- 1<sup>st</sup> NFI in the 1990s (implemented between 1991-1999 by province), and timber volume data converted to carbon using expansion factors (supported by SUFORD)
- Province-wide biomass survey and forest mapping in Houaphan province in 2014-15 (supported by GIZ CliPAD)
- 2<sup>nd</sup> NFI biomass survey pilot in Khammouane province in 2015 (supported by JICA NFIS)

Lao PDR is aiming to apply Tier 2 emission factors, using country-specific allometric equations to convert the results of the 2<sup>nd</sup> NFI data into biomass for the following main land/forest types; evergreen forest, mixed deciduous, dry dipterocarp, regenerating vegetation and bamboo. Country-specific allometric questions are currently in development.

Table 8.1b: Proposed elements of REL/FRL for the ER Program

Elements	Proposal	Justification/issues
<b>Carbon pools</b>	<ul style="list-style-type: none"> <li>• Above Ground Biomass (AGB)</li> <li>• Below Ground Biomass with default ratio (BGB/RTS Ratio)</li> </ul>	<ul style="list-style-type: none"> <li>- The biomass survey conducted in Houaphan province shows dead wood and litter are insignificant.</li> <li>- Soil carbon data are currently not available, and requires further study. It can be assumed that soils of dry forest have less soil carbon than soils in rain forest due to faster decomposition.</li> </ul>
<b>Gases</b>	<ul style="list-style-type: none"> <li>• CO<sub>2</sub></li> <li>• CH<sub>4</sub></li> </ul>	<ul style="list-style-type: none"> <li>- Extensive biomass burning for shifting cultivation and land preparation (forest</li> </ul>

Elements	Proposal	Justification/issues
	<ul style="list-style-type: none"> <li>N<sub>2</sub>O</li> </ul>	<ul style="list-style-type: none"> <li>clearance) for plantation development.</li> <li>Methods for estimating activity data is currently under consideration.</li> </ul>
<b>Activities</b>	<ul style="list-style-type: none"> <li>Deforestation</li> <li>Forest degradation</li> <li>Carbon stock enhancement from forest regeneration and reforestation/afforestation</li> </ul>	<ul style="list-style-type: none"> <li>Deforestation and forest degradation are major sources of emissions.</li> <li>Significant removals are expected by large areas shifting from 'regenerating vegetation' to 'forest' classes.</li> <li>Further examination needed for determination of whether shift to forest/vegetation types associated with a lower carbon stock (e.g. shift from mixed deciduous to evergreen) is degradation.</li> </ul>
<b>Reference period</b>	2005-2015	<ul style="list-style-type: none"> <li>Activity data on change between three time periods</li> <li>Carbon stock data from the 2<sup>nd</sup> NFI and allometric equations for main forest/land types and default values for others</li> </ul>
<b>Method for REL/FRL construction</b>	Annual mean of emissions/removals in the reference period. FRL for net of emissions and removals or separate REL for emissions and FRL for removals will be tested to find out most appropriate for change trend in the past and future estimate.	<ul style="list-style-type: none"> <li>There is great potential of forest regeneration in the Accounting Area, where shifting cultivation is prevalent and existence of vast area of Regenerating Vegetation.</li> </ul>

### Consistency with UNFCCC guidance and Methodological Framework of the Carbon Fund

The proposed methodology for the REL is consistent with the Decision 12/CP.17 "Modalities for forest reference emission levels and forest reference levels" provided by the UNFCCC, as well as with the Methodological Framework of the Carbon Fund. A reference table comparing the requirements of each of these documents is available as Annex II of this document.

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

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

Currently, data to fulfill the elements proposed REL/FRL for the ER Program are not available in full. Therefore, the following is provided as a preliminary estimate of the REL/FRL for the ER Program.

Table 8.1b: Differences between final and preliminary REL/FRL for the ER Program

Elements	Final elements (for ERPD)	Preliminary elements (for ER-PIN)
<b>Carbon pools</b>	<ul style="list-style-type: none"> <li>Above Ground Biomass (AGB)</li> <li>Below Ground Biomass with default ratio (BGB/RTS Ratio)</li> </ul>	<ul style="list-style-type: none"> <li>Above Ground Biomass (AGB)</li> <li>Below Ground Biomass with default ratio (BGB/RTS Ratio)</li> </ul>
<b>Gases</b>	<ul style="list-style-type: none"> <li>CO<sub>2</sub></li> <li>CH<sub>4</sub></li> <li>N<sub>2</sub>O</li> </ul>	<ul style="list-style-type: none"> <li>CO<sub>2</sub></li> </ul>
<b>Activities</b>	<ul style="list-style-type: none"> <li>Deforestation</li> <li>Forest degradation</li> <li>Carbon stock enhancement from forest regeneration and reforestation/afforestation</li> </ul>	<ul style="list-style-type: none"> <li>Deforestation</li> <li>Forest degradation</li> <li>Carbon stock enhancement from forest regeneration and reforestation/afforestation</li> </ul>
<b>Reference period</b>	2005-2015	2000-2010
<b>Method for</b>	Annual mean of emissions/removals in the	Annual mean of emissions/removals in the

Elements	Final elements (for ERP)	Preliminary elements (for ER-PIN)
<b>REL/FRL construction</b>	reference period. FRL for net of emissions and removals or separate REL for emissions and FRL for removals will be tested to find out most appropriate for change trend in the past and future estimate.	reference period. FRL for net of emissions and removals or separate REL for emissions and FRL for removals.

**Activity data:** For the purpose of the ER-PIN, and until the 2015 map becomes available, the draft maps generated by FIPD/JICA for 2000, 2005 and 2010 are used for the source of the activity data for the preliminary REL/FRL of the Accounting Area. Table 8.2a below shows the average annual change in the ER Program area based on draft maps of 2000-2010.

Table 8.2a: Activity Data used for the preliminary REL/FRL from 2000-2010 across all 6 provinces in the ER Program

Activity data source	Baseline 10-year average annual change (ha/year)
Deforestation and forest degradation	60,169
Enhancement of carbon stocks	62,268

**Emission Factors:** The emission factor for the interim REL is the difference between the carbon stocks among the land/forest type categories converted into CO<sub>2</sub>t. Carbon stock is for above and below ground biomass, estimated based on DBH data from the 1<sup>st</sup> NFI converted to biomass using the allometric equations of Chave et al 2005 or default expansion factors. Carbon stock for non-forest land applies IPCC default values. Non-CO<sub>2</sub> gases are not considered for the preliminary REL/FRL.

Table 8.2b: Average carbon stock (AGB and BGB) for land/forest type used for the preliminary REL/FRL (based on 1<sup>st</sup> NFI)

Land/Forest class	tC/ha
Evergreen Forest	146.8
Mixed Deciduous Forest	80.1
Dry Dipterocarp Forest	58.0
Coniferous Forest	44.6
Mixed Coniferous and Broadleaved Forest	107.5
Forest Plantation	58.2
Bamboo	28.2
Regenerating Vegetation	10.8
Savannah	16.7
Scrub	39.5
Grassland	7.6
Swamp	0
Upland Crop	5
Rice Paddy	5
Other Agriculture	2.6
Agriculture Plantation	38.8
No Vegetation	0

**Estimated REL/FRL**

Based on the above, the preliminary REL/FRL for the Accounting Area separated out per emissions and removals and expressed as average per annum is as follows:

Table 8.2c: Reference Emission Level, average annual gross change in emission and removals from 2000-2010

Activity	Forest Reference Emission Level (tCO <sub>2</sub> e/year)
REL for Emissions	6,907,488
FRL for Removals	7,211,465

## 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.*

**Approach for measuring and reporting on ERs**

The ERs and removals attributable to the proposed ER Program will be reported by using the national forest monitoring system (NFMS), under development by FIPD and supported by JICA. The scope of the NFMS will be defined and the system will be in place for the 1<sup>st</sup> ER Program monitoring and reporting period, proposed for around 2020. Then, the NFMS will enter its modification and improvement cycle for further refinement.

Under the NFMS, activity data will be measured and reported twice in around 2018 and 2020. The same satellite images used in 2010 and 2015 (i.e. RapidEye) is planned for the 2018 monitoring period as part of the NFMS. Compilation/analysis of monitoring results and report preparation for the Carbon Fund will be mostly done by FIPD with additional information of the ER Program interventions, which will be also stored in the NFMS, in consultation with concerned agencies such as DFRM and projects, proposed to the National REDD+ Task Force (RTF) for confirmation and further report to and approval by the National Environment Committee (NEC).

**Capacity for measuring and reporting**

National level forest monitoring will be implemented by FIPD, which has been creating the forest maps with JICA support. FIPD staff have now accumulated sufficient knowledge and experiences in image interpretation and quality assurance/control activities. FIPD also houses an inventory section, which will be responsible for the 2<sup>nd</sup> NFI in cooperation with the Inventory Division of DFRM under MoNRE. Both are involved in the designing process. In addition, having both the satellite-based monitoring and ground-based (i.e. NFI) monitoring administered under the same agency (i.e. FIPD), enables Laos to maintain technical and institutional consistency in national forest monitoring.

With support from Government and donor-supported provincial interventions in the ER Program, the capacity of local forestry agencies for monitoring of the forest situation could be strengthened for analysis by exploring the use of freely available images<sup>6</sup>. Such options will be explored during the ER-PD phase. Feeding local level monitoring results to the central level will need further capacity development of local staff and institutional building to do this. The intention of the Government is to pilot and decide the monitoring methodology by 2020 in selected provinces, especially those in the Accounting Area, and to introduce this gradually after 2020.

For the reporting, related agencies, such as the Department of Disaster Management and Climate Change, MoNRE, will be invited to the ER Program reporting work, in order to enhance coordination with the GHG inventory reporting and other REDD+ reporting protocols under the UNFCCC. Compilation/analysis and reporting work may need support from concerned projects such as JICA and CliPAD, if deemed necessary.

<sup>6</sup> i.e. Landsat 8 or Google Earth through a simple, non-expensive and durable system such as FAO's OpenFORIS Collect Earth.

**9.2 Describe how the proposed ER Program monitoring system is consistent with the (emerging) national REDD+ monitoring system.**

As in the case of REL/FRL, the proposed ER Program monitoring system will be part of the emerging NFMS as described in Section 9.1 above. There will be no specific ER Program monitoring system to be developed and all activities of measuring and reporting will be done under the NFMS.

**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.**

Decision 11/CP.19 Modalities for national forest monitoring systems provides following guidance/requirements and the consistency of Lao NFMS is clarified in the next table.

Table 9.3a: Consistency of Lao PDR's NFMS with guidance from UNFCCC to date

Guidance/requirements	Consistency of Lao NFMS
NFMS should take into account the guidance provided in decision 4/CP.15 and be guided by the most recent Intergovernmental Panel on Climate Change guidance and guidelines, as adopted or encouraged by the Conference of the Parties	<ul style="list-style-type: none"> <li>- A combination of remote sensing and ground survey will be used for monitoring.</li> <li>- GPG for LULUCF 2003 will be used calculation of activity data applying Approach 3 and emission factors at Tier 2.</li> </ul>
Robust national forest monitoring systems should provide data and information that are transparent, consistent over time	<ul style="list-style-type: none"> <li>- Lao PDR's NFMS will provide key data and information related to monitoring in a transparent way.</li> <li>- Data and information will be consistent with the past ones used for development of REL/FRL and will be so in the future with some improvement</li> </ul>
Suitable for measuring, reporting and verifying anthropogenic forest-related emissions by sources and removals by sinks, forest carbon stocks, and forest carbon stock and forest-area changes resulting from the implementation of the activities referred to in decision 1/CP.16, paragraph 70	<ul style="list-style-type: none"> <li>- NFMS will monitor not only forest related emissions but also implementation of REDD+ interventions and actions, some of which will be GIS based.</li> </ul>
Build upon existing systems, as appropriate	<ul style="list-style-type: none"> <li>- Laos has been implementing forest mapping and field inventory. NFMS will be built on these experiences and institutional setting and add new data/information such as allometric equations, REDD+ interventions and so on. Formal institutionalization of NFMS, which needs to be flexible to reflect new data/technologies and organizational changes, will be proposed to and approved by the RTF.</li> </ul>
Enable the assessment of different types of forest in the country, including natural forest, as defined by the Party;	<ul style="list-style-type: none"> <li>- Different types of forest as defined in Section 8.1 will be assessed.</li> </ul>
Be flexible and allow for improvement	<ul style="list-style-type: none"> <li>- NFMS will be designed to be flexible as stated above.</li> </ul>
National forest monitoring systems may provide, as appropriate, relevant information for national systems for the provision of information on how safeguards in decision 1/CP.16, appendix I, are addressed and respected.	<ul style="list-style-type: none"> <li>- This will be considered, consulted and decided in the process of NFMS and SIS development</li> </ul>

Consistency with the Methodological Framework of the FCPF Carbon Fund is also secured, and is described in Annex II.

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

The monitoring of forest-related emissions/removals will be done by the government agencies with FIPD at the center as stated above. Communities, including indigenous peoples will play a crucial role in monitoring forest changes in the design and implementation process of REDD+ interventions and action. Some examples are provided below;

1. In many villages with relatively rich forest and under potential risks of encroachment or conversion, the participatory land use planning (PLUP) are conducted with agreed regulations or conservation agreements to be endorsed by District governors. Villagers are to patrol their forest area and report to District Forestry Offices on a regular basis.
2. Village participation in Production Forest Management planning and implementation with benefit sharing from timber sales.
3. Evolving guidelines for Protection Forest Management Planning, which stipulates that zoning of Strictly Controlled Area, where almost no extraction/development activities are allowed, should be done through village consultation and PLUP.
4. Forest landscape management, the overarching concept of the Lao ER Program, will entail consultation with local communities

The intentions are for the progress and results of the ER Program implementation to be monitored and reviewed by a monitoring committee (to be established during the ER-PD phase, and may be part of the Program Steering Committee). The key roles of such a committee would be to ensure effective and efficient implementation of the Program, and to monitor the Grievance Redress Mechanism is functioning appropriately. Such a monitoring committee is proposed to include representatives from Lao Front for National Construction and CSOs. It is proposed that the representatives from these groups would be identified through a self-selection process.

**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.**

For Lao PDR and especially the stakeholders at the ground level who actually depend their socio-economy to the natural resources (e.g. forest dependent communities, environment service users), the non-carbon benefits to be generated from the proposed ER Program could be, in fact, larger than the carbon benefits to be obtained through the ERPA. The non-carbon benefits are identified (Section 16) through desk analysis, discussions at the national and provincial stakeholder consultations, and by reviewing accumulated knowledge of the national and international experts. The non-carbon benefits as well as the impacts consequent to the interventions (Section 5) will be monitored as a part of the ER Program monitoring.

A standardized monitoring system of the non-carbon benefits will be developed under the NFMS to cover also the ER Program. Such standard will serve as a framework for each province to further decide how to include and operationalize the monitoring of non-carbon benefits and impacts under their jurisdiction. The developed monitoring system will form an integral part of the provincial REDD+ planning of each province. It is important to align the monitoring of non-carbon benefits with existing monitoring systems and indicators (national surveys and other socio-economic data collection), to the extent possible in order to avoid duplicative work and to reduce costs.

Table 9.5a: Expected non-carbon benefits from the ER Program

	Type of benefit	Example of indicator	Data source
Socio-economic benefits	Increased income and poverty reduction	Poverty rate of the target communities Average income of the target communities	National census and statistics Provincial statistics Sample survey
	Access to land	Formalized tenure /management agreements	Management agreements Tenure instruments
	Increased knowledge and skills,	Number of knowledge sharing publications produced Number of knowledge sharing	Publications Workshop reports

	Type of benefit	Example of indicator	Data source
		workshops held	
	Increased participation of women and ethnic minorities	Number of women participated Number of ethnic minorities participated	Documented records of FPIC
	Recognition of local knowledge & customary use of forests	Formalized forest management and use agreements	Management and use agreements
	Improved forest governance	Number of cases of illegal logging reported Degree (%) of un-planned deforestation induced by infrastructure development	Illegal logging report Remote Sensing-based forest monitoring and field survey
Environmental benefits	Increased watershed protection, protection of streams and water sources	Total area (ha) of watersheds managed under established management system (e.g. management plan, conservation agreement)	Management documents
	Increased conservation of natural habitat for wild species	Total area (ha) of conservation forests managed under established management system (e.g. management plan, conservation agreement)	Management documents
	Increased forest restoration	Total area (ha) of forests restored compared to the historical baseline	Forest monitoring report

## 10. Displacement

### 10.1 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.*

Potential risks of both domestic and international displacement of emissions from the ER Program activities, their assessed risk (high/med/low), and mitigation measures are presented in the table below.

It should be noted that domestic displacement risks are present, but that they are temporary considering Lao PDR's intentions for rolling out REDD+ nationally.

The greatest risks of displacement are associated with displacement of legal and illegal logging activities for export (and in part, for domestic consumption). If the activities proposed through the ER Program are successfully implemented and legal and illegal logging for timber reduces in the proposed Accounting Area, buyers and operators may move to other locations in the country, or possibly to other countries such as Myanmar. Such risk exists, but is considered at moderate levels as well-known high-value species for furniture have already been depleted from the Northern region, generally speaking. It should be noted that the decision for displacement is not one to be taken by agents within the Accounting Area, and therefore mitigation measures primarily also need to be considered outside the scope of the ER Program. Mitigation measures for domestic displacement include Lao PDR's intentions for improvement of forest law enforcement, including through the recently committed engagement in negotiation with the EU on a Voluntary Partnership Agreement (VPA).

Internationally, the engagement of Myanmar in REDD+ and its work on governance is hoped to keep the displacement from taking place. On the other hand, Lao PDR is considered a major destination for displacement of deforestation and degradation from other regional countries, particularly Viet Nam and China. Lao PDR's commitment and ability to successfully implement REDD+ should be welcomed by the regional REDD+ community.

Moderate levels of risk are also associated with domestic displacement of conversion of forests for industrial agriculture and tree plantations. It is envisaged that with the high opportunity costs of industrial agriculture (including tree plantations), conversion for these purposes will not be entirely controlled even in the proposed ER Program area. The ultimate decision of displacement here again, is largely at the hands of external agents and the market, thus mitigation measures under the ER Program are not effective. The national implementation of zoning and land use planning, and eventual roll out of REDD+ at the national scale are hoped to prevent displacement.

Table 10.1a: Risks of displacement and main mitigation measures.

	Main direct drivers	Risk of displacement	Mitigation measures
Degradation	Pioneering shifting cultivation for agricultural area	<b>Low</b> (domestic): Risks exist along borders with provinces outside the ER-P area.	Provision of alternative livelihood options, training, and other incentives coupled with law enforcement and sanction to discourage further encroachment.
	Legal and illegal selective logging	<b>Med</b> (domestic and international): attractive timber species has largely been depleted	Nationally rolling out work on FLEGT.
	Conversion of forests into agricultural area	<b>Med</b> (domestic)	Gradual implementation of REDD+ nationally. Working nationally on zoning and appropriate policies (including fiscal policies) to control agricultural expansion.
Deforestation	Conversion of forests into industrial tree plantations	<b>Med</b> (domestic)	As above.
	Mining projects and hydropower infrastructure converting forests	<b>Low</b> (domestic): Not envisaged to be addressed directly by REDD+	n.a.

## 11. Reversals

### 11.1 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.*

There are no major risks of anthropogenic and non-anthropogenic reversals of greenhouse gases from the proposed actions of the ER Program.

Moderate levels of risk of reversals are associated with direct drivers of pioneering shifting cultivation, legal and illegal selective logging, and conversion of forests into industrial agriculture and tree plantations. However, it should be understood that the risks of reversals are not associated only with the termination of the potential REDD+ finance to be flowing into ER Program area, but more to do with the presence/absence of a specific program of action. In this regard, the underlying strategy to mitigate these risks is in the sustainability of the design of the ER Program and national REDD+ program overall. Sustained success will be possible by not only the REDD+ financial incentives, but a package of interventions including law enforcement and participatory planning along with appropriate levels of monitoring. REDD+ and the ER Program are seen as opportunities to improve national policy and processes of planning, monitoring and implementation.

The long-term sustainability of the interventions will be secured through the Government's intentions to scale-up the ER Program to the whole country through the National REDD+ Program, and to continue its implement into the future (as long as there is continued commitment to REDD+ from the international community).

Table 11.1a: Risks of reversals and main mitigation measures

	Main direct drivers	Risk of reversal	Mitigation measures
Degradation	Pioneering shifting cultivation for agricultural area	<b>Med</b> (anthropogenic): there is an overall trend of reduced pioneering shifting cultivation in the Northern region	Participatory land use planning applied to strengthen buy-in by local communities. Sustained national efforts towards law enforcement and necessary sanctions.
	Legal and illegal selective logging	<b>Med</b> (anthropogenic): attractive timber species has largely been depleted	Sustained national efforts on FLEGT.
	Conversion of forests into agricultural area	<b>Med</b> (anthropogenic)	Sustained national efforts on zoning and land use planning, FLEGT, and investment management.
Deforestation	Conversion of forests into industrial tree plantations	<b>Med</b> (anthropogenic)	As above.
	Mining projects and hydropower infrastructure converting forests	<b>None</b> (anthropogenic)	n.a.
	Fire	<b>Low</b> (natural): not considered major driver	

## 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:*

- up to December 31, 2025 (currently the end date of the FCPF)*
- for a period of 10 years; and*
- the lifetime of the proposed ER Program, if it is proposed to continue longer than 10 years.*

Based on the anticipated resources to be mobilized for the implementation of the ER Program, an average annual target of 10% efficacy is set against the REL/FRL. The estimated ERs to be generated by the ER Program are presented in the table below.

Table 12.1a: Estimated ER from the ER Program

Schedule	Estimated emissions (tCO <sub>2</sub> e)	Estimated removals (tCO <sub>2</sub> e)	Total estimated ER performance (tCO <sub>2</sub> e)
a) Up to 31 December 2025 (8 years starting at 2018)	5,525,990	5,769,17	11,295,161
b) For a period of 10 years	6,907,487	7,211,464	14,118,952
c) the lifetime of the proposed ER Program if longer than 10 years <sup>7</sup>	n/a	n/a	n/a

<sup>7</sup> Lao PDR is committed to continuing with the ER Program under the National REDD+ Program if REDD+ if the international community maintains its commitment to REDD+

**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.*

No other carbon finance providers or buyers have been identified to date. Lao PDR proposes to offer to the Carbon Fund the maximum amount of ERs generated from the ER Program, as allowed by the Carbon Fund.

An amount corresponding to the level of uncertainty estimated and for the risks of reversals associated will be set aside in the buffer reserve.

The proposed methods of estimating uncertainty, and levels of uncertainty for data currently available, corresponding to indicators 7.1 and 7.2 of the FCPF Carbon Fund Methodological Framework, are described in Annex II and replicated below.

Table 12.2a: Uncertainty estimations

CF MF indicator	Consistency of Lao PDR's REL/RFL for ER Program
Indicator 7.1: All assumptions and sources of uncertainty associated with activity data, emission factors and calculation methods that contribute to the uncertainty of the estimates of emissions and removals are identified.	<ul style="list-style-type: none"> <li>Activity data will use statistical methods on estimating uncertainty of the amount of land use/cover changes uses error matrix derived from land use/cover change maps and statistically analyze the uncertainty of the amount of land use/cover changes. The percentage uncertainty of activity data will be calculated by IPCC formula using the 90 % confidence interval.</li> <li>The assumptions and sources of uncertainty estimation for activity data are as follows. <ul style="list-style-type: none"> <li>All land use and land cover changes are considered anthropogenic.</li> <li>An user/produce land cover classification accuracy of 70% and a forest/non-forest classification accuracy of 80%.</li> <li>Uncertainties regarding seasonality, deciduousness and atmospheric correction of satellite images procured nation-wide. Images used: RapidEye imagery in 2010 which has 5m spatial resolution and 5 spectral bands. SPOT 4&amp;5 multi-spectral imagery in 2005 which has 10 meter spatial resolution and 4 spectral bands. LANDSAT TM imagery in 2000 which has 7 spectral bands.</li> <li>Interpretation procedure: Objective based supervised classification was conducted to develop the bench mark map at first. Then, the bench mark map was corrected by visual interpretation. Finally, the maps for other years were developed with change detection method in order to maintain consistency of classification/interpretation.</li> <li>Availability of reference data: The reference data for 2010 bench mark map are the ground truthed data points and the interpreted data on the grid points on ALOS pan sharpened imagery, which has 2.5m spatial resolution.</li> </ul> </li> <li>The assumptions and sources of uncertainty estimation for emission factors are as follows against to the five causes. <ul style="list-style-type: none"> <li>Instrumental imprecision: Quality control survey will be implemented for the 10 % of total sampling plot. Thus, instrumental imprecision and error of tree measurement will be calculated.</li> <li>Sampling errors: Level of error (10-20%) and confidence interval (90-95%) will be set for sample plot calculator equation. The details are described in Indicator 8.2</li> <li>Allometric equation model: In Laos, region specific allometric equation will be developed.</li> <li>Representatives(random errors): It is quite difficult to assess the representativeness of sample point. But, at least, sample points will be distributed randomly by GIS without human bias.</li> <li>Completeness of carbon tools: AGB will be measured. BGB to be estimated using IPCC default value.</li> <li>Inventory data collection has been a large source of error in the past, a cloud-storage, tablet-based, data collection system has been tested and successfully trialed throughout the country for the 2016 NFI. Reducing data entry errors.</li> <li>Statistically significant carbon pools have been assessed and identified.</li> </ul> </li> </ul>
Indicator 7.2: The sources of uncertainty identified in	<ul style="list-style-type: none"> <li>Overall uncertainty will be estimated by the equation based on IPCC GPG-LULUCF (IPCC, 2003).</li> </ul>

CF MF indicator	Consistency of Lao PDR's REL/RFL for ER Program
Indicator 7.1 are assessed for their relative contribution to the overall uncertainty of the emissions and removals.	

Risks of reversals, as mentioned under Section 11, are considered moderate.

### **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)<sup>8</sup>**

#### **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.*

The FCPF Readiness grant will support the implementation of SESA and development of ESMF, but these activities have not yet taken place. This activity will be planned in the near future, when the international TA for the project is contracted (tenders are currently being scored).

#### **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?*

Four of the six proposed provinces of the ER Program currently receive support from the SUFORD-SU project, which has technical and financial support from the Forest Investment Program (FIP) and World Bank. This project had an Environmental and Social Impact Assessment (ESIA) done during project preparation, as well as an Environmental and Social Management Framework (ESMF) prepared. Interventions in those provinces already comply with the World Bank social and environmental safeguards. The safeguards compliance is mainstreamed into the operating procedures. For the social safeguards, the work is guided by a Community Engagement Framework, which ensures participation of ethnic groups and local communities, and respect for their knowledge.

The FCPF Readiness grant has already sponsored a workshop in October 2014, which examined the issue of forest governance in Lao PDR. This workshop was preceded by preparation of a background study on this topic.

Considerable overlap exists between the World Bank safeguards and the UNFCCC safeguards. Nonetheless, a REDD+ technical working group will address the issue of safeguards, and will examine more specifically the UNFCCC safeguards.

#### **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 Government has its own grievance redress mechanisms, which include village mediation units, provincial, regional and supreme courts, and also direct appeals to the National Assembly (the draft revision of the Constitution

<sup>8</sup> The SESA is the assessment process to be used in FCPF REDD+ countries during R-PP implementation and REDD+ readiness preparation. The ESMF is an output of SESA that provides a framework to examine the issues and impacts associated with projects, activities, and/or policies/regulations that may occur in the future in connection with the implementation of the national REDD+ strategy but that are not known at the present time.

also speaks of a Provincial Assembly to be established). The SUFORD-SU project, supported by the World Bank and FIP, has been developing a grievance redress mechanism, making use of and strengthening the Government's mechanism. Training and piloting in use of this mechanism will begin in September 2015. After piloting and with necessary revisions or adjustments made to ensure the functionality of the mechanism, it is envisaged that this will be adopted as a model to be applied for the ER Program and for the further National REDD+ Program.

It is also noted that the World Bank has a mechanism for lodging serious complaints directly to an independent World Bank Inspection Panel, reporting directly to the World Bank Board of Directors.

## **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.*

According to the Forestry Law, forest resources are considered to be national assets and managed by the Government on behalf of the nation. Government titling programs are working to formalize permanent land-use rights in urban and peri-urban areas, and land allocation programs including the aforementioned Land Use Planning and Forest Allocation have formalized temporary land-use rights for agricultural and forest lands. A piloting of further land titling is on-going in the Northern region through the "Land Management and Decentralized Planning Project" in the provinces of Luang Namtha, Sayabouri, Houaphan and Luang Prabang. Through these programs, a process of formalization took place involving delineating village boundaries, designating agricultural and forest, allocating agricultural land to specific households, issuing temporary certificates and preparing land-use contracts and village land-use agreements. Temporary land use certificates are valid for three years and cannot be but cannot be sold, leased or used as collateral. While in many cases temporary certificates have expired, the rights bestowed through these certificates have informally been transferred and exchanged. Local participation in the Government's land-use planning process has been limited, and in many cases has resulted in conflicts or abandonment of the allocated land. A process of reviewing and improving participatory land use planning has since been an active agenda of the Government and development community.

Two pilot cases of formalized communal land tenure exist, but this is yet to be scaled up as an official process by the Government, with the exception of forests within "un-categorized" zones (i.e. outside the 3 forest management zones) for which an official process of registration (i.e. not titling) is about to be formalized. There are on-going efforts, including through the FIP funded SUFORD-SU project to formalize this, particularly in the context of Production Forest Areas (PFAs) – under the administration of DoF of MAF. Communal land titling in the other two forest categories of protection forests and conservation forests is not possible, under the current legislative framework. However, in practice, communal management of forests and forest lands by villages and local communities is prevalent in all three forest categories and in uncategorized forests. As part of the Lao Forest Investment Plan (Lao FIP), the SUFORD-SU and other projects aim to work on expanding participatory sustainable forest management in all three forest categories. Through the support of provincial and district staff villagers develop forest management plans. The villages then sign a Memorandum of Understanding (MOU) with the district on their rights and responsibilities. In PFAs, the villages are entitled to a percentage of the timber harvest revenues, which are managed through the Forest and Forest Resources Development Fund.

In un-categorized forests, communal forests are referred to officially as "Village Forestry" and should undergo a process of Village Forestry Management Planning including registration of land by households and/or as communal land. The access rights to village forests are defined through the management plans. SUFORD-SU is now beginning to pilot Village Forestry in 33 villages in PFAs in Northern Laos (Bokeo and Luang Namtha provinces). The aim is to work towards communal titling of these village forests, and where possible, commercialization of forest products harvested. Other development partners are also working to pilot village forestry, under the guidance of DoF's Division on Village Forestry and Non-Timber Forest Products. In the project design for SUFORD-SU, the possibility of forest lease was also outlined. The idea is for degraded areas of PFAs to be leased to communities for reforestation. This will be further consulted among senior DoF management for implementation.

The Government of Lao PDR is currently working on addressing the August 2014 Notice from the National Assembly to survey and re-delineate all boundaries of the three forest management zones/categories with the intention to zone forestlands to avoid conflicts with village settlements. At the same time, reviews of the Land Policy and the Land Law are underway. Once these are finalized, then other relevant natural resource management laws and policies, including the Forestry Law, will be reviewed. Tenure issues are expected to be addressed in the review process. Throughout the review processes, efforts have been made to promote certain critical enabling issues for REDD+ such as secure rural land tenure and forest classification instructions from the National Assembly.

## **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 arrangements for REDD+ performance-based payments in Lao PDR is planned for consultation through the TWG on benefit sharing, and subsequently for endorsement through the National REDD+ Task Force (RTF).

To ensure that REDD+ benefits are channeled through a process that is transparent, inclusive, participatory and equitable, a set of regulations and supporting policies will be required. This includes an entity or institution that has the authority to receive/distribute the benefits of REDD+ at both national and sub-national level. In this context, it is envisaged that the Ministry of Finance (MoF) will play a key role in the guidance and decisions of disbursement processes. However, it still has to be decided through which channels the benefits are being distributed to the respective beneficiaries.

The Government of Lao PDR has several existing mechanisms for sharing benefits with stakeholders, which may serve as models for benefit-sharing under REDD+. Two of the most relevant examples include the Environmental Protection Fund (EPF) and the Forest and Forest Resources Development Fund (FFRDF). The EPF has been instrumental in receiving funds to be used for the resettlement of uprooted villages affected by the hydropower development projects including the Nam Theun 2 dam financed through the World Bank. The FFRDF is a fund devised to ensure that incomes generated from the forestry sector can be maintained for the purpose of serving the sector, and receive for example, royalties from timber harvests via the national Treasury. These funds are then used to fund forest management activities and to support village development. The share of the funds distributed to villagers is specified in Prime Ministerial Decree No. 1 of 2012.

With respect to the ER Program, two main options are currently under discussion (see Figure 15.1a). Once payments for Emission Reductions (ERs) are provided by the Carbon Fund to the MoF it will be transferred to a national fund eligible to transparently manage the budget. Then, the fund will transfer a specific amount (to be discussed and determined) to national level REDD+ agencies to cover the costs for REDD+ related administration and monitoring. In terms of sub-national and village level benefit-sharing, one option would be to distribute the remaining amount to the participating provinces based on provincial-level performance measured through the national and provincial monitoring systems. Another option would be to offer sufficient funding and other technical support based on negotiation that would allow for continued implementation of the Provincial REDD+ Plans. In either way, the eligible provincial entity/ fund (e.g. EPF/FFRDF/PRF) would channel the resources to those provincial-level agencies responsible for REDD+ to continue the implementation of the Provincial REDD+ Plans as well as districts to fund the continuation of local level activities in terms of reducing emission from deforestation and forest degradation. This could include e.g. payments to Village Development Funds (VDFs) to reward villagers being actively involved in sustainable forest management and forest protection.

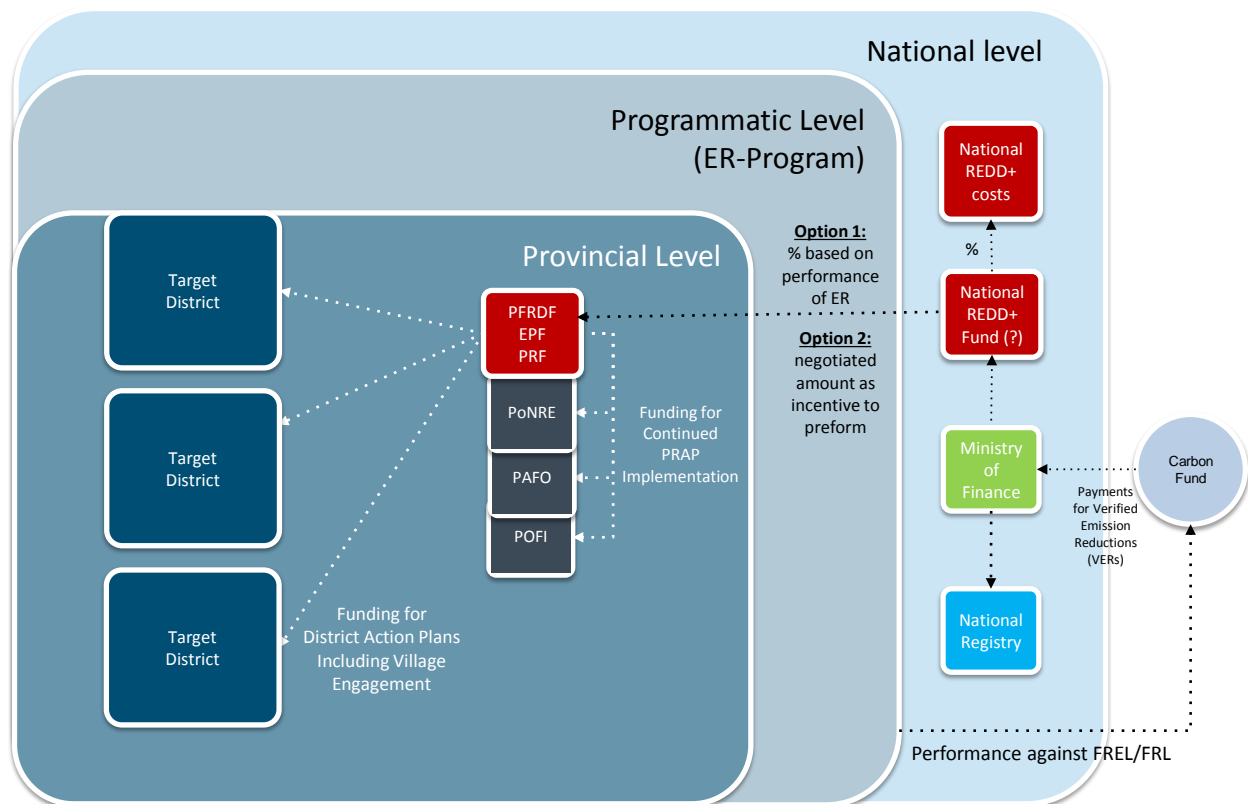


Figure 15.1a: Fund flows of Verified Emissions Reductions from the Carbon Fund and benefit sharing options

**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.*

As mentioned above, the benefit sharing system will be designed to ensure the continuation of interventions under the Provincial REDD+ Plans, where they are generating positive results in terms of both carbon and non-carbon benefits. In this sense, the sharing of benefits among the forest management agencies and forest-dependent villages will address issues of deforestation and forest degradation, such as salvage logging (through improved forest protection and forest law enforcement) and shifting cultivation (through provision of support for alternative income-generating activities, including agroforestry, non-timber forest production, value-chain addition, etc.

### 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.*

The national multi-sectoral government National REDD+ Task Force has designated a technical working group to begin working on benefit sharing. The work to prepare the ER Program will be closely integrated with this work.

## 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.*

The ER Program is fundamentally geared towards targeted interventions while also taking a more comprehensive landscape and green growth approach to dealing with emission reductions from land use change. The following four principles guide the design of the ER Program interventions.

1. **Pro-poor rural development:** to reduce poverty if it can deliver significant financial flows to rural areas, which are among the poorest parts of the country.
2. **Improved forest governance:** is expected to be a significant benefit for the country. Lao PDR anticipates the performance-based scheme would drive significant improvements in forest management that can only be achieved through reforms and strengthening of forest governance systems.
3. **Protection of human rights:** The heightened international attention on community forest management that will accompany REDD+ finance could strengthen the implementation of existing safeguards and have positive implications for the respect for human rights and rights to land and resources.
4. **Biodiversity conservation and other ecosystem services.** While the programme presents both opportunities and risks to biodiversity. The possible negative impacts can be mitigated and potential opportunities promoted through nationally appropriate balance of regulatory and economic incentives as well as participation.

In the proposed program area, a high proportion of the villages have high ethnic minority populations. Social benefits will include:

- Increased incomes and poverty alleviation;
- Increased knowledge, skills, and participation;
- Increased participation of women and ethnic minorities in participatory sustainable forest management, land use planning, and village development activities;
- Recognition of local knowledge and customary use of forests; and
- Improved forest and broader governance.

The proposed program area contains five national biodiversity areas (conservation forest areas), as well as numerous production forest areas and protection forest areas. Within this region, work is ongoing to re-establish biodiversity conservation corridors. Environmental benefits for these forests and for the local villages will include:

- Increased watershed protection, protection of streams and water sources;
- Increased conservation of natural habitat for wild species; and
- Increased forest restoration.

### 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.*

Lao PDR is an LDC whose economic growth depends significantly on its land natural resources – not least, its remaining high-carbon and high-conservation-value forests. The complex context of poverty, market pressures from regional economies, natural resource dependent-growth, and a population with high forest-dependence makes Lao PDR an important test case for REDD+. Through the case of Lao PDR, we would like to be able offer answers to questions raised globally on REDD+, such as;

- **Can financial incentives to developing countries leverage government's high level commitment to change multi-sectoral planning and coordination?**

Lao PDR acknowledges that for successful implementation, REDD+ will need to be strategized at the highest level, and by multi-sectors/ministries. The ER-PIN itself has been consulted with the Government Office

(Prime Minister's Office), and once accepted, it is envisaged that there will be further consultations with the Government Office, and the National Environmental Committee, also led by the Deputy Prime Minister.

- ***What are the enabling conditions for REDD+? What needs to go in hand with REDD+ for success?***

The financial incentive mechanism part of REDD+ alone will not be sufficient to bring about success. REDD+ interventions will be designed to have at its core, improved governance including law enforcement, coordination in inter-sectoral and wider landscape planning, work on improved land and resource tenure, grievance redress mechanisms, etc. While there have been considerable efforts to work on related issues in the past, the coupling of these issues with the financial incentive of REDD+ is hoped to cast these core issues in a new light.

In Lao PDR, there has been a recent Decision by the Prime Minister to engage in negotiation with the EU on a Voluntary Partnership Agreement and to strengthen work on FLEGT, and a bilateral agreement with the Government of Viet Nam to collaborate in both FLEGT and REDD+. The ER Program will serve as a critical start up for testing how REDD+ and the FLEGT and VPA process may in hand change the circumstances of international displacement and leakage.

- ***How can the processes of REDD+ be practically mainstreamed into existing planning and monitoring processes?***

REDD+ is still a new and emerging concept in Lao PDR. A phase of raising awareness and understanding of what REDD+ can achieve needs to precede the full roll out at the national level. This will need to be done by identifying what are the unique processes that REDD+ requires (i.e. spatial planning, drivers analysis, participatory planning etc.), testing these processes, then working out how to most practically, effectively and cost-efficiently mainstream them into existing planning and monitoring processes at different levels of government. The ER-Program will serve as the piloting phase through which lessons and ideas will be gleaned.

- ***Can forest degradation from shifting cultivation be effectively addressed through REDD+?***

In the case of the Northern Lao landscape, forest degradation is not only widespread, but also critical from a carbon stock point of view. In many countries around the world working on REDD+, forest degradation is identified as a serious issue for the forest landscape, but from a carbon accounting point of view, does not justify being prioritized. In the case of northern Lao PDR, carbon content of "regenerating vegetation" or, degraded forests, versus the predominant forest type of mixed deciduous forests is not insignificant. Addressing forest degradation will entail addressing a complex scene of illegal logging operations and shifting cultivation practices, which on the ground are often linked – logging operations opening up forests to facilitate pioneering shifting cultivation.

Addressing forest degradation will mean working with local communities and often ethnic minority groups to who traditionally practice shifting cultivation. Livelihoods improvement and enhanced security of land and resource access will be a critical element of the interventions.

As Lao PDR's ER Program name suggests, **improved governance, rural livelihoods and forest landscapes** are at the core of the proposed ER Program. Forest resources in Northern Lao PDR are set within a complex context of being home to many ethnic minorities whose subsistence and cultural identify depend greatly on their traditional land use practices involving shifting cultivation, vigorously growing market pressures to expand industrial agriculture and timber harvesting from bordering countries, namely Viet Nam and China, and national growth strategies prioritizing development of economic infrastructure and projects such as hydropower and mining on forest lands. Planned deforestation occurring in the form of hydropower and mining projects and road and other economic infrastructure is a serious issue for the forest landscape that cannot be entirely curbed, but can be improved through improved coordination in planning. Curbing unplanned deforestation (primarily in the form of conversion to industrial agriculture and tree plantations) will require coordinated efforts in planning and enforcement by the government, implementation by the local villagers and businesses, and market prices, demand and preferences.

These approaches aim to develop province-wide agreements on management of all types of forests and forest land. Such provincial-level frameworks will be important to increase cooperation among sectors over land use, and thus to minimize the negative social and environmental impacts that other sectors, such as hydropower, mining, infrastructure, and agricultural and forestry plantations, may have on natural forests.

The proposed ER Program offers to the global community, a test case in promoting integrated spatial planning and forest landscape management into the overall management and planning framework of the Government. The Program will also offer lessons on the interface between rural livelihood and carbon impacts through addressing forest degradation, and a test case for how REDD+, FLEGT and the VPA may serve to address issues of international leakage. These experiences will be important not only for other areas in Lao PDR, but also elsewhere that FCPF and FIP are supporting sustainable forest management and REDD+, particularly in the context of LDC countries.

## 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).*

Currently, a few projects are being implemented aiming for third party certification and sales of credits are being prepared outside of the Accounting Area, and one project within the Accounting Area (i.e. Luang Prabang province) to be implemented with a plan to registered under the Joint Crediting Mechanism of the Japanese Government<sup>9</sup>. This project envisaging the JCM is the “REDD+ project in Luang Prabang province through controlling slash-and-burn” with a total area of approximately 30,000 ha.

MoNRE has initiated the preparation of a decree which stipulates registry requirements for REDD+ projects/programs in the country, however, it may still take time to finalize this due to limited understanding among the stakeholders, especially other related ministries (e.g. MPI, MoF). This issue will be facilitated in the coming time by MoNRE with technical supports from development partners (e.g. CliPAD, JICA, FCPF Readiness Grant).

The Lao ER Program will be a large scale sub-national REDD+. These activities will be tracked and recorded in a registry, which will be part of the national forest monitoring system esp. in the geo-spatial database system (see Section 9).

<sup>9</sup> The Governments of Lao PDR and Japan signed the “Bilateral Cooperation on the Joint Crediting Mechanism for the Low Carbon Growth Partnership between Japan and the Lao PDR” on Aug 7th 2013.

**18. List of acronyms used in the ER-PIN***Please include an explanation of any institutional or other acronyms used. Add rows as necessary.*

Acronym	Meaning
CDS	Capacity development strategy
CF	Carbon Fund
CLIPAD	Climate Protection through Avoided Deforestation (project under GIZ and KfW)
CNA	Capacity needs assessment
DDG	Deputy Director General
DFRM	Department of Forest Resources Management (under MoNRE)
DG	Director General
DOE	Department of Environment (under MoNRE)
DoF	Department of Forestry (under MAF)
DOFI	Department of Forest Inspection (under MAF)
DPI	District office of Planning and Investment
EPF	Environmental Protection Fund
ER	Emissions reduction
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
FCPF	Forest Carbon Partnership Facility
FFRDF	Forests and Forest Resources Development Fund
FPREP	Forestry Sector Policy Strategy for Sustainable Forest Management and REDD+ Promotion Project
FREL	Forest reference emission level
FRL	Forest reference level
INDC	Intended nationally determined contributions
LFNC	Lao Front for National Construction
MAF	Ministry of Agriculture and Forestry
MEM	Ministry of Energy and Mines
MoF	Ministry of Finance
MOIC	Ministry of Industry and Commerce
MoNRE	Ministry of Natural Resources and Environment
MPI	Ministry of Planning and Investment
MPWT	Ministry of Public Works and Transportation
MRV	Measurement, reporting and verification
NAFRI	National Agriculture and Forestry Research Institute
NEC	National Environmental Committee
NFI	National Forest Inventory
NFIS	National Forest Information System (project under JICA)
NLMA	National Land Management Authority
NSEDP	National socio-economic development plan
NUOL	National University of Laos
PAFO	Provincial Agriculture and Forestry Office
PAREDD	Participatory Land and Forest Management Project for Reducing Deforestation (under JICA)
POFI	Provincial Office of Forest Inspection
PONRE	Provincial Office of Natural Resources and Environment
PPI	Provincial Office of Planning and Investment
REDD+	Reducing emissions from deforestation and forest degradation plus
REL	Reference emission level
RPP	Readiness proposal plan
RTF	National REDD+ Task Force

RV	Regenerating Vegetation
SFM	Sustainable forest management
SUFORD-SU	Scaling Up Participatory Sustainable Forest Management Program
TWG	Technical working group
VDF	Village development fund
WREA	Watershed Resource and Environment Administration

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# Annex I

## Financing table

Expected uses of funds	Description	Breakdown per year									
				ER-PD formulation		ER-PA duration					
		2014	2015	2016	2017	2018	2019	2020	2021	2022	Total (2016-2022)
<i>Costs related to developing the ER Program (e.g., monitoring costs)</i>	Provincial REDD+ Strategy & Action Plan (Drivers analysis & interventions Benefit sharing Monitoring plan)			1,600	1,600						3,200
	FREL/FRL			50	50						100
	Consultations - village planning & agreements			1,500	1,500						3,000
<i>Operational and implementation costs</i>	Coordination					70	70	70	70	70	350
	Provincial monitoring					70	70	70	70	70	350
	NFMS							50		50	100
	Governance and law enforcement					5,000	5,000	5,000	5,000	5,000	25,000
	Forest landscape management planning, and integrated spatial planning					1,000	1,000	1,000	1,000	1,000	5,000
	Participatory land use planning and sustainable livelihood development					6,000	6,000	6,000	6,000	6,000	30,000
	PES - Payment of Environmental Services					700	700	700	700	700	3,500
	SFM certification					240	240	240	240	240	1,200
	Forest restoration and afforestation					1,800	1,800	1,800	1,800	1,800	9,000
<b>Total uses</b>				<b>6,300</b>		<b>74,500</b>					<b>80,800</b>

(unit:US\$1,000k)

Expected sources of funds	Description	Estimated breakdown per year									
		Note: this column is for reference only, as on-going initiatives contribute directly to some of the ER P provinces		ER-PD formulation		ER-PA duration					Total (2016-2022)
		2014	2015	2016	2017	2018	2019	2020	2021	2022	
Government budget	Budget of Provincial forest resource development plan (*6)	375	375	375	375	375	375	375	375	375	3,375
	through ICBF			243	243	243	243	243	243	243	1,700
	through CliPAD	220	220	220	220	220					1,100
Committed	FIP (SUFORD-SU)	780	780	780	780	780					3,900
	World Bank (SUFORD-SU)	1,160	1,160	1,160	1,160	1,160					5,800
	Finland (SUFORD-SU)	940	940	940	940	940					4,700
	JICA (PA-REDD)	575	575								1,150
	JICA (F-PREP)		300								300
	JICA(NFIS)	700	700								1,400
	Japan (FPP)	550	550								1,100
	(CliPAD)	2,200	2,200	2,200	2,200	2,200					11,000
	KfW (ICBF) two provinces			957	957	957	957	957	957	957	6,700
Uncommitted	FCPF Carbon Fund			325	325						650
	FIP (SUFORD-SU)				3,900	3,900	3,900	3,900	3,900		19,500

	<i>World Bank (SUFORD-SU)</i>				2,500	2,500	2,500	2,500	2,500		12,500
	<i>JICA (SFM&amp;REDD+)</i>			1,000	1,000	1,000	1,000	1,000			5,000
	<i>LENS 2 (Luang Prabang)</i>			150	150	tbd	tbd	tbd			300
	<i>Sales of environment services (PES)</i>					1,000	1,000	1,000	1,000	1,000	5,000
<i>Revenue from sale of additional Emission Reductions (not yet contracted)</i>	ER sales of ER-P to FCPF and other remaining buyers							17,500		17,500	35,000
<b>Total sources (before taxes)</b>		<b>15,300</b>		<b>23,100</b>		<b>81,775</b>					<b>104,875</b>

(unit:US\$1,000k)

<b>Net revenue before taxes (=total sources – total uses)</b>	<b>n.a.</b>	<b>16,800</b>	<b>7,275</b>	<b>24,075</b>
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## Annex II

### REL/FRL Consistency with 12/CP.17 UNFCCC and the Methodological Framework of the Carbon Fund

Table: REL/FRL Consistency with 12/CP.17 UNFCCC

Requirements	Consistency of Lao REL/FRL for the ER Program
Expressed in tons of carbon dioxide equivalent per year.	- Lao REL/FRL will be expressed in tons of carbon dioxide equivalent per year
Maintaining consistency with anthropogenic forest related greenhouse gas emissions by sources and removals by sinks as contained in each country's greenhouse gas inventories.	- Forest/land use change data from 2000-2015 and associated carbon stock change will be the main data set for LULUCF part of GHG inventory in the 3 <sup>rd</sup> National Communication, which is planned to be submitted to UNFCCC in 2017. Communications with the Department of Disaster Management and Climate Change, MoNRE, which is responsible for national GHG inventory, have been established.
The information provided should be guided by the most recent Intergovernmental Panel on Climate Change guidance and guidelines, as adopted or encouraged by the COP.	- GPG for LULUCF (2003) will be used.

Table: REL/FRL Consistency with the Methodological Framework

Relevant Criterion and Indicator of MF	Consistency of Lao REL/FRL for ER Program
Indicator 3.1: The ER Program identifies which anthropogenic sources and sinks associated with any of the REDD+ Activities will be accounted for in the ER Program.	- Deforestation and degradation will be sources of emissions and forest regeneration, afforestation and forest growth will be sinks in the Lao REL/FRL.
Indicator 3.2: The ER Program accounts for emissions from deforestation.	- Lao FRL/FRL will account for emissions from deforestation.
Indicator 3.3: Emissions from forest degradation are accounted for where such emissions are more than 10% of total forest-related emissions in the Accounting Area, during the Reference Period and during the Term of the ERPA. These emissions are estimated using the best available data (including proxy activities or data).	<ul style="list-style-type: none"> <li>- Transition from higher stock forest type to lower one will be examined whether it is degradation according to international discussions and trends.</li> <li>- Degradation within a forest type will be further examined for possible stratification.</li> <li>- According to the results of examinations stated above, emissions from such degradation will be calculated and accounted for in the Reference Period.</li> </ul>
Indicator 4.1: The ER Program accounts for all Carbon Pools and greenhouse gases that are significant within the Accounting Area, both for Reference Level setting and Measurement, Monitoring and reporting (MMR).	<ul style="list-style-type: none"> <li>- It is clear from Provincial level biomass surveys that dead wood and litter are non-significant pools. Soil carbon will be further studied for its significance.</li> <li>- In addition to CO<sub>2</sub>, emission of non-CO<sub>2</sub> gases from biomass burning is significant in the Accounting Area and they will be accounted for.</li> </ul>
Indicator 4.2: Carbon Pools and greenhouse gases may be excluded if: i. Emissions associated with excluded Carbon Pools and greenhouse gases are collectively estimated to amount to less than 10% of total forest-related emissions in the Accounting Area during the Reference Period; or ii. The ER Program can demonstrate that excluding such Carbon Pools and greenhouse gases would underestimate total emission reductions.	
Indicator 5.1: The ER Program identifies the IPCC methods used to estimate emissions and removals	- GPG for LULUCF (2003) will be used.

Relevant Criterion and Indicator of MF	Consistency of Lao REL/FRL for ER Program
for Reference Level setting and Measurement, Monitoring and reporting (MMR).	
<p>Indicator 6.1: The following methodological steps are made publicly available:</p> <ul style="list-style-type: none"> <li>- Forest definition</li> <li>- Definition of classes of forests, (e.g., degraded forest; natural forest; plantation), if applicable</li> <li>- Choice of activity data, and pre-processing and processing methods</li> <li>- Choice of emission factors and description of their development</li> <li>- Estimation of emissions and removals, including accounting approach</li> <li>- Disaggregation of emissions by sources and removal by sinks</li> <li>- Estimation of accuracy, precision, and/or confidence level, as applicable</li> <li>- Discussion of key uncertainties</li> <li>- Rationale for adjusting emissions, if applicable</li> <li>- Methods and assumptions associated with adjusting emissions, if applicable.</li> </ul>	<ul style="list-style-type: none"> <li>- These methodological steps will be made public at relevant forum including the Forestry Sub-Sector Working Group consisting of Government agencies, development partners, NGOs and so on.</li> <li>- Lao REDD+ Website currently under discussion for establishment will have an access or link to the forest information database, which provides such information and steps.</li> </ul>
<p>Indicator 6.2: For the following spatial information, maps and/or synthesized data are displayed publicly, and reasonable efforts are made to explain how these were derived from the underlying spatial and other data, and to make key data sets or analyses publicly available:</p> <ul style="list-style-type: none"> <li>- Accounting Area</li> <li>- Activity data (e.g., forest-cover change or transitions between forest categories)</li> <li>- Emission factors</li> <li>- Average annual emissions over the Reference Period</li> <li>- Adjusted emissions</li> <li>- Any spatial data used to adjust emissions, if applicable.</li> </ul>	<ul style="list-style-type: none"> <li>- These methodological steps will be made public at relevant forum including the Forestry Sub-Sector Working Group consisting of Government agencies, development partners, NGOs and so on.</li> <li>- Lao REDD+ Website currently under discussion for establishment will have an access or link to the forest information database, which provides such information and steps as part of the Lao National Forest Monitoring System</li> </ul>
<p>Indicator 7.1: All assumptions and sources of uncertainty associated with activity data, emission factors and calculation methods that contribute to the uncertainty of the estimates of emissions and removals are identified.</p>	<ul style="list-style-type: none"> <li>- Activity data will use statistical methods on estimating uncertainty of the amount of land use/cover changes uses error matrix derived from land use/cover change maps and statistically analyze the uncertainty of the amount of land use/cover changes. The percentage uncertainty of activity data will be calculated by IPCC formula using the 90 % confidence interval.</li> <li>- The assumptions and sources of uncertainty estimation for activity data are as follows. <ul style="list-style-type: none"> <li>a. Quality and suitability of satellite data: RapidEye imagery in 2010 which has 5m spatial resolution and 5 spectral bands. SPOT 4&amp;5 multi-spectral imagery in 2005 which has 10 meter spatial resolution and 4 spectral bands. LANDSAT TM imagery in 2000 which has 7 spectral bands.</li> <li>b. RapidEye imagery has been ortho-rectified based on original Ground Control Points. SPOT 4&amp;5 multispectral imagery and LANDSAT imagery have been ortho-rectified based on default values.</li> <li>c. Definition of forest classification is described in 8.1.1. MMU is 0.5ha.</li> <li>d. Interpretation procedure: Objective based supervised classification was conducted to develop the bench mark map at</li> </ul> </li> </ul>

Relevant Criterion and Indicator of MF	Consistency of Lao REL/FRL for ER Program
	<p>first. Then, the bench mark map was corrected by visual interpretation. Finally, the maps for other years were developed with change detection method in order to maintain consistency of classification/interpretation.</p> <ul style="list-style-type: none"> <li>e. Availability of reference data: The reference data for 2010 bench mark map are the ground truth data and the interpreted data on the grid points on ALOS pansharpen imagery which has 2.5m spatial resolution.</li> </ul> <ul style="list-style-type: none"> <li>- The assumptions and sources of uncertainty estimation for emission factors are as follows against to the five causes. <ul style="list-style-type: none"> <li>a. Instrumental imprecision: Quality control survey will be implemented for the 10 % of total sampling plot. Thus, instrumental imprecision and error of tree measurement will be calculated.</li> <li>b. Sampling errors: Level of error (10-20%) and confidence interval (90-95%) will be set for sample plot calculator equation. The details are described in Indicator 8.2</li> <li>c. Allometric equation model: In Laos, region specific allometric equation will be developed.</li> <li>d. Representatives(random errors):It is quite difficult to assess the representativeness of sample point. But, at least, sample points will be distributed randomly by GIS without human bias.</li> <li>e. Completeness of carbon tools:AGB will be measured. BGB and soil might be estimated IPCC default value. It was determined that Deadwood and Litter are not insignificant in Laos in a previous study.</li> </ul> </li> </ul>
Indicator 7.2: The sources of uncertainty identified in Indicator 7.1 are assessed for their relative contribution to the overall uncertainty of the emissions and removals.	<ul style="list-style-type: none"> <li>- Overall uncertainty will be estimated by the equation based on IPCC GPG-LULUCF (IPCC, 2003).</li> </ul>
Indicator 8.1: Systematic errors are minimized through the implementation of a consistent and comprehensive set of standard operating procedures, including a set of quality assessment and quality control processes that work within the local circumstances of the ER Program.	<ul style="list-style-type: none"> <li>- In the 2<sup>nd</sup> NFI, a quality control survey will be conducted. A complete remeasurement of a total of 10% of sampling locations to be randomly or systematically chosen by people other than the original field crews will be performed. This validation crew should be experienced in forest measurement and highly attentive to detail. All trees shall be remeasured in each selected cluster and plot. Field crews taking measurements should not be aware of which plots will be remeasured, whenever possible.</li> <li>- After remeasurement, data analysis will be conducted and biomass estimates are compared with estimates from the original data. Measurement Error (%) = <math display="block">\left  \frac{(t \text{ C/ha of measured plot} - t \text{ C/ha of remeasured plot})}{t \text{ C/ha of remeasured plot}} \times 100 \right </math></li> <li>- In the 2<sup>nd</sup> NFI, the following check will be implemented as a data quality assurance. <ul style="list-style-type: none"> <li>a. Data collection in the field: Repeat all measurements</li> <li>b. Data sheet checks: Data sheet have to re-checked at the end of the day</li> <li>c. Data entry checks: Tablet repels the abnormal value</li> </ul> </li> </ul>
Indicator 8.2: Random errors and other uncertainties are minimized to the extent practical based on the assessment of their relative contribution to the overall uncertainty of the emissions and removals.	<ul style="list-style-type: none"> <li>- Winrock International Sample plot calculator (Stratum specific version) will be used for calculating number of plot based on variability of preliminary data (1<sup>st</sup> NFI, Houaphan and Khammuane). Level of error (10-20%) and confidence interval (90-95%) will be set for following sample plot calculator equation. <math display="block">\text{number of plots for strata} = (t * \text{standard deviation} * 0.10 * x)^2</math> <i>t = Critical value from a two tail-test with n-1 degrees of freedom, based on target confidence level (e.g. 90%)</i></li> </ul>

Relevant Criterion and Indicator of MF	Consistency of Lao REL/FRL for ER Program
Indicator 9.1: Uncertainty associated with activity data and emission factors is quantified using accepted international standards, for example by providing accuracy, confidence interval, distribution of error, and propagation of error. Where errors in data and methods are considered large as defined in IPCC Guidelines, Monte Carlo methods (numerical simulations) should be used to estimate uncertainty.	<ul style="list-style-type: none"> <li>- Monte Carlo analysis is especially useful where extensive country-specific land use data exist. There is the country-specific land use data in Laos.</li> <li>- Therefore, uncertainty associated with activity data and emission factors in Laos should be estimated by Monte Carlo methods.</li> </ul>
Indicator 10.1: The Reference Level is expressed in tons of carbon dioxide equivalent per year.	<ul style="list-style-type: none"> <li>- Lao REL/FRL will be expressed in tons of carbon dioxide equivalent per year.</li> </ul>
Indicator 10.2: The ER Program explains how the development of the Reference Level can inform or is informed by the development of a national Forest Reference Emission Level or Forest Reference Level, and explains the relationship between the Reference Level and any intended submission of a Forest Reference Emission Level or Forest Reference Level to the UNFCCC.	<ul style="list-style-type: none"> <li>- Lao REL/FRL for the Accounting Area will be developed based on the national data set for the Accounting Area with additional sample plots in the Accounting Area.</li> <li>- Activities, pools, gases accounted in both Lao REL/FRL for the Accounting Area and the national REL/FRL to be submitted to UNFCCC will be identical and both will be developed almost at the same time.</li> <li>-</li> </ul>
Indicator 10.3: The ER Program explains what steps are intended in order for the Reference Level to achieve consistency with the country's existing or emerging greenhouse gas inventory.	<ul style="list-style-type: none"> <li>- Forest/ land use change data from 2000-2015 and associated carbon stock change will be the main data set for LULUCF part of GHG inventory in the 3<sup>rd</sup> National Communication, which is planned to be submitted to UNFCCC in 2017. Communications with the Department of Disaster Management and Climate Change, MoNRE, which is responsible for national GHG inventory, have been established.</li> </ul>
Indicator 11.1: The end-date for the Reference Period is the most recent date prior to 2013 for which forest-cover data is available to enable IPCC Approach 3. An alternative end-date could be allowed only with convincing justification, e.g., to maintain consistency of dates with a Forest Reference Emission Level or Forest Reference Level, other relevant REDD+ programs, national communications, national ER program or climate change strategy.	<ul style="list-style-type: none"> <li>- The reference period for the Lao REL/FRL for the Accounting Area is planned to be 15 years from 2000 to 2015 in order to have three stock change data sets for durability and to ensure recent land/forest use changes are reflected in the REL/FRL. Therefore, the end-date of the Reference period will be 2015.</li> </ul>
Indicator 11.2: The start-date for the Reference Period is about 10 years before the end-date. An alternative start-date could be allowed only with convincing justification as in Indicator 11.1, and is not more than 15 years before the end-date.	<ul style="list-style-type: none"> <li>- <i>See response to 11.1</i></li> </ul>
Indicator 12.1: The definition of forest used in the construction of the Reference Level is specified. If there is a difference between the definition of forest used in the national greenhouse gas inventory or in reporting to other international organizations (including an Forest Reference Emission Level or Forest Reference Level to the UNFCCC) and the definition used in the construction of the Reference Level, then the ER Program explains how and why the forest definition used in the Reference Level was chosen.	<ul style="list-style-type: none"> <li>- The forest definition of Lao PDR is provided and explained in Section 8.1.1. and will be used for GHG inventory as stated in the consistency with Indicator 10.3 above.</li> </ul>

**Annex III: Summary of main Government institutions involved in managing and governing the proposed ER Program**

MRV/REL		
	Institution	Function
National level	REDD+ Task Force - (MRV/REL TWG)	Developing guidelines and technical advisory
	Ministry of Agriculture and Forestry (MAF) - Forest Inventory and Planning Division (FIPD)	Lead in National forest inventory and mapping
	Ministry of Natural Resources and Environment (MoNRE) - Department of Disaster Management and Climate Change (DDMCC)	Reporting to UNFCCC
Provincial level	Provincial Agriculture and Forestry Office (PAFO)	Involvement in National Forest Inventory and Mapping
	Provincial Office of Natural Resources and the Environment (PoNRE)	Involvement in National Forest Inventory and Mapping
District level	District Office of Agriculture and Forestry (DAFO)	Involvement in National Forest Inventory and Mapping
	District Office of Natural Resources and Environment (DoNRE)	Involvement in National Forest Inventory and Mapping

Low Emission Development (LED) Planning - Land use		
	Institution	Function
National level	REDD+ Task Force - (Enforcement and Mitigation TWG)	5-Year LED Strategy planning, Provincial REDD Strategy, Provincial REDD+ Action Plan - (LEDs planning and implementation)
	REDD+ Task Force - (Land Use TWG)	5-Year LED Strategy planning, Provincial REDD Strategy, Provincial REDD+ Action Plan - (LEDs planning and implementation)
	Ministry of Planning and Investment (MPI)	Integration of LEDs into National Socio Economic Development Planning (NSEDPP)
	Ministry of Natural Resources and Environment (MoNRE)	5-year Sectoral Plans
	Ministry of Agriculture and Forestry (MAF)	5-year Sectoral Plans
	Ministry of Industry and Commerce (MIC)	5-year Sectoral Plans
	Ministry of Energy and Mines (MEM)	5-year Sectoral Plans
	Ministry Public Works and Transportation	5-year Sectoral Plans
Provincial level	TBD – not forest specific	5-Year LED Strategy planning, Provincial REDD Strategy, Provincial REDD+ Action Plan - (LEDs planning and implementation)
	TBD – not forest specific	5-Year LED Strategy planning, Provincial REDD Strategy, Provincial REDD+ Action Plan - (LEDs planning and implementation)
	Department of Planning and Investment (PPI)	Integration of LEDs into Provincial Socio Economic Development Planning (PSEDPP)
	Provincial Office of Natural Resources and the Environment (PoNRE)	5-year Sectoral Plans
	Provincial Agriculture and Forestry Office (PAFO)	5-year Sectoral Plans
	Department of Industry and Commerce	5-year Sectoral Plans
	Department of Energy and Mines	5-year Sectoral Plans
	Department of Public Works and Transportation	5-year Sectoral Plans
District level	TBD – not forest specific	5-Year LED Strategy planning, Provincial REDD Strategy, Provincial REDD+ Action Plan - (LEDs planning and implementation)
	TBD – not forest specific	5-Year LED Strategy planning, Provincial REDD Strategy, Provincial REDD+ Action Plan - (LEDs planning and implementation)
	District Office of Planning and Investment (DPI)	Integration of LEDs into District Socio-Economic Development Planning (DSEDPP)
	District Office of Natural Resources and Environment (DoNRE)	5-year Sectoral Plans
	District Office of Agriculture and Forestry (DAFO)	5-year Sectoral Plans
	District Office of Industry and Commerce	5-year Sectoral Plans
	District Office of Energy and Mines	5-year Sectoral Plans
	District Office of Public Works and Transportation	5-year Sectoral Plans

Safeguards		
	Institution	Function
National level	REDD+ Task Force - (Social and Environmental Safeguards TWG)	Develop Policies and Regulations regarding Social and Environmental Safeguards Approach for Lao PDR
	Lao Front for National Construction (LFNC)	Facilitation of the dissemination of safeguards approach
	MoNRE - Department of Social and Environmental Impact Assessment	Facilitation of the dissemination of safeguards approach
	Lao Women's Union	Facilitation of the dissemination of safeguards approach
Provincial level	TBC (e.g. Provincial Safeguards Unit)	Provide transparent information on monitoring of social and environmental safeguards
	Lao Front for National Construction (LFNC)	Facilitation of the dissemination of safeguards approach
	Provincial Office of Natural Resources and the Environment (PoNRE) / Environment Section	Facilitation of the dissemination of safeguards approach
	Lao Women's Union	Facilitation of the dissemination of safeguards approach
District level	Lao Front for National Construction (LFNC)	Facilitation of the dissemination of safeguards approach
	Lao Women's Union	Facilitation of the dissemination of safeguards approach

Regulation and Policy		
	Institution	Function
National level	National Assembly (NA)	Approvals
	Prime Minister's Office	Approvals
	NEC	Approvals and Advice on Scope
	National REDD+ Task Force	Approvals and Advice on Scope
	REDD+ Task Force (Legal Framework TWG)	REDD+ Regulation and Policy Development
	Ministry of Natural Resources and Environment (MoNRE)	Forest Law Revision and new decrees/regulations relating to REDD+
	Ministry of Planning and Investment (MPI)	REDD+/LEDS Policy Planning
	Ministry of Finance (MoF)	REDD+ Related Policy and Regulation on Financial Flows
	Ministry of Agriculture and Forestry (MAF)	Forest Law Revision and new decrees/regulations relating to REDD+
	Ministry of Industry and Commerce (MIC)	Mainstreaming LEDS/REDD+ into policy
Provincial level	Governor's Office	Approvals
	PEC	Approvals and Advice on Scope
	Provincial RED+ Task Force	Approvals and Advice on Scope
	Provincial Office of Natural Resources and the Environment (PoNRE)	Implementing Forest Law and new decrees/regulations relating to REDD+
	Department of Planning and Investment (PPI)	Implementing REDD+/LEDS Policy Planning
	Department of Finance (DoF)	Implementing REDD+ Related Policy and Regulation on Financial Flows
	Provincial Agriculture and Forestry Office (PAFO)	Implementing Forest Law and new decrees/regulations relating to REDD+
	Department of Industry and Commerce	Mainstreaming LEDS/REDD+ into policy
District level	Governor's Office	Approvals
	District Office of Natural Resources and the Environment (DoNRE)	Implementing Forest Law and new decrees/regulations relating to REDD+
	District Office of Planning and Investment (DPI)	Implementing REDD+/LEDS Policy Planning
	District Office of Finance (DoF)	Implementing REDD+ Related Policy and Regulation on Financial Flows
	District Agriculture and Forestry Office (DAFO)	Implementing Forest Law and new decrees/regulations relating to REDD+
	District Office of Industry and Commerce	Implementing REDD+/LEDS Policy Planning

	Institution	Function
National level	National REDD+ Task Force	Approvals
	REDD+ Task Force (Benefit Sharing TWG)	Develop Policies and Regulations regarding REDD+ Benefit Sharing and Distribution Mechanism for Lao PDR
	Ministry of Finance (MoF)	Set-up BSD Mechanism
	Ministry of Agriculture and Forestry (MAF)	
	Ministry of Natural Resources and Environment (MoNRE)	
	Ministry of Industry and Commerce (MIC)	
Provincial level	Provincial RED+ Task Force	
	Department of Finance (DoF)	Implement BSD Mechanism
	Provincial Agriculture and Forestry Office (PAFO)	
	Provincial Office of Natural Resources and the Environment (PoNRE)	
District level	District Office of Finance (DoF)	Implement BSD Mechanism