



# The context of REDD+ in the Lao People's Democratic Republic

Drivers, agents and institutions

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Photo by Guillaume Lestrelin/IRD  
Swidden cultivation landscape in the Nam Khan River basin, Northern Laos (June 2005)

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# Abbreviations

3Es	Effectiveness, efficiency, equity
ADB	Asian Development Bank
A/R	Afforestation/Reforestation
ASEAN	Association of South-East Asian Nations
CarBi	Carbon & Biodiversity (project)
CDM	Clean Development Mechanism
CIFOR	Center for International Forestry Research
CLiPAD	Climate Protection through Avoided Deforestation (project)
COP	Conference of the Parties
CSO	Civil Society Organization
DAFO	District Agriculture and Forestry Office
DoFI	Department of Forest Inspection
DoNRE	Department of Natural Resources and Environment
EIA	Environmental Investigation Agency
FCMP	Forest Cover Monitoring Project at the Mekong River Commission
FCPF	Forest Carbon Partnership Facility
FIP	Forest Investment Program
FIPD	Forest Inventory and Planning Division under the Department of Forestry of Ministry of Agriculture and Forestry
FLEG	Forest Law Enforcement and Governance
FLEGT	Forest Law Enforcement, Governance and Trade (EU Action Plan)
FPIC	Free, Prior and Informed Consent
FRA	Global Forest Resource Assessment by FAO
FSC	Forest Stewardship Council certification scheme
GDP	Gross Domestic Product
GEF	Global Environment Facility
GIS	Geographical Information System
GIZ	German Agency for International Cooperation
GoL	Government of Lao PDR
GPAP	Governance, Public Administration Reform
ILO	International Labour Organization
I-REDD+	Impacts of Reducing Emissions from Deforestation and Forest Degradation and Enhancing Carbon Stocks (project)
IUCN	International Union for Conservation of Nature
KfW	German Development Bank

LEAF	Lowering Emissions in Asia's Forests (project)
LULUCF	Land Use, Land-Use Change and Forestry
LUPLA	Land-Use Planning and Land Allocation
MAF	Ministry of Agriculture and Forestry
MoNRE	Ministry of Natural Resources and Environment
MRV	Monitoring, reporting and verification
NAMA	Nationally Appropriate Mitigation Action
NAPA	National Adaptation Programme of Action
NGO	Nongovernmental Organization
NLMA	National Land Management Authority
NPA	National Protected Area
PAREDD	Participatory Land and Forest Management Project for Reducing Deforestation (project)
PES	Pro-poor Payments for Environmental Services
PFA	Production Forest Area
PLUP	Participatory Land Use Planning
REL	Reference Emission Level
R-PIN	Readiness Plan Idea Note for REDD+
R-PP	Readiness Preparation Proposal for REDD+
SIDA	Swedish International Development Coordination Agency
SNV	Stichting Nederlandse Vrijwilligers (Foundation of Netherlands Volunteers)
SOE	State-Owned Enterprise
SUFORD	Sustainable Forestry for Rural Development (project)
UNFCCC	United Nations Framework Convention on Climate Change
UNFF	United Nations Forum on Forests
VCS	Verified Carbon Standard
WCS	Wildlife Conservation Society
WREA	Water Resources and Environmental Agency
WTO	World Trade Organization

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# Executive summary

This report on the context of REDD+ in the Lao People's Democratic Republic is a contribution by the EU-funded project "Impacts of Reducing Emissions from Deforestation and Forest Degradation and Enhancing Carbon Stocks (I-REDD+)" to Component 1 of the Global Comparative Study on REDD+ conducted by the Center for International Forestry Research (Brockhaus and Di Gregorio 2012). The aim is to provide an overview and analysis of the drivers of deforestation and forest degradation (both direct and indirect), institutional arrangements for the forestry sector in general and for REDD+ in particular, the political economy underlying the drivers of deforestation and forest degradation, and the existing legal frameworks for REDD+ and their implications for achieving effective, efficient and equitable outcomes from REDD+ in Laos (Brockhaus et al. 2012).

Laos is receiving considerable international attention and support to implement REDD+. Forest covers more than 40% of the country's total land area (9,500,000 ha), although this has followed a fairly consistent forest loss of about 0.7% a year since 1982. The main direct drivers of deforestation are agricultural expansion — by both individual farmers and large-scale agribusinesses — and the development of industrial tree plantations and large hydropower, mining and infrastructure projects. Shifting cultivation and selective logging are blamed for forest degradation. The indirect drivers of deforestation and forest degradation are rooted in the national agenda for economic growth. With investors from neighboring countries such as Vietnam, Thailand and China keen to gain access to the country's land and natural resources, the government of Laos has sought to encourage private investment in hydropower, mining, agriculture and forestry as a way of boosting the national economy. As a result, with private investors providing the financial, technical and human resources that the country needs for rural development, Laos is becoming an important resource frontier for transnational capital and large-scale land and natural resource investments. The consequent intensification of competition over resources poses a challenge not only for

forest governance, but also for the development of REDD+ policies and initiatives in Laos.

The government of Laos has long sought to curb deforestation and forest degradation. The main approach for doing so, as identified in Laos' Readiness Preparation Proposal for REDD+ (R-PP) submitted to the World Bank's Forest Carbon Partnership Facility (FCPF), consists of a combination of law enforcement, land-use planning and farm extension activities. Several policies and programs have also been introduced with the aim of strengthening land and forest governance. A nationwide program of land-use planning and land allocation was initiated in the early 1990s with the aim of clarifying village boundaries, regulating local access to land and forest resources, and limiting shifting cultivation. Since the 1990s, the government has marked out some 12.5 million ha (more than 50% of the national territory) as state conservation, production and protection forests.

However, Laos' persistent shortage of financial and human resources has impeded the effective implementation of such initiatives. Outcomes have generally been unclear. For example, although *de jure* centralization of forest governance has been achieved, local communities and other nonstate actors continue to have *de facto* influence over forest resource management and use. Moreover, the country's focus on national economic growth and associated encouragement of both domestic and foreign companies to invest in timber harvesting creates not only a need for strong political commitment but also trade-offs. If existing interests and power conflicts continue to prevail, efforts to address the drivers of deforestation and forest degradation may ultimately prove unsuccessful.

REDD+ came onto Laos' national agenda in 2007. The government sees REDD+ as a potentially important source of the technical and financial support it needs to achieve its longstanding afforestation and reforestation objectives. With stimulus from the FCPF, a national, cross-sectoral REDD+ taskforce was established in

November 2008 to coordinate the country's REDD+ readiness activities. The government of Laos favors a hybrid approach to REDD+ that incorporates multiple funding strategies (bilateral, multilateral and commercial) and implementation at national, subnational and project levels. Since Laos submitted its R-PP in October 2010, it has received a first grant from the FCPF (2011), and a US\$30 million investment plan was approved by the World Bank's Forest Investment Program (FIP) in January 2012. Since 2009, bilateral and multilateral projects have played an important role in supporting the design of the national REDD+ framework and subnational pilot activities. Private sector actors have also been active in developing public-private partnerships and subnational projects for REDD+. Given the lack of strong domestic civil society, international development agencies, international NGOs and private companies have been the main stakeholders in consultation processes, which have generally been limited to the national level.

No clear proposals for REDD+ benefit sharing in Laos have been put forward, partly because of the government's preference for a flexible approach that would allow the country to explore a range of options. Factors that need addressing are the lack of clarity over carbon rights, the conflict between formal and customary rights, and the absence of any specific legal provisions on indigenous rights, all of which could compromise the equity, effectiveness and efficiency of REDD+.

Laos has created a broadly defined institutional architecture for REDD+, whereby the National Environmental Council is linked to the National REDD+ Taskforce and then to REDD+ offices

at the central and provincial levels. The details of REDD+ policy options — such as reference emission levels, monitoring, reporting and verification, benefit sharing and stakeholder participation — continue to be discussed at the central level. To ensure the effective implementation of REDD+, policy makers must:

1. strengthen cross-sectoral coordination and information sharing, in order to reduce transaction costs, improve information flows, and enhance access to information and planning decisions
2. develop institutions and incentives to reduce the gaps between policy and practice
3. set correct crediting baselines and define conditions for additionality
4. establish social and environmental safeguards that ensure distributive, procedural and contextual equity; too often, civil society and the general population have little participation in land-use planning and negotiations over land concession agreements.

If REDD+ in Laos is to be effective and efficient, substantial investment is needed to build the capacity of administrative and technical staff, especially at the subnational level; to clarify and harmonize land-use planning and land allocation processes; and to strengthen monitoring and law enforcement in areas under high threat of deforestation and forest degradation. To ensure equitable outcomes of REDD+, Laos needs an accountable and transparent benefit-sharing mechanism across levels, accountable consultation processes, and meaningful participation of not only the elite and powerful actors but also of local groups, civil society organizations and NGOs.

# 1 Introduction

Reducing Emissions from Deforestation and forest Degradation plus conservation, sustainable management of forests and enhancement of forest carbon stocks (REDD+) has become increasingly complex and controversial in the years since Costa Rica and Papua New Guinea introduced the concept at the 11th Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC) in Montreal in December 2005. As REDD+ has evolved, it has come to be expected to generate not only financial incentives for developing countries to reduce greenhouse gas emissions and sustain economic growth by halting or preventing the destruction of their forests, but also the political will to improve forest governance.

Although Laos has a fairly small area of primary forest compared with countries such as Indonesia and Thailand (FAO 2011), natural forest accounts for the largest proportion of its land area among all Southeast Asian countries. Over the past decade, the country has become an important “resource frontier” for transnational capital and large-scale land investments, raising concerns about the rates of deforestation and forest degradation (Baird 2011). As a result, Laos is receiving marked attention from the international community and significant technical and financial support to develop and implement REDD+ mechanisms. The government of Laos has demonstrated its interest in REDD+ by establishing institutions such as a REDD+ taskforce and supporting REDD+ pilot projects funded by donors and international NGOs. The aim of this report is to provide information on how REDD+ has developed so far and to analyze the key socioeconomic and political processes, opportunities and constraints that are likely to affect the design and implementation of REDD+ in Laos.

The report is a contribution to CIFOR’s Global Comparative Study on REDD+ by I-REDD+,

or “Impacts of Reducing Emissions from Deforestation and Forest Degradation and Enhancing Carbon Stocks”, a project funded by the European Community’s Seventh Framework Research Programme (<http://www.i-redd.eu/>). I-REDD+ is a 4-year international research initiative, which was launched in 2011 with the main objective of ensuring that the design and implementation of future REDD+ mechanisms are based on appropriate knowledge about carbon storage in landscapes, carbon monitoring technology, potential impacts on local livelihoods and ecosystem services, and institutions overseeing access to resources and payments. Interdisciplinary research on these issues is being conducted from the local to the regional level in four Southeast Asian countries: Laos, Vietnam, China (Yunnan) and Indonesia. The Global Comparative Study on REDD+ aims to provide policy makers, donors and practitioners with strategic information and analyses of the opportunities and challenges for REDD+ in tropical forest countries. The present document has been produced through the alignment of these two research initiatives.

Within this broad institutional framework, a research team comprising researchers from the Faculty of Forestry of the National University of Laos, the French Institute of Research for Development and CIFOR was set up. The team studied the history and current status of forest governance, deforestation and forest degradation in Laos, and the associated challenges for REDD+, primarily by reviewing a wide range of documents, including gray literature, scientific papers, laws and decrees, and government strategies. The authors also made direct observations during national workshops and meetings related to REDD+ in Laos, compiling data from recorded conversations during meetings and informal discussions. The findings of this study were reviewed by external reviewers who have worked with the Lao forestry sector for several decades and

verified by participants in a national consultation workshop held in Vientiane in May 2013, comprising representatives from government offices, nongovernmental organizations (NGOs), civil society organizations (CSOs), donors and international research institutes.

To aid intercountry comparability, the authors follow the global comparative guidelines for country profiles developed by Brockhaus et al. (2012). The report is organized as follows. In Section 2, we examine the main drivers of deforestation and forest degradation in Laos and assess the underlying causes. Section 3 contains an examination of the institutions that govern the forestry sector. In particular, we study the state of forest governance and resource rights and discuss

their potential implications for the development of future REDD+ mechanisms. Section 4 attempts to place Laos' forestry sector within the broader political economy, highlighting the recent impacts of transnational trade and investment on land and forest use and management in Laos. Section 5 summarizes the current and planned institutional and organizational arrangements for developing and implementing national REDD+ policy in the country. In Section 6, we assess the trends in natural resource governance, planned policies, and the opportunities and constraints associated with REDD+ in light of their implications for achieving efficiency, effectiveness and equity (the "3Es") in REDD+ outcomes. We conclude, in Section 7, with some policy recommendations.

# 2 Drivers of deforestation and forest degradation

## 2.1. Current forest cover and historical overview of past forest cover change

### 2.1.1. Forest cover change

Since 1982, the average annual rate of deforestation in Laos has amounted to approximately 0.7% (76,000 ha/year), reducing the national forest cover from 49% in 1982 to 45% in 1992 and 41.5% in 2002. According to preliminary data from the latest national forest cover assessment (undertaken in 2010 but not yet officially released), about 40% of the country (9,500,000 ha) is estimated to be forest, natural or planted.

### 2.1.2. Land-use categories and terminology

Laos' 2007 Forestry Law does not define "forest", but its forest cover assessments generally define forest as an area spanning at least 0.5 ha, of which at least 20% of the crown cover comprises trees that will reach a height of at least 5 m after maturity (GoL 2005b); this is the definition of forest that the government of Laos submitted to the UNFCCC. The land-use categories applied by the forestry administration during recent monitoring exercises are defined in Table 1. During the most recent National Forest Inventory, conducted 2011–2012, only five forest types were mapped: evergreen, mixed broadleaf/coniferous, mixed deciduous, dry dipterocarp and coniferous.

It should be noted that the term "shifting cultivation" is not used uniformly, which creates

difficulties in interpreting available data on land use and forest change. The national Forestry Strategy 2020 (GoL 2005a) differentiates between "pioneering shifting cultivation", applicable to deforestation of areas that have never been used for crop production, and "rotational shifting cultivation", responsible for rotational clearing of fallow forest. However, these terms are not used consistently. On the one hand, the term "shifting cultivation area" is used for the whole area where rotational cultivation is practiced, that is, the area under crop and forest fallows. On the other hand, fallows are considered "Current Forest" one year after the crop area is abandoned if the crown cover exceeds 20%. Further confusion arises when others use the terms differently (Rigg 2005): "pioneering shifting cultivation" is often used as a synonym for "shifting cultivation", and "rotational cultivation" is often called "rotational shifting cultivation". Others do not differentiate between these two types.

Moreover, the current definitions of "degraded forest" or "barren unstocked forest land", which can be zoned for conversion into planted forests, have major implications for REDD+. An example is where villagers clear forest land (classified as "Current Forest") for swidden agriculture; these lands would then presumably enter the category of "Potential Forest", but plantation developers could classify these spaces as "degraded/unstocked forest" and seek to have them included in REDD+ frameworks.

**Table 1. Land-use categories as applied by the Lao forestry administration.**

Land-use category	Definition
<i>Current Forests</i>	<p>Natural forest and plantations spanning at least 0.5 ha, of which at least 20% of the crown cover comprises trees that will reach a height of at least 5 m after maturity. <i>Current Forests</i> are further subdivided into the following nine forest types :</p> <ol style="list-style-type: none"> <li>1. <i>Upper Dry Evergreen Forest</i> is located at an altitude above 200 m and characterized by the species <i>Hopea</i> spp. (Mai Khen), <i>Pterocarpus pedatus</i> (Mai Do), <i>Dipterocarpus alatus</i> (Mai Nhang), <i>Lagerstroemia</i> spp. (Mai Peua) and <i>Anisoptera</i> spp (Mai Bak). The height of upper and second stories is usually less than in <i>Lower Dry Evergreen Forest</i>.</li> <li>2. <i>Lower Dry Evergreen Forest</i> is located at an altitude below 200 m and is otherwise similar to <i>Upper Dry Evergreen Forest</i>. The second story is usually dense and the height (10–30 m) is usually quite even within a stand.</li> <li>3. <i>Upper Mixed Deciduous Forest</i> contains more than 50% deciduous trees and is located at an altitude above 200 m. While in moist areas with a lot of climbers it might be difficult to distinguish this forest type from the <i>Dry Evergreen Forest</i>, the difference is clear in dry regions. <i>Upper Mixed Deciduous Forest</i> appears to be more open than <i>Dry Evergreen Forest</i> and might contain a considerable amount of bamboo and undergrowth.</li> <li>4. <i>Lower Mixed Deciduous Forest</i> is located at an altitude below 200 m and otherwise has similar characteristics to those of <i>Upper Mixed Deciduous Forest</i>.</li> <li>5. <i>Dry Dipterocarp Forest</i> occurs as open stands and reaches a height of 8–25 m. With crown cover of less than 20%, this vegetation type forms savannah within the category of <i>Other Wooded Areas</i>. Some typical species for this forest, such as <i>Dipterocarpus intricatus</i> (Mai Sabeng), <i>Dipterocarpus obtusifolius</i> (Mai Sat), <i>Shorea obtusa</i> (Mai Chick), <i>Shorea siamensis</i> (Mai Hang) and <i>Terminalia tomentosa</i> (Mai Suak) are characterized by thick, fire-resistant bark.</li> <li>6. <i>Gallery Forest</i> is not characterized by tree species composition and can be either deciduous or evergreen. It occurs along rivers and streams in bands of up to 100 m width.</li> <li>7. <i>Coniferous Forest</i> is usually single storied and open but young growth may form a dense second story. It occurs in higher elevations with a cool climate. Usually <i>Pinus</i> spp. and less often other conifer species such as <i>Cunninghamia</i> sp. are dominant.</li> <li>8. <i>Mixed Coniferous / Broadleaf Forest</i> is located at higher elevations and forms a transition between coniferous and deciduous or evergreen broadleaf forests.</li> <li>9. <i>Plantation Forest</i> covers planted forests including rubber plantations and excluding coffee, tea and fruit tree plantations. Contrary to the definition of “forest”, young tree plantations with less than 20% crown cover are considered <i>Plantation Forest</i> and consequently <i>Current Forest</i>. Because of the limited extent of <i>Plantation Forest</i> at the time of the forest cover assessments, this inclusion of areas with less than 20% crown cover in the category <i>Current Forest</i> is insignificant.</li> </ol>
<i>Potential Forests</i>	<p>Areas where the crown cover has fallen below 20%, e.g., because of logging or shifting cultivation, and which have the potential to regenerate to a state of more than 20% crown cover. <i>Potential Forest</i> consists of:</p> <ul style="list-style-type: none"> <li>• <i>Unstocked Forest</i> areas, where the crown cover has fallen below 20%, e.g., because of logging or shifting cultivation, and which have the potential to regenerate to a state of more than 20% crown cover</li> <li>• <i>Ray/Shifting Cultivation</i> areas, after clear-cutting and until 1 year after abandonment</li> <li>• <i>Bamboo</i> areas, with a crown cover below 5% and dominated by bamboo species (at least 80% of total cover of understory).</li> </ul>
<i>Other Wooded Areas</i> (vegetation types: savannah, heath, scrub)	Areas with trees where the crown cover will never reach 20% because of site conditions
<i>Permanent Agriculture</i>	Rice paddies, agricultural plantations, other agricultural areas
<i>Other Non-Forest Land</i>	Grassland, rocks, swamp, urban/built-up areas

### 2.1.3. State forests and categories

The national Forestry Law identifies three categories of state forests based on their functions (Table 2). About 12.5 million ha (more than 50% of the country's land area) is delineated as state forest (see Table 3 and Figure 1). According to the national government (GoL 2011b), protection forest areas could span 8.2 million ha in the future, of which 2.59 million ha would be covered with forest. A further 3.29 million ha of forest (13.9% of the country's land area) is located outside state forest areas (GoL 2011b). With the ongoing demarcation of protection forest areas, this area will decrease, which could have potentially adverse impacts on local communities, through restriction of their access to forest resources.

**Table 2. Forest categories in Laos, according to 2007 Forestry Law.**

Category	Functions
Conservation forests and national protected areas (NPAs)	Conservation of nature; preservation of plant and animal species as well as forest ecosystems and other sites of natural, historical, cultural, tourism, environmental, educational and scientific research importance. These are subdivided into total protection zones (all land uses prohibited), controlled use zones (permanent agriculture, noncommercial logging and collection of forest products allowed), corridor zones (collection of forest products allowed) and buffer zones (noncommercial logging and collection of forest products allowed).
Protection forests	Protection of the environment; protection from natural disasters; prevention of soil erosion; protection of water resources, riverbanks, roadsides and soil quality; the protection of strategic areas for national defense. These are subdivided into total protection zones (all land uses prohibited) and controlled use zones (permanent agriculture, noncommercial logging and collection of forest products allowed).
Production forests	Natural and planted forests that serve the purpose of production of timber and other forest products to satisfy business demands and the requirements of national socioeconomic development and people's livelihoods. These are subdivided into forest management areas (devoted to timber extraction) and village-use zones (permanent agriculture, noncommercial logging and collection of forest products allowed).

**Table 3. Number, size and forest cover of state forest areas in Laos.**

State forest category	Management level	No.	Area (ha) <sup>a</sup>	Area forested (ha) <sup>a</sup>
Conservation forest	National	24	3,500,000	2,370,000
	Provincial	76	644,000	
	District	143	495,000	
Production forest	National	51	3,089,000	1,300,000
Protection forests (delineation ongoing)	National	262	4,758,000	2,570,000
	Provincial	n.a.	n.a.	
	District	n.a.	n.a.	
Total			12,486,000	6,240,000

<sup>a</sup> Figures are estimates only because of high variations in source data. Sources: GoL (2010b, 2011a); Watt (2010)

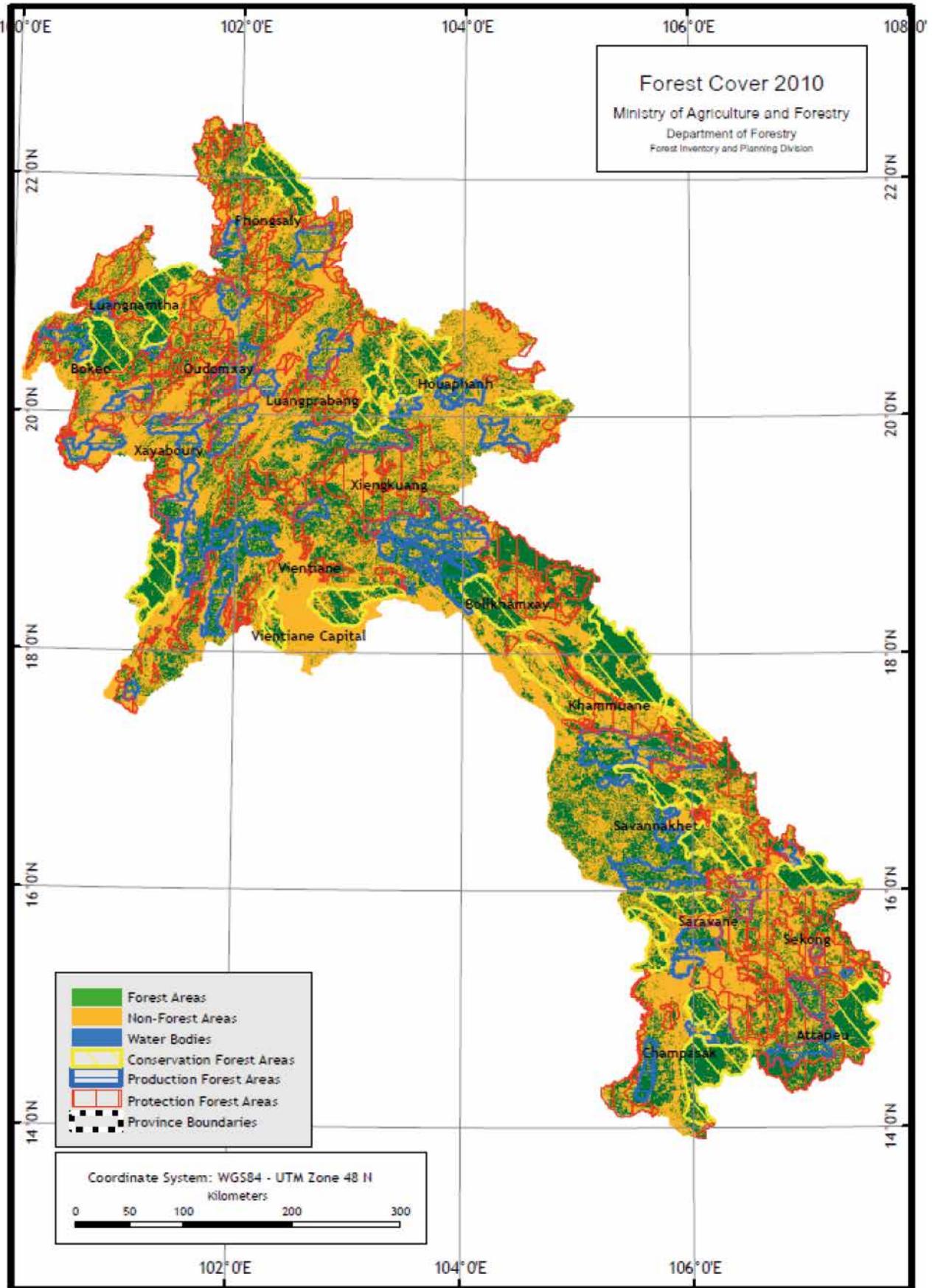


Figure 1. Forest cover in Laos, 2010.

Source: GoL (2011a)

## 2.1.4. Land-use changes and forest cover trends

### 2.1.4.1. Historical trends in deforestation

An analysis of the historical trends in land-use change, and hence in deforestation and forest degradation, in Laos is contained in the country's Readiness Preparation Proposal (R-PP) (Watt 2010). The analysis drew on data from the following sources: three nationwide surveys of land use and forest cover for 1982, 1992 and 2002, conducted by the Forest Inventory and Planning Division under the Department of Forestry in the Ministry of Agriculture and Forestry ("FIPD sample data"); the Forest Cover Monitoring Project by the Mekong River Commission for 1993 and 1997 ("FCMP data"); and two additional GIS layers for FIPD for 1992 and 2002 ("FIPD GIS data"). The FIPD sample data and data from the National Forest Inventory conducted between 1993 and 1999 were the official sources for the UN Forest and Agriculture Organization's Global Forest Resource Assessment (FAO 2010). According to the FIPD data, actual forest cover decreased from 49% of the national territory in 1982 to 45% in 1992 and to 41.5% in 2002 (Table 4). This represents an annual deforestation rate of 0.4% (46,000 ha) between 1982 and 1992 and of 1.2% (134,000 ha) between 1992 and 2002. The FCMP data, however, show a different picture, with 39% forest cover in 1993 and 38% in 1997 and a lower average annual deforestation rate of 0.5% (46,000 ha) between 1993 and 1997. Deforestation rates after 2002 are not available because the government has not officially released the data from the most recent FIPD forest cover assessment. However, according to preliminary findings, in 2010 the overall forest cover had further decreased to 40% of the country's land area, or 9,500,000 ha (GoL 2011b).

The data sets show some differences between geographic regions. According to the FIPD sample data, annual deforestation slowed down in the northern part of the country; indeed, in the northwestern provinces of Luang Namtha, Bokeo and Oudomxay, forest cover increased by 600–900 ha/year between 1992 and 2002. By contrast, high deforestation of 17,000–40,000 ha/year occurred in the former Xaisomboun Special Zone (now part of Vientiane and Xiengkhuang Provinces) and the southern provinces Bolikhamxay and Savannakhet. Between 1992 and 2002, the average annual deforestation rate in the northern and southern parts of the country was between 1.1% and 1.5%. In the central part of the country, the rate was 2.2%. The FCMP data reveal a similar average annual deforestation rate of 1.1% in the northern part of the country, but rates of 0.4%–0.5% were seen for the central and southern parts between 1993 and 1997.

The data sets differ substantially for some individual provinces. The most striking differences are for the former Xaisomboun Special Zone and Oudomxay Province. For Xaisomboun, FIPD data record a deforestation rate of 5.5% between 1992 and 2002, whereas FCMP data give a 0.1% rate between 1993 and 1997. For Oudomxay, according to FIPD sample data, forest cover increased by 2.3% each year from 1992 to 2002, whereas FCMP data show a deforestation rate of 2.3% between 1993 and 1997. The differences between the data sets can be attributed to difficulties in distinguishing between forested and non-forested land because of the topography (steep terrain), as well as subjectivity of interpretation, seasonal changes in forest cover, the time lag between the data sets and the use of images with different resolutions (Watt 2010).

**Table 4. Change in national forest cover, according to forest cover assessment by the Forest Inventory and Planning Division.**

	1982	1992	2002	2010 <sup>a</sup>
Actual forest cover (% of national territory)	49%	45%	41.5%	40%
Actual forest cover (hectares)	11,637,000	11,168,000	9,825,000	9,500,000

<sup>a</sup> 2010 figures have not been officially validated

Deforestation takes place not only in all three categories of state forest but also outside these areas. Data are insufficient to disaggregate the degraded area precisely into the categories. Official land concession inventories and research, however, have revealed that, in some cases, deforestation takes place inside conservation forests and national protected areas (NPAs) (Nanthavong et al. 2009; EIA 2011). This pattern indicates points that are highly relevant for REDD+ and equity: that most deforestation is taking place in areas managed by central state agencies and therefore that these state agencies could be the primary potential beneficiaries from REDD+. Moreover, because of poor data sets and lack of up-to-date information, it is difficult to ascertain the true REDD+ potential of Laos nationally. The unreliability of these data sets mean they are inadequate for determining baselines. This is an important gap.

#### 2.1.4.2. Historical trends in forest degradation

In Laos' R-PP, FIPD sample data, FCMP data, FIPD GIS data and National Forest Inventory data were used to determine historical trends in forest degradation (Watt 2010). The data sets use canopy closure classes to quantify the growing stock, and the reduction in growing stock is used to estimate forest degradation. The FIPD sample data and the FCMP data define well-stocked forests as having a canopy closure of more than 70%. FIPD sample data report a rapid decline in this canopy class from 3.2 million ha in 1992 to 840,000 ha in 2002. However, the FIPD GIS data for 2002 and the FCMP data for 1997 suggest areas of 1.57 million ha and 1.52 million ha, respectively, for this canopy closure class. The trends for medium-stocked and low-stocked canopy classes are even harder to interpret (Table 5): medium-

stocked forest shows a decline followed by a rapid increase, whereas the area of low-stocked forest increases, flattens and then declines.

Watt (2010) suggests that the FIPD sample data overestimate the area of well-stocked forest in 1992 (29%), given that the FCMP data for 1993 and 1997 report that well-stocked forest accounts for 17% of the total forest area and the FIPD GIS data put the proportion of well-stocked forest at 15% in 2002. Using the FIPD sample data, Watt (2010) calculated a volume-based forest degradation trend. According to those calculations, the decrease in volume between 1992 and 2002 represents an average annual decline of about 1.67% in stock in remaining forest or about 1.67 m<sup>3</sup>/ha/year. Using values from canopy density models, he observed a degradation rate of 0.6 m<sup>3</sup>/ha/year. The reference emission level (REL) model in the R-PP used an average rate of 1.12 m<sup>3</sup>/ha/year. Generally, estimates of the rate of forest degradation have a high level of uncertainty because they involve estimating an area with particular canopy closure classes (data with a high level of uncertainty) and assigning growing stock to each class (which has an unknown level of uncertainty).

Geographic differences in forest degradation trends can be deduced from geographic differences in timber harvesting and shifting cultivation. According to Thomas et al. (2010), commercial timber harvesting in the 1990s was most intensive in central and southern provinces, especially in Khammuane, Savannakhet and Bolikhamxay, for which they report log extraction of 420,000 m<sup>3</sup> in the 1998/1999 logging season. In the same logging season, log extraction amounted to 4100 m<sup>3</sup> in Luang Namtha, 704 m<sup>3</sup> in Vientiane Municipality and 8300 m<sup>3</sup> in Champasak. By

**Table 5. Forest degradation: Relative distribution of forest cover classes.**

Year		1992	1993	1997	2002	
Source		FIPD sample	FCMP	FCMP	FIPD sample	FIPD GIS
<b>% of national forest cover</b>	Low stocked (20–39%)	16%	30%	30%	29%	14%
	Medium stocked (40–69%)	55%	53%	53%	63%	71%
	Well stocked (>70%)	29%	17%	17%	8%	15%

Source: Adapted from Watt (2010)

contrast, according to Messerli et al. (2009), the heaviest levels of forest degradation caused by shifting cultivation occur in the northern uplands (Oudomxay, Luang Prabang and Huaphanh Provinces) and in parts of the Annamite Mountains on the eastern border with Vietnam (Savannakhet and Saravane Provinces).

Degraded forest is found in all three state forest categories, although data are insufficient to disaggregate the degraded area precisely into the categories. According to the R-PP (GoL 2010b), about 1.24 million ha (40%) of production forest areas (PFAs) are heavily degraded, but have the potential to recover and regrow under appropriate protection and management. The R-PP (GoL 2010b) and the Forest Investment Program (FIP) (GoL 2011b) state that illegal logging is conducted in all state forest categories and in forests outside these categories. For example, officially contracted harvesting operators cut above the allowed quota in production forests or in infrastructure development sites, as well as in neighboring protection and conservation forests (cf. Baird 2010b). In addition, local and foreign operators carry out large-scale illegal logging without any official harvesting contracts; these operators tend to target conservation forests (protected areas) and protection forests. Documented examples come from Xe Pian NPA (Baird 2010b), Nakai Nam Theun NPA (World Bank 2001) and other NPAs (EIA/Telapak 2008). Villagers also carry out small-scale illegal logging in all forest categories. According to the FIPD sample data for 1992 and 2002, most degradation occurs in forests with 70% or more canopy closure. However, studies differ over the locations of these forests. Whereas Watt (2010) assumes that they are more likely in conservation forests and NPAs, Hett et al. (2011b) claim that 70% of natural forests (i.e., primary forest with closed canopy) and the majority of the carbon stocks of these forests are found outside of the NPAs.

#### **2.1.4.3. Projected trends in deforestation and forest degradation**

To calculate the average annual emissions of CO<sub>2</sub> using baseline settings, Laos' R-PP estimates the area affected by land clearance under a business-as-usual scenario from 2010 to 2015 to be 67,000 ha per year (GoL 2010b). In the R-PP, this figure is broken down into commercial concessions (34,200 ha), smallholder cash crops (14,700 ha),

hydropower projects (13,100 ha), mining projects (5100 ha) and infrastructure developments (2000 ha). According to the R-PP, another 57,300 ha of forest will be degraded through shifting cultivation. Some of these estimates differ from those made by Watt (2010), who projects forest clearance of 14,100 ha/year for mining between 2010 and 2020 and 1000 ha/year for infrastructure development. Additional estimates are available from Stenhouse and Bojö (2011), who report that, as a result of government plans, up to 3% of the NPA is, or will be, flooded for hydropower, up to 5% of the NPA lies within mining concession areas and up to 2.4% of the NPA system may be used for mining.

Laos' Fifth (2001–2005) and Sixth (2006–2010) National Socioeconomic Development Plans included tree planting, with plantation targets of 134,000 ha by 2005 and an additional 25,000–30,000 ha by 2010 (GoL 2001, 2006). The Sixth National Socioeconomic Development Plan (GoL 2006) and the Forestry Strategy 2020 (GoL 2005a) set a target of 500,000 ha for the development of timber and rubber plantations. According to Laos' Agricultural Development Strategy 2020, the Ministry of Agriculture and Forestry (MAF) envisages no more than 300,000 ha of company-based rubber plantations nationwide (GoL 2010a) — a threshold that has probably already been reached (GoL 2010b). In fact, anecdotal evidence suggests that the continued approval of additional concessions for plantation development could potentially lead to further deforestation (EIA 2012).

#### **2.1.4.4. Historical trends in afforestation and reforestation**

In 2009, Laos had approximately 300,000 ha of tree plantations, including 136,000 ha (46%) of rubber plantations (GoL 2009). By 2011, approximately 400,000 ha of rubber plantations and 300,000 ha of other industrial tree plantations had been established or were in the process of being developed (Barney 2011). In many instances, plantation development could be considered as deforestation because existing plantations had replaced natural forests (Nanthavong et al. 2009). According to the Sixth National Socioeconomic Development Plan and the Agriculture and Forestry Development Plan 2006–2010 (GoL 2006), targets to be achieved by 2010 were 53% forest cover through the rehabilitation

of 2.55 million ha of degraded forest and the establishment of 150,000 ha of forest plantations. Although the plantation target has been reached, there is no doubt that the 53% forest cover target and the 2.55 million ha rehabilitation target have not. In 2009, the government reported that, by 2008, approximately 600,000 ha of forest had been restored (GoL 2009). Given that forest cover had decreased to 40% by 2010 (GoL 2011b), claims about these rehabilitation efforts appear questionable, especially as there are no reliable data on forest rehabilitation efforts or achievements on non-forested or degraded land.

The Forestry Strategy 2020 (GoL 2005a) set a target of planting trees in 500,000 ha of severely degraded (“unstocked”) forest areas and assumed that 6 million ha of forest would regenerate naturally. More generally, the government has committed to increasing the country’s forest cover to 65% by 2015 and to 70% by 2020 (GoL 2005a, 2010d). Given that forest cover had decreased to 40% by 2010 and the failure of past rehabilitation efforts, this target does not appear feasible without major policy changes (Puustjaervi 2011). Although afforestation, in the form of industrial timber plantations, is underway in areas already designated for that purpose, many of these plantations are established in forested areas, which means that they begin with deforestation. In the Industrial and Socioeconomic Development Plan for the Northern Provinces, the target for rubber plantations was reduced from 200,000 ha to 150,000 ha (cf. Shi 2009) — a threshold that has presumably already been reached. It remains to be seen whether the government of Laos will stand by this self-imposed threshold or allow the further establishment of rubber plantations.

## 2.2. Main drivers of forest cover change

Although most scholars and studies cite logging and shifting cultivation as the two main drivers of deforestation and forest degradation in Laos, the country’s R-PP discusses nine drivers, which were identified during a study on land use and forest changes conducted in support of the R-PP (Thomas et al. 2010). The nine drivers are: (1) unsustainable wood extraction from production forest, (2) pioneering shifting cultivation, (3) agricultural expansion, (4) industrial

tree plantation, (5) mining, (6) hydropower development, (7) infrastructure development, (8) fire and (9) urban expansion. The main drivers are analyzed below.

### 2.2.1. Unsustainable wood extraction from production forest

Unsustainable wood extraction from production forest occurs in the form of commercial logging, logging for household purposes and illegal logging; wood extraction from conversion sites is dealt with separately. As it involves the extraction of selected timber species only, unsustainable wood extraction from production forest is a driver of forest degradation rather than of deforestation.

#### 2.2.1.1. Commercial logging

Until the 1990s, Laos had no forest management system for commercial logging. Approximately 2.5 million ha was officially designated as production forest but not mapped and the designation criteria were not made publicly available. Logging was carried out according to national logging quotas issued by the Prime Minister’s Office. Quotas were based not on sustainable forest management plans or forest inventories but rather on suggestions by various government authorities and members of the forestry and wood-processing industries; as a result, these suggestions reflected the industry’s demand for raw materials. The common understanding was that the forestry sector and revenue-generating forestry activities were underdeveloped. The main stakeholders involved in unsustainable wood extraction were the government authorities issuing the quotas, nine state forest enterprises, several provincial forest enterprises, private logging contractors and foreign donors that supported the government’s aim of increasing timber production. Following the 1986 New Economic Mechanism, which aimed at economic reform and liberalization, state forest enterprises and provincial forest enterprises were dissolved. At that time, the state forest enterprise concessions were basically logged out (cf. Barney 2011) and wood extraction moved into newly opened areas and areas of infrastructure development.

From 1991 onward, national logging quotas were lowered substantially within the framework of the Tropical Forest Action Plan. The main stakeholders involved in unsustainable wood extraction in this period were three military-

run state-owned enterprises (SOEs) under the jurisdiction of the Ministry of Defense, which had gained control of the logging business. Although the central government was issuing national logging quotas, the SOEs' logging activities evaded government control. In the late 1990s, central and provincial governments regained control over the SOEs (although the military continues to wield considerable influence in the forestry and logging sector, especially in border areas). Science-based, sustainability-oriented forest management was promoted through donor-supported projects from the 1990s onward. This shift is reflected in the 1996 Forestry Law (GoL 1996), which allows wood extraction only in officially designated PFAs for which forest management plans are in place. At the same time, however, special logging quotas such as “district construction quotas”, “debt-repayment quotas”, “development logging quotas” and “military logging quotas” were being issued at the local level (Baird 2010b).

Legal commercial logging in PFAs is not considered a major driver of deforestation because it is very limited. Most PFAs lack marketable tree species of minimum harvestable diameter and the timber market is not interested in lesser used tree species (cf. Thomas et al. 2010). During the 1990s, official extraction of logs from PFAs ranged between 120,000 m<sup>3</sup> and 340,000 m<sup>3</sup> per year, accounting for 23.3%–73.8% of the overall log extraction (Table 6). Since 2000, quotas for commercial wood extraction from production

**Table 6. Official wood extraction from production forests, 1990–1999.**

Year	m <sup>3</sup>	% of overall log extraction
1990	220,000	73.8
1991	200,000	51.2
1992	120,000	61.5
1993	340,000	66.7
1994	150,000	25.3
1995	204,000	23.3
1996	263,000	39.9
1997	170,000	30.4
1998	257,000	55.3
1999	319,000	43.5

Source: World Bank (2001)

forests have been reduced. For example, the logging quota for the 2008/2009 season was 150,000 m<sup>3</sup>, but less than 86,000 m<sup>3</sup> was reported to have been harvested (GoL 2009). Often, however, the quotas have not been adhered to. According to some reports, actual logging in PFAs exceeds official quotas because of additional quotas issued locally or corrupt practices that inflate quotas (World Bank 2001; Baird 2010b). Sometimes, actual logging in PFAs remains below official quotas because of bad weather or the preference of logging companies to log in areas that are easier to convert to other uses (cf. GoL 2009; Baird 2010b). Therefore, accurately estimating timber extraction from PFAs is often not possible.

#### 2.2.1.2. Logging for household consumption

Although the government of Laos concedes that wood extraction for household consumption is poorly regulated, it has less of an effect on forest degradation than other drivers (GoL 2010b). Thomas et al. (2010) estimate that logging for household consumption has increased in line with population growth, from about 630,000 m<sup>3</sup>/year (1992–2002) to 770,000 m<sup>3</sup>/year (2002–2009). According to the National Population and Housing Census of 2005, 80% of households use firewood as their main source of energy for cooking (Messerli et al. 2008). Estimates for firewood extraction vary substantially, ranging from 1.5 million m<sup>3</sup> to 8 million m<sup>3</sup> per year (cf. World Bank 2001; Phiathap 2002). Firewood is often collected from shifting cultivation areas during site preparation (Thomas et al. 2010). However, there is no reliable information on how much firewood is taken from secondary forest or fallows, thus contributing to forest degradation.

#### 2.2.1.3. Illegal logging

Accurate and reliable information on the extent of illegal logging in Laos is not available, but the government concedes that “wood extraction has actually increased in recent years as a result of increased illegal logging”; it considers illegal logging a serious problem and the main driver of forest degradation (GoL 2010b). According to the R-PP (GoL 2010b), the growing stock of Laos' forests has fallen by an average of 18 million m<sup>3</sup> per year during the past 20 years; official forest clearance and timber harvesting account for only about 10 million m<sup>3</sup> per year, with the remaining 8 million m<sup>3</sup> per year not accounted for. The R-PP further estimates that 5000 trees (or 12,500 m<sup>3</sup>)

are illegally harvested each year in a typical district. Several estimates or observations support the notion that illegal logging is substantial. One report (Anonymous 2000), for instance, puts the amount of timber illegally logged at 100,000 m<sup>3</sup> per year, and EIA (2009) reports that 600,000 m<sup>3</sup> is smuggled into Vietnam each year.

As the legal framework for Laos' forestry sector has numerous discrepancies, it is often difficult to determine whether logging activities are legal or illegal. Article 49 of the Forestry Law states: "The government allows logging and harvesting of forest products only in the production forest areas where inventory, surveys and sustainable management plans have been completed and only in the areas that the government permits the construction of infrastructure". It has been argued that, under this definition, nearly all wood extraction from areas other than infrastructure development sites is illegal, because, as of 2010, sustainable forest management plans had been developed for only six of the 51 PFAs supported by the Sustainable Forestry for Rural Development (SUFORD) project funded by the World Bank and the government of Finland (Barney and Canby 2011). However, local or central government authorities often grant logging licenses in violation of the law (Bestari et al. 2006).

An array of agents are involved in illegal logging, among them domestic and foreign companies and individual business operators, the military, local people and government officials (GoL 2010b). Vietnamese and Lao companies are reportedly involved in illegal logging in hydropower development sites in the south of the country (EIA 2011). Often local people or contractors are hired to carry out the actual logging, with local authorities or the military providing support (Baird 2011). Overall, however, unsustainable wood extraction through illegal logging is the result of a complex web of direct and indirect drivers. Laos has long been characterized by a centrally planned economy (cf. UNIDO 2003) and its standard planning instruments include 5-year plans, growth objectives, production plans and targeted sector priorities (cf. GoL 2006, 2010d). This political model and a pressing need for economic growth led to the overambitious development of the wood-processing industry with a demand for raw material that far exceeded the sustainable supply from natural forests (Frazer et al. 2009). At the

same time, Laos' neighbors — especially Vietnam — have developed massive, partly export-oriented wood-processing industries, thus driving up demand for raw materials from Laos (Forest Trends/DFID 2010). The high demand for raw material in turn drove up timber prices, boosting the already high profits of logging operations (Forest Trends/DFID 2010). The combination of insufficient financial resources allocated from the state budget to forestry departments and inadequate training of forestry officials led to low capacity among forest authorities and thus weak control and monitoring of the forestry sector. Furthermore, the combination of poor regulation of natural resources and extremely low salaries for forestry officials weakened governance and led to ample opportunities for rent seeking and corruption in the forestry sector (Baird 2011).

### 2.2.2. Pioneering shifting cultivation

Rural households, which account for 69% of Laos' population, practice shifting cultivation (GoL 2012) in their pursuit of income and food security. Past (pioneering) shifting cultivation has presumably transformed large areas of mature forest into rotational shifting cultivation areas consisting of a mosaic of fallows (secondary forests) and land under crop, thus contributing to deforestation and forest degradation. It has been estimated that, at the end of the 1980s, pioneering and rotational shifting cultivation covered about 4,864,000 ha, of which 310,000–600,000 ha were cultivated areas and the rest was fallow forest (Chazee 1994). According to the government (GoL 2005b), the total area of shifting cultivation remained more or less constant between 1982 and 2002. However, the area under cultivation increased nationwide from 597,400 ha in 1982 to 625,700 ha in 1992, although it had decreased to 516,900 ha by 2002. According to the Forest Strategy 2020 (GoL 2005a), between 1992 and 2002 pioneering shifting cultivation was a key cause of forest cover loss in the country's north. However, other reports suggest that pioneering shifting cultivation declined from 180,000 ha in 1994/1995 to 119,000 ha in 2001/2002 to 29,400 ha in 2005 (Thomas et al. 2010). Evidence from a case study in northern Laos supports this decrease, as it found that no pioneering shifting cultivation occurred in the study area between 2007 and 2009 (Hett et al. 2011a).

Shifting cultivation has long been cited as a major cause of deforestation and forest degradation in Laos, both by the government and by some donors (cf. Souvanthong 1995; GoL 2005a). Shifting cultivation, as a cause of deforestation or forest degradation, was widespread in areas declared conservation forest when National Biodiversity Conservation Areas were established in 1993; this network was converted into the NPA system in 2000. Although rotational shifting cultivation remains an important proximate driver of forest degradation in many of these areas (see Robichaud et al. 2009; Hett et al. 2011), some NPAs have managed to reduce the encroachment by shifting cultivation by large amounts (Moore et al. 2011). As described by Castella et al. (2013), this reduction has often been achieved through a combination of village resettlements, village boundary delineation and strengthened law enforcement with the support of international conservation organizations such as the Wildlife Conservation Society (WCS) and WWF. However, others have asserted that international organizations cannot claim credit for this reduction because it has also been observed outside the NPA; indeed, it is more likely attributable to the images selected for the feasibility study and not to improved NPA management (personal communication from Moore, 2013).

The government introduced several policies aimed at eradicating or at least stabilizing shifting cultivation to begin a shift toward permanent agriculture; these include the Shifting Cultivation Stabilization Program (Prime Ministerial Decree No. 117/1989), MAF Instruction No. 1220, and the Land and Forest Allocation Program (MAF Instruction No. 822). It is now believed that shifting cultivation has not played a key role in large-scale deforestation since the middle of the 20th century and that rotational shifting cultivation is in fact a sustainable land-use system that does not induce further deforestation as long as population pressures or other influences do not reduce the area available for cultivation (e.g., Fox 2000; GoL 2005a). Local studies from Laos support this view (e.g., Robichaud et al. 2009).

Pioneering shifting cultivation does drive deforestation in areas with insufficient land or land access for rotational shifting cultivation because of population increase or loss of land. In Laos, local populations may grow because

of voluntary or forced resettlement included in government policies, such as the NPA system and the Shifting Cultivation Stabilization Program, or government-supported economic measures such as the development of large-scale plantation concessions or the construction of hydropower dams. Factors in such developments are insecure land tenure or even loss of land, for example due to the establishment of plantation concessions.

### 2.2.3. Industrial tree plantations

Tree plantations are developed as medium- to large-scale investments in concessions on leased land as well as small-scale investments and household-based plantations, mainly on private land. As of 2011, approximately 300,000 ha of industrial tree plantations had been established or were being planned or developed (Barney 2011). According to the Forestry Law (GoL 2007b), industrial tree plantations can be developed only on degraded or barren land. However, given ample evidence that industrial tree plantations are often established on forested land (Nanthavong et al. 2009; Thomas et al. 2010; Barney 2011), the government considers industrial tree plantation development to be a major driver of deforestation (GoL 2010b).

An analysis of land-use change in Laos (Thomas et al. 2010) identified the following key factors contributing to deforestation through the development of industrial tree plantations:

- weak enforcement of laws, regulations and concession agreements by local authorities because of low human and technical capacity and limited financial resources
- inappropriate or nonexistent land-use planning, insecure land tenure and minimal awareness among resource users of their rights to use land and forest resources
- absence of economic incentives that could help make the management and protection of forests competitive (economically attractive) compared with other land uses.

Barney (2011) analyzes and illustrates in detail many of these drivers and causes using the example of industrial timber plantations developed for pulpwood by international companies. Between 2000 and 2010, the demand for pulpwood rose sharply in many countries. In China, for example, the Chinese government and financial sector responded by backing an increase in pulp-

manufacturing capacity. This growth raised interest in Laos as a supplier of plantation timber, inducing some key players to invest in pulpwood plantations. This process was initially supported by the Asian Development Bank (ADB) and officials at various levels of the government of Laos allocated concession areas for these investments, often without sufficient consideration of the impacts on existing forest cover.

#### **2.2.4. Agricultural expansion**

Information on the actual extent of the expansion of cash crops is limited. Thomas et al. (2010) report that the area used for cash crops, such as maize, coffee, vegetables and fruit, increased from 17,700 ha in 1992 to around 320,000 ha in 2006; yet another estimate (UNDP 2010) is that 3.5 million ha or 14.7% of the country's land area is under agribusiness concession agreements or contracts. During the past 20 years, especially between 2002 and 2009, agricultural expansion has been a major driver of deforestation in Laos, following the substantial increase in the number of large and small agricultural concessions and household farming (Thomas et al. 2010; GoL 2010b). Stibig et al. (2007) describe the conversion from forest to cash crops (including rubber) as the "most important cause of forest loss" in Laos. More detailed information might become available shortly from the Second Agricultural Census, which was being evaluated at the time of writing this report. The immediate and underlying causes of deforestation associated with large-scale commercial agriculture are similar to those described above for timber plantation development. Deforestation through agricultural expansion on a smaller scale is driven by smallholders who expand their permanent plantations of cash crops. This livelihood strategy is influenced by favorable site conditions such as soil fertility, which promise high productivity and profitability, as well as by market forces such as domestic demand or demand in neighboring countries.

#### **2.2.5. Mining**

The government views mining as a key sector for economic development (GoL 2010d) and mining activities in Laos are expected to increase (GoL 2010b). In October 2008, 213 mining projects were registered in Laos (Kyophilvong 2009). In 2011, copper and gold were the most important mineral resources exploited. Others include bauxite and lignite/coal, and bauxite deposits have been explored on the Boloven Plateau in the country's

south. According to Stenhouse and Boj  (2011), one company has been granted a production agreement, and seven companies are in the prospecting stage. Open-cast bauxite mining would lead to deforestation of large areas. Stenhouse and Boj  (2011) estimate that mining concessions have been issued for 5% of the NPA (e.g., in Nam Et-Phou Loey NPA) and that up to 2.4% of these areas may be exploited for mining. Exact information on the areas deforested by mining operations is not available, but operations such as the Sepon Gold-Copper Operation Project in Savannakhet Province, the Phu Kham Copper-Gold Mining Project in Vientiane Province and the Hongsa Lignite Project in Xayaboury Province cover extensive areas. According to the R-PP (GoL 2010), 5100 ha of forest will be cleared each year for mining activities.

In October 2008, 85 foreign companies were active (48 Chinese, 19 Vietnamese, six Thai, four Australian, two Russian, two North Korean, two Canadian, one South Korean, one Polish) and 42 domestic mining companies were active. Forty projects were in the prospecting stage, 85 in the exploration stage, seven in the feasibility study stage and 46 in the mining stage (Kyophilvong 2009). Of the 35 active mines in 2006, 13 were managed by government departments (Ministry of Energy and Mines: seven; Ministry of Defense: five; Ministry of Industry and Commerce: one) and more than 10 by foreign investors (six Chinese, three Thai, two Vietnamese, two Australian). The large-scale Sepon Gold-Copper Operation Project and the Phu Kham Copper-Gold Mining Project were operated by Australian companies, although ownership of Sepon was transferred to Chinese investors in 2011. According to Kyophilvong (2009), domestic companies and companies from neighboring countries carry out smaller mining operations with little consideration for environmental impacts. Mining is motivated by high profitability, abundant market opportunities and government investment incentives, and facilitated by weak governance (especially over approvals of concessions) and weak enforcement of forestry and environmental laws.

#### **2.2.6. Hydropower development**

The government of Laos is pursuing the development of hydropower relentlessly as one of the main pillars of the country's economic growth. The Seventh National Socioeconomic Development Plan (GoL 2010d) sets out plans to build 10 large dams with a combined capacity of more than

5000 MW. According to the Department of Energy Promotion and Development under the Ministry of Energy and Mines (GoL 2011c), 14 projects were operating and nine were under construction in July 2011. Some of these projects are of considerable size, such as the operational 1075 MW Nam Theun 2 project and the 1285 MW Xayaboury project, under construction since 2011. According to Stenhouse and Bojö (2011), at least six of the hydropower projects that are operational or under construction as well as 12 potential hydropower projects are located in NPAs; in total this means that 3% of the NPA is or could be used for hydropower. The development of hydropower thus led directly to the annual deforestation of 6000–15,000 ha between 2006 and 2010 (Watt 2010). Furthermore, hydropower indirectly leads to further deforestation and forest degradation as logging operators often illegally extend the range of their logging operations into areas surrounding the construction sites (Thomas et al. 2010; EIA 2011). In addition, the resettlements that usually accompany hydropower projects intensify pressure on forests at the resettlement sites because of the increase in population density (Thomas et al. 2010). The main stakeholders in hydropower development are the government and major international financial institutions such as the World Bank and the ADB, which share the common vision of using hydropower development as a strategic pillar for increasing government revenues and developing poor regions. The concessionaires are the state-owned company Electricité du Laos (EDL) and companies from China, Thailand, Norway, Malaysia, Russia, France and Vietnam that form joint ventures with the national government.

### 2.2.7. Infrastructure development and urban expansion

Compared with hydropower development, infrastructure development is a relatively minor direct driver of deforestation, with approximately 2000 ha affected annually (Watt 2010). Indirectly, however, it can have a major effect on forest degradation because it opens up previously inaccessible areas. Examples of urban development are the growth of Vientiane and the relocation of the provincial capital of Phongsaly, and road upgrading and urban development work within and around the Nam Et-Phou Loey NPA. From 1992 to 2002, urban areas expanded from approximately 84,000 ha to 135,000 ha (cf. Thomas et al. 2010), that is, an average of 5000 ha per year. Recent exact information on the extent of urban expansion is not

**Table 7. Wood extraction from conversion sites, 1990–1999.**

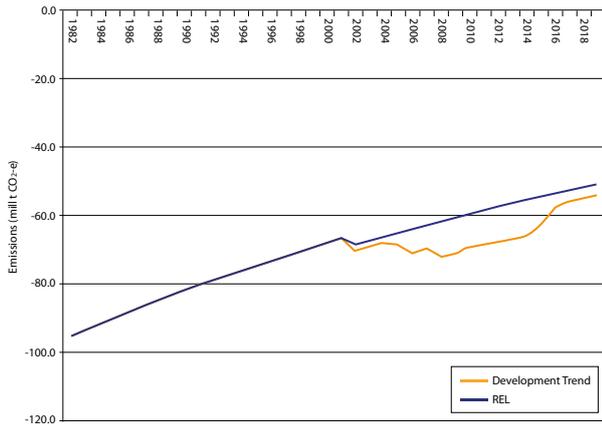
Year	m <sup>3</sup>	% of overall log extraction
1990	78,000	26.2
1991	190,000	48.8
1992	75,000	38.4
1993	170,000	33.3
1994	444,000	74.7
1995	670,000	76.7
1996	396,000	60.1
1997	389,000	69.6
1998	208,000	44.7
1999	415,000	56.5

Source: World Bank (2001)

available. Data on wood extraction from conversion sites between 1990 and 1999 are given in Table 7, which shows that between 26% and 77% (average 53%) of annual wood extracted is taken from conversion sites, especially hydropower sites.

### 2.2.8. Fire

Vegetation fires occur frequently in Laos, mainly at the end of the dry season between February and April. The number of fires detected by the MODIS instruments on satellites each year ranges from 20,000 fires in 2002 and 2008 to 50,000 fires in 2010 (Müller and Suess 2011). In 2010, about 18% (>4 million ha) of the land area of Laos was affected by these fires (Müller and Suess 2011). Fires are usually part of forest change activities such as conversion to croplands (shifting cultivation) or to plantations. They are also lit to encourage the growth of new grass for cattle fodder or for hunting. Fires often escape because they are left unattended and continue to spread uncontrolled for long periods. The Forest Strategy 2020 (GoL 2005a) names fire as one of the two main drivers of forest degradation in Laos (shifting cultivation being the other), especially in the north of the country. Stibig et al. (2007) claim that fire is not a driver of deforestation in Laos, although it might contribute to degradation, and Thomas et al. (2010) indicate that the impact of fire on forest degradation is “very low”. Nevertheless, fire is included as one of the nine drivers of deforestation and forest degradation by Thomas et al. (2010) and in Laos’ R-PP (GoL 2010b). However, this driver receives little attention in analyses and documents.



**Figure 2. Modeled reference emission levels and projected trend.**

Source: GoL (2010a, 2010b)

### 2.3. Mitigation potential

In the course of developing Laos’ R-PP, Watt (2010) created a model for estimating the sources and magnitudes of emissions from land use, land-use change and forestry (LULUCF). This model was used to estimate the average yearly emissions

of CO<sub>2</sub> from each driver between 1982 and 2002 and to project future emissions to 2020. The results are presented in the R-PP (GoL 2010b) and the FIP (GoL 2011b) and are reproduced here in Figure 2 and Table 8. The model calculations show a historical decline in annual emissions from 1982 (95.3 million tCO<sub>2</sub>e) to 2010 (60.6 million tCO<sub>2</sub>e). The decline is interpreted as a result of a reduction in the remaining growing stock of 1.12% per year (Watt 2010).

For 2012–2020, the total volume of annual emissions from deforestation and forest degradation was estimated at approximately 51 million tons CO<sub>2</sub>. Deforestation and forest degradation each contribute about half of the total, with the expansion of concessions identified as the main source.

#### 2.3.1. Hydropower and mining

Approximately 5.3% of the total emissions from LULUCF (2.5 million tons of CO<sub>2</sub>) come from hydropower and mining. Carbon-sensitive planning, which requires the developer to take carbon stocks into consideration, to factor them into financial calculations and to avoid unnecessary deforestation, offers an opportunity to reduce these emissions. Furthermore, biomass removals from

**Table 8. Estimate of average yearly emissions of CO<sub>2</sub>, 2012–2020, using baselines.**

Total annual emissions	Average annual area affected ('000 ha)	Average annual emissions (million tCO <sub>2</sub> e)	Percentage of total emissions of CO <sub>2</sub>
Total annual emissions from C stock change in natural forests		-46.84	100.0%
Total annual emissions from rotational shifting cultivation	57.3	-9.95	21.25%
Total annual emissions from land clearance	67.2	-9.28	19.82%
Of which:			
Commercial concessions	34.2	-4.72	10.08%
Smallholder cash crops	14.7	-2.02	4.32%
Hydropower	13.1	-1.81	3.87%
Mining	5.1	-0.70	1.50%
Infrastructure	0.2	-0.02	0.05%
Total annual emissions from forest degradation (wood extraction)	9,776.7	-23.34	49.83%
Total annual net emissions of sequestration plantations	67.2	-4.26	9.10%
<b>Total annual net emissions (adjusted for sequestration)</b>		<b>-51.10</b>	

Source: GoL (2011a)

potential hydropower reservoirs have to be planned and executed with greater care.

### 2.3.2. Industrial tree plantations and cash crops

Conversion of forest to plantations and smallholder cash crops contributes approximately 40% of the total emissions from LULUCF, making it the main contributor of CO<sub>2</sub> emissions from deforestation in Laos. The bulk of the mitigation potential therefore lies in preventing further loss of forest with high crown cover. This will require the enforcement of existing requirements to develop these concessions only on barren or severely degraded land with less than 20% crown cover, through better land-use planning, incorporation of carbon values into land values and strict law enforcement. Conversion of forest by smallholders, which affects 14,700 ha per year (GoL 2010b), could be reduced through better land-use planning and improved agricultural production techniques.

### 2.3.3. Unsustainable wood extraction

Unsustainable wood extraction is the main source of emissions from forest degradation, which accounts for close to 50% of the emissions from LULUCF (23 million tons of CO<sub>2</sub>). Only 14% of PFAs are managed according to accepted standards for participatory sustainable forest management, such as that of the Forest Stewardship Council. Implementing sustainable forest management in all PFAs, which involves the delineation of forest boundaries, the participation of local communities in forest protection and the introduction of reduced impact logging, would lead to a reduction in emissions. Stopping illegal logging through more effective governance and law enforcement is also essential. The FIP (GoL 2011b) lists four approaches to achieving this:

- Enforce the provision in the Forestry Law that allows harvesting only in protected forest areas that have sustainable management plans and tighten controls on harvesting in infrastructure development areas.

- Enforce the Forestry Law requirement that all harvesting machinery and equipment be registered and ensure that harvesting capacity meets approved quotas.
- Analyze and monitor wood consumption to compare it with the harvest production officially allowed under participatory sustainable forest management and closely monitor all special licenses for clearance for infrastructure projects. The difference will be the volume harvested illegally.
- Conduct monitoring and surveillance of forest areas to detect illegal logging, which can be extremely difficult because of the size of the area to be covered and its low accessibility.

### 2.3.4. Shifting cultivation

Reducing emissions from shifting cultivation will require the introduction of suitable alternative livelihood options that contribute to food security and poverty reduction to replace shifting cultivation. Introducing new livelihood sources will require improved extension services. Similar efforts have been made in the past with projects trying to develop or improve agricultural production and sustainable farming systems. Options to support these activities include improvement of water supply, health, sanitation, education and communication facilities, as well as savings and credit schemes at the community level. Furthermore, the capacity of local government and village institutions has to be strengthened. At the same time, the pressure that leads to shortened fallow cycles in rotational shifting cultivation areas has to be decreased, as longer cycles help ensure the sustainability of rotational shifting cultivation areas. Achieving this will require that government policies be reassessed and adjusted. Current efforts to develop communal land titling could assist in the shift away from overly restrictive land regulation (e.g., the “three plots per household” policy; see Section 4.1) and give farmers greater flexibility in pursuing extensive forms of shifting cultivation.

# 3 Institutional environment and distributional aspects

## 3.1. Governance in the forest margins

### 3.1.1. Global governance and international agreements

Laos is not a member of the International Timber Trade Organization, and neither has it been prominent in the United Nations Forum on Forests (UNFF). However, as a member of the Association of South-East Asian Nations (ASEAN), it has contributed to the design of regional strategies communicated during UNFF meetings, such as the ASEAN work plan 2008–2015 for Strengthening Forest Law Enforcement and Governance (FLEG) and the ASEAN common position paper on Reducing Emissions from Deforestation and Forest Degradation (REDD+) in Developing Countries (2008). Following the Bali Declaration in 2007, government representatives attended meetings for the East Asia and Pacific FLEG initiative. Representatives from MAF have also participated in information meetings for the European Union Forest Law Enforcement, Governance and Trade (EU FLEGT) Action Plan (Vientiane Times 2012a). More recently, representatives from MAF, the Ministry of Planning and Investment and the German Agency for International Cooperation (GIZ) have discussed the funding and design of a joint project to support the development of a FLEGT Voluntary Partnership Agreement between Laos and the EU (Vientiane Times 2012b). With regard to international trade, the terms of Laos' membership in the World Trade Organization (WTO) were agreed in September 2012 (WTO 2011) and the country has been an official WTO member since February 2013. The government of Laos has ratified the following major international agreements on biodiversity, wildlife and protection of the natural resources:

- United Nations Framework Convention on Climate Change (UNFCCC) in 1995

- United Nations Convention on Biological Diversity (CBD) in 1996
- Convention on International Trade in Endangered Species (CITES) in 2004
- Ramsar Convention on wetlands, with two sites registered in 2010.

As for bilateral agreements, the government of Laos and the Forest Protection Department of Vietnam signed a Memorandum of Understanding dealing with law enforcement and the prevention of illegal timber trade in 2009. This initiative has been described as a response to high-profile reports by international NGOs (e.g., EIA/Telapak 2008) about the magnitude of illegal timber extraction in Laos and related trade with the Vietnamese wood-processing industry (Lawson and MacFaul 2010; World Bank 2011a). However, as recent studies have shown, this agreement has had little impact on the illegal cross-border timber trade (Forest Trends 2010; EIA 2011, 2012). More generally, forestry law enforcement and the implementation of the major international agreements listed above tend to be heavily constrained by the limited capacity and resources within relevant departments, legal uncertainties allowing for exceptions (e.g., special logging quotas issued by central and subnational governments despite a national ban on the export of roundwood in place since 2007) and the persistence of discretionary practices and collusion between officials and private sector actors (World Bank 2005, 2011a; Bestari et al. 2006; Forest Trends 2010; Pescott et al. 2010; EIA 2011).

### 3.1.2. Governance in areas under high threat of deforestation and forest degradation

Deforestation and forest degradation in Laos are generally considered to result from two main sets of drivers: first, strong pressure from the private sector to gain access to the country's land and

natural wealth, leading to high rates of land and logging concession grants, rapid forest conversion and unsustainable timber extraction; second, high poverty rates and growing population densities in rural areas, leading to uncontrolled agricultural expansion, forest conversion and overharvesting of forest resources (GoL 2005a, 2010a; World Bank 2005).

In response to the increasing pressure on natural resources in Laos, there has been tremendous development of legislation and procedures in land-use planning and forestry in recent years. For instance, the 1996 Forestry Law was revised in 2007 to limit the authority of provincial and district governments to grant licenses over large areas of forest land and establish concessions. The revised law created a Department of Forest Inspection within MAF, authorizing it to regulate activities in the forestry sector and file charges against offenders (GoL 2007a). Furthermore, the Prime Minister imposed a moratorium on large-scale land concessions for private investments (i.e., mining, hydropower, plantations, etc.) in response to growing concerns about the negative socioeconomic and ecological impacts of “land grabbing” by private investors and the low government revenues derived from these concessions (Dwyer 2007). Significant changes were also introduced into the broader land-use planning system with the introduction of Participatory Land Use Planning (PLUP) at the village cluster level (MAF and NLMA 2009), National and Provincial Land Use Master Plans (GoL 2010b) and Northern/Southern Development Plans (Shi 2009), all aimed at least in part at addressing issues related to concessions and agricultural expansion; for example, instruments defined forest conservation areas, identified land available for industrial development or introduced communal land registration as a tool to prevent large-scale land seizures.

Although such developments represent a move toward improved land and forest governance, they have brought in multiple actors and duplicate rules for managing natural resources. The result is conflicting legal provisions, unclear and overlapping mandates, lack of coordination among actors, and inconsistent implementation of plans and regulations across the national territory (GoL 2008; Lestrelin et al. 2012). For example,

despite its extension in 2009, the moratorium on concessions has not been fully enforced because of legal exceptions and loopholes (Kenney-Lazar 2010). Given the persistent lack of resources and insufficient capacity for law enforcement and monitoring at the subnational level, the government of Laos will face major challenges in any program to reduce deforestation and forest degradation.

There are two key weaknesses in forest governance in Laos. First, ambiguities and uncertainties in rules and processes in land-use planning and land allocation create opportunities for unsound resource-use practices. Over the past decade, private investors (both domestic and foreign) have negotiated with central and subnational government bodies and signed medium- to large-scale concession agreements, even though most of these types of operations have proved to be unrealistic at the local level. Reports suggest that there have been cases where concessions were allocated to multiple investors and where local people were excluded from their land, thus experiencing severe impacts on their livelihoods (GoL 2005a; Baird 2010a; Barney 2010; Kenney-Lazar 2010; Dwyer 2011). In some of the reported instances, unscrupulous operators who gained concession rights took advantage of the limited presence of forestry departments at the local level, for example by ignoring agreed concession development plans and/or engaging in corruption and timber smuggling (EIA/Telapak 2008; Sipaseuth and Hunt 2009; Baird 2010a, 2010b; EIA 2011). Although most cases reported to date were in southern Laos, most notably Attapeu, Champasak and Bolikhamxay Provinces, concerns are growing about booming Chinese agribusiness investments in the north (Dwyer 2007; TNI 2010).

Closely related to the first weakness are the weak governance and poor law enforcement capacity, which not only create loopholes for large-scale industrial projects but also leave the way open for smallholder farmers and small-scale logging operators to encroach upon protected and production forests. The penalty system appears inefficient and poorly suited to local situations. On the one hand, in most upland areas characterized by widespread poverty and predominantly subsistence agriculture (Rigg 2005), fines tend

to be an ineffective and even harmful instrument because of offenders' inability to pay. On the other hand, in areas where smallholders have had opportunities to develop commercial agriculture, fines tend to be considered merely as the price that the emerging class of farming entrepreneurs must pay to gain access to land (Ducourtieux et al. 2005).

The weak governance and mismanagement of forest resources can be partly explained by the minimal local participation in land-use planning and negotiations of land concession agreements. In the first instance, local populations' limited access to information and lack of planning experience, poor facilitation capacities of district land-use planners, and absence of follow-up incentives for monitoring and extension converge to impede local negotiation, understanding and implementation of the plans (Lestrelin et al. 2011). In the second instance, the presence of powerful private interests often results in deals agreed and signed between high-level government officials and private investors, with little or no input from local populations (Baird 2010a; Barney 2010; Kenney-Lazar 2010), or in unmediated, direct negotiations between investors and local populations, with major risks of elite capture and/or manipulation by investors (Haberecht 2009; Phimmavong et al. 2009; Sipaseuth and Hunt 2009).

Although newly emerging civil society groups in Laos are starting to address issues on resource governance, their capacity remains nascent. Laos was virtually devoid of civil society before the mid-2000s. The creation of the Lao Union of Science and Engineering Associations in 2001 prompted the emergence of nonprofit organizations in the fields of rural development and environmental governance, such as the Lao Biodiversity Association and the Community Development and Environment Association. However, these organizations retain close ties with ministries and other government bodies. Most of these organizations are run by senior government officials. In 2009, Prime Ministerial Decree No. 115 officially recognized these organizations as local NGOs, and about 50 local NGOs were registered with the Lao Non-Profit Associations Network in 2010. Many of these NGOs are partners with both government and international

development agencies. They are also beginning to influence land and forest governance, including through working groups such as the "Land issues" group, "Micro-macroeconomic linkages" group and "*Mak Phet*". Although these organizations are not entirely grassroots initiatives, as they are closely monitored by the government, they are increasingly active in putting land issues from across the country onto the national agenda, and play an active role in prompting changes in land and forestry institutions, especially with regard to securing land tenure and introducing collective land titling at the village level (Sipaseuth and Hunt 2009).

### 3.2. Implications for REDD+

This context of weak governance and heavy pressure on land and forest resources has major implications for the future of REDD+ in Laos. First, to be both effective and efficient, REDD+ will require considerable investments in capacity building for administrative and technical staff, especially at subnational levels. Second, significant technical and organizational investment will be needed to clarify and harmonize land-use planning and land allocation and to enhance monitoring and law enforcement in areas under high threat of deforestation and forest degradation. Building upon current momentum within ASEAN, some of these challenges could be addressed by designing complementary REDD+ and FLEG or FLEGT initiatives (Proforest 2011). As Laos is not among the EU's major direct timber trade partners, there are probably better, shorter-term prospects for FLEG agreements within the ASEAN framework; these should probably be prioritized. Ensuring equity and co-benefits such as poverty reduction and political representation will also require a greater role for civil society, and, importantly, facilitating the emergence of grassroots initiatives and setting up a grievance mechanism for those affected. Without such governance reforms, REDD+ will, at best, not change much in the landscape and, most likely, given the flows of significant capital and the emergence of new actors and interests associated with REDD+, exacerbate institutional complexity and ambiguities, socioeconomic inequalities, and marginalization of forest-dependent populations.

### 3.3. Decentralization and benefit sharing

#### 3.3.1. Decentralization in forestry and land-use planning

The issue of decentralization is controversial not only in the forestry sector but also in the REDD+ arena. On the one hand, decentralization is critical for building ownership among local stakeholders because local governments are important for forest management and because these actors and local communities participate in forest management and protection even without decentralization of authority over forests. On the other hand, experiences to date suggest that decentralization does not always lead to improved forest management. We therefore analyze decentralization in Laos and consider the pros and cons of its application for REDD+.

Laos has undergone several administrative reforms during recent decades. Following the shift from a command to a market economy in 1986, provinces were defined as strategic units for the elaboration of socioeconomic development plans and districts became responsible for refining and budgeting provincial plans. Villages were given responsibility for implementing plans devised by local authorities. This process gave provincial and district governments significant control over budgets and development planning, and they were authorized to grant land concessions to the private sector. However, with a lack of capacity and resources at the subnational level, deterioration of state services and mismanagement, recentralization began in the early 1990s (Stuart-Fox 2005). As a result, the role of the central government in planning development for subnational levels was reinforced, along with a short-term return to central budgets, which reduced the autonomy of provinces and districts.

A decade later, decentralization re-emerged. The 2004 Law on Local Administration re-established the administrative roles and hierarchy defined in the late 1980s and provided for the emergence of consultative bodies at the village and district levels (GPAR 2004). More recently, Prime Ministerial Instruction No. 9 (2007) prompted the creation of “village development clusters” (*kum ban pattana*) as new subdistrict administrative units aimed at strengthening party leadership and facilitating local delivery of state services, such as technical

and information service centers. In an effort to support bottom-up initiatives and decentralized planning, village cluster committees also were established and made responsible for compiling and submitting local socioeconomic development plans to the district administration. Although village development clusters are still in the process of being established countrywide, reports are already revealing major shortcomings linked to their inadequate resources and human capacity, unclear mandates, minimal political representation and the persistence of a top-down political culture (e.g., Foppes 2008).

While the creation of “village development clusters” reflects an important move toward decentralized decision making in socioeconomic planning, in the forestry sector, an opposite trend has ensued. The revised Forestry Law (2007) has effectively deprived districts of their authority to allocate land concessions on forest land. Since 2007, the Provincial Land Management Authority has been the primary body for granting leases to nonprotected forest land of up to 150 ha. The National Land Management Authority has the power to allocate up to 15,000 ha of land, whereas larger concessions require the approval of the National Assembly. According to formal laws, then, district and village authorities are virtually devoid of power to make decisions about land concessions, even though they are the main bodies responsible for implementing plans devised at the provincial and central levels (Article 79 of the revised Forestry Law).

Village-level land-use planning has long been the cornerstone of the country's land management system and, in principle, a key step toward the recognition of customary rights to use land and natural resources (Vandergest 2003; Fujita and Phanvilay 2008). Village land-use planning is carried out by the District Agriculture and Forestry Office, other district financial and planning offices, and a village land management committee formed for the occasion; the process involves the negotiation of an agreement on village boundaries, forest and agricultural land demarcation, and land-use regulation. The village administration is responsible for monitoring forest and agricultural land uses, enforcing land regulation, allocating land to individual households and resolving land conflicts (MAF and NLMA 2009).

Historically however, the authority of the local administration has long been subordinate to the national objectives of eradicating shifting cultivation and preserving forest resources. Thus, district planners have tended to discount local claims, instead designing plans that favor forest conservation over agriculture (Evrard 2004; Ducourtieux et al. 2005; Lestrelin 2010). Important land issues have also reportedly arisen from uncoordinated planning interventions, such as land-use planning by District Agriculture and Forestry Offices and resettlement plans by District Governor's Offices (Romagny and Daviau 2003; Evrard and Goudineau 2004; Lestrelin and Giordano 2007). Recurrent concerns about minimal local participation and coordination between agencies eventually led to the introduction of PLUP at the village and village cluster levels. PLUP involves a wide range of district agencies and follows guidelines to ensure that local rights and interests are acknowledged (MAF and NLMA 2009).

From a legal and procedural perspective, therefore, the history of land-use planning in Laos has been marked by efforts to achieve decentralization and greater public participation (Lestrelin et al. 2011). As indicated in the previous section, however, in a context of weak governance and limited capacity for monitoring, law enforcement and extension, land-use decision making has long been decentralized in practice.

Only a few legal provisions cover the sharing of benefits from land-use revenues, all of which were established in relation to the management of national PFAs. Since the mid-1990s, the World Bank and the government of Finland have been supporting efforts by MAF to demarcate 106 PFAs covering about 3.2 million ha. To date, only half of these areas have been selected for community forestry and timber certification projects (GoL 2005a) with 1.2 million ha subject (already or in the near future) to benefit-sharing arrangements under the SUFORD project (Puustjaervi 2011). Prime Ministerial Decree No. 59 on Sustainable Management of Production Forests in 2002 was the first legal instrument to set standard modalities for sharing the benefits of timber extraction in PFAs. However, only a very small share of the revenues (2%–4% of the total) actually went to local communities (FoF 2008; Puustjaervi 2011). To increase the benefits received by villagers, a

new mechanism for benefit sharing was designed in 2011 and established through Presidential Decree No. 001/PR. This decree states that 70% of the total revenue from timber sales have to be paid to the National Treasury (with harvesting costs paid from this amount), with the remaining 30% divided as follows: 20% to a national forest development fund, 40% to cover operating costs incurred by provincial and district authorities, and the remaining 40% transferred to village development funds.

Furthermore, the 2010 Prime Ministerial Decree No. 333 on Protection Forest requires hydropower and ecotourism projects to allocate 1% of their annual revenues to forest management and protection. Although this rule differs from other benefit-sharing schemes based on sustainable forest management, its application can generate benefits for communities. However, there are no clear guidelines on fund allocation and operators. Likely recipients of the new sources of revenue are the National Poverty Reduction, Environmental Protection and Forest Development Funds, which can distribute any monetary benefits accruing from resource development in the form of environmental payments and/or community development (Muziol et al. 2011; Puustjaervi 2011).

### 3.3.2. Implications for REDD+

According to Laos' R-PP, the future institutional setup for REDD+ will be largely structured along the current forestry administration system. This means that it will likely be centered on the National Environment Committee (chaired by the Deputy Prime Minister) as the main body responsible for the design and validation of REDD+-related policy. The National REDD+ Taskforce, which was established in 2008, will perform a coordinating function across ministries, and the National REDD+ Office (within the Department of Forestry in MAF and the Department of Forest Resources Management in the Ministry of Natural Resources and Environment (MoNRE)) will oversee seven technical working groups on: the REDD+ legal framework; RELs; participation of ethnic groups and local communities; implementation and enforcement of mitigation measures; land use; MRV; and benefit sharing. Plans devised by stakeholders at the central level are then to be implemented by Provincial Agriculture

and Forestry Offices. Although this centralized model will allow for national, subnational (e.g., regulation and law enforcement) and project-based activities, the current context of limited political devolution and inadequate allocation of state resources for forest monitoring and management raises questions about how REDD+ schemes will incorporate local communities' interests and responsibilities. If major efforts are not made to improve local participation and institute clear social and governance safeguards, the role of local communities may indeed be restricted to forest patrolling and inventory and restoration activities, with them deriving few or no benefits from REDD+ (Chokkalingam 2010). Finally, significant investments will also be needed to design transparent, efficient and equitable benefit-sharing arrangements, which are important not only for communities but also for other potential REDD+ participants such as the private sector and NGOs. Experiences with community forestry in PFAs and the shortcomings of current benefit-sharing regulations may offer useful lessons for future benefit sharing.

### 3.4. Indigenous rights and rights to carbon, land and trees

#### 3.4.1. Indigenous rights in international and national contexts

Laos has not ratified the International Labour Organization's Indigenous and Tribal Peoples Convention but it did vote in favor of the UN Declaration on the Rights of Indigenous Peoples in 2007. The country also celebrated International Day of the World's Indigenous Peoples for the first time in 2009. Nevertheless, it has no specific legal provisions on indigenous rights and, more generally, no references to indigenous people in the law. Instead, the Constitution (amended in 2003) recognizes the existence of diverse ethnic groups and their right to preserve their customs and traditions.

Although the Forestry Law recognizes the customary use of resources, all land and forests are legally defined as the property of the national community placed under the supervision and management of the state (Sipaseuth and Hunt 2009). For example, MAF Instruction No. 54 (1996) on customary rights and the use of forest resources indicates that all customary land uses are

subordinated to the broader regulatory framework established at the central level. Article 42 of the 2007 Forestry Law further establishes that:

Customary utilization of forests is the use of forest and forest products that has been practiced for a long time *in accordance with laws and regulations*. The State allows the use of timber and harvest of forest products *in non-prohibited forests* for household utilization without adverse impact on forest resources, and the environment as well as reflecting the rights and interest of individuals or organizations [authors' emphasis].

As this shows, shifting cultivation is not considered a customary right of ethnic minorities.

In addition, despite the Constitution's claim that all ethnic groups in Laos are equal, ethnic minorities, especially those residing in mountainous rural areas of Laos, are often economically and socially marginalized (McAllister 2012). Furthermore, as described in Section 3.1.2, civil society remains fairly underdeveloped in the country. There is no active indigenous movement and no grassroots mobilization of indigenous peoples and their rights. Although some of the 50 local NGOs officially registered include members of ethnic minority groups, none of these organizations is devoted specifically to indigenous rights and self-governance. In fact, the public debate over indigenous issues appears to be nonexistent outside of the government framework (IWGIA 2010).

#### 3.4.2. Tenure

National discussions about carbon tenure in Laos began with the preparation of the country's R-PP. Four potential recipients of carbon rights and REDD+ payments were identified: government agencies at central and subnational levels, NGOs, private enterprises and local communities. However, a distinction is made between carbon rights holders and possible beneficiaries of carbon sales. The main stakeholders mentioned as recipients of direct carbon rights are governments and local communities. A concession agreement (or similar contract) could also make it possible for a private sector entity to acquire rights. In contrast, although some NGOs may seek compensation for costs incurred during project development, they are not pursuing carbon rights themselves; rather,

NGO involvement to date has been primarily focused on promoting the rights and benefits of those they seek to represent.

As discussed above, the 2007 Forestry Law establishes that all land classified as forest is owned by the national community and managed by the state. However, individuals and organizations have full ownership of any trees that they have planted (Article 4). In principle, this provision constitutes a relatively good basis for local communities and other nongovernment actors to participate in the carbon stock enhancement component of REDD+. The question of carbon tenure becomes more complex with regard to avoided deforestation and forest degradation on existing forest land. In the following, we analyze the tenure issues for each category of land.

#### 3.4.2.1. State forestland

About 12.5 million ha of state production, conservation and protection forests were delineated in 2011 (see Section 1), which is more than half of the country's total surface area (23,860,000 ha). The government seeks to expand the area of protection forests from 6 million ha to 8.2 million ha by 2015 (Ounekham 2011). All these areas are under the authority of the forestry administration and conversion from conservation or protection forest to production forest or any other land use must be approved by the National Assembly. However, although commercial logging concessions may only be granted in production forests (by Provincial Agriculture and Forestry Offices, following quotas allocated by MAF), in recent years a substantial amount of logging has been approved in the catchment areas of proposed hydroelectric dams (Baird 2010b). More generally, in areas that do not receive financial and technical support from international organizations, state conservation, production and protection forests are often marked on paper only (GoL 2005a).

#### 3.4.2.2. Village agricultural and forest land

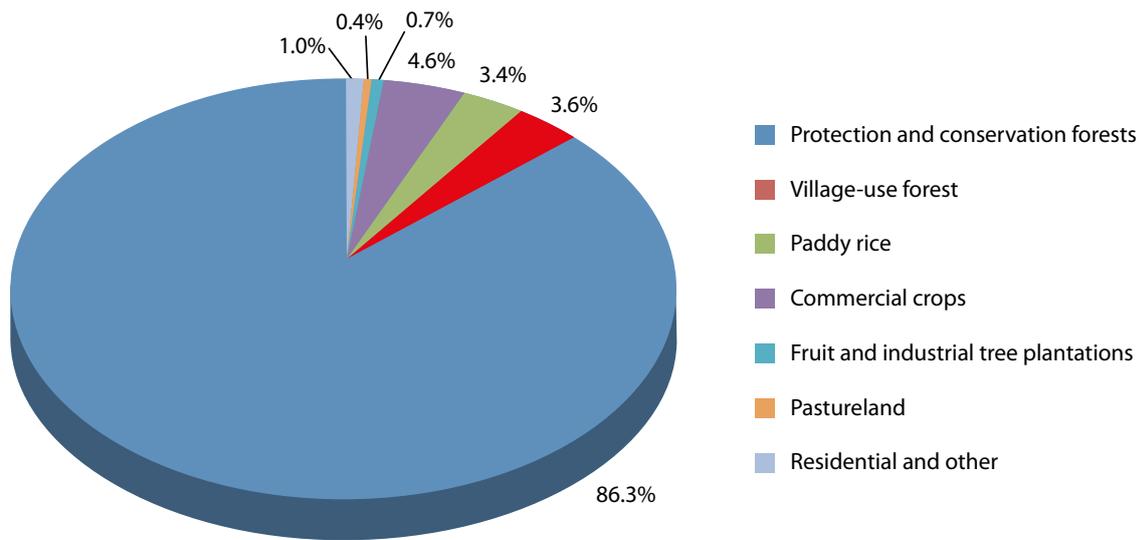
In controlled-use zones in state protection, conservation and production forests (see Section 2.1.) and, more generally, outside state forestland, a village land-use planning and land allocation system is in place that differentiates between residential land, agricultural land (current and reserve) and three categories of forests: protection

and conservation forests, in which all land uses are prohibited; and village-use forests, in which limited logging and collection of forest products are permitted. The village land-use plan is negotiated between district and village administrations and agricultural land is allocated to individuals and households by the village authorities (MAF and NLMA 2009). The 2003 Land Law allows the following areas to be allocated:

- paddy land: up to 1 ha per labor unit per household
- commercial annual and perennial crops: up to 3 ha per labor unit per household
- tree plantations: up to 3 ha per labor unit per household
- natural or improved pastures: up to 15 ha per labor unit per household
- degraded forestland for agricultural production: up to 3 ha per labor unit per household.

Land-use titles can be issued by the District Land Management Authority (renamed the Department of Natural Resources and Environment at the time MoNRE was created in 2011) for land under permanent agriculture, such as paddy fields, tree plantations and annual crops, but excluding shifting cultivation. A temporary land-use certificate is issued, which can be upgraded to a permanent title after 3 years. Once a permanent title has been allocated to an individual, the land can be sold, exchanged, leased or transferred as inheritance. Upgrading is conditional upon compliance with the village land-use plan. Prime Ministerial Decree No. 88 on the Implementation of the Land Law (2007) also allows for collective titles to be issued for village-use forests, pastures and rotational agricultural land; this collective land cannot be sold or transferred. Village protection and conservation forests remain the full property of the state; no individual or collective titling of these is possible but the village administration is responsible for enforcing state regulations in these areas (Liu and Sigaty 2009).

There is a critical dearth of recent and consistent data on the outcomes of village land-use planning for land zoning and allocation nationwide. According to MAF, the scheme has been implemented in 7130 villages (out of some 10,500 villages), covering about 9 million ha of land in 2005 (Figure 3).



**Figure 3. Land zoned and allocated at the village level, 1995–2005.**

Note: The relative distribution of each category of forest land is estimated based on the 2001 figures. Source: GoL (2005a)

However, village land-use planning has been widely criticized over the past two decades for its approach to land tenure and tenure rights. Numerous reports have highlighted a strong tendency among planners to favor forest land over agricultural land during zoning activities (e.g., Aubertin 2003; Evrard 2004; Ducourtieux et al. 2005; Lestrelin 2010); see also Figure 3. Equally important are reports of poor and uneven efforts to renew and upgrade temporary land-use certificates (to permanent land titles over lowland peri-urban areas and perennial land uses), the very slow development of collective land titling and, more generally, the limited binding and securing value of tenure arrangements (e.g., Evrard 2004; Barney 2007; Fujita and Phanvilay 2008).

#### 3.4.2.3. Land concessions

Land concessions for mining, hydropower, agribusiness and plantation development have been booming in Laos in recent years (Dwyer 2007). Prime Ministerial Decree No. 135 (2009) allows agribusiness and plantation concession contracts on degraded forest land to run for 30–40 years, with the possibility to extend “on a case-by-case basis” (Article 28). The Provincial Land Management Authority (now moved to the Provincial Offices of Natural Resources and the Environment) was given the authority to grant concessions up to 150 ha and the National Land Management

Authority (now within MoNRE) is responsible for granting land concessions up to 15,000 ha. Larger concession grants must be approved by the National Assembly.

Although the exact extent of land concessions granted at the national level is unknown, MAF estimated that 1.5 million ha was conceded to agribusiness and plantation companies in 2010 (GoL 2010a). Arguing that China alone is demanding 1 million ha for food production, Schoenweger and Üllenberg (2009) estimate that the reality is probably closer to 2–3 million ha, or 10%–15% of the national territory. In any case, only 500,000 ha of these concessions would already have been planted and much less would be at the production stage. As Barney (2010) reports, the key companies active in the plantation sector are primarily foreign corporations, including Oji Lao Plantation Forest (Japan): 50,000 ha; Birla Lao Pulp & Plantations (India): 50,000 ha; Paksong Highland (Thailand): 26,000 ha; Daklak Rubber (Vietnam): 10,000 ha; Viet-Lao Joint Stock Rubber (Vietnam): 10,000 ha; Cityland Resources (Malaysia): 3500 ha.

Also lacking are accurate data on the current extent, location and status of land concessions granted (Dwyer 2007; Hanssen 2007). For instance, an inventory by the National Land

Management Authority (NLMA) and the German Agency for Technical Cooperation (GTZ) (NLMA 2009) found that, out of 237 land concession projects active in Vientiane Province, 40% were not documented at all in the relevant agencies at provincial and district levels; that is, concession agreements and land-use plans were missing. Furthermore, only 5% of the documented projects had detailed and accurate concession maps. One reason for this lack is companies' need to search for suitable land and reach local agreements once the concession has been granted at the national level. In this context, overlaps between approved land concession areas and between private concessions and other local land uses are frequent, leading to serious land conflicts (Schoenweger and Üllenberg 2009; Kenney-Lazar 2010). In response, MoNRE is making concerted efforts to clarify and harmonize land-use planning and allocation across the country. The ministry submitted national and provincial land-use master plans to the National Assembly in 2010 and it is now finalizing a national inventory of land concessions. In addition to this very ambitious objective, MoNRE also has a target of completing or updating village boundary delineation, land-use zoning and land titling for the whole country by 2015.

### 3.4.3. Implications for REDD+

As seen above, government agencies are the main holders of forest carbon rights, and so can be expected to be the key beneficiaries from REDD+ schemes. Although this remains to be established

in law, private enterprises may in theory acquire carbon rights through a concession agreement (or similar contract) and thus also receive REDD+ payments for efforts in promoting sustainable forestry and plantations. Less clear is the extent to which local communities would benefit from REDD+. Under the current legal framework, local communities may be able to claim carbon rights to planted trees and possibly collective rights to use village production forests. However, they are unlikely to be eligible to claim rights to the carbon-rich areas that will generate the greatest benefits from REDD+, such as protection and conservation forests.

To benefit local communities, REDD+ would have to require the allocation of titles on *all* types of village forest land, including protection and conservation forests, or the establishment of forest management contracts that include protection and conservation forests. Village Land and Forest Management Agreements established during PLUP and certified by district administrations could serve as binding contracts. However, such agreements are limited in terms of tenure security in areas with land concessions and state development projects. Ultimately, if local communities are not granted strong forest tenure and carbon rights, REDD+ could contribute to further marginalizing forest-dwelling populations already largely excluded from the management of carbon-rich areas by resettlement and village land-use planning schemes.

# 4 The political economy of deforestation and forest degradation

In this section, we investigate the political-economic factors underlying the drivers of deforestation and forest degradation to identify enabling factors and obstacles for REDD+ policies. Land and forest policy and governance in Laos have undergone major transformations during the past three decades, fueled by successive changes in the government's political-economic strategies for state building and socioeconomic development. As discussed by Lestrelin et al. (2012), three political-economic projects in particular, which started at different times but which all continue to the present, have influenced the dynamics of deforestation and forest degradation in the country: Moving People from the Hills (launched 1975), Rationalizing Land Use (1990) and Turning Land into Capital (1997). The first two projects are discussed in Section 4.1 and Turning Land into Capital is discussed in Section 4.2.

## 4.1. Recent history of land and forest governance in Laos

During the late 1970s, Laos' newly independent Communist leadership made significant efforts to build state legitimacy and reinforce state control over national territory and resources. After years of armed conflict (1959–1975) and with little in the way of financial resources or human capacity, these efforts involved the resettlement of remote populations to more accessible areas, mainly along roads and rivers. Although the original aim of resettlement programs was to secure the national territory and increase state control over remote (potentially subversive) populations, the strategy was continued as a means of facilitating the delivery of state services and eradicating subsistence shifting cultivation, which the central government deemed unproductive and environmentally destructive (Baird and Shoemaker 2007). There are no official figures on the exact extent of

resettlements. However, historical studies of population displacements between 1975 and 1990 show that, in some provinces in northern Laos, more than half of the population may have been moved from the uplands to valley regions (Evrard and Goudineau 2004).

The late 1980s saw dramatic changes in Laos' political economy. As the aid supplied by the Soviet Union since the 1970s dried up, the government of Laos had to find alternative sources of support. Following a decade of relative isolation, Laos engaged in wide-ranging reforms oriented toward liberalization of the domestic economy. The so-called "New Economic Mechanism" of 1986 paved the way for major regulatory reforms, such as restructuring of the tax system, encouragement of foreign investment, privatization, creation of tenure rights and private sector development. At the same time, multilateral and regional banks (e.g., World Bank, ADB) and international development agencies (e.g., United Nations agencies, Swedish International Development Cooperation Agency) offered Laos new sources of financial and technical support.

During this transition, development agencies and the government alike used scientific findings to rationalize land uses and national development (Lestrelin et al. 2012). For example, to achieve sustainable rural development, a series of "eco-zones" were demarcated, and scientific assessments of the risks of ecological degradation and recovery rates were called on to balance the goals of development and conservation (Goldman 2001). Also during the 1990s, a policy known as Land-Use Planning and Land Allocation (LUPLA) emerged as a major instrument for regulating access to land and forest through demarcation of village boundaries and forest and agricultural land zoning. Furthermore, LUPLA led to the "three plots per household" regulation aimed at curbing

the expansion of shifting cultivation — identified as a cause of deforestation — and encouraging farmers to intensify their upland cropping systems. By restricting village and individual land access, LUPLA encouraged sedentarization and the establishment of permanent fields, especially among populations living in mountainous areas. Finally, at the same time that LUPLA was implemented, the government started to demarcate large areas of state conservation, production and protection forests.

Resettlement programs, village-level land reforms, LUPLA and the demarcation of state forests all gradually led to the disconnection of rural livelihoods from forest resources (Castella et al. 2012). Throughout the country, rural communities were moved away from dense forests (subsequently classified as state forests) and gathered in locations with high population density where existing forest resources have since been rapidly degraded. Until the mid-1990s, this segregation between community-managed agricultural lands and state-managed forest lands gave the three military-run SOEs ample scope to exploit timber resources and develop relatively straightforward trade agreements with buyers from countries such as Vietnam, Thailand, Taiwan and Malaysia (Lang 2001).

Another important shift in land and forest governance occurred in the late 1990s: in line with the “green neo-liberal” models advocated by donors such as the World Bank and the ADB, “turning land into capital” became the key strategy for achieving national development goals (Lestrelin et al. 2012).

## 4.2. Turning land into capital

As Goldman (2001) explains, international financial institutions tend to support large capital projects such as hydroelectric dams, large-scale mining operations and plantations, viewing them as valuable not only for increasing government revenues and developing marginal regions but also for providing poor populations with alternative livelihoods and, hence, diverting them from imposing excessive pressure on the environment. In line with this perspective and with support from the World Bank, ADB and several foreign state-owned enterprises and private companies, the government of Laos developed a strategy of transforming the country into the

“battery of Southeast Asia”. In addition to the 10 hydroelectric dams already in operation, 60 new dams are planned or under construction, with 95% of the electricity produced from these dams meant for export to Thailand, Vietnam and China (Matthews 2012). Mining also is a key strategic sector for “turning land into capital” and the government of Laos expects a major increase in mining activities in the coming years (GoL 2010b). More than 4 million ha of land is being prospected or explored by foreign companies, mainly Chinese and Vietnamese (Wellmann 2012). However, as discussed above, hydropower and mining are primary drivers of deforestation and forest degradation in Laos, and conversion of forest to hydropower and mining concessions has been a primary source of timber exports during the past 10 years (Barney and Canby 2011).

Another government strategy is to facilitate private investment in agriculture and forestry as a means of ending the persistent lack of financial, technical and human resources needed for rural development. Through agribusiness, industrial concessions and contract farming arrangements, it is expected that private sector investment will both increase national revenue through fees and taxes on concessions and industrial production and provide the capital and technology needed to support the modernization and intensification of rural land uses. Yet although this policy shift has proven efficient for attracting private (mostly foreign) capital, its impacts on land and forest governance are more ambivalent. Over the past decade, Laos has become an important “resource frontier” for transnational capital flows and investment (Barney 2009). Supported by land investment policies (e.g., Presidential Decree No. 02/2009 establishes land leasing fees of USD 5–50 per ha for agricultural production and tree plantations), the agribusiness, forestry and wood-processing sectors of countries such as Vietnam, China and Thailand have invested significant financial resources in Laos and propelled massive and largely uncontrolled land deals, forest conversion and timber extraction. Land deals, deforestation and forest degradation are strongly correlated in Laos (Barney and Canby 2011), with many concessionaires harvesting the timber from the land they were allocated for development before selling the lease rights to a third party. A look at the demand side uncovers the driving forces behind this process.

Government reforms in Laos in the late 1990s aimed at easing private land investment coincided with a boom in demand in neighboring countries for timber and land for commercial plantations. For instance, the forestry sector in China, which began economic reforms in 1978, underwent a transformation (Wang et al. 2004): forest tenure was devolved to smallholders, forestry SOEs were reformed, stumpage fees were introduced and prices for forest products were liberalized. During the late 1990s, the government shifted its strategic focus from timber production to environmental protection. Forestry policy was redirected toward the afforestation and regeneration of degraded forest lands and a logging ban was established in natural forests. At the same time, to reduce pressure and avoid potential conflicts over access to domestic land and forest resources, China's central government adopted its "Go Out" (*zou chu qu*) strategy, which offered Chinese companies incentives to invest abroad, such as subsidies for relocation and tax exemption on imports (Mann 2009).

Dramatic changes have also occurred in the Vietnamese forestry and wood-processing sectors over the past 20 years (Meyfroidt et al. 2010). Throughout the 1990s, the government of Vietnam shifted away from sourcing timber from natural forests in favor of plantations and imports. At the same time, it began exporting less raw timber and more value-added processed timber products. Legal reforms enacted in 1993 led to the progressive devolution of forest tenure in rural areas. The same year, a logging ban was implemented in Vietnam, which was later expanded to cover more than half of the country's natural forests in 1998. Despite illegal logging and the emergence of a smallholder tree plantation sector, the domestic timber supply remained insufficient to meet the growing needs of the wood-processing industry. As a result, Vietnam increasingly sources its timber through imports, both legal and illegal, from Laos and Cambodia (EIA 2011, 2012). Thailand underwent similar changes, driven by a national logging ban imposed in 1989, the subsequent transnationalization of several large agribusiness and forestry companies, and the domestic wood-processing industry's heavy reliance on imports from neighboring countries (Woods et al. 2011).

This combination of centralized forest governance, high demand in Vietnam, Thailand and China for land and forest resources, the government of Laos's pressing need for money, and associated reforms for easing land investment led to the emergence of powerful transnational networks connecting private and public buyers and investors (and sometimes high-ranking officials from foreign countries) to Laos' political and economic elites. By involving these elites in business arrangements and joint ventures, these networks gain access to higher levels of government and negotiate grants of large-scale land and forestry concessions, generally in exchange for financing development interventions (Dwyer 2011). As a result, as several researchers have noted, many large-scale land and forest resource deals concluded in Laos in the past decade have involved the outsourcing and/or partial privatization of rural and infrastructure development. Shi (2008) and Tan (2012), for instance, observe that large-scale land leases and contract farming arrangements with Chinese rubber enterprises were signed alongside China–Laos bilateral cooperation agreements. Kenney-Lazar (2012) reports that a private Vietnamese corporation managed to obtain a 10,000-ha concession for timber extraction and rubber plantation in exchange for financing infrastructure development in Vientiane.

Over the past decade, transnational land investment and timber trade networks have thus functioned as key drivers of forest conversion and degradation in Laos, along with large capital hydropower and mining projects. Patron–client relations, collusion and corruption certainly play major roles in the establishment and functioning of these networks (Baird 2011). The government's weak capacity for monitoring and law enforcement also makes closing land and forest resource deals easier (Barney and Canby 2011). Somewhat paradoxically, however, such transnational networks — connecting Lao and foreign government officials, public and private enterprises, local communities, and foreign workers, among others — might derive their power primarily from their role as a key source of funding for rural and infrastructure development in a country marked by a persistent shortage of financial capital (Dwyer 2011). Through these networks, foreign governments find opportunities

to reduce pressure on domestic resources (e.g., the Chinese “Go Out” strategy), investors and buyers can secure profitable deals on land and forest resources, and the government of Laos gains access to funding for rural and infrastructure development, which in turn reinforces the legitimacy of the state. In the absence of domestic counter-powers such as indigenous movements or a strong and independent civil society, this bundle of converging interests between powerful political

and economic elites drives the current trend of land and natural resource acquisition, deforestation and forest degradation. Furthermore, projections on the growth of the Lao economy (World Bank 2011b) indicate that hydropower, mining and industrial tree plantations will continue to make important contributions at least for several years, at the expense of natural resources, and with further deforestation and degradation of forests.

# 5 REDD+ policy environment: Actors, policy events and processes

## 5.1. Broader climate change policy context

The government of Laos ratified the UNFCCC in 1995 and the Kyoto Protocol in February 2003 (GoL 2010). In 2007, a Prime Ministerial Decree was issued pertaining to the regulation of Clean Development Mechanism (CDM) activities in Laos. The decree defined the Water Resources and Environmental Agency (WREA) as the designated national authority responsible for approval of CDM projects. With the creation of MoNRE in June 2011 and the merging of WREA into the new ministry, the CDM Executive Board was moved into MoNRE.

A National Environmental Council was established in October 2008, chaired by the Deputy Prime Minister and the Ministers of MAF, MoNRE, and the Ministry of Planning and Investment. The committee oversees seven working groups on agriculture and food security; forestry and land-use change; water resources; energy and transportation; industry; urban development; and public health (GoL 2010). Building on these working groups and with support from the UN Development Programme and Global Environment Facility, the government of Laos developed a National Adaptation Programme of Action (NAPA) for climate change in 2009 and adopted a National Strategy on Climate Change in March 2010. In line with these developments, climate change was included in the Seventh National Socioeconomic Development Plan (2011–2015) as a key challenge to be addressed through mitigation measures in the environment sector. The plan estimates that climate change effects reduce GDP by about 1.1% each year. Laos is also part of the Mekong River Commission's "Climate Change and Adaptation Initiative" started in 2011.

In response to the Kyoto Protocol and Nationally Appropriate Mitigation Actions (NAMA) introduced in the Bali Action Plan in 2007, the government of Laos began closely managing its environment and natural resources alongside efforts to achieve sustainable socioeconomic development and poverty reduction. The government developed policies and resolutions and issued national strategies in a number of sectors (GoL 2009), including: the Forestry Strategy 2020 (2005), the National Strategy on Climate Change (2010), Agricultural Development Strategy 2020 (2010) and the Seventh National Socioeconomic Development Plan (2011–2015) of 2010. The government also underwent an institutional restructure. In particular, a new ministry (MoNRE) was established; also the National REDD+ Office was established at the Department of Forestry and subnational REDD+ Offices will be established at the province level (see Section 5.4).

Despite these relatively rapid and wide-ranging institutional developments, policy and project implementation appear to be proceeding much more slowly. Two CDM projects have been registered by the Board of Designated National Authorities: an energy efficiency project in a brewery (Proact International Incorporation, begun in 2007) and a hydropower project (Xekhaman 3 Power Company, begun in 2011). Eight additional projects in the hydropower (five), biogas (one), cement (one) and afforestation (one) sectors were approved by the board in 2012 and are currently undergoing validation (IGES and MoNRE 2011). According to Hanh et al. (2006), however, Laos is not highly attractive for CDM project investors because it has relatively little potential for greenhouse gas emission removals and its CDM and market institutions are weak.

The NAMA, which is undergoing a feasibility study, focuses on the development of an urban transportation master plan for Vientiane, funded by the Japanese Ministry of the Environment. However, with lack of clarity over coordination and difficulties in disbursing funding, activities related to the NAMA have mainly consisted of awareness-raising meetings, capacity building and training in assessment of greenhouse gas emissions. Representatives of the government of Laos stated during COP 15 in Copenhagen (December 2009) that REDD+ is not suitable for inclusion in its NAMA:

Laos does not support REDD+ being administered under the Nationally Appropriate Mitigation Actions (NAMAs) framework, because policies and measures, as well as action plans and strategies, are very difficult to quantify in terms of impact on emissions within the Land Use and Forestry sector. (GoL 2011a, 45)

Overall, although afforestation and reforestation objectives have long been core elements of successive national development strategies (see Section 3), the government of Laos has only very recently started to make explicit the linkages between these objectives and climate change adaptation and mitigation. Afforestation and reforestation policies and large-scale forest management projects (e.g., SUFORD) made no reference to climate change at the time they were conceived, but with the opportunities for international support and funding that have arisen since then, most are being redefined to link back to mitigation and adaptation. The government of Laos has come to view REDD+ as a potentially important source of technical and financial support for achieving its longstanding afforestation and reforestation objectives. As the Lao delegation at COP 15 in December 2009 presented:

Laos desires a flexible stand-alone internationally binding agreement for reducing emissions from deforestation and forest degradation; with enhancement of carbon stocks, conservation and sustainable management of forests. Such a scope supports the Forest Strategy 2020 and the 5-year plan of the Ministry of Agriculture and Forestry. It also supports the ambitious target of achieving 70% forest coverage of land area in Laos

by 2020. [... REDD+] activities should be country driven, voluntary, take into account national circumstances and capacities, respect country sovereignty, facilitate sustainable development, reduce poverty, promote broad country participation and be subject to equitable, adequate, predictable and sustainable financing, with financing included for technology support and capacity building. (GoL 2011a, 45)

Finally, the lack of a donor coordination committee fits with the government's preference for a hybrid approach to REDD+ financing (see Section 5.4.2) and implementation, that is, integration of multiple sources of funding (bilateral, multilateral and market based) and nesting of national and project-based REDD+ initiatives. Under this approach, the Ministry of Planning and Investment will essentially remain responsible for coordinating national activities, as it is the key authority for engaging with international donors and the private sector and channeling technical and financial support to certain sectors and locations.

## 5.2. REDD+ policy actors, events and policy processes

According to the interviews with the key government institutions and NGOs at the national level, government decision makers are likely to have concerns about investing (scarce) resources in complex REDD+ activities, given the uncertainty surrounding global commitments on climate change. Nevertheless, REDD+ came onto the national policy agenda as early as 2007. The government applied to participate in the Forest Carbon Partnership Facility (FCPF) in November 2007 and officials from the WREA joined COP 13 in Bali in December 2007 (in the absence of forestry specialists, however, the Lao delegation had said little in the discussions (Trockenbrodt 2008)). In June 2008, the Department of Forestry under MAF, with inputs from experts from various organizations, including the World Bank, Japan International Cooperation Agency (JICA), Swedish International Development Coordination Agency (SIDA), GIZ, International Union for Conservation of Nature (IUCN) and WCS, submitted a Readiness Plan Idea Note (R-PIN) to the FCPF. In the same month, officials

from the Department of Forestry, the National Agriculture and Forestry Research Institute and the Faculty of Forestry of the National University of Laos participated in a UNFCCC methodology workshop in Japan, which led to the development of a concept note on “Establishing Forest Carbon Monitoring and Reference Scenarios in Laos”.

In November 2008, MAF established, via Decree No. 1313, the National REDD+ Taskforce, chaired by the Director General of the Department of Forestry. The taskforce has a legal mandate for (1) management of FCPF processes, (2) promotion and coordination of planning and implementation of REDD+ project and pilots, (3) participation in and observation of international climate change dialogues and REDD+ negotiations, and (4) capacity building through workshops and seminars. The taskforce's 12 members come from:

- Departments of Forestry and Forest Inspection (MAF)
- National Agriculture and Forestry Research Institute (MAF)
- National Agriculture and Forestry Extension Services (MAF)
- Department of Land Use Planning and Development (NLMA at the Prime Minister's Office)
- Department of Environment (WREA at the Prime Minister's Office)
- Faculty of Forestry of the National University of Laos
- Mining and Electricity Departments (Ministry of Energy and Mines).

In October 2009, Laos obtained a REDD+ R-PP grant from the FCPF, and the REDD+ taskforce submitted the country's R-PP to the FCPF in August 2010. The taskforce was expanded in January 2011 to encompass cross-sectoral organizations. The new structure was made official in July 2011 through MAF Decision No. 0006, which assigned leadership to the Director General of the Department of Forestry and listed 15 additional members from the organizations listed above, as well as from:

- Department of Law (Ministry of Justice)
- Department of Planning (Ministry of Planning and Investment)
- Division of External Finance (Ministry of Finance)

- Three state unions: Lao Front for National Construction, Lao Women's Union and Lao Chamber of Commerce.

However, as the new ministry (MoNRE) was established in June 2011, the membership of organizations in the REDD+ taskforce is being revised. Parts of the former Department of Land Use Planning & Development at NLMA and the Department of Environment in the WREA were moved from the Prime Minister's Office to MoNRE. Furthermore, the creation of the new ministry affected MAF's Department of Forestry, especially the Division of Forest Conservation and Division of Forest Protection and Restoration, which have been integrated into MoNRE as the Department of Forest Resource Management. This organizational restructuring of MoNRE and MAF means the responsibility for implementation of REDD+ is now divided between these two ministries. The terms of reference of the new department (Department of Forest Resource Management (in MoNRE)) cover REDD+ implementation in protection and conservation forests, whereas the Department of Forestry (MAF) remains responsible for REDD+ implementation in production forests and forest areas under village management (FCPF 2012). After the terms of reference for these two ministries were revised and resubmitted in February 2011, the FCPF finally approved the R-PP for Laos in October 2012. The new funding from FCPF for implementation of REDD+ in Laos is expected to be available by the third quarter of 2013.

In June 2010, while developing its R-PP, Laos was selected as a pilot country for the FIP. The FIP in Laos was developed to dovetail with the Forestry Strategy 2020 and to address the drivers of deforestation and forest degradation, as identified in Laos' R-PP. The main objective is to support existing efforts to bring all forests and forest resources under participatory and sustainable protection, development and management. The FIP's ambition is to remove any scope for the various drivers of deforestation and forest degradation to operate. In January 2012, the government endorsed an investment plan, to be partly supported by a grant of USD 30 million from the World Bank, the ADB and the International Finance Corporation. Support under the FIP will target primarily REDD+, with some attention to interventions to build

resilience to climate change. Essentially, the FIP is supporting existing activities, namely (1) the ADB-funded Biodiversity Conservation Corridor project, as well as similar projects by JICA, GIZ, WCS and WWF in and around national protection and conservation forests, (2) industrial tree plantation and contract farming initiatives operated by licensed private companies, and (3) the SUFORD Project (funded by the World Bank and the government of Finland), along with plans to expand SUFORD to cover the entire PFA. Although the approved project document lists eight target provinces (Luang Prabang, Bokeo, Xayaboury and Huaphanh Provinces in northern Laos; Bolikhamxay and Khammuane Provinces in central Laos; Attapeu and Saravane Provinces in the south), recent discussions at the central level suggest that FIP support could be limited to buffer zones around conservation areas.

REDD+ development in Laos is also being supported through bilateral and multilateral initiatives. Most recently, in November 2012, Laos was accepted as a partner country of the UN-REDD Programme, thus becoming eligible for targeted capacity building and financial support through UN agencies (UN-REDD 2012). Bilateral aid has made an important contribution to the development of REDD+ policy in Laos. The Climate Protection through Avoided Deforestation (CliPAD) program funded by the German Development Bank (KfW) has been particularly influential in facilitating the discussion and development of the national framework for REDD+ in Laos. This program, which was launched in January 2012, is operated through the Department of Forestry with technical support from GIZ and WCS. CliPAD has also engaged Lao academics from the Faculty of Forestry of the National University of Laos to review national legislation on forests, land tenure and land use. The aim of the review is to identify inconsistencies and gaps in the legal framework and provide specific recommendations for implementing REDD+ in Laos; the findings are expected to contribute also to the revision of the Forestry Law, which will be submitted to the National Assembly in 2013.

CliPAD supports not only national REDD+ policy development but also subnational activities in and around the two NPAs of Nam Phouy and Nam Et-Phou Loey. Pilot activities in Nam Phouy progressed quite rapidly, with, for example, the completion of a feasibility study

following the Verified Carbon Standard (VCS) methodology VM0006 and engagement in free, prior and informed consent (FPIC) through the Lao Biodiversity Association; however, these have been postponed because of tensions with the Lao military authorities responsible for monitoring the NPA border area with Thailand (Article 16 of the 2007 Forestry Law states that forest management plans shall follow the principles of socioeconomic development and national defense and security plans) (GoL 2007b). FPIC as implemented in Nam Phouy has been seen as a pioneering effort for Laos by formally ascertaining whether local communities consent to participate in development projects in their areas. In Nam Et-Phou Loey, a feasibility study found that a REDD+ project following VCS guidelines would not be financially sustainable because of low historical rates of deforestation. Low observed deforestation in the NPA is partly linked to limitations in interpreting satellite images and/or the historical management of forest in the NPA. Consequently, CliPAD has opted for an alternative, jurisdictional approach (VCS Jurisdictional and Nested REDD+) aimed at establishing RELs and designing REDD+ mechanisms in Huaphanh and Xayaboury Provinces. Currently, Huameuang District in Huaphanh Province is selected as the demonstration site of the project, whereas the project team (which included officials from the Department of Forestry and other concerned departments) is working with relevant authorities (from national to local) to select a district or districts as the demonstration site of the project in Xayaboury Province.

Other major projects that aim to assist REDD+ in Laos through institutional support, capacity building and/or pilot activities include the following:

- Grassroots Capacity Building for REDD+ in Asia Pacific: started in August 2009, funded by Norad, run by the Faculty of Forestry of the National University of Laos and the Department of Forestry in MAF with support from the Center for People and Forests (RECOFTC)
- Participatory Land and Forest Management Project for Reducing Deforestation (PAREDD): started in January 2010, funded by JICA, run by the Department of Forestry and the National Agriculture and Forestry Extension Service with technical support from JICA

- Lowering Emissions in Asia's Forests (LEAF): regional initiative started in February 2011, funded by USAID, run by SNV, Winrock, Climate Focus and the US Forest Service
- Carbon & Biodiversity (CarBi): started in January 2012 along the border of southern Laos and central Vietnam, funded by KfW, run by the Departments of Forestry and Forest Inspection (MAF) with technical support from WWF
- Sustainable Forest and Rural Development (SUFORD): 3-year project (2009–2012) with a REDD+ component, supported by the World Bank and the government of Finland, in central and southern provinces; project activities are run jointly by the Department of Forestry, National Agriculture and Forestry Research Institute, National Agriculture and Forestry Extension Services, provincial and district agriculture and forestry offices, and local communities (GoL 2011a)
- Improving Xe Pian NPA (now in its second phase): started in August 2011, supported by WWF-Germany through WWF-Laos office (2011–2013). The primary activities of the project are sustainable forest management, wildlife conservation, law enforcement and capacity building for subnational and local communities on sustainable resource management within the NPA. A secondary activity is a REDD+ feasibility study under the VCS. Activities are run by the Department of Natural Resources (MoNRE) with technical support from WWF-Laos and OeBF-Germany.

The private sector also has become involved in REDD+ in Laos. In early 2012, New Chip Xeng, a Thai shipping company in a joint venture with Honda in Laos, invested USD 3 million to conduct a VCS feasibility study, assisted by Laos' Prime Consultancy Company. New Chip Xeng reportedly aims to develop a subnational REDD+ public–private partnership on 550,000 ha of NPA in four provinces (Vientiane Times 2012c). Other major actors from the private sector that have demonstrated an interest in developing REDD+ activities in Laos include Stora Enso (feasibility stage), Oji Paper (feasibility study complete), Arcadia Investment Management Corporation (feasibility underway), Prime Invest/Sinclair Knight Merz (pre-feasibility), Indochina Resort Group, Green Planet JSC, and Kyoto Energy Co. (Ounekham 2011). Nevertheless, the private sector

has not had much recent involvement in Laos' REDD+ policy processes, although the private sector is ranked second in the list of actors to be prioritized for further consultation during the R-PP implementation phases.

Other actors shaping REDD+ policy in Laos include researchers from the Faculty of Forestry of the National University of Laos. Lao scholars from the university are engaged in a number of international and regional research networks studying REDD+, including the EU-funded Impacts of REDD+ in Southeast Asia (I-REDD+) project, the Sustainable Mekong Research Network, Asia-Pacific Network for Sustainable Forest Management and Rehabilitation, and the Asia-Pacific Network for Global Change Research. Finally, although many of the international NGOs active in Laos express reservations about the potential impacts of REDD+ on rural communities' rights and livelihoods, as illustrated in the Final Declaration of the Ninth Asia–Europe People's Forum held in Vientiane in October 2012, the REDD+ policy process has not witnessed any protest action from CSOs. The inactivity of CSOs may be explained partly by their weak capacity and partly by the limited experience of government agencies in dealing with opinions that diverge from formal government statements (personal communication from Barney, 2013).

### 5.3. Current REDD+ consultation process

The REDD+ taskforce decided to limit stakeholder consultations (see next paragraph) held to prepare the R-PP to national-level representatives of government, donors, civil society and the private sector. Officials from Huaphanh, Luang Prabang and Xayaboury Provinces were also consulted (CliPAD and PAREDD, which initiated REDD+ pilot projects, invited their local counterparts). The reasons advanced for limiting consultations related to: (1) the need to avoid raising expectations in areas not yet targeted for REDD+ activities, (2) limited time and funds to conduct consultations at subnational levels, (3) the challenges of consulting rural communities in remote areas, given their low education levels and minimal knowledge about climate change, and (4) plans by the CliPAD and PAREDD+ projects to conduct consultations at the local level. Three main consultations were

undertaken in the course of drafting Laos' R-PP. From 7 April to 17 May 2010, 35 interviews were conducted with representatives of various ministries, Lao nonprofit associations, international financial institutions, development agencies and NGOs, and selected private enterprises. The aims of these interviews were to assess awareness and understanding of REDD+ and to discuss expectations concerning REDD+ project implementation.

Following the interviews, the first national consultation workshop was held in Vientiane on 25 and 26 May 2010, in combination with a high-level meeting chaired by MAF. These two events sought to raise awareness about REDD+ among key stakeholders and/or policy makers at the national level. The high-level meeting was attended by about 150 participants from key organizations. At the workshop, the 100 or so participants contributed to discussions and working groups on strategic and policy matters related to REDD+ in Laos and the drafting of the R-PP. A second national consultation workshop was held in Vientiane on 10 and 11 August 2010. The workshop was attended by 109 representatives of ministries, provincial administrations (Attapeu, Bolikhamxay, Xayaboury, Luang Prabang and Huaphanh Provinces), Lao mass organizations and nonprofit associations, international financial institutions, development agencies and NGOs (the private sector was excluded because a consultation workshop for the private sector was scheduled to take place during the implementation of the R-PP). The aim of this workshop was to provide stakeholders with an overview of the REDD+ activities planned for Laos and to elicit additional input into the draft R-PP.

Further consultations took place during the scoping, joint and technical missions for the FIP. A national consultation workshop was held by the secretariat of the Lao REDD+ taskforce on 20 January 2011, with the aim of sharing information about drivers of deforestation and ongoing and planned REDD+ activities in Laos. The workshop was attended by representatives from various government agencies, nonprofit associations, private businesses, international development agencies and NGOs. On 21 January, additional discussions took place among officials from the Department of Forest Inspection under MAF, a few representatives from Lao nonprofit

associations and three private companies interested in forest carbon (Stora Enso, Oji Paper and Earth Systems Laos).

A second national consultation workshop for the FIP was held by the Department of Forestry on 7 June 2011 to discuss preparations for the FIP in detail. Again, the workshop was attended by representatives of several ministries and governmental agencies (those directly involved in FIP-supported activities) along with representatives from nonprofit associations, private companies, international development agencies and NGOs. The main points of discussion included the building of national capacity to prepare for the FIP, the adoption of a programmatic approach, the alignment of FIP activities with national forestry policies and laws, and the establishment of mechanisms to coordinate FIP activities with other development partners and projects. Additional discussions took place on 7–9 June 2011 with representatives from forestry companies (Stora Enso and Oji Paper), officials from MAF, Ministry of Finance (MoF) and WREA, and representatives from nonprofit associations, the Public Administration and Civil Service Authority and JICA.

A third national consultation workshop on the FIP was held in Vientiane on 9 September 2011 by the Department of Forestry to discuss the key themes identified in the draft investment plan and the framework for engaging local communities. The workshop was attended by approximately 100 participants from line government agencies, officials from the eight target provinces (see Section 5.2), and representatives of mass organizations, nonprofit associations, the private sector, and international development agencies and NGOs engaged in REDD+ and forestry. This was followed by two regional consultation workshops in Luang Prabang on 13 September 2011 (attended by stakeholders from Bokeo, Huaphanh, Luang Prabang and Xayaboury Provinces) and in Thakhek (Khammuane Province) on 15 September 2011 (attended by stakeholders from Attapeu, Bolikhamxay, Khammuane and Saravane Provinces). The aims of these workshops were to present and discuss the draft investment plan and to identify implementing partners and concrete options for using funds at the subnational and local levels.

In addition to these consultations, international NGOs, Lao nonprofit associations and operators of REDD+ pilot projects have held several workshops and forums at the central and subnational levels, such as the Lao Biodiversity Association's national and subnational forums on information and awareness raising on REDD+, which covered FPIC and the potential impacts of REDD+ on local communities, and a national workshop supported by CliPAD, which focused on opportunities and constraints for private sector involvement in REDD+ in Laos.

## 5.4. Future REDD+ policy options and processes

### 5.4.1. Types of REDD+

The R-PP identifies three main activities aimed at controlling deforestation, all of which involve payments related to forest carbon stocks. The first, at the national level, focuses on establishing a regulatory framework for carbon-sensitive mining and hydropower development. This action would build partly on experiences with the Nam Theun 2 hydropower project in Khammuane Province and involve the preparation and implementation of biomass removal plans, the restoration of forest cover and the monitoring of greenhouse gas emissions in and around project sites. Project developers and operators are not expected to receive REDD+ payments, with REDD+-related funding from international sources most likely directed toward supporting the government in law enforcement and monitoring.

The second activity, aimed at curbing the expansion of agriculture and tree plantations in existing forests, seeks to improve land-use planning and land allocations and leases by using information on carbon stocks and values. This intervention will take place at the district level, with REDD+ payments to be used to support activities such as the creation of permanent sample plots for forest carbon, setting baselines, and monitoring emission reductions. These activities could be integrated into existing land-use planning and land allocation processes by land-use planning projects such as the GIZ-supported project on Land Management and Economic Development in Rural Areas and the ADB-funded Sustainable Natural Resources Management and Productivity Enhancement Project.

The third activity is aimed at controlling forest conversion. It promotes forest protection, regeneration and restoration initiatives by smallholders in both village and national conservation, production and protection forests. REDD+ payments can therefore be distributed at the local level, although this will be contingent on local communities having a clear definition in REDD+ payment. Local plans were being tested in villages adjacent to the Nam Phouy NPA in Xayaboury Province (CliPAD project), but this pilot activity was recently suspended, with plans to move CliPAD away from Nam Phouy NPA to be based near the district administrative boundary (one or two districts) which is a so-called jurisdictional approach; local plans are also being piloted in 16 villages in Luang Prabang Province as part of PAREDD.

Laos' R-PP identifies three additional sets of activities for avoided forest degradation that could be associated with REDD+ payments. The first builds upon the experiences from SUFORD to expand sustainable forest management practices to all national production forests (around 3.1 million ha) as well as to sites targeted for large-scale infrastructure projects. REDD+ payments could be used to clarify production forest boundaries, facilitate participation by local communities in forestry activities and introduce improved timber harvesting techniques, such as reduced impact logging, rotational schemes and residue management.

A second set of activities would aim to improve surveillance of illegal logging, monitoring of wood supply and value chains, and law enforcement. REDD+ funds could be used to support national surveys on wood consumption, processing and trade as well as district-level activities such as intelligence operations, forest rangers and better registration of timber harvesting and transportation machinery.

The third strategy focuses more specifically on regulating shifting cultivation, which the government still views as a major cause of forest degradation. Activities here would include greater research on alternatives to shifting cultivation, such as combinations of agricultural extension and private sector efforts to promote contract farming for tree plantations/agroforestry in shifting cultivation areas. These activities would be partly supported by REDD+ payments and conducted

at the district level as a complement to improved village land-use planning interventions (see second paragraph of this section).

#### 5.4.2. Financing

The government of Laos favors a flexible financing strategy for REDD+ implementation. The Lao delegation at COP 15 in December 2009 emphasized its support for multilateral approaches to REDD+ financing and its openness to market-based approaches:

Flexibility is the most important element for financing REDD+ in Laos. At this stage, Laos prefers to build readiness for REDD+ with bilateral relationships with donors, given the extensive capacity building which is required within the readiness phase. As a participating country within the FCPF, Laos also supports multilateral approaches for financing. In the hope to keep financing flexible, particularly within the UNFCCC, Laos supports the hybrid approach to financing which means financing REDD+ can come from both funds and market based approaches. Laos is also interested in opportunities within the voluntary market to support sustainable project based approaches to REDD. (GoL 2011a, 46)

This position is reflected in the diversity of financial partnership agreements that currently support REDD+ policy development and implementation in Laos. Indeed, REDD+ in Laos is supported by multilateral financial institutions such as the World Bank, the International Finance Corporation and the ADB (through the FCPF and FIP), bilateral development banks such as BMZ/KfW (CliPAD and CarBi), bilateral cooperation agencies such as JICA, GIZ and USAID (PAREDD, CliPAD and LEAF) and international NGOs such as WWF (CarBi). In addition, private companies such as the New Chip Xeng Group are financing REDD+-related public-private partnerships (Sub-National Reduction of Deforestation and Forest Degradation project).

#### 5.4.3. Monitoring, reporting and verification

The first attempt at setting a national REL for Laos was made by the Department of Forestry while drafting the R-PP. This initial REL was based on the assessment of historical values of deforestation and degradation measured between

1982 and 2001 (land cover and forest inventory data). It also incorporated the impacts of the national development plans and economic growth for post-2002 values (see Section 2.3). The most recent national forest cover data (for 2010) and the second national forest inventory, currently underway, are expected to provide additional information to improve this estimate of the national REL. The Department of Forestry is planning to improve the model and develop RELs at the provincial level, with funding from the FCPF. International agencies such as WCS and GIZ, which are guiding the design and establishment of Laos' MRV system, are exploring possibilities for including existing data sets or investing in new data sets to establish a reasonably accurate REL and to introduce MRV in Huaphanh Province.

The government of Laos appears to favor a jurisdictional and nested approach to REDD+, although no official decisions have been made in this regard. The perceived benefit of this approach is that it can allow for a diverse range of REDD+ initiatives, thus allowing both national and individual REDD+ activities. The National REDD+ Office would develop and administer a wall-to-wall national MRV system, which would require national forest cover mapping and forest inventory approximately every 2 years. Then, provincial REDD+ offices would be responsible for ground-truthing national results, such as by conducting forest inventories, and compiling reports at the provincial level. Provincial REDD+ offices would also develop provincial REDD+ strategies, in collaboration with relevant offices and authorities, and integrate them into other sector strategies. Projects run by private companies and/or NGOs would likely be included either under VCS jurisdiction methodologies at the subnational level or as standalone projects in nonregistered jurisdictions. For all projects, whatever methodologies are used, there is a need to incorporate institutional capacity building and activity implementation at the subnational level. The poor capacity for MRV at the subnational level calls for considerable technical assistance and capacity building. Investment will also be needed to support the development of verification standards and the accreditation of independent organizations responsible for verification and certification.

#### 5.4.4. Benefit sharing

There is a lack of clear proposals for REDD+ benefit sharing in Laos. Organizations such as GIZ and WCS have positioned themselves as central on this issue. CliPAD, initially using funds from KfW, includes plans to design and experiment with benefit-sharing mechanisms for REDD+ in pilot sites in Xayaboury and Huaphanh Provinces. CliPAD is also supporting the revision of Laos' Forestry Law through a review of legislative and institutional frameworks related to forest resources. However, as indicated in Laos' FIP investment plan, the revision of the Forestry Law is expected to provide guidance on REDD+ benefit sharing in Laos.

Consideration of co-benefits has not been largely debated, while demonstration projects are aiming to obtain Climate, Community and Biodiversity (CCB) certification. The R-PP addresses this question only very superficially, by merely mentioning the existence of co-benefits and the need to monitor them. However, Laos' FIP investment plan lists several co-benefits associated with REDD+ activities and proposes to integrate indicators into its results framework, such as household incomes, tenure security, ethnic and gender balances in access to resources and decision making, and habitat fragmentation.

#### 5.4.5. Proposed participation mechanisms

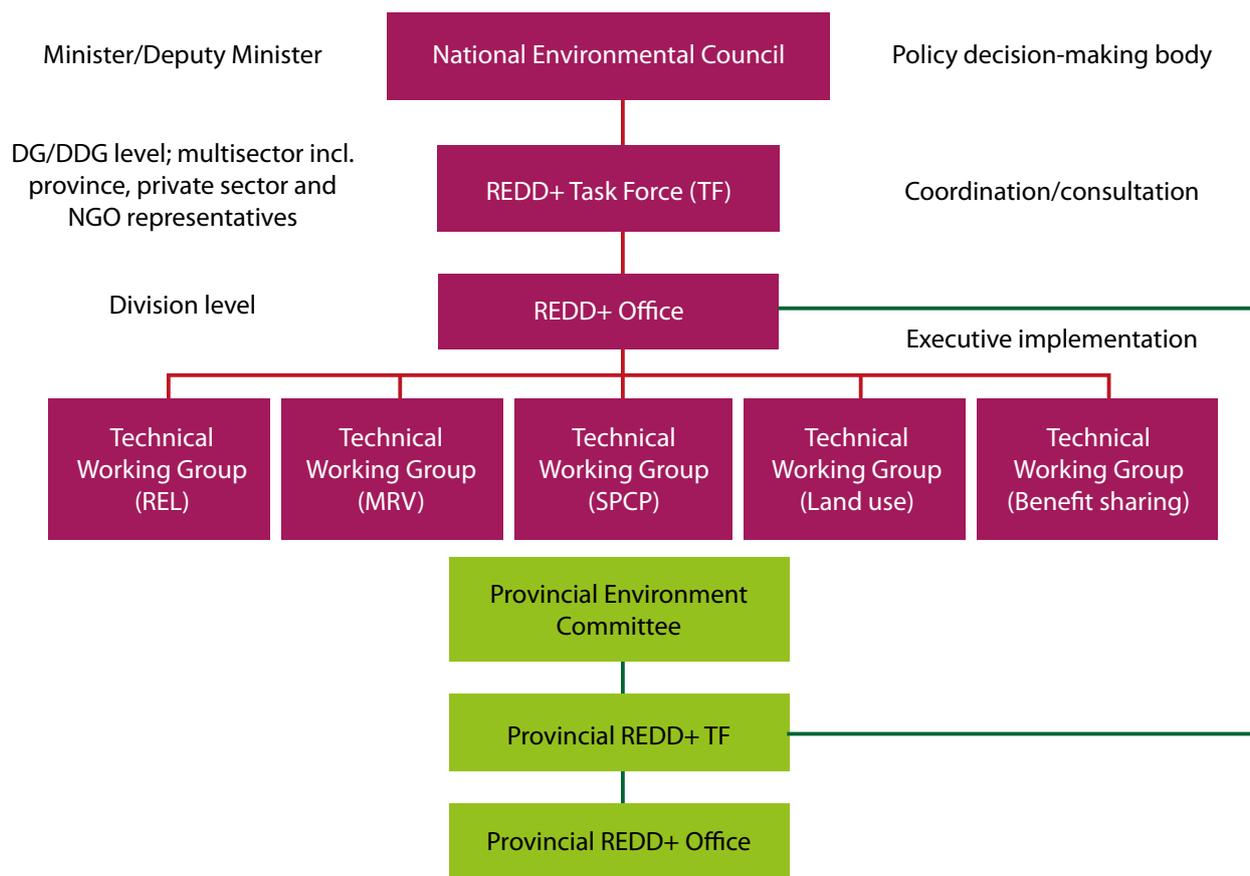
Consultations conducted within the framework of the FCPF and FIP have continued to focus essentially on the national and (to a lesser extent) provincial levels. However, the government of Laos recognizes the need to expand future consultation and participation mechanisms to encompass lower administrative levels, including district and village levels. As described in the R-PP and FIP investment plan, a "Stakeholder Participation and Consultation" working group under the supervision of the National REDD+ Office will set the overall national strategy on consultation and participation in REDD+ in Laos (see Section 5.4.6). This working group will be responsible for developing a detailed work plan on REDD+ readiness preparation, identifying partner organizations to conduct information-pipeline and consultation activities, and developing and disseminating awareness-raising and training materials on forest carbon management and REDD+. In general, subnational activities targeting consultation and enhanced

participation are expected to be in areas where pilot REDD+ activities are planned and build upon existing administrative channels linking provinces and districts to villages. In particular, Technical Service Centers, which are agriculture and forestry extension units recently formed at the village cluster level, are expected to play a key role in the process.

#### 5.4.6. Policies and institutions

Implementing REDD+ in Laos will therefore require that new institutions and agencies be created at various levels. For instance, the National REDD+ Office is established at the Department of Forestry and subnational REDD+ Offices at the provincial level are also under planning (Figure 4). The main role of the National REDD+ Office is to coordinate with working groups on RELs, MRV, consultation and participation, and benefit-sharing schemes. The main role of subnational REDD+ offices at the provincial level is to implement REDD+ activities at province, district and lower levels. In the future, the National REDD+ Taskforce will also include representatives of the private sector and CSOs active at the national and provincial levels. Important legal reforms pertaining to forest carbon tenure, financing and benefit sharing, among others, will be included in the revision of the Forestry Law.

Although officials from WREA (now under MoNRE) participated in UNFCCC events, the Department of Forestry (under MAF) has been leading the development of REDD+ policy and strategy in Laos. The creation of MoNRE in 2011 and the transfer of responsibilities for conservation and protection forests from MAF to the new ministry have led to some uncertainty over leadership and coordination within REDD+ policy development. The institutional restructuring caused the delay of many REDD+-related activities. Furthermore, although the Department of Forest Resource Management (under MoNRE) has a legal mandate to make decisions concerning REDD+, it lacks the necessary staff and capacity, and no REDD+ projects have yet been assigned to the department. Instead, almost all REDD+ demonstration projects have been assigned to the National REDD+ Office (within the Department of Forestry), which does have some staff capacity. MoNRE has yet to become involved in REDD+, whereas MAF is currently responsible for all REDD+ decision making.



**Figure 4. Planned institutional arrangements for REDD+ in Laos.**

Source: GoL (2010b)

### 5.4.7. Policy learning

Government policies aimed at combating deforestation have generally not been reviewed in light of lessons learned from previous experiences. However, that such policies are overly ambitious has become clear, with REDD+ apparently brought into the debate as a result. As discussed in Section 5.1, the government of Laos sees REDD+ as a potentially important source of technical and financial support for its longstanding afforestation and reforestation objectives. This position, repeated throughout Laos’ R-PP, stems essentially from the recognition that, despite the country’s efforts to reshape forest governance, national policies and programs to curb deforestation and forest degradation have been hindered by the persistent lack of

human and financial capacity for implementation, monitoring and law enforcement.

In addition, with the REDD+ taskforce established only at the national level with members from national institutions, there are no formal mechanisms to use local experiences from pilot projects to inform the national REDD+ policy process. However, as most operators of pilot REDD+ projects, such as GIZ, WCS and JICA, also advise and train the central government agencies overseeing national REDD+ strategy and policy, they can be considered direct brokers of information, helping the information to flow from the local level (pilot projects) and the international level (multilateral debates and negotiations around REDD+) to the national level.

# 6 Implications for the 3Es

In this section, we consider the main implications of the context in Laos for achieving effectiveness, efficiency and equity (the “3Es”) in REDD+. Here, “effectiveness” refers to the magnitude of the reduction in carbon emissions, defined as the difference between the volume of emissions with and without REDD+ interventions. Assessing effectiveness therefore requires (1) accurate and verifiable measurements of actual emissions with REDD+, (2) predictions of what would have happened without REDD+ and (3) estimates of potentially undesirable side effects in space (leakage) and time (permanence) and on other mitigation activities. “Efficiency” refers to whether the emission reductions are achieved at minimum cost. Costs for implementing REDD+ include establishment of technical and governance structures, capacity building, transaction costs for activities such as monitoring, law enforcement and tenure reforms, and opportunity costs incurred by land users in avoiding land conversions. “Equity” has three main dimensions (McDermott et al. 2012): (1) distributive equity includes fair repartition of REDD+ benefits between and within stakeholder groups and local communities; (2) procedural equity refers to fairness in the processes set up to allocate resources and resolve disputes, which requires recognition of all parties, inclusion, representation and participation in decision making; and (3) contextual equity takes into account the uneven playing field in forest governance, namely imbalance in the capabilities and power of different stakeholder groups, that prevents some people from fully participating.

The success of REDD+ policies will depend on whether they address the main causes of change in forest carbon stocks. In most developing countries — including Laos — drivers of deforestation originate largely from outside the forestry sector (Hosonuma et al. 2012). In Laos, deforestation

and forest degradation are driven by small-scale agricultural expansion, agribusiness and industrial forestry concessions, and mining, hydropower and other infrastructure development. The success of REDD+ policies in Laos will therefore depend largely on their effectiveness in integrating and coordinating operations across sectors, institutions and management levels. We use a 3E framework to assess four key aspects that will significantly influence the outcomes of REDD+ in Laos: (1) cross-sectoral coordination, (2) institutional arrangements and governance, (3) MRV and (4) benefit sharing and participation (see Table 9).

## 6.1. Strengthening cross-sectoral coordination

Effective implementation of REDD+ will require strong engagement and coordination across the agriculture, forestry, mining, energy, infrastructure, investment and planning sectors. To date, REDD+ policy development has been largely dominated by forestry experts. Even though government negotiators from WREA (now under MoNRE) attended COP meetings, they generally played a very minor role in REDD+ policy development. Rather, the development of national REDD+ policies and strategies has remained largely under the leadership of the Department of Forestry under MAF. The Department of Forestry has not only been active in leading the national policy development, but has also been participating in key regional and international discussions on REDD+.

The need for a more inclusive and integrated approach was recognized in the development of Laos’ R-PP and efforts have been made to expand membership of the REDD+ taskforce beyond the forestry sector:

In order to engage all sectors involved in REDD+ and related climate change issues, membership of the National Environment Committee will be broadened to include other sectors not currently represented, especially the National Land Management Authorities (current MoNRE). The REDD+ task force will be strengthened by additional members from other key ministries including Finance, Planning and Investment, Mines and Energy. (GoL 2011a, 15)

The transfer of the responsibility for conservation and protection forests from MAF to MoNRE have led to unstable power relations, unclear mandates and poor coordination between these two key ministries involved in the REDD+ policy process. A programmatic approach across all sectors and clear coordination of development partners and projects are prerequisites for achieving REDD+ objectives. Although the Forestry Law and Land Law were initially being revised in concert, in what seemed to be an example of the necessary alignment, the two processes have since evolved independently, which may have negative consequences for REDD+ and weaken or obscure the necessary synergies between land and forest policies.

## 6.2. Reducing the gap between policy and practice

The government of Laos will have to address the issue of weak enforcement of laws and regulations before implementing REDD+. Significant initial investments to strengthen governance and build institutional capacity will be needed if national policies and measures aimed at reducing the loss of forest carbon are to be effective. On the one hand, weak forest governance, collusion, corruption and patron–client relationships are key indirect drivers of illegal logging and unsustainable timber extraction in Laos — the main causes of forest degradation. To enhance REDD+ effectiveness and cost efficiency, large upfront investments will be required to build the capacity of administrative and technical staff, to raise awareness and to enforce existing laws and regulations. On the other hand, to avoid deforestation, land-use planning and land allocation processes need to be aligned and local communities' land tenure rights must be secured, given the widespread land acquisition by agribusinesses (see Section 2.2). Stakeholder

consultation and planning, coordination between national and provincial levels, and the testing of improved measurement and monitoring systems at all levels should therefore be prioritized. New mechanisms (e.g., FLEGT) and investment schemes (e.g., FIP) under discussion could give the government the support it needs to implement its regulations.

## 6.3. Setting correct crediting baselines and defining conditions for additionality

National and subnational crediting baselines are important considerations for cost efficiency. On the one hand, an incorrect baseline may allow some stakeholders to claim carbon credits for results that would have occurred anyway. On the other hand, stakeholders' efforts to control deforestation may not be properly recognized if unforeseen demand drives illegal logging beyond expectations.

The additionality of REDD+ measures may be difficult to demonstrate in a context where relevant policies and regulations are in place but cannot be enforced because of a lack of capacity and/or resources. REDD+ may create an additional incentive to implement existing policies, by serving as an umbrella for the many projects that can contribute to achieving carbon emission reductions through avoided deforestation and forest degradation, as well as co-benefits such as biodiversity conservation and improved livelihoods.

Any performance assessment must consider the tools used to measure performance and how they can be adapted to local contexts. It is often difficult to disentangle the multiple factors underlying land-use change, such as investment opportunities, land policies, law enforcement and poverty traps. “To which factors should the observed phenomena be ultimately attributed?”, “Who is responsible for failure?”, “Who should be credited with the success and avoided carbon emissions?” — these are questions that defy easy answers in real-life situations. Simple explanations of the relationships among factors are likely to be the exception rather than the rule. Hence, it is necessary to consider how these relationships are influenced by local contexts and, crucially, to adapt performance measurements to the particular context in which

REDD+ is implemented (Lestrelin et al. 2013). As the context can significantly influence the effectiveness of policy options aimed at avoiding deforestation and forest degradation, context-sensitive approaches to performance assessment are essential.

#### **6.4. Ensuring distributive, procedural and contextual equity**

The relevance and consequently the overall performance of REDD+ will be boosted if local communities and civil society participate in designing and implementing local REDD+ architectures (see Section 3.1). Participation is also needed to create fair benefit-sharing mechanisms (Section 3.2). Procedural equity, therefore, is expected to improve distributive equity and avoid the potential capture of REDD+ benefits by national or local elites. The aim of FPIC is to give communities sufficient information, time and experience to allow them to participate effectively in REDD+ consultation, design and implementation (Anderson 2011), by empowering local communities and increasing equity, so that they can identify, defend and pursue their interests. However, a major difficulty with enhancing community participation is that operators implementing REDD+ are reluctant to raise expectations if these ultimately cannot be met. The FPIC regime envisaged in international REDD+ negotiations is difficult to operationalize on the ground given the lack of clarity about REDD+ architecture and processes, that is, the content of the message is not yet clear. In addition, those in the field, such as district officers from District Agriculture and Forestry Offices and Departments

of Natural Resources and Environment, lack the methods and skills to adapt their message to local circumstances, which might require, for example, engaging marginalized groups such as upland ethnic minorities and women.

In any case, benefit-sharing mechanisms and carbon rights need to be clarified before local communities can be engaged through FPIC. As discussed in Section 3.3, carbon rights may be linked to land rights, although local populations may derive little benefit from this, as carbon-rich areas are generally under state management (state protection and conservation forests) (Bourgoin et al. 2013). Poor tenure security and hence lack of ability to exclude land concessions and state development projects may further marginalize forest-dependent populations, so it is essential to ensure the equity of REDD+ schemes through the allocation of strong forest tenure and carbon rights to local communities. Stakeholders at all levels should respect the legality of village PLUP agreements, signed by district governors, to prevent land grabbing. In addition, locally controlled forestry initiatives should engage people living in or near state-managed carbon-rich forests — families, communities and indigenous peoples — in maintaining the forest resources on which they depend. These communities could be rewarded for their long-term stewardship of state forested land with a share of the carbon credits generated by avoiding forest loss while enhancing livelihoods. Finally, high priority should be given to clarifying and securing land and carbon rights and to improving forest governance through targeted investments and capacity-building activities, if “3E REDD+” is to be achieved in Laos.

**Table 9. 3E assessment of key aspects of REDD+ in Laos.**

Main aspects	Effectiveness (carbon)	Efficiency (costs)	Equity and co-benefits
Institutions	<ul style="list-style-type: none"> <li>National ownership of the REDD+ agenda: high-level commitment but implementation challenges still to be addressed</li> <li>The private sector is involved in REDD+ consultations. Also explores implementation mechanisms through REDD+ project feasibility studies</li> <li>Policies that address deforestation and forest degradation (e.g., Land and Forestry Laws) are being revised to better accommodate REDD+</li> </ul>	<ul style="list-style-type: none"> <li>Limited capacity to cope with increased volumes of finance. Administrative processes are slow and will remain cumbersome as long as the mandate of each institution involved is not clarified</li> <li>Civil society involved in law revision consultations and increasing role in REDD+ (e.g., Land Issues Working Group)</li> </ul>	<ul style="list-style-type: none"> <li>Requirement for stronger law enforcement, especially to secure land and carbon rights for local communities and indigenous people</li> <li>Lack of transparency and accountability mechanisms</li> <li>Poor capacity and lack of field methods to improve local participation and consultation</li> </ul>
Coordination	<ul style="list-style-type: none"> <li>Vertical (between national, provincial and local levels) and horizontal (cross-sectoral) institutional coordination remain major challenges for REDD+ implementation</li> <li>Level of understanding of REDD+ implications at the subnational level needs to be improved so that coordination can become effective</li> </ul>	<ul style="list-style-type: none"> <li>Clarification of institutional responsibilities is a prerequisite for coordination</li> <li>Alignment of policy processes is required to develop a supportive policy environment for REDD+ implementation</li> <li>Alignment with other mitigation strategies (e.g., NAMAs) is not clear</li> </ul>	<ul style="list-style-type: none"> <li>Transaction costs could be reduced by improved coordination, which would lower the burden on some key actors (e.g., village chiefs required to attend multiple workshops on similar topics by uncoordinated projects; PLUP by different agencies cannot be reconciled)</li> </ul>
Capacity for MRV	<ul style="list-style-type: none"> <li>Reference levels still under development represent a constraint on MRV</li> <li>Lack of reliable carbon data at the national level. Inventories currently underway may provide results in the near future</li> <li>Coordination mechanisms are not in place, no national organization with the capacity to monitor</li> </ul>	<ul style="list-style-type: none"> <li>Data are generated by different projects/institutions — requires good coordination, harmonization</li> <li>Comparison of time series of remote sensing data are complicated by the use of different standards between years</li> <li>Human capacity needs to be further developed and synergies built across agencies involved in MRV</li> </ul>	<ul style="list-style-type: none"> <li>Efforts to involve local communities in monitoring are limited. Need to be strengthened so that communities can take part in MRV</li> </ul>
Benefit sharing and participation	<ul style="list-style-type: none"> <li>Consensus reached on the principle of participation of all stakeholder groups (including local communities) in REDD+ design and implementation</li> <li>However, practical aspects of participation need to be defined and shared among partners</li> </ul>	<ul style="list-style-type: none"> <li>Fiduciary systems necessary to deliver REDD+ benefits need to be developed</li> <li>Benefit-sharing mechanisms should be defined through widespread consultation to avoid implementation problems</li> </ul>	<ul style="list-style-type: none"> <li>Lessons should be learned from pilot projects, such as SUFORD on production forest governance or PES initiatives</li> <li>Legal aspects related to tenure and registration of land, carbon rights and associated forest resources should be clarified through widespread consultation</li> </ul>

# 7 Conclusion and policy recommendations

The government of Laos has long viewed deforestation and forest degradation as important policy issues. However, the various regulations and land reform and planning programs created to address deforestation and forest degradation have met with little success. Recently, the government's adoption of its "turning land into capital" strategy — designed to boost private land investment and development in order to increase national revenue and generate sufficient capital and technology to modernize rural land uses — has intensified the pressure on forest resources. This pressure on Laos' forest resources is evident through the steady decline in national forest cover, from 49% of the country's land area in 1982 to 40% in 2010.

REDD+ found a place in the national policy debate in 2007, and the government of Laos sees it as a potentially important source of the technical and financial support the country needs to achieve its afforestation and reforestation objective of 70% national forest cover by 2020. The National REDD+ Taskforce was established in November 2008 and, since 2010, numerous multilateral and bilateral projects have been providing Laos with institutional, technical and financial support to design a national strategy and framework and introduce subnational pilot REDD+ activities. The private sector is also supporting the creation of public–private partnerships around REDD+. Nevertheless, progress in designing and establishing an appropriate institutional, policy and regulatory environment for REDD+ has been relatively slow to date. With the exception of a broadly defined institutional architecture linking the National Environmental Council to the National REDD+ Taskforce and REDD+ offices at the central and provincial levels, most REDD+ policy options, for example on setting RELs, MRV, benefit sharing and participation, continue to be concentrated at the central level. Our review of the main drivers,

agents and institutions involved in deforestation and forest degradation in Laos highlights several critical issues that need to be addressed in policy discussions.

In the context of weak land and forest governance that dominates in Laos, there is a strong need for clearer mandates and enhanced coordination among REDD+ actors, particularly MAF, MoNRE and the departments within these ministries responsible for overseeing land and forest policy. The development of regulations and mechanisms to strengthen both horizontal (cross-sectoral) and vertical (national–local) coordination could assist in reducing gaps between policy and practice, limiting transaction costs, and increasing transparency in decision making. Coordination is also very important for additionality and consistency in crediting baselines at both national and subnational levels. The additionality of REDD+ may be difficult to demonstrate in a context where relevant policies and regulations are endorsed but cannot be implemented because of institutional confusion and uncertainty.

The development of context-sensitive and participatory approaches to measuring the performance of REDD+ interventions is another important task that will require enhanced coordination. In particular, coordination between administrative units and across administrative levels will constitute a key challenge to efforts to achieve the government's preference for a jurisdictional, nested REDD+ approach. Finally, high priority should be given to clarification of land and carbon rights. As most carbon-rich areas are under state management, national land and forest tenure reform may be necessary to avoid marginalizing local communities and to ensure that REDD+ schemes are equitable.

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This report explores the drivers (both direct and indirect) of deforestation and forest degradation and discusses the political, economic and social opportunities and constraints that will influence the design and implementation of REDD+ in Laos. The government of Laos has long sought to curb deforestation and forest degradation, and the country is receiving considerable international attention and support to implement REDD+. However, agricultural expansion, the development of industrial tree plantations, and large hydropower, mining and infrastructure projects continue to result in deforestation, with shifting cultivation and selective logging (legal and illegal) largely blamed for forest degradation. At the same time, indirect drivers of deforestation and forest degradation are rooted in a national agenda of economic growth, characterized by incentives for foreign and domestic investment in forest management and timber harvesting. As a result, Laos is becoming an important resource frontier for transnational capital and large-scale land and natural resource investments. The consequent intensification of competition for resources poses a challenge not only for forest governance, but also for the development of REDD+ policies and initiatives.

In an examination of the institutions and policies defining Laos' forestry sector and REDD+, the report reflects on lessons to be learned from past forestry and economic development policies. The government of Laos has demonstrated strong political interest in REDD+, but REDD+ implementation faces major obstacles, particularly unclear carbon rights and weak governance, with the latter attributable to poor local capacity, weak coordination among stakeholders, and minimal involvement by local communities and civil society.

The report makes several recommendations for achieving effective, efficient and equitable outcomes of REDD+ in Laos: capacity building of administrative and technical staff, especially at the subnational level; clarification and harmonization of land-use planning and land allocation processes; and stronger monitoring and law enforcement in areas under high threat of deforestation and forest degradation. Furthermore, an accountable and transparent mechanism for sharing the benefits of REDD+ across levels and fully accountable consultation processes must be implemented, with the participation of not only elite and powerful actors such as domestic and foreign businesses but also local groups and civil society.



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