

**Lao PDR Forest Note:  
Toward Sustainable Forest Landscapes for Green  
Growth, Jobs, and Resilience**



**June 5, 2020**

# Lao PDR Forest Note

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Environment, Natural Resources and The Blue Economy Global Practice



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## Acronyms and Abbreviations

ACIAR	Australian Centre for International Agricultural Research
ADB	Asian Development Bank
AFD	<i>Agence Française de Développement</i>
AFPNet	Asia-Pacific Network for Sustainable Forest Management and Rehabilitation
AGF	Agriculture and Food
ASA	Advisory Services and Analytics
ASM	Artisanal Small-scale Mining
CFA	Conservation Forest Area
COVID-19	Coronavirus Disease 2019
CPF	Country Partnership Framework
CSR	Corporate Social Responsibility
DAFO	District Agricultural and Forestry Office
DCNEC	Department for Combatting Natural Resource and Environmental Crime
DFRM	Department of Forest Resource Management
DOF	Department of Forestry
DOFI	Department of Forest Inspection
EcPD	Economic Police Department
EIA	Environmental Impact Assessment
ENB	Environment, Natural Resources, and Blue Economy
ERPA	Emission Reductions Payment Agreement
ESIA	Environmental and Social Impact Assessment
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FAP	Forest Action Plan
FCPF	Forest Carbon Partnership Facility
FIP	Forest Investment Program
FIPD	Forest Inventory and Planning Department
FLEGT	Forest Law Enforcement, Governance, and Trade
FOMACOP	Forest Management and Conservation Project
FPIC	Free, Prior, and Informed Consent
FSC	Forest Stewardship Council
GDP	Gross Domestic Product
GEF	Global Environmental Facility
GGDPO	Green Growth Development Policy Operations
GGTF	Green Growth Trust Fund
GHG	Greenhouse Gas
GIZ	German Agency for International Cooperation ( <i>Deutsche Gesellschaft für Internationale Zusammenarbeit</i> )
GoL	Government of Lao PDR
GP	Global Practice
IEE	Initial Environmental Examination
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IPF	Investment Project Financing
IUCN	International Union for Conservation of Nature

IWRM	Integrated Water Resources Management
JICA	Japan International Cooperation Agency
KfW	<i>Kreditanstalt für Wiederaufbau</i>
LCD	Lao Customs Department
LDC	Least Developed Country
LENS	Lao Environmental and Social Project
LLL	Lao Landscapes and Livelihood Project
LPG	Liquefied Petroleum Gas
LSM	Large-scale Mining
MAF	Ministry of Agriculture and Forestry
MOIC	Ministry of Industry and Commerce
MONRE	Ministry of Natural Resources and Environment
MoF	Ministry of Finance
MPS	Ministry of Public Security
MSMEs	Micro, Small, and Medium Enterprises
MTI	Macroeconomics Trade and Investment
NAFRI	National Agriculture and Forestry Research Institute
NDC	Nationally Determined Contribution
NDMO	National Disaster Management Office
NGGS	National Green Growth Strategy
NGPES	National Growth and Poverty Eradication Strategy
NPA	National Protected Area
NRS	National REDD+ Strategy
NSEDP	National Socio-economic Development Plan
NTFP	Non-Timber Forest Product
OSPP	Office of the Supreme People’s Prosecutor
PAFO	Provincial Agriculture and Forestry Office
PAMD	Protected Area Management Division
PES	Payment for Environmental Services
PFA	Production Forest Area
PLUP	Participatory Land Use Planning
PMO	Prime Minister’s Order
POFI	Provincial Office of Forest Inspection
PRF	Poverty Reduction Fund
ProFEB	Protection and Sustainable Use of Forest Ecosystems and Biodiversity
PSFM	Participatory Sustainable Forest Management
PtFA	Protection Forest Area
R&D	Research and Development
REDD	Reducing Emissions from Deforestation and Forest Degradation
SDG	Sustainable Development Goal
SMEs	Small and Medium Enterprises
STEPP	Strategic and Tactical Enforcement Patrol Programme
SUFORD-SU	Scaling-Up Sustainable Participatory Forest Management
TA	Technical Assistance
TABI	The Agro-Biodiversity Initiative
TLAS	Timber Legality Assurance System
UNCCD	United Nations Convention to Combat Desertification

UNFCCC	United Nations Framework Convention on Climate Change
UNODC	United Nations Office for Drugs and Crimes
VFNMD	Village Forest and NTFPs Management Division
VIT	Village Implementation Team
VPA	Voluntary Partnership Agreement

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## Rationale for the Country Forest Note

**This Country Forest Note provides an upstream analysis of the status of forests as well as investments and policies relevant to the forest sector in the Lao People’s Demographic Republic.** The analysis looks at forests in a programmatic and cross-sectoral manner to strategically position the World Bank Group to support the country in delivering on forest-relevant interventions. More specifically, this note

- Outlines current trends and challenges in forest and land use;
- Analyzes new challenges;
- Builds on the ongoing dialogue and reviews past investments;
- Identifies major investment and policy gaps; and
- Recommends key policy changes and sectoral investments needed.

**Preparation of the Country Forest Note, as part of the corporate commitment under the Forest Action Plan (FAP) 2015–2020, informs and programmatically organizes World Bank Group engagement.** The FAP reflects a new business model that departs from the project-by-project, instrument-driven approach that has shaped the forest portfolio in recent years to a more integrated approach. This note is also part of the commitment under the World Bank’s Climate Change Action Plan and IDA19.

**In addition, Country Forest Notes help country teams raise the prominence of the forest sector and guide dialogue with the government and stakeholders, including donors, civil society, and private entities.** By facilitating more detailed discussions on how forests and other sectors interact, it supports the preparation of strategies, plans, and specific interventions to address analytical and investment gaps. As ‘living documents’, Country Forest Notes can be updated to reflect the evolving needs that arise over time. Overall, Country Forest Notes make it easier to

- Understand and put forward suggestions to address challenges the forestry sector faces with respect to sustainable development and economic growth, including institutional capacity, governance, and policy issues;
- Analyze current and potential engagements and investment opportunities by the World Bank Group and partners; and
- Propose a programmatic umbrella of possible actions and interventions to advance the country’s engagement on forests.

## Executive Summary

**Natural capital in Lao PDR is a major source of wealth for the country and becomes even more strategic in times of economic stress.** With forest cover standing at 58 percent of the land area, Lao PDR still has one of the highest portions of forest cover among countries in the region. While forest products directly benefit vulnerable rural communities, ecosystem services from forests support key economic sectors such as energy, agriculture, industry, and tourism. Forests and downstream industries also offer important job and livelihood opportunities in rural areas in Lao PDR that can be expanded. In particular, the global and regional increases in demand for wood products and nature-based tourism are opportunities for the forest sector to increase its contribution to shared prosperity, poverty reduction, climate stability, resilience, and environmental sustainability.

**The contribution of forests to safety nets and poverty alleviation, especially during coronavirus disease 2019 (COVID-19), is significant but largely underappreciated:**

- Two-thirds of the population lives in rural areas and relies on forests for food, fuel, fiber, and medicine.
- More than 39 percent of rural family income is derived directly from non-timber forest products (NTFPs).
- The economic value of subsistence consumption of NTFPs to households has been estimated at US\$489 per year and at US\$204 per household per year for cash income.
- The value of timber and non-timber forest products is estimated at US\$10,740 per capita.
- Forests also continue to be an important, yet unsustainable, source of household energy, with about 91 percent of the population continuing to use solid biomass for cooking and heating. Charcoal use has increased from 6 percent in 2012 to 24 percent in 2019.
- Consumption of wood products by urban dwellers has been estimated at more than 280,000 m<sup>3</sup> per year, which is valued at more than US\$45 million.

**During the economic recovery from the impacts of COVID-19, the largely untapped job potential from forest plantations, downstream industries, and nature-based tourism will be essential.** Forest-based industries, nature-based tourism, and planted forest producers are some of the economic activities in rural areas that have the potential to provide gainful and green employment at scale (the plantation industry alone could generate approximately 100,000 new jobs), while also promoting landscape restoration and biodiversity conservation.

**Lao PDR is home to some of the world's biologically richest and most endangered species and an extensive network of Protected Areas.** The country includes four ecologically diverse regions: (a) the Northern Highlands, (b) the Annamites Range; (c) the Indo-Chinese karst landscapes; and (d) the Mekong plain. Recently, the Government of Lao PDR (GoL) took very important decisions to expand the already large network of protection areas and national parks. On February 15, 2019, it upgraded two national Protected Areas (NPAs), establishing Nakai Nam Theun and Nam Et-Phou Louey as the first two national parks. In January 2020, Hin Nam No was also redesignated as a national park and is short-listed to become the country's first natural World Heritage Site. This protected area network plays a key role in responding to increasing tourist demand for experiences in nature.

**Lao forests are also important for the mitigation of disasters such as flooding, drought, and erosion.** Good management of forested watersheds is vital for Lao PDR's power sector, as hydropower provides nearly all of its electricity generation and serves as an important source of foreign revenue (for example, reduction of sedimentation increases the lifetime of reservoirs). Droughts in 2020 have also painfully revealed the importance of forests for Luang Prabang's and other cities' water supply, which is only noticed when forest degradation and loss have already occurred.

**Unfortunately, deforestation and forest degradation continue, driven mainly by agricultural expansion and encroachment, illegal logging, and infrastructure development.** Forest cover fell by 2.9 percent between 2000 and 2015 and the quality of the remaining forests has been degraded. It is estimated that the cost of deforestation and forest degradation in 2017 amounted to US\$464 million, or 2.7 percent of gross domestic product (GDP).<sup>1</sup> Lao PDR's global biodiversity value is likewise in danger. The highest priority threats to the country's biodiversity include climate change which disrupts ecosystems, illegal logging and wildlife trade, infrastructure development in and around Protected Areas, and expansion of agriculture and settlements.

[Major policy development in the forest sector now requires implementation](#)

**Recognizing the benefits from forests, the government has adopted an ambitious reform agenda** including new legislation, policies, and plans to promote economic development through socially and environmentally sustainable forest management in partnership with the private sector and villages living in and around forests. The government has embraced a more holistic approach to policy development that recognizes the trade-offs and opportunities among forests and other sectors. While in the past forest policy was largely formulated and implemented by the forest sector with little interaction with or recognition by other sectors, the government has in recent times adopted policies which acknowledge the contribution from the forest sector and improve cross-sectoral coordination.

**The government's drive to improve policies and governance has already resulted in notable successes.** Many measures have been introduced to bring Lao PDR's forests under more sustainable management. The 2019 Forestry Law, for instance, recognizes the need to support decentralized management of forests by villagers for multiple benefits and opens degraded lands in the state's production forest areas (PFAs) to industrial forestry plantations. New policies attest to the government's interest in pursuing environmental and social sustainability; these include the Prime Minister Decree on Environmental and Social Impact Assessment (ESIA) 2019 and subsequent public disclosures in 2020, a ministerial decision on Strategic Environmental Assessment (SEA) 2019, independent certification of 108,000 ha of forest management and controlled wood, and finally an emerging timber legality assurance system as part of continuing Forest Law Enforcement, Governance, and Trade (FLEGT) negotiations with the European Union (EU). Earlier policies set the stage for these recent reforms. The Prime Minister's Order 13 (2016) halted the uncontrolled expansion of land concessions, and the Prime Minister's Order 15 (2016) imposed a moratorium on the export of logs and unfinished timber and achieved a 75 percent reduction in illegal

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<sup>1</sup>World Bank 2020. Lao PDR: Emission Reduction Program Document

logging.<sup>2</sup> To strengthen forest conservation, the government has prioritized the development of the national park system, announcing the designation of the first three national parks in 2019. Efficiency of forest administration has been enhanced by consolidating the management responsibility for all forest areas under the Department of Forestry (DOF) under the Ministry of Agriculture and Forestry (MAF).

**All relevant policy documents since the 1990s consistently include the highly ambitious target to expand forest cover to 70 percent.**<sup>3</sup> The most viable ways to achieve this target would include, among others, (a) expanding environmentally, socially, and financially sustainable industrial forest plantations on degraded lands; (b) operationalizing village forest management in line with the 2019 Forestry Law and developing mutually beneficial partnerships between the villages and plantations; (c) equipping smallholders to participate in the timber market sustainably; and (d) allocating resources to the large protected area network, prioritizing areas with the highest biodiversity and sustainable tourism values.

**In addition to its domestic priorities on sustainable forest management and conservation, Lao PDR also embraces its international responsibility to contribute to climate change mitigation through improved forest management and land use.** Forest management, land use, and the REDD+<sup>4</sup> approach figure prominently in Lao PDR's NDC, which aims to reduce greenhouse gas (GHG) emissions by 60–69 MtCO<sub>2</sub>e.<sup>5</sup> Improved forest management and land use will also help manage climate risks and generate co-benefits by reducing flooding, drought, and erosion and by improving water quality.<sup>6</sup>

#### Major policy gaps and implementation challenges

**Despite the major progress Lao PDR has made in reforming the forest sector, there are still gaps in the regulatory framework, and the capacity to implement policies is a challenge.** The yet unfinished Village Forestry reform process prevents the full mobilization of local resources. While providing alternative livelihoods is important to reduce pressure on forest resources, scaling up village-level livelihood activities relying on government resources is a major challenge. Licensing and supervision will need a better and more transparent system, which should include stronger environmental and social standards, consultations, and incentives for long-term sustainability.

**Forest and wildlife law enforcement in Lao PDR is complex.** This is especially true in remote areas involving logistical and interagency coordination challenges, lack of alternative livelihood opportunities, and strong demand for timber and non-timber products and wildlife. The increased migration back to the villages because of COVID-19 and the associated lack of jobs in urban areas may also put increased pressure on forests and create land use conflicts. Other global trends and consumer demands will also

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<sup>2</sup> Reforms are also reflected in the 2019 Forestry Law, 8th National Socio-Economic Development Plan (NSED) 2016–2020; the localization of Sustainable Development Goals (SDGs); Water Law (2017), Land Law (2019); Tourism Strategy 2006–2020; National Strategy on Climate Change 2013–2020, Climate Change Action Plan 2013–2020, and 2015 Nationally Determined Contribution (NDC) to the Paris Agreement; the emerging National REDD+ Strategy (NRS) to 2025, NRS Vision to 2030; the National Land Use Master Plan; and the National Green Growth Strategy (NGGS) for 2030.

<sup>3</sup> The origin of the 70 percent target was a discussion at the national forest conference in 1989. The GoL took the decision based on the country's original historic forest cover. Since that date, the target has not changed.

<sup>4</sup> REDD+ = Reducing emissions from deforestation and forest degradation; mechanism defined within the United Nations Framework Convention for Climate Change with the objective to provide incentives to reduce deforestation and degradation.

<sup>5</sup> World Bank 2020. Lao PDR: Emission Reduction Program Document.

<sup>6</sup> Environmental Challenges and Opportunities for Green Growth in Lao PDR (Assessment on the State of Environment) (World Bank 2020).

increase pressure on forests. For instance, the international drive to reduce the use of plastic will induce significant demand for alternatives, including products made of paper and wood fibers.

**Investment in pulp and forest industry and forest plantations is expanding in Lao PDR, driving increased demand for land and forest resources.** This development is both a significant opportunity and a risk, with approximately 400,000 ha of degraded forestlands being identified by the government for private plantation investments from three to four firms (as of June 2020). The recent opening of degraded lands in the state's PFAs to industrial tree plantations could contribute significant jobs and government revenues. Durable shared prosperity and poverty reduction from this opportunity can only be secured by continuing to improve the regulatory framework and enhancing government capacity to transparently manage the new challenges in a socially and environmentally sound way. This would involve forging partnerships among firms, villagers, and government and practicing good forest governance to ensure villages prosper, benefits are shared, private profits are possible, environmental risks are managed, and government revenue streams are sustainable.

**Although the landscape concept is an increasingly accepted approach to better manage trade-offs and mutual opportunities among diverse sectors' objectives, most key pieces of national forestry legislation do not prescribe cross-sectoral collaboration.** These include the Forestry Law (2019) and the decrees on Protected Areas, protection forests, and production forests. A second constraint is that individual projects often opt to bypass these cross-sectoral institutional bodies, favoring more immediate project outcomes and results. The NGGS for 2030 and the new SEA and ESIA policies, all enacted in 2019, are steps toward a more integrated landscape approach. Finally, national plans and strategies could better support local implementation needs and build up approaches, tools, and mechanisms for coordinating development.

**Implementing the government's new policies and plans requires significantly better equipped human and financial resources.** The government's forward-looking forest agenda requires more effective forest governance, increased budget, and stronger teams. This situation is beyond the institutional capacities in the short term, even with donor support, due to, for example, a thin labor market in Lao PDR. Increasing forest cover to 70 percent through government interventions alone would cost at least US\$200 million if natural regeneration were applied or US\$1.4 billion if gap planting were used (or US\$80–500 per ha).<sup>7</sup> Forest conservation (that is, the protected area system) is chronically underfunded and largely donor supported, while 'forest protection' for watershed services is largely unfunded despite the large area of designated protection forest. The government, therefore, has recognized the importance of private sector participation and opened opportunities to attract business developers and investors. However, increased private sector participation in the sector hinges upon a shift toward a transparent forest economy that emphasizes the government's role in policy, planning, coordinating, monitoring, and supervision of activities carried out by private initiatives and villagers in line with stated forest management objectives. This transition will further require enhanced administration capacity.

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<sup>7</sup> This would require reforestation of about 2,800,000 ha of degraded forest. Estimate from the Scaling-Up Sustainable Participatory Forest Management (SUFORD-SU) project.

**Public forest administration is highly dependent on external support.** Currently available financing from government sources is just a fraction of the needed budget to cover the extensive forest areas.<sup>8</sup> During 2013–2018, only 7 percent of the Forest Department budget, or on average LAK 140 million per year (US\$16,000 per year), of its operational budget was financed by the government; the remainder came from donor projects. The average annual budget for Protected Areas is approximately US\$5,000 which leaves these parks exposed to encroachment and degradation.

**Lao PDR’s vision for the forest agenda needs urgent implementation support from both the public and private sectors to achieve and sustain the vision.** Rapid changes driven by some international investors (mainly pulp) are under way and represent a good opportunity for job creation but could result in large environmental and social impacts if the government does not implement due process and transparent licensing processes and support for communities’ rights and livelihoods. Nature-based tourism also requires improvements in the enabling environment, effective planning, private sector participation, and well-managed multisector interaction.

### Lao PDR forests at a crossroads

**Lao PDR’s forestry sector is now at a crossroads—as it moves away from an extraction-based industry, it now has the opportunity to transition to a modern and sustainable forest-based industry that drives economic growth, recovery, and resilience.** The ongoing shift toward a new forest economy based on partnerships with private initiatives and local villagers can be accelerated, encouraging investors to make long-term investments in forest-based activities and facilitate the needed community support. During times of international employment contraction after COVID-19, the current opportunity is to massively employ villagers in restoring of forests, support for forest plantations, building of tourism facilities in Protected Areas such as trails and structures, provision of labor for protective green infrastructure such as erosion management structures accompanied by natural solutions such as reforestation of steep slopes, community patrols to counter poaching and illegal logging, and other labor-intensive activities to help accelerate the shift to this new economy.

**In Lao PDR, this transition could unlock economic opportunities in three key main areas:**

- **Sustainable large-scale plantation forestry.** The recently launched but rapidly progressing policy shift to open up to the plantation industry has not gone unnoticed by global investors. Although there are uncertainties with regard to COVID-19 impacts on the investment appetite, it seems reasonable to expect that, if policies are implemented successfully, an industrial plantation forest resource of 300,000 ha could attract in-country investment of US\$5 billion, result in the creation of at least 100,000 new jobs from plantations and expanded downstream wood processing, generate up to US\$1.5–2 billion per year in export earnings, reduce poverty, and contribute to climate action.
- **Nature-based tourism.** The economic benefit from tourism, which in Lao PDR is highly nature based, could be up to US\$600 million over 10 years, with the direct contribution of tourism to

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<sup>8</sup> The operational cost of managing PFAs has been estimated at US\$0.65 per ha, or about US\$2 million per year (SUFORD-SU 2019). The cost of managing Protected Areas ranges from US\$1 to US\$2 per ha (ICBF 2018) or US\$5 million per year. The cost of protection forest management and forest areas outside the three forest categories is estimated at US\$1 per ha, or about US\$8.2 million per year (SUFORD-AF 2011). In an international comparison, these are low figures; the average cost of forest management in tropical countries has been estimated at US\$6.25 per ha (Köthke 2014).

GDP doubling to at least 8.4 percent (the global average is 10 percent), assuming a global recovery from COVID-19. The currently low tourism flux offers Lao PDR the opportunity to prepare itself for later demands. The concentration of biodiversity-rich and attractive landscapes provides an excellent potential and opportunities for nature-based tourism that responds to the increasing regional demand.

- **Village forestry.** Decentralized community forestry, known as Village Forestry in Lao PDR, is a vehicle to manage forests for multiple benefits in a sustainable and equitable manner. There are rights given to the villagers, such as some commercial use of timber found in the Village Use Forests, and the procedures for collecting NTFPs for commercial use are formalized. This now opens the opportunity for economic development in already degraded areas for village forest plantations, outgrower schemes, NTFPs, and benefit sharing.

**Despite the increasingly recognized economic and poverty reduction contribution, required funding mechanisms will need to be supplemented by innovative funding sources such as payments for ecosystem services (PES), results-based carbon finance, and private sector financing.** The provision of ecosystem services through good management of forested watersheds reduces sedimentation in hydropower reservoirs and expands the lifetime of investments, reduces impacts of disasters, protects rural roads and buildings, and provides steady water supply that otherwise would need to be managed through expensive infrastructure. Nam Theun 2 hydropower facility provides a model for PES; until 2035, a portion of revenues from the facility are being directed to the management of Nakai Nam Theun National Park upstream and its enclave villages, to reduce downstream environmental impacts. The economic service functions of forests have been clear for some time in Lao PDR, through, for example, the designation of ‘Protection Forest Areas’ (PtFAs) (distinct from Protected Areas) meant to provide watershed services. This land use designation is Lao PDR’s largest, accounting for approximately half the country, but are not yet methodically and professionally managed.

## Recommendations

**While the government has made tremendous improvements in the policies, approaches, and technologies used for sustainable forest management over the last three decades, there remain major untapped opportunities that could help in reaching its long-standing objective of 70 percent forest cover.** Going forward, effective management will require reorientation of skill development and capacity building, reforms to the legal framework, scale-up of sustainable livelihoods, strengthened village forest management, an adequate resource allocation from the government coupled with enhanced effectiveness in using available resources, increased financing and collaboration with private sector actors committed to sustainability, and innovative public-private management approaches. The government could also benefit across sectors by adopting a holistic approach to development where forest-smart, cross-sectoral interventions under an integrated landscape framework clarify and manage trade-offs and opportunities between various land uses, including forests. Village Forestry will need to remain in the center of interventions with special focus on integrating gender-relevant solutions. The interventions would accommodate a range of cross-cutting themes such as empowering women and other marginalized groups, mitigating flood and erosion risks, addressing climate change, and providing inclusive and affordable access to forest and nonfarm livelihoods and green jobs. The government can seek ‘win-win’ solutions among various sector interventions that involve or affect forests. In this view, good forest governance and management contribute to better sector performance of hydropower, agriculture

(especially downstream irrigated crops), and tourism, while good transport planning and maintenance should contribute to maintaining forest health.

**Going forward, it is proposed that the government considers 21 key recommendations across four strategic areas—governance, private sector, village empowerment, and financing** (Error! Reference source not found.). While each of these will likely require a combination of cross-cutting investments and activities to be sustainable, they are organized in 21 actionable recommendations.

**Table 1: Summary of priority actions recommended to strengthen Lao PDR’s forestry sector**

<b>Challenge</b>	<b>Recommendation</b>
<b>Governance</b>	
Building capacities to plan, implement, monitor, and enforce existing policies and plans	1. Further invest in capacity building, with emphasis on establishing a well-functioning authorizing environment for public-private partnerships (PPPs) and utilizing law enforcement technologies.
Strengthening national and provincial coordination to reconcile competing interest for land uses and identify mutual opportunities	2. Establish a Landscape Investment Platform to support multisector dialogue and decision-making to balance trade-offs among resource uses and secure mutual opportunities among sector projects.
Institutional arrangements for forest law enforcement are complex	3. Review the institutional setup for forest law enforcement to make it more effective and to eliminate potential for conflicts of interest; reinforce interagency law enforcement cooperation.
Making the 2019 Forest Law even more successful by clarifying interpretations involving objectives of production forests; the roles, rights, and responsibilities of villages and firms; and delineations of three forest categories	4. Develop implementing regulations related to the 2019 Forestry Law, to enhance clarity and consistency and to eliminate inconsistencies and gaps in the legal framework. 5. Decide on the continuity of the logging ban to consequently adjust (or not) management objectives of the PFAs. 6. Consider re-delineation of three forest categories to ensure their structure is optimized.
Improving efficiency of protected area management	7. Consider allowing private investment in PFAs. 8. Consider the formation of a Department of National Parks and Wildlife Conservation in MAF.
Better integrating infrastructure planning	9. Plan for rural roads and infrastructure with a landscape perspective to guarantee risks to biodiversity, forests, and environmental conservation are minimized. Seek economic complementarities among sectors, such as upstream forest protection with downstream small irrigation development.
Better integrating disaster risk management	10. Scale up nature-based solutions and green infrastructure for disaster resilience.
<b>Private sector</b>	
Advancing the potential for forest plantation and wood industry	11. Streamline and standardize key investment and licensing processes for the plantation industry, assess carrying capacity of landscapes for plantation before licensing of plantation industry, promote environmentally and socially sustainable practices, and improve governance to attract responsible companies. 12. Invest in public-private research and development (R&D) on good silvicultural practices. 13. Increase the supply of legal wood products by strengthening and formalizing the framework for timber tracking, building on the ongoing EU Voluntary Partnership Agreement (VPA) work.
Strengthening the enabling environment for private companies and	14. Analyze and collaborate with national and regional financial institutions to promote viable financing package for forest



<b>Challenge</b>	<b>Recommendation</b>
forest small and medium enterprises (SMEs) to access finance	<p>plantations, including performance grants and incubation funds.</p> <p>15. Promote comprehensive assessment of enabling environment for forest SMEs (including credit systems, labor capacity, licensing, logistics, information systems, and so on).</p> <p>16. Consider tax or other incentives for environmentally responsible and certified companies, especially for SMEs.</p>
Scaling up nature-based tourism	17. Improve the enabling environment for demand-led sustainable private sector investment in key landscapes, especially in and around key Protected Areas, supported by clear and transparent concession procedures.
<b>Village empowerment</b>	
Untapped potential for village forest management to fully empower local people for jobs, livelihoods, income, and government revenue	18. Clarify land and tree tenure arrangements in forestland areas and unlock the potential of villagers to sell sustainably harvested timber from the forestlands allocated to villages and provide extension and market services to them to optimize village income and government revenue.
Limited efforts to scale up sustainable livelihoods and jobs that compete with those that incentivize encroachment, along with further job and income shortages due to COVID-19	19. Scale up livelihood development around forest areas through intensification, sustainable natural resource management, green infrastructure and natural solutions, and cross-sectoral collaboration spatially (considering the economic geography of interventions).
Increasing demand for wood fuel	20. Develop policies and incentives to promote sustainable wood fuels, increase efficiencies of kilns and cookstoves, and promote alternative energy sources. Promote households to shift to electricity for at least some cooking can help absorb Lao PDR's excess electricity production, generate government revenues, and reduce wood fuel demand.
<b>Financing</b>	
Addressing gaps in government financing to manage the forest estate effectively	21. Increase public financing for monitoring and law enforcement, extension, and activities that have potential to leverage financing from the private sector.
Improving enabling conditions to increase public-private financing for forests	<p>22. Seize untapped opportunities to benefit from PES schemes for hydropower and other sectors.</p> <p>23. Seize untapped opportunities to benefit from REDD+ and other climate finance options.</p>

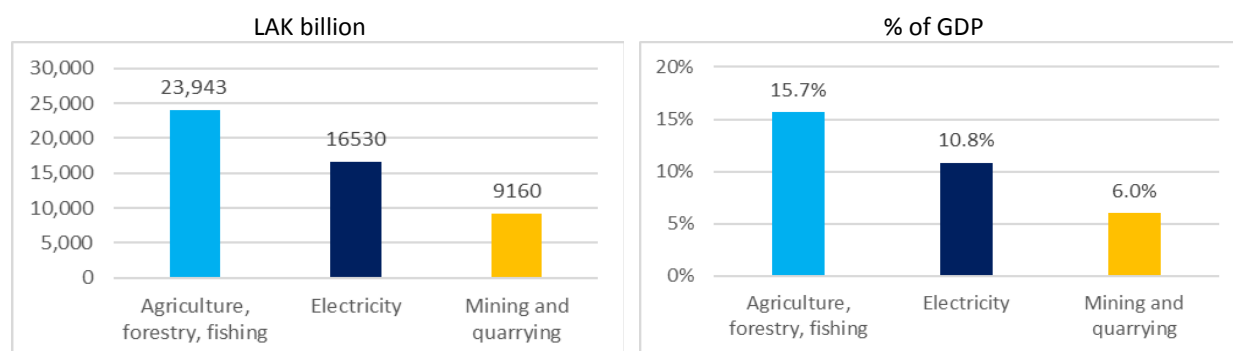
# 1. Introduction

## 1.1 Country context

**From 2005 to 2015, Lao PDR achieved rapid economic growth and a significant decline in poverty, although inequality has widened.** Since 2000, gross domestic product (GDP) growth has averaged around 8 percent per year. The poverty rate declined from 34 percent in 2003 to 23 percent in 2013 (Pimhidzai et al. 2014)<sup>9</sup>, yet the Gini coefficient increased from 32.5 to 36.2, reflecting lower gains for the bottom 40 percent and higher poverty concentrations in rural areas, most of which are forestland. The incidence of poverty (using the international poverty line) is projected to have declined to 18.4 percent in 2019 (World Bank 2020e). The impact of coronavirus disease 2019 (COVID-19) on the Lao economy is currently being assessed; earlier and even very recent projections of growth and poverty rates are being revised.

**This growth has largely relied on the short-term liquidation of natural capital, but slower economic growth in recent years indicates there are limits to this pattern of growth.** While Lao PDR's natural resource endowment makes up about half of the country's wealth (57 percent of total wealth in Lao PDR in 2014<sup>10</sup>), there is a risk that the value of the asset cannot be maintained and there are also opportunities for economic renewal. Agriculture, forestry, and fishing contributed the largest share of national wealth, followed by electricity production and mining and quarrying (Figure 1). While value added per worker is many times higher in electricity production and mining and quarrying than in agriculture, forestry, and fishing, the latter sectors account for over 65 percent of total employment and form the basis of the livelihoods of the vast majority of the poor (World Bank 2020a).

**Figure 1. Natural resources share of national wealth**



Source: Produced from Lao Statistics Bureau 2019.

**Forests and Protected Areas account for more than half of the natural resource endowment** (World Bank 2018a), but between 2000 and 2015, forest cover fell by 2.9 percent and the quality of the remaining forests was degraded (DOF/Forest Inventory and Planning Department (FIPD) 2018). The decline in natural assets, and the ecosystem services that they provide, come at a high cost. In 2017, natural capital depletion amounted to about 4.8 percent of GDP, mostly due to forest loss (World Bank 2020b).

<sup>9</sup> Lao Expenditure and Consumption Survey in 2012/13. National poverty line is equal to LAK 203,613.6 per month in 2012 (about US\$2.86 in purchasing power parity 2005 per day).

<sup>10</sup> The estimated NCV in Lao PDR in 2018 is US\$149 billion or over US\$21,000 per capita. Crop land, household water supply, timber production, hydropower, and nature-based tourism have the largest values. This is followed by fisheries and wild food, watershed protection (substantially underestimated due to lack of data), wood fuel, and irrigation.

Meanwhile, in 2018, widespread flooding resulted in a slowdown in GDP growth to 6.3 percent (down from the expected 7 percent). In 2019, more floods and droughts, reduced agricultural production from a caterpillar infestation, and a decline in growth in wholesale trade are expected to leave GDP growth at around 5.2 percent (World Bank 2020e).

**The state of natural capital disproportionately affects not only vulnerable rural communities but also key economic sectors such as energy, agriculture, industry, and tourism.** Degradation and loss of forest resources and biodiversity undermine the ability of the natural resource base to provide livelihoods, jobs, food, and watershed services and to reduce persistent risks from floods, landslides, and droughts. More than 70 percent of Lao PDR's population depends on forest resources, soil, wetlands, and fish for income and nutrition (World Bank 2020b) and nature-based tourism is one of the main interests for more than half of the international visitors coming to Lao PDR (World Bank 2019a). Overall, the total annual loss of value in ecosystem services (for example, food availability, wood production, carbon sequestration, and water regulation flows) was estimated at US\$472 million (2007 base year) (Global Mechanism of the UNCCD 2018).

**Natural capital degradation also amplifies the impacts of natural disasters and climate risks that are already on the rise.** In the 2010/11 Census of Agriculture, 31 percent of rural villages reported that they are prone to flood and 70 percent reported being drought prone. Recent climate projections show increased intensity and frequency of rainfall and flooding risks during wet seasons and longer dry seasons accompanied by more severe droughts (World Bank 2020d).<sup>11</sup> These risks also negatively affect the country's hydropower generation, which has an estimated US\$283 million of revenue at risk (USAID 2014). Overall, the cost of the 2018 floods was equivalent to 2.1 percent of GDP or 10.2 percent of Lao PDR's annual budget (World Bank . 2018b).

**The global COVID-19 outbreak has a significant negative impact on Lao PDR's economy.** This slowdown will have a negative effect on rural livelihoods, highlighting the significance of forest landscapes as a safety net for the rural populations in terms of food, medicines, livelihoods, and jobs. Lack of jobs has increased migration to the rural areas and natural resources might come more under pressure than before. Most Lao businesses are small and medium enterprises (SMEs), which are especially vulnerable to economic disruptions. In addition to the direct impact of COVID-19, the anticipated slowdown in the global economy will likely reduce trade and disrupt global manufacturing supply chains that involve Lao PDR. Highly affected countries like China, one of Lao PDR's most important trading partners, are experiencing dramatic reductions in economic activity, with a high risk of damage to financial markets (World Bank 2020c).

**New infectious diseases and viruses tend to amplify negative consequences for the most vulnerable citizens, namely children, the elderly, and ethnic minorities, who typically reside in rural and forest areas.** At the same time, wildlife habitats in Southeast Asia's forested areas are often the source of the spread of zoonotic diseases, in particular COVID-19. Zoonotic disease emergence is the combined result of habitat loss due to forest encroachment for agriculture and livestock as well as the hunting and consumption (and associated trade and marketing) of wild meat of potential vector species such as bats, pangolins, and other small mammals. Restoring natural habitats and engaging in community-based information and outreach campaigns can be vital in preventing and slowing contagion in case of pandemic,

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<sup>11</sup> The mean annual rainfall is projected to increase by 10–30 percent by 2050 in the eastern and southern parts of the country in particular, largely during the wet season.

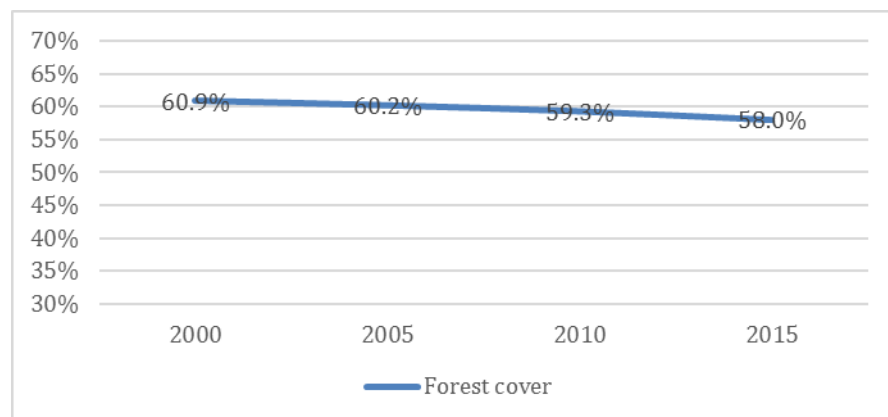
while at the same time providing meaningful support to the law enforcement efforts to combat wildlife and forest crimes (World Bank 2020b).

**To ensure a more sustainable growth pathway and reduce risks from natural capital degradation, Lao PDR has adopted a Green Growth Framework based on nature-based solutions at the landscape level.** With its new 2030 National Green Growth Strategy (NGGS), Lao PDR aims to build long-term wealth by the careful management of natural capital. This includes sustainably managing forests to help reduce the risks of climatic effects becoming disasters. As confirmed in the Lao PDR Nationally Determined Contribution (NDC) for the Paris Agreement on the United Nations Framework Convention on Climate Change (UNFCCC), the government foresees the forest sector as the most important contributor to the mitigation of climate change through emissions reductions from slowed deforestation and degradation rates and as a carbon sink from restoration of degraded forests and barren forestland. A well-coordinated, cross-sectoral implementation strategy executed effectively at the forest landscape level will maximize the sector’s contribution.

## 1.2 Forest sector context

**Lao PDR has among the highest portion of forest cover among countries in the region, although forest cover declined by 2.9 percent between 2000 and 2015 to 58.0 percent (Error! Reference source not found.) and forest quality also deteriorated (Figure 8).** Anecdotal evidence and initial carbon accounting assessments suggest that forest cover loss has slowed in the last few years.

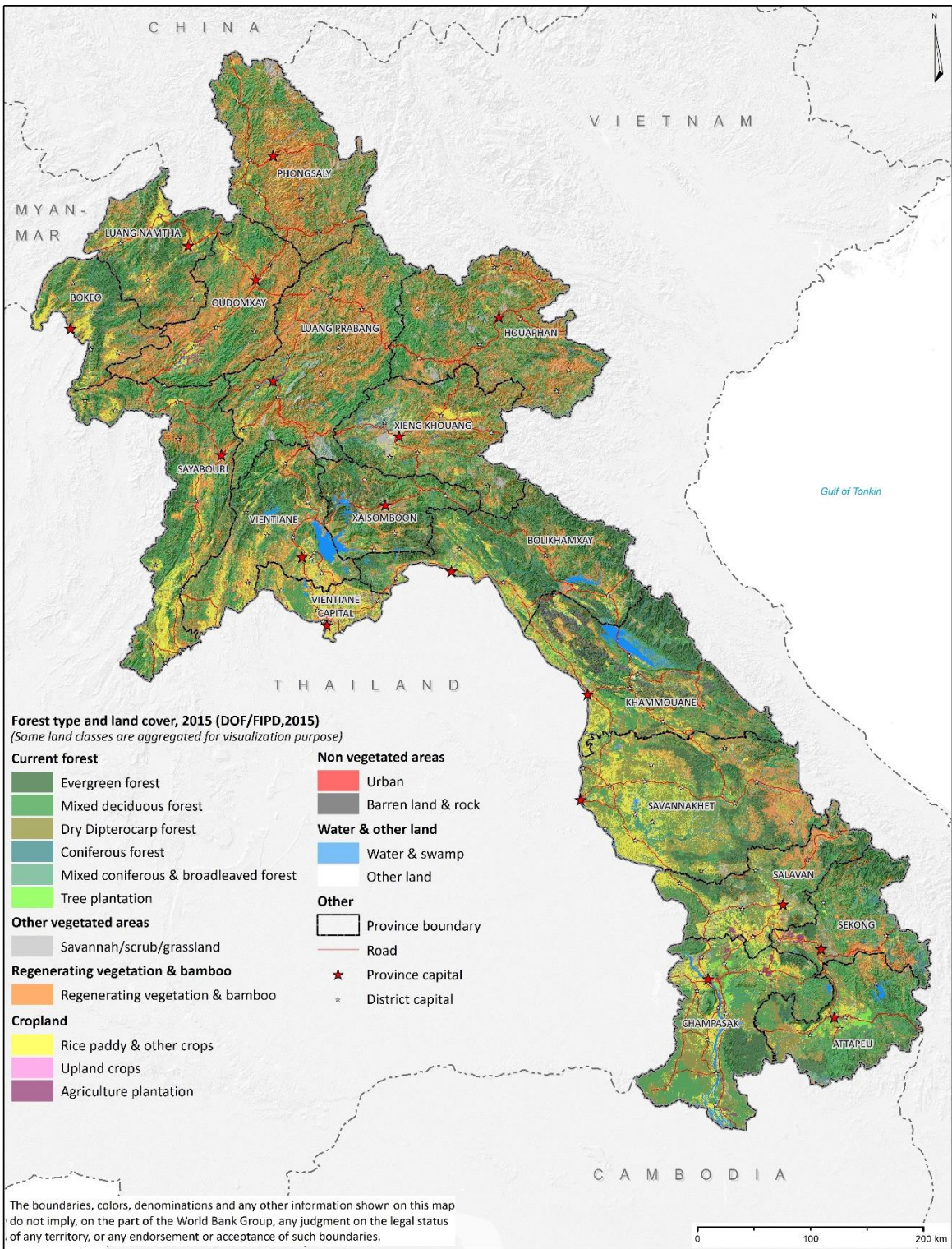
**Figure 2: Forest cover change in Lao PDR 2000–2015**



Source: National Forest Inventory, Ministry of Agriculture and Forestry (MAF) FIPD 2018.

The most common forest type in mixed deciduous, followed by dry evergreen and evergreens, dry dipterocarp, mixed deciduous, and mixed broadleaf and coniferous. See Figure 3 for a map of the forest type and land cover in Lao PDR in 2015.

Figure 3: Map of forest type and land cover in Lao PDR in 2015



Source: National Forest Inventory, MAF FIPD 2018.

According to the Forestry Law of 2019, the country continues to be legally divided into three State Forestlands:

- (a) Production Forest areas (or Production forestland areas) (PFAs) covering 3.1 million ha are managed primarily for production of wood, fiber, fuel, and non-timber forest products (NTFPs). However, the PFAs are currently subject to a logging ban introduced by the government in 2013. An estimated 1,500 villages (GoL 2017), or some 900,000 people,<sup>12</sup> are in and around PFAs.
- (b) Protection Forest Areas (or Protection forestland areas) (PtFAs) are meant to be managed primarily for watershed protection, to reduce natural resource and disaster risks to key infrastructure and other assets, and to support national defense and NTFPs. They comprise the largest forestland by area, covering 7.8 million ha (or one-third of the total land area of Lao PDR). They contain only about 57 percent forest cover, the rest being agricultural land and other land uses. They are not covered by any consistent management regime. An estimated 1,911 villages,<sup>13</sup> or some 1,150,000 people,<sup>14</sup> are in PtFAs.
- (c) Conservation forestland areas (CFAs), more commonly referred to in English as Protected Areas (PAs), which are managed for protection of biodiversity, cover 4.5 million ha, or 19 percent of the country's land area. Many of these Protected Areas possess globally significant biodiversity and habitat integrity, which is a comparative advantage for tourism. There are 1,207 villages, or 840,000 people (Parr et al. 2019),<sup>15</sup> in and around the three national parks and 10 national Protected Areas (NPAs) which represent about 85 percent of total area of conservation forests.

On average, 67 percent of the land area in the three forest categories is covered with forest; the proportion is highest in the conservation areas and lowest in PtFAs.

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<sup>12</sup> The number of people is estimated by multiplying the number of villages with the average number of households in rural villages and the average number of people in a rural household. The average number of households in rural villages, 110 households per village, was estimated based on the sampled villages in the Lao Social Indicator Survey II (2017), and the average number of people in a rural household is based on the data in the Population and Housing Census in 2015. It should be noted that estimates on the number villages overlap since one village may have territory in all three forest categories.

<sup>13</sup> World Bank, Inventory of National Protection Forestland Areas, Lao PDR, 2020 (unpublished).

<sup>14</sup> Calculated as above for PFAs. See comment above on overlap.

<sup>15</sup> See comment above on overlap.

**Table 2: Area of state forestland and estimated forest cover, as reestimated in 2015**

State forestland area	Total area (million ha)	Forest cover (forested area)		
		Million ha	% within category	% of total land area
PtFA	7.98	4.62	57.9	20.0
Conservation forestland area (Protected Areas)	4.66	3.47	74.4	15.1
PFA	3.10	2.14	69.2	9.3
Areas outside the three forest categories	7.31	3.14	40.5	13.6
Plantation (included in the forest areas inside and outside the three forest categories)	—	0.14		0.6
Total, all land types	23.05 <sup>a</sup>	—		—
Total, forest cover		13.37		58.0 <sup>b</sup>

Source: National Forest Inventory, MAF FIPD 2018.

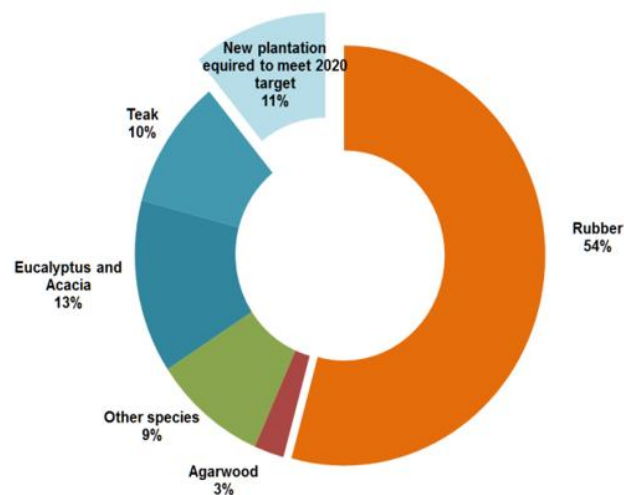
Note: a. The total land area lying within Lao PDR’s internationally established boundaries is revised to 23.05 million ha, as provided by the National Geographic Department, based on its remote sensing survey.

b. The forest coverage of 58 percent includes 0.14 million ha of forest plantation.

Within each of these forestland areas, villages also possess their own village forests, which are further designated by production (Village Use Forests), protection, and conservation uses. The new Forestry Law of 2019 establishes the rights and responsibilities for villages to manage their forests, including for timber in some areas. Specific procedures and guidelines for this potentially transformative decentralized management regime have not yet been developed.

There is also a sizable area (3.3 million ha) of forests and potential forests outside the three state forest categories. Most tree plantations have been established there until recently when they were not allowed inside the three forest categories including the Production Forests. The plantation area is approximately 480,000 ha, of which rubber trees cover more than half, followed by company-owned eucalyptus and acacia plantations and smallholder-owned teak plantations (Figure 4).

**Figure 4: Area of plantation species and target for 2020**



Source: Smith et al. 2017.

**Lao PDR has three high priority ecosystems, which are reasonably well represented within the Conservation Forest Area system (National Parks, NPAs, and other preserves), although some notable gaps remain.** These are (a) the wet evergreen forest ecosystem in the Annamites bordering Vietnam, (b) the massive karst formations of central Lao PDR, and (c) the montane forest ecosystem in the Greater Annamites. To strengthen its commitment to conservation, the government announced the designation of the first two National Parks in February 2019, including Nakai Nam Theun National Park, the largest tract of wet evergreen forest in the world, and Nam Et-Phou Louey across three northeastern provinces. In January 2020 Hin Nam No in central Lao PDR became the third national park.

### 1.3 Contribution of forests to livelihoods, jobs, and development

**There are important opportunities for diversified growth and jobs centered on the growing demand for wood and tourism services.** If implemented successfully, an industrial plantation forest resource of 300,000 ha could account for 1.2 percent of Lao PDR's land area of 23.7 million ha, attract in-country investment of US\$5 billion, create 100,000 or more new jobs from plantations and expanded downstream wood processing, earn up to US\$1.5–2 billion per year in export earnings, reduce poverty, and contribute to climate action (World Bank 2019e). In general, one job is created for 3 ha of plantation. It is estimated that the economic benefit from nature-based tourism could be up to US\$600 million over 10 years, with the direct contribution of tourism to GDP doubling to at least 8.4 percent (World Bank 2019a).

**Current contribution of forestry to GDP is limited as a result of the logging ban and degradation of production forest areas (PFAs).** Timber royalties have been a small fraction of the resource rent of exports in the past decade. The resource rent of timber exports amounted to as much as US\$6 billion from 2009 to 2018. Timber royalties were only US\$209 million, indicating a huge loss in Government of Lao PDR (GoL) revenues compared to previous years. As much as 90 percent of the state's national PFAs are now in great need of regeneration. The state's national PtFAs, the largest land use classification in the country, are likewise seriously degraded and have an estimated 59 percent of their forest cover remaining.

**Forests are a significant contributor to poverty alleviation with two-thirds of the population relying on forests for food, fuel, fiber, and medicine, and more than 39 percent of rural family income is derived directly from NTFPs.** The economic value of NTFPs to households has been estimated at US\$489 per year for subsistence consumption and US\$204 per year for cash income (Foppes and Samontry 2010). Forests also continue to be an important source of household energy, with about 91 percent of the population continuing to use solid biomass for cooking and heating purposes (World Bank 2019b). Consumption by urban dwellers has been estimated at more than 280,000 m<sup>3</sup> per year, with a value equivalent to more than US\$45 million (Sopthilath 2012). Charcoal is also a rapidly increasing source of energy; use have increased from as little as 6 percent in 2012 to 24 percent in 2019. Families use from 1.86 kg charcoal a day (rural) to 2.33 kg a day (urban).<sup>16</sup>

**Natural resources are also important for foreign tourism to Lao PDR as well as for domestic tourism and recreation now and in the future.** There are nearly 1,200 natural sites for tourism, and 4.2 million foreign tourists visited Lao PDR in 2018. Tourism contributes 4.4 percent (US\$811 million) of GDP in Lao PDR and directly supports 3.5 percent of jobs. The fact that both figures are below the global averages of 10.4

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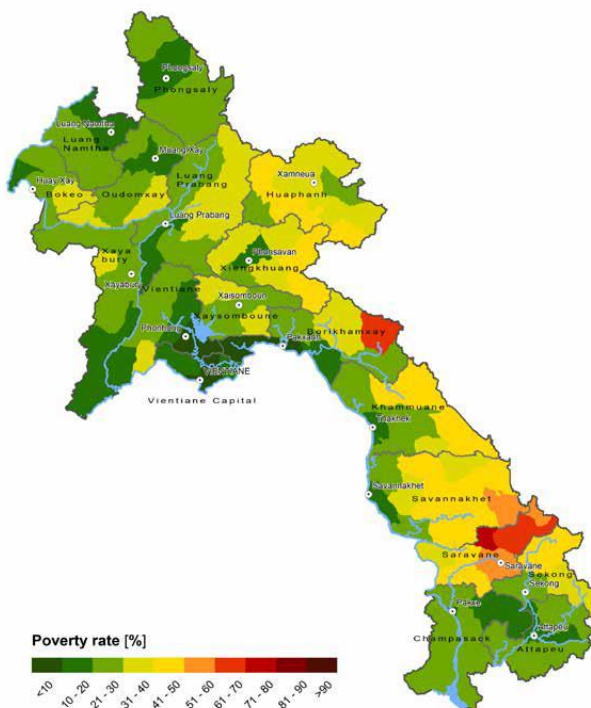
<sup>16</sup> Sepp, Steve. 2014. Multiple-Household Fuel Use: A balanced choice between fuelwood and charcoal. Published by GIZ



percent and 9.9 percent, respectively, suggests that there is substantial potential for growth (World Bank 2019a). There is a large regional market for nature-based tourism on Lao PDR’s doorstep. In 2018, tourism to Asia grew by 8 percent, a significant increase in comparison with the global average of 6 percent, while inter-Asian tourism grew by an even greater number of 10 percent. China was a major driver of growth in the region (more than 13 percent) and is projected to continue its importance for Lao PDR tourism with the opening of the China-Lao PDR Railway soon. Thai tourists continue to be the largest market for Lao PDR (World Bank 2019a). While the COVID-19 pandemic will create a temporary slowdown, the sector will eventually rebound, and overall trends could continue.

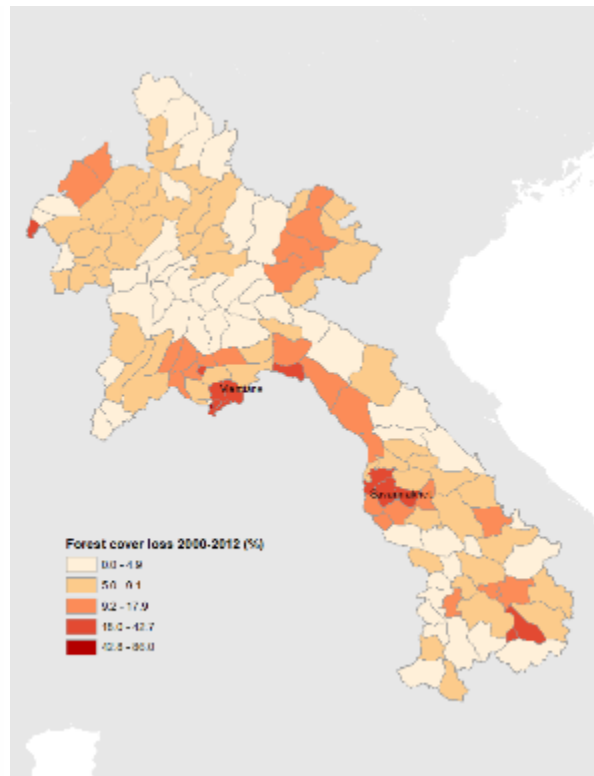
**The poverty safety net of forests is well demonstrated when the country forest map is overlaid with the poverty map, clearly showing that the rural poor are mostly located in forested areas in Lao PDR (World Bank and FIP 2019).** Figure 5 and Figure 6 suggest that the poorest districts are more likely to be in provinces in the south where forest cover is higher and ethnic diversity is highest. In these areas where access to markets, institutions, and education is difficult, forests alleviate poverty by providing food, raw materials, medicine, and cash crops and are an essential part of the rural communities’ cash and non-cash income.

Figure 5: Poverty headcounts (district level), 2012/13



Source: Taken from Coulombe et al. (2016) in World Bank and FIP (2019).

Figure 6: Forest cover loss (district level), 2000–2012



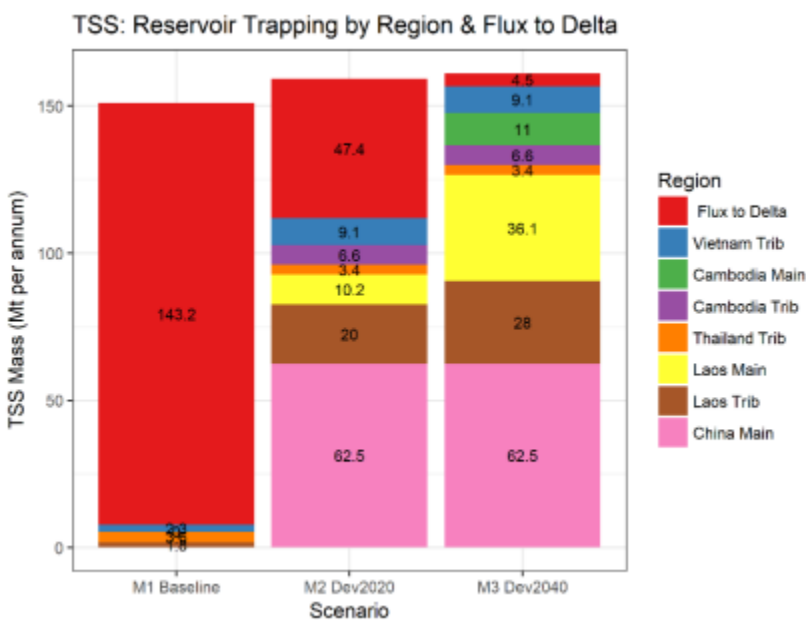
Source: Author’s estimations using Hansen et al. data set in World Bank and FIP (2019).

**However, many other benefits of forests are either not reflected in GDP or misattributed to other sectors.** Forests provide a substantial share of the population’s food consumption, energy for cooking and other purposes, and other NTFPs—benefits that are imperfectly reflected in GDP. Forests also provide

other important ecosystem services that are typically not traded in markets, including recreational values, regulation services, soil erosion reduction, and mitigation of natural hazards such as flash floods, seasonal flooding, landslides, and droughts. Reduction of soil erosion and natural hazards helps protect water quality (for example, reduced turbidity), protect infrastructure and productive assets, and prolong their useful life (for example, reduced sedimentation of reservoirs).

**Considering the importance of hydropower development in Lao PDR, it is worthwhile emphasizing the dependency of water infrastructure on the natural conditions of the upstream catchment supplying runoff and the relevance of integrated water resources management (IWRM) which takes into account the environmental services provided by forests.** Among many other benefits, healthy forests reduce flood peaks due to increased infiltration and detention, increase the baseflow due to infiltration, and reduce erosion and sediment transport due to reduced flood peaks and lower flow velocities. Reservoir sedimentation is a major cause of underperformance of dams worldwide and of particular concern to the efficiency of dams in Lao PDR and is accelerated by the degradation or removal of upstream natural vegetation. While infrastructure solutions generally exist, these are often highly expensive and inefficient, necessitating natural solutions. In addition, downstream, reduced sediment transfer due to trapping upstream may affect fisheries and agriculture due to lower nutrient inputs to the system. Although reliable data are scarce, one study projects the vast increase of sediment trapping in reservoirs along the Mekong. A global World Bank study on sedimentation including the Mekong River is currently under way.

Figure 7: Projected sediment trapping in reservoirs on the Mekong



Source: <http://www.mrcmekong.org/assets/Publications/Mekong-sediment-from-the-MRC-Council-Study-Technical-notedocx.pdf>.

**Well-functioning forest ecosystems enhance natural resilience to adverse impacts of hydrological variability.**

A high resilience of forest ecosystems leads to a reduced vulnerability of the local population, if these measures are understood by local stakeholders and ownership of these measures can be created. Nature-based solutions aim at the conservation, rehabilitation, and sustainable management of ecosystem, such as forests, wetlands, water bodies, and agriculture; provide livelihood and human well-being; and are instrumental in mitigating

disasters and adapting to a changing climate. As such, they can be a cost-efficient and highly effective measures to complement traditional infrastructure developments.

**Despite these significant contributions of forests to economic development and poverty reduction, forest management is not on a sustainable pathway.** Lao PDR is now starting to explore important opportunities for diversified growth and jobs in the forest sector. There is significant potential to continue to reduce poverty and expand the economy while conserving forests into the future, but good policies will now need implementation support. The subsequent chapters of this report detail the challenges and opportunities associated with this transformation.

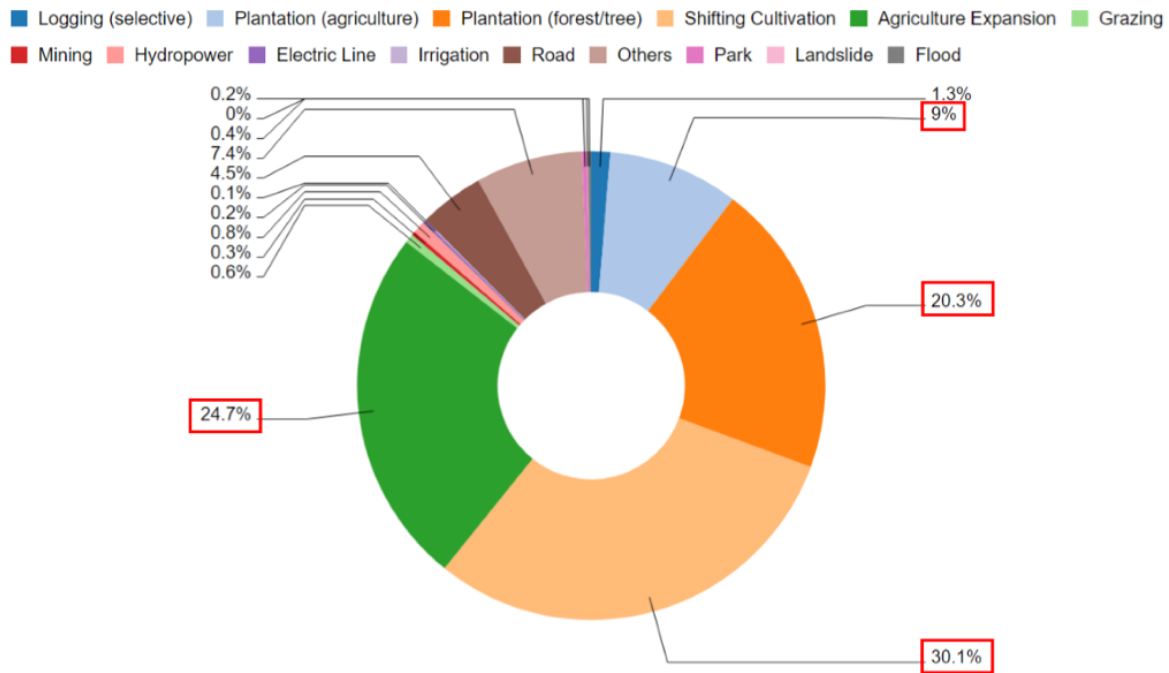
#### 1.4 Drivers of deforestation and degradation in Lao

**In Lao PDR, deforestation and forest degradation have historically been driven predominantly by agricultural expansion, followed by the establishment of tree plantations and by infrastructure development.** An assessment on the forest area disturbed (deforested or degraded) in 2005–2015 identified agriculture as the driver in more than 64 percent of the total area (Figure 88). Shifting cultivation in traditional rotational forest/rice systems (Box 1) was the leading cause (30 percent), followed by small-scale agricultural expansion (25 percent) and agricultural plantations (9 percent). Apart from rice, the main agricultural products driving deforestation include sugarcane (41 percent), maize (19 percent), and cassava (13 percent) (Figure 99**Error! Reference source not found.**). Forest plantations were also identified as a major driver (20 percent), of which nearly 90 percent were for rubber plantations. Although a road itself does not cause deforestation, the disturbance caused by roads and infrastructure was found to be the driver of around another 5 percent of forest area disturbed (Haraguchi 2017)<sup>17</sup>. The roads also tend to have an indirect multiplier effect because they facilitate access to forests and their clearing. While mining and hydropower development can be locally significant drivers, their impact has been limited (1 percent) and the government has recently adopted a more critical stance toward hydropower projects with projected negative impacts on Protected Areas, with two hydropower projects cancelled and one being developed under strict conditions on its geographical imprint.

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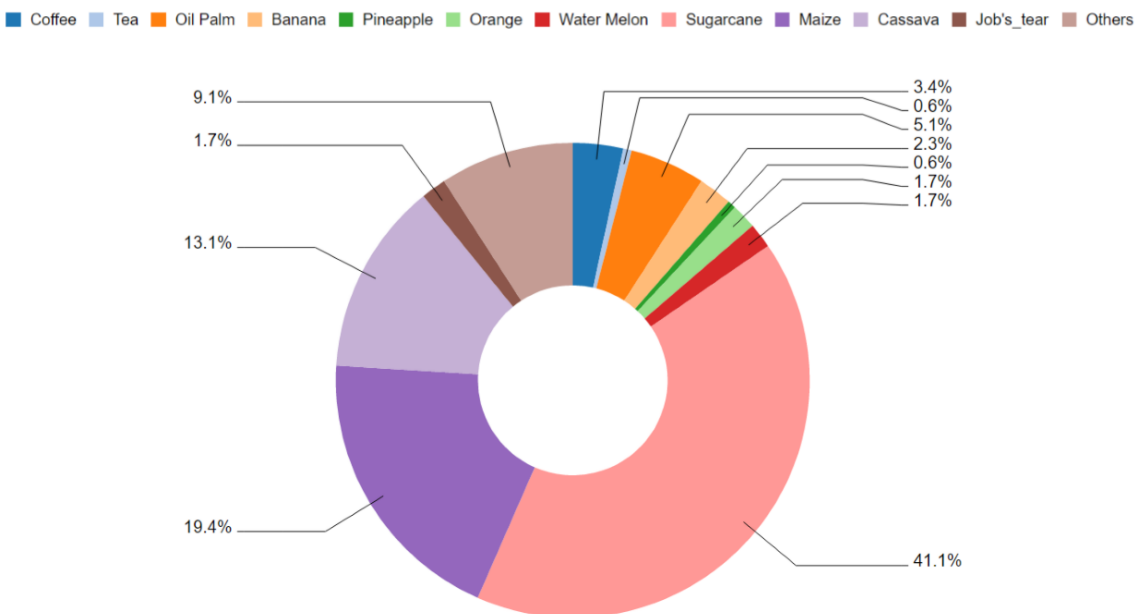
<sup>17</sup> These results were estimated through large-scale driver analysis comprising disturbed areas with a minimum size of 20 ha. A complementary assessment where the minimum size of disturbance was reduced to 5 ha was conducted in selected “hotspot” areas. The results of this analysis were somewhat different suggesting that the proportion of the area disturbed by shifting cultivation was 16 % of the total area disturbed, by small-scale agricultural expansion 19 %, agricultural plantations 14 %, forest/tree plantations 7 %, roads 15 % and selective logging 11% (Haraguchi 2017).

**Figure 8: Disturbance type (drivers of deforestation and degradation)**



Source: Haraguchi 2017.

**Figure 9: Agriculture type (drivers of deforestation and degradation)**



Source: Haraguchi 2017.

**While the expansion of agriculture remains the leading driver of deforestation in Lao PDR, population and economic growth have increased pressure on forests and competition for land use in recent years.** With increases in incomes, both in Lao PDR and regionally, there have been corresponding increases in demand for crops and wood products. In addition, demand for plantation wood will dramatically increase, as alternative wood-based products will likely be demanded given the international drive to increase

products made of wood fiber and cellulose. It is expected that, to meet this demand, global wood harvesting will need to quadruple by 2050 (Hetemäki, Palahí, and Nasi 2020). The pressure to expand tree plantations to meet the increased demand not only provides opportunities but also carries the risk of accelerating deforestation.

**Box 1: Shifting cultivation in Lao PDR**

**In Lao PDR, each year around 100,000–150,000 ha of forest areas are affected by shifting cultivation.** Shifting cultivation is a traditional system that can be managed sustainably in long rotations. The key threat is pioneering shifting cultivation, where natural forest is converted permanently to rotational production systems involving trees and rice. One approach to promote sustainability could be to, in a participatory way, delineate traditional shifting cultivation as a legitimate land use and manage it as such, while restricting new conversions into that system. Another approach would be to offer alternative livelihoods as a route out of shifting cultivation given its very low margins and high labor expense. Such areas covered around 25 percent of the total area of Lao PDR in 2015. Distinguishing between “Regeneration Vegetation” and forests through remote sensing is difficult. However, a survey undertaken by the Forest Department in collaboration with the Japan International Cooperation Agency (JICA) in 2018, assessed the relationship between the number of years since abandoned cropping and the amount of above-ground biomass (AGB). The results of the survey showed that the number of years for RV to reach the forest threshold was on average 7 years.

*Source:* Lao PDR ER-PD Annex 1, DOF and JICA 2018.

**The expansion of permanent agriculture may increase demand for land, whereas improved agricultural productivity may reduce demand for land.** Without specific incentives, active farmers rarely leave areas unused in a manner that would allow natural regeneration. Persisting low productivity in agricultural production will further contribute to forest degradation. Nearly all rice production growth in Lao PDR is driven by area expansion, not through increases in productivity (ADB 2017). In response, irrigation coupled with nonfarm income generating activities could be a game changer in improving local incentives to abandon pioneering shifting cultivation. Associated well-managed forest upstream would build the irrigation scheme’s resilience.

**As an indirect or parallel driver, the construction of the railway from Yunnan Province in China to Vientiane, and other large-scale infrastructure investments in Lao PDR, are likely to drive land prices higher close to the railway** and push the agricultural frontier further into the forests but also increase demand for agricultural products, intensify the utilization of natural resources, and ultimately fuel land speculation while also facilitating expansion of sustainable tourism and the economic potential of sustainably managed forests.

Although not a major driver of deforestation, both large-scale mining (LSM) and artisanal small-scale mining (ASM) activities have affected natural resources, especially forest and water resources. Case studies of the Phu-Hae area in Xieng Khouang Provinces of northern Lao PDR revealed that local government agencies have insufficient capacity to exercise their legal powers to protect natural resources and local livelihoods, partly as a result of weak governance mechanisms. The impacts from LSM and ASM had degraded natural resources and changed local livelihood strategies, affecting particularly the poorer households and women who perceived ASM as a means to increase income and sustain precarious livelihoods, which was often at the expense of the environment and their health.

Lao PDR has a problem with poor management and oversight of mine tailings dams. Tin mining in the Hinboun District of Khamouane Province is characterized by small mine operators. The cumulative effects

of 100 years of poor tin mining practice have resulted in the river containing high levels of arsenic, cadmium, and other heavy metals. Potash mining has also potential impacts to aquifers from injecting excess salinized water into the ground. . Policy context: Evolution from extraction to forest conservation and plantation

**Lao PDR is in the middle of a shift from resource extraction toward an emerging sustainable plantation economy.** The early forest policies were built around the concept of managing native forests sustainably, but the actual practice was that resource extraction took place with little heed for sustainability. Illegal logging was rampant and tree and agricultural plantations often expanded by encroaching into forest areas. Lack of resources left forest areas vulnerable to unsustainable practices, which eventually led to the decision to impose a temporary logging ban that is still in place today. However, by stepping up policy implementation, the government has gradually curtailed illegal logging, contained the uncontrolled expansion of plantations, and introduced more sustainable forest management practices.

**The most significant new policy is the expansion of the commercial tree plantations where fast-growing species can be established.** With the promulgation of the new Forestry Law in 2019, which opens the degraded lands in the PFAs to commercial tree plantations, Lao PDR is following a number of Southeast Asian countries (for example, Thailand, Vietnam, Indonesia, and Malaysia) that have adopted policies to promote plantation establishment aimed at compensating for the reduced availability of natural forest timber. Including China’s southern provinces, the total area planted to fast-growing species in the region is around 10 million ha.

**This increase in plantation area is in line with a regional trend away from extractive forest economies, where natural forests have been overharvested and degraded, to ones where plantation-grown timber now contributes more to raw material supplies.** Most of these have involved fast-growing species such as *Eucalyptus* and *Acacia*, mainly for paper production or wood chip exports and increasingly for the manufacture of composite wood panel products, such as medium-density fiberboards. This trend has been most pronounced in China, Indonesia, and Vietnam. In Lao PDR, if these plantations are established in degraded areas and apply socially and environmentally sound practices, they could substantially contribute to reducing pressure on native forests as well as create jobs and livelihoods. Good partnerships among commercial plantations and village forest management user groups will also deliver jobs, livelihoods, and revenue.

**Box 2: A case study on Vietnam’s trend to scale up forest plantations**

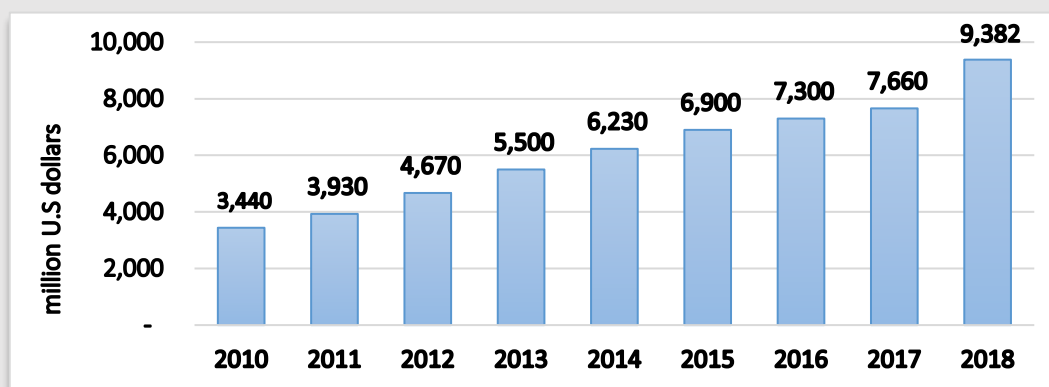
**Vietnam’s policy has resulted in an increase from 1.4 million ha of plantations in 1999 to 4.2 million ha by 2017<sup>18</sup> and an increase in the country’s total forest cover from 28 percent to 41.6 percent.** These plantations comprise mainly fast-growing species, of which about 1.7 million ha are owned by smallholders, with average holdings of 1–3 ha. They produced about 12.7 million m<sup>3</sup> of wood in 2017.

**The expansion of plantations has been accompanied by a dramatic growth in wood product exports, which increased from US\$3.4 billion in 2010 to US\$9.4 billion in 2018 (Figure 10), led by the furniture sector whose share increased from US\$2.1 billion to US\$4.6 billion.<sup>19</sup> However, part of the demand for wood products has been satisfied by illegal sources from the region.**

<sup>18</sup> Forest status 2017: <http://kiemlamvung1.org.vn/bv/quyet-dinh-c25/cong-bo-hien-trang-rung-toan-quoc-nam2017-p579>; MARD. 2018. Decision No. 1187/QD-BNN-TCLN dated April 3, 2018, on publication of national forest status as of December 2017 (quoted in Country Forest Note Vietnam, World Bank Group, June 2019).

<sup>19</sup> International Trade Centre - Trade Map.

Figure 10: Forest products export turnover in Vietnam, 2010–2018



Source: World Bank Group, Vietnam Country Forest Note, 2019.

**Notable policy successes in Lao PDR over recent years include the following:**

- **Containing the uncontrolled expansion of land concessions.** One of the first signs of improved policy implementation was the Prime Minister’s Order 13 (2012), which suspended selected land concessions, including rubber and eucalyptus plantations. These had often been established by clearing forest areas, resulting in serious environmental and social problems. While the regulation was slow to take effect and its implementation is far from perfect, it has reduced the forest area lost to plantations. In 2015–2019, the average annual area of forest cleared for plantations has been estimated to be about 40 percent lower than in 2005–2015 and the actual drop in the area cleared is probably significantly higher<sup>20</sup> (DOF 2020c). Evidence from various provincial-level assessments also suggests that the decline continues.<sup>21</sup>
- **Reducing illegal logging.** Another significant policy success was the introduction of the ban on timber exports (the Prime Minister’s Order 15), which enabled a 75 percent reduction in the volume of illegal logging in one year (Kukkonen and Langner 2017). The key was the effective action taken by the government to improve governance, particularly enforcement operations.
- **Increased political will for forest conservation.** Lao PDR established its first two national parks in 2019 and the third one in 2020. Nam Et-Phou Louey and Nakai Nam Theun are the two largest Protected Areas in Indochina. Hin Nam No, the third national park, is under consideration for World Heritage Designation. In addition, in the past five years, the GoL cancelled two hydropower projects that would have affected Nam Et-Phou Louey NP and has put strict conditions on a reservoir that would flood 5 percent of the area of Dong Hua Sao NPA. Nature-based tourism has become a high government priority, arising through green growth and conservation engagements.

<sup>20</sup> The remote sensing technology used in the assessment is unable to detect young plantations. Thus, some of the plantations that were detected to have been established during 2015–2019 had probably already been established in the previous observation period 2005–2010. Since the actual figure in the first period is higher than the one estimated, and in the second period it is lower, the drop in plantation establishment from the first period to the second is likely to be much more significant than the figure produced by the assessment.

<sup>21</sup> Personal Communications, Janne, Sami. 2020. Remote Sensing Expert for SUFORD-SU Project.

## 1.5 Current policies and plans

**All relevant national policy documents since the 1990s consistently recognize the importance of forests for sustainable development and climate change mitigation and include the highly ambitious target to expand forest cover to 70 percent** (Box 2). Apart from the draft REDD+<sup>22</sup> Strategy (under review), the 8th National Socio-economic Development Plan (NSEDP) specifically mentions the implementation of the REDD+ mechanism as a priority activity to mitigate climate change. It also refers to Forest Law Enforcement, Governance, and Trade (FLEGT) as a key mechanism to contribute to the emission reduction commitments of Lao PDR's intended NDC, which includes the target to expand forest cover to 70 percent. In addition, the sustainable management of natural capital, with forests as the key element, is the centerpiece of National Green Growth Strategy (NGGS) 2030.

### Box 3: Key national policy and planning documents

- Forestry Law (approved in 2019)
- Green Growth Strategy 2030 (approved in 2019)
- National Land Use Master Plan (approved in 2019)
- 8th National Socio-Economic Development Plan (2016–2020)
- Five-year Agriculture and Forestry Development Plan (2016–2020)
- National Strategy on Climate Change (2013–2020)
- Climate Change Action Plan (2013–2020)
- Biodiversity Strategy and Action Plan (2016–2025)
- Intended Nationally Determined Contribution (approved in 2015)
- Ten Year Natural Resources and Environment Strategy 2016–2025
- REDD+ Strategy (2025) and Vision (2030), (draft under review)
- Master Plan for the National Protected Areas of Lao PDR 2020–2025 (draft under review)

**In recent years, the government has embraced a more holistic approach to policy and strategy development that recognizes the trade-offs and opportunities among forests and other sectors.** While forest policy was previously formulated and implemented largely by the forest sector, with little interaction with or recognition by other sectors, the government has increasingly adopted policies that improve cross-sectoral coordination. In addition to Lao PDR's NSEDP and NDC, examples include the following:

- **The National Growth and Poverty Eradication Strategy (NGPES) (2004)** aims to enhance growth and development, reduce poverty, and contribute to the goal of graduation from least developed country (LDC) status by 2020 by strategically identifying the sectors that are most important for poverty reduction and formulating national action plans for them. Priority sectors include forestry, agriculture, health, and education. It further identifies trade, tourism, manufacturing, and energy as supporting sectors necessary for poverty reduction and environment, gender, population, and capacity development as key cross-cutting sectors.

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<sup>22</sup> REDD+ = Reducing emissions from deforestation and forest degradation.



- **The Strategy for Agricultural Development (2011–2020)** recognizes forestry as one of the key sectors contributing to the reduction of rural poverty. It emphasizes the need to promote sustainable forest management and enhance forest cover and quality to provide environmental services and fair benefits to rural communities and to public and private enterprises. It also promotes forest management to sequester carbon and the use of payments for carbon services under REDD+.
- **The National Land Use Master Plan 2030** defines the country land areas for national strategic characteristics. Of the total country land area, 16,577,500 ha (70 percent) is conserved and reserved for forest cover as reflected in the National Forest Strategy 2020 (2015) and 7,102,500 ha (30 percent) is for socioeconomic development. A challenge indicated in this Master Plan is that about 2,130,000 ha (30 percent) of the land area reserved for forest cover is the area that cannot be forested due to natural characteristics (include rocky/stone areas).
- **The Law on Water and Water Resources (2017)** recognizes the services provided by forests such as soil retention, erosion control, and water regulation and highlights the need for IWRM. It calls for close collaboration between the Ministry of Natural Resources and Environment (MONRE), which is responsible for implementing the law and overseeing the process for sharing water in a river basin between different sectors (including for native forests) and other sectoral ministries such MAF.
- **The Power Sector Vulnerability Assessment and Resilience Action Plan (2019)** recognizes the importance of watershed protection. It identifies four key power sector resilience actions, one of which is to “Facilitate Better Sedimentation Management in Hydropower Watersheds.” The priority activity is to develop incentive and enforcement structures to ensure the protection of upstream watersheds, followed by education and community awareness programs.
- **The NGGS (2019–2030)** aims to capture the potential of forests for tourism development that identified tourism as a priority sector to deliver greener and more resilient economic growth. Enhanced environmental quality including the status of forests is seen as key in generating new growth opportunities from nature-based tourism. To this end, the NGGS sets targets for improving the management of national parks.

**The legal environment has also become more supportive for effective forest law enforcement.** With the new government taking office in 2016, efforts to combat illegal logging and wildlife trade and to control timber sales and transport have been stepped up. Two influential Prime Minister’s Orders have been swiftly implemented—‘Enhancing Strictness on the Management and Inspection of Timber Exploitation, Timber Movement and Timber Business’ (No. 15/PM 2016) and ‘Increased Strictness in the Management and Inspection of Protected Wild Fauna and Flora’ (No. 05/PM 2018). The revised Penal Code (No. 13/2017) has also been important for improving effectiveness of forest law enforcement. In addition, the policy environment outside the country has become more favorable. For example, responding in part to the COVID-19 pandemic, China has imposed a ban on wildlife consumption and trade (China.cn.org, 2020).

**The new 2019 Forestry Law and PM Decree on Environmental and Social Impact Assessment (ESIA) have further institutionalized stakeholder consultations in government processes.** The Forestry Law refers to the need to “consult and agree with local people” (section 5, article 87) and the PM Decree obligates that ESIAs are to be publicly consulted and disclosed. This is a critical aspect of scaling up commercial planted

forests enterprises. In addition, policies related to Conservation Forest Area need to be established. The introduction of a centralized management system for the NPAs was the most recent substantive policy change undertaken in line with global good practice. The Protected Area Management Division (PAMD) under the Department of Forestry (DOF) of MAF has now the legal mandate to manage the NPA system.

**However, the NPAs have not been able to fully capitalize on the opportunity offered by nature-based tourism and the management of PtFAs is still in its infancy.** Despite attracting more than 4.1 million visitors in 2018, Lao PDR's nature-based tourism potential has been restricted by significant barriers to business investment and an underprioritization of Protected Areas and other natural attractions. Likewise, despite PtFAs making up the largest single land zonation in the country and having legislation that lays out the principles, procedures, and management objectives for Protection Forest (Decree 333, 2010), the government has not allocated any specific funds toward their support nor is there significant donor projects.

**At the subnational level, the Sam Sang policy on decentralization presents a challenge to the central administration's capacity to coordinate activities in provinces and districts, including those related to forests and Protected Areas.** The policy was introduced by the Politburo Resolution 03/CPP 2012 and the Prime Minister's Instruction 16/PM, dated July 15, 2012, on Sam Sang (Three Builds Directive). The aim is to build the provinces as strategic units; strengthen the capacity of the districts in all regards, especially planning; and build villages into development units. The Sam Sang policy promotes more active administration at the grassroots level, and the implementation focuses on management delivery and the handling of responsibility between the administrations at central, provincial, district, and village levels. Accordingly, the Sam Sang policy provides provinces with strong authority to manage the forestry estate, including the supervision of the NPA system.<sup>23</sup> Even before the introduction of the Sam Sang policy, forest officers in the provincial administrations reported to the Provincial Governor; there is no direct line of command from DOF to provincial forestry staff. This may present challenges for the central level to guide and supervise such activities.

**Forest management has also become more decentralized in recent years, with increasing attention to village-led forestry management.** The concept of Village Forestry has undergone changes from the village-led model introduced in the 1990s (under the Forest Management and Conservation Project [FOMACOP]) to the state-led participatory sustainable forest management model (PSFM) in the early 2000s. In the last few years, the concept has again been under review and the new Forestry Law (2019) puts forward a model where forest management at the village level is "led by the villagers" (article 39). Several projects have already conducted land use planning which managed to integrate land allocation and land use planning at village level. There are new rights given to the villagers, such as commercial use of timber found in the Village Use Forests, and procedures for collecting NTFPs for commercial use are formalized. There are already several good examples of this. For instance, Nakai Nam Theun National Park has a legally designated cross-sectoral board of directors comprising representatives from provincial and district administrations,<sup>24</sup> Lao Women's Union, Lao Front for Reconstruction (ethnic affairs), and the

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<sup>23</sup> To some extent this has already been obviated by the 2019 Forestry Law which locates protected area units that cut across more than one province as being under DOF, not the province.

<sup>24</sup> The sections of public administration represented on the board include economic development, forestry, environment, information, culture and tourism, planning and investment, and foreign affairs.

military (refer Prime Minister Decree No. 122/PM dated April 21, 2017). The board provides oversight to participatory annual planning and five-year planning and reviews work plans, budgets, and staffing levels.

**Implementation of the policy on Village Forestry is, however, still in the early stages, and the concept also needs further development to ensure that the benefits to the local people are real and constitute an incentive for sustainable forest management and protection.** It is important to understand that the village forests cut across all forest categories as well as the forest areas outside, but they have not been mapped or registered except in a few locations where the activity has been supported by development projects. The three types of village forests are Village Use Forests (where commercial activities are potentially allowed), village protection forests, and Village Conservation Forests. The extent of village forests in the country is not known, but the Village Use Forests that have been mapped have an average size of 250–400 ha per village. While many are heavily degraded, some have harvestable timber left (SUFORD-SU, Village Forestry Project 2020, unpublished data).

**Additionally, although all PFAs have developed management plans over the last few years, these plans have only been partially implemented due to the ban on timber harvesting.** If the ban were lifted, the sustainable harvesting volume would initially be modest, but the log supply could increase substantially in the medium term if the recovery of growing stock in the PFAs can be secured. The current policy focus is to promote commercial tree plantations, which, according to the new Forest Law, are allowed on degraded lands in PFAs. The area of degraded and barren lands in PFAs, which are considered suitable for plantation establishment, is about 660,000 ha (DOF 2020b).

## 1.6 Institutions

**The administrative structure for the forest sector involves four ministries:**

- MAF's Department of Forestry (DOF) is the lead ministry responsible for the forest sector.
- MONRE monitors the development of forest resources.
- The Ministry of Industry and Commerce (MOIC) guides the development of wood industries and is charged with organizing timber sales in state forest areas.
- The Ministry of Planning and Investment is the lead agency for concession approval.

**The administrative structure is adequate even though there are still misunderstandings regarding mandates, especially on plantation establishment.** At the provincial and district levels, the responsibility for the forest sector rests with Provincial Agriculture and Forestry Offices (PAFOs), District Agriculture and Forestry Offices (DAFOs), and Provincial Offices of Forest Inspection (POFIs) except for National Protected Areas (NPA management which has been placed under centralized management (Box 4).

**Box 4: Recent structural reforms relating to conservation, protection, and PFAs**

**In 2011–2012, the country started an institutional reform which reorganized the responsibilities of government bodies in relation to REDD+.** A new MONRE was established which also led to changes in the structure of the existing MAF. Before the establishment of MONRE, all forestry and therefore REDD+ and FLEGT-related matters fell under MAF or, more precisely, under its DOF. Once MONRE was established in 2012, the government merged the former Division of Forest Conservation and the Division of Forest Protection and Restoration at DOF into the Department of Forest Resource Management (DFRM) at MONRE. The Division of Forest Production remained under DOF at MAF. The REDD+ Division was placed under the DFRM at MONRE, while the REDD+ office was under DOF at MAF (Mustalahti et al. 2017).

**However, in late April 2016, the new government of Lao PDR decided to restructure some ministries and to reconsolidate the forest sector under one ministry—MAF.** The Minister of MONRE officially transferred the DFRM to the Minister of MAF on August 19, 2016 (Mustalahti et al. 2017). The functions of the DFRM were incorporated in those of DOF divisions, mostly in the Protection Forest Division and the Protected Area Management Division (PAMD) that was established in connection with the transfer. The two national REDD+ offices were merged into one office under DOF. Approximately 80 percent of the country’s land area is managed by DOF (the three forest categories and the forests outside).

**Effective coordination between multiple agencies involved in forest law enforcement has increased but will need further development to address the increasing pressure on forest resources.** The approach to forest law enforcement in Lao PDR has historically been somewhat inconsistent and fragmented, but in recent years, the government has considerably recognized the need to strengthen interagency collaboration. Forest law enforcement involves several agencies, including the Department of Forest Inspection (DOFI) under MAF, the Economic Police Department, and the Environmental Police Department under the Ministry of Public Security (MPS), the Lao Customs Department (LCD) under the Ministry of Finance (MoF), the Department of Inspections under MONRE, the Office of the Supreme People’s Prosecutor (OSPP), and the Government Inspection and Anti-Corruption Authority (Box 5). Coordination between the multiple agencies involved in forest law enforcement has improved as multiagency training has become standard practice and joint operations at a provincial, national, or international level are carried out regularly. Still, the multitude of agencies involved poses problems for coordination, and there is confusion as to the delineation of mandates and responsibilities of various agencies including those of DOFI with the Department for Combating Natural Resources and Environmental Crime (DCNEC), as well as DOFI/POFI and DOF/PAFOs. The administrative structure for POFIs and DOFIs could also be reviewed. Currently, there is no direct line of command from the central level to the provincial level since PAFOs and POFIs report to the provincial administration. In cases where the provincial administration is involved in illegal activities, this creates a conflict of interest.

**Box 5: Enforcement agencies involved in forest and wildlife crime**

**The Department of Forestry Inspection (DOFI)** under MAF is a key agency in the enforcement of forestry law. DOFI was established in 2008. DOFI is empowered to conduct forest control operations, investigate illegal logging and wildlife crime over forest landscapes, make arrests, and pursue prosecutions in court.

**The Department for Combating Natural Resources and Environmental Crime (DCNEC)** often referred to as the environmental police, was created in 2012. It is part of the General Police Department and operates under the MPS. The DCNEC has the duty of preventing, suppressing, investigating, and arresting offenders who commit

crimes related to natural resources and the environment. The DCNEC shares jurisdiction over these crimes with other regulatory agencies across Lao PDR.

**The Economic Police Department (EcPD)** is part of the General Police Department and operates under the Ministry of Public Security (MPS). The EcPD has the duty of preventing, suppressing, investigating, and arresting offenders who commit economic-related crimes including those pertaining to natural resources and the environment.

**The Lao Customs Department (LCD)** under the MoF is responsible for revenue collection from dutiable goods imported into Lao PDR. It is also responsible for identifying and seizing contraband smuggled into and from Lao PDR. This includes illicit timber trafficking.

**The Department of Inspection** under the Ministry of Environment and Natural Resources has the power and duty to inspect, research, and resolve administrative disputes and propose the competent organizations to resolve disputes of civil and criminal nature relating to natural resources and the environment.

**The Office of the Supreme People's Prosecutor (OSPP)** deals with large-scale crime. It does not have a specific unit that is devoted to the prosecution of environmental crimes. The allocation of individual cases is determined by the penalty that the matter attracts.

**The Government Inspection Authority and Anti-Corruption Authority** are responsible for investigating cases of corruption across the government, including those related to the forestry sector. With respect to the Forestry Law, the powers of state inspection agencies and the Anti-Corruption Authority include the implementation of any aspect of that law or actions taken by individuals with the forestry agency or sector.

*Source:* Smith et al. 2016

## 2. Challenges for Sustainable Forest Landscapes

Despite the progress Lao PDR has made in reforming the forest sector and moving toward integrated landscape management, a combination of governance, private sector, village empowerment, and financing challenges need to be addressed to enable the country to reach 70 percent forest cover. Overall, these challenges are underpinned by the need to reduce the pressure of competing land uses, as discussed in section 1.2, and to remove barriers to public-private sector collaboration. It is expected that the COVID-19 epidemic will further increase the challenges.

### Box 6: Summary of challenges

#### Governance

- Limited capacities to plan, implement, monitor, and enforce existing policies and plans
- Strengthening of national and provincial coordination to reconcile competing interest for land uses and identify mutual opportunities
- Institutional arrangements for forest law enforcement are complex
- Improvement in management arrangements for protection and conservation areas
- Lack of integrated infrastructure planning
- Lack of integrated disaster risk management

#### Private sector

- Advancing of the potential for forest plantation and wood industry
- Undeveloped nature-based tourism

#### Village empowerment

- Untapped potential for village forest management to fully empower local people
- Limited efforts to scale up sustainable livelihoods that compete with those that incentivize encroachment, along with further job and income shortages due to COVID-19
- Increasing demand for wood fuel

#### Financing

- Addressing gaps in government financing to manage the forest area effectively
- Improving enabling conditions to increase public-private financing for forests
- Strengthening enabling environment for private companies and forest SMEs

### 2.1 Governance challenges

*Build capacities to plan, implement, monitor, and enforce existing policies and plans*

**The rapidly changing forest sector policy and strategy environment in Lao PDR requires new and strengthened management capacities and skills.** Forest and forest landscape management, planning, and implementation capacities remain weak despite support from various development partners on capacity building and training. The quality of many planning documents could be improved and activities are often not implemented properly. While the capacity for carrying out routine tasks and work plans is good, the capacity to carry out new activities and develop new approaches is limited. One of the long-standing

factors contributing to the lack of skills is high staff turnover (Siintola 2018). The change from extraction-based use of forests to a plantation economy represents another challenge. Limited skills in developing and implementing monitoring and compliance systems (spatial assessment, environmental assessments), revenue management, and contract management remain a constraint, especially at the provincial level. Moreover, engagement with private sector and community partners across the landscape, including women and minority ethnic groups, is insufficient, with only a small number of women employed in forest agencies in Lao PDR.

**Despite recent efforts to increase the effectiveness of forest law enforcement, capacity remains low and mandates and responsibilities are unclear.** Law enforcement in Lao PDR is challenging, especially in remote areas where lack of alternative livelihood opportunities and strong demand for agricultural and wildlife products are driving encroachment and illegal hunting and where enforcement involves coordination among several agencies across jurisdictions (national, provincial, district) and logistical challenges (see section 1.6 ). While multiagency training has become standard practice and joint operations at provincial and national levels are carried out regularly, the multitude of agencies involved poses problems for coordination and there is confusion as to the delineation of mandates and responsibilities of various agencies. Additionally, the absence of a reporting line from the provincial to the central level creates a conflict of interest. Since PAFOs and POFIs report to the provincial administration, they may be subject to undue influence if criminal cases involve representatives of the provincial administration.

**Enforcement is further challenged by high poverty levels and market forces, which continue to incentivize farmers, local enterprises, and individuals to encroach on forest lands.** The main conflict comes from expansion of agriculture into forest areas in contravention of regulations or land use plans. People in poverty and those who lack land are often unable to observe the restrictions in land use plans. In addition, smallholder farmers respond to market signals quickly and flexibly, making enforcement challenging. Local governments often encourage agricultural expansion even if there is a negative impact on forests. While the government lacks effective means to control smallholders, it is somewhat better equipped to control the expansion of land concession through procedures set up for their approval and monitoring. However, due to poor governance, irregularities occur, undermining the implementation of official policies.

*Strengthen national and provincial coordination to reconcile competing interest for land uses and identify mutual opportunities*

**The government is addressing forest sector challenges on a broad front, but interventions tend to be fragmented spatially, sectorally, and financially.** Fragmented interventions and financing can undermine service delivery and achievements of results. Past efforts to improve cross-sectoral coordination include the Integrated Spatial Planning Process reactivated by MONRE in 2012, the coordination committees for National Protected Areas, and the Provincial REDD+ Task Forces. However, the experience gained so far suggests that these mechanisms have room for better performance, especially at the provincial level. While cross-sectoral issues raise interest when policies and plans are formulated, the interest tends to wane once planning has been completed. Also, the strongest mandate for cross-sectoral landscape-level coordination is often with the central-level agencies through national plans and strategies. The provincial stakeholders participate in the process, but since they are not necessarily decision-makers, their motivation to engage in extensive discussions has been low.

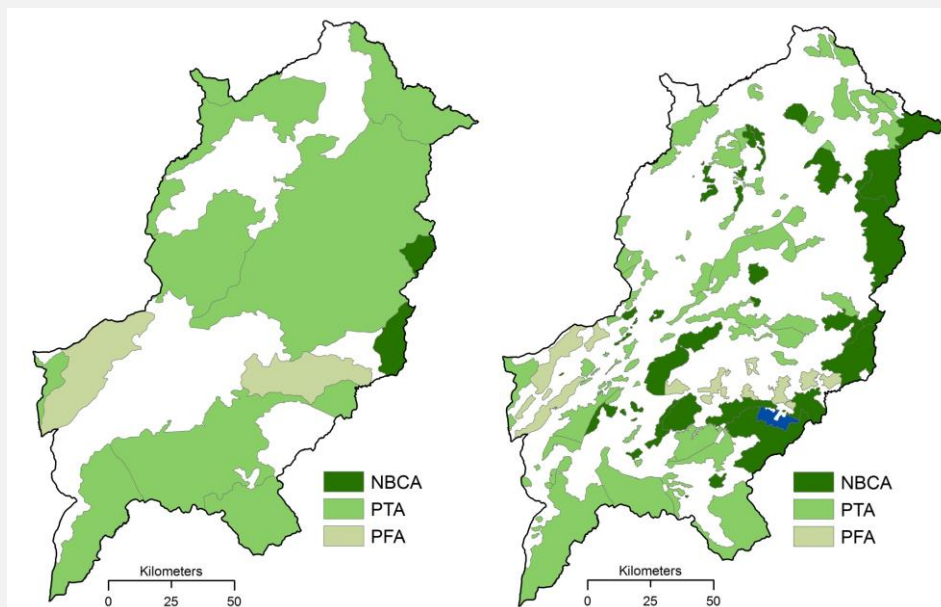
**Lao PDR also lacks a platform for sharing technical forest and land-related data.** Lack of data creates inefficient processes and inefficient resource management and does not allow integrated land use and resource management planning. Sharing data between ministries and agencies is still not very common.

**Most key pieces of national forestry legislation do not prescribe cross-sectoral collaboration** but reference vertical working arrangements within MAF. These include the Forestry Law (2019) and the decrees on Protected Areas, protection forests, and production forests.

**National-level targets for land use through national strategies and plans are not linked to land use planning at the local level.** The Land Use Master Plan sets national-level targets for the main land uses, including the forest area, but there is no link between these targets and the local plans. As there are no physical targets for the local plans, not even indicative ones, it is unlikely that the forest area accumulating under them would hit the national target figure. While the government has developed the Participatory Land Use Planning (PLUP) method with detailed implementation instructions to guide the process, the outcome of the process in terms of land allocation is influenced by the interpretation of the planners on how the methodology is applied (Box 7). Lao PDR is ethnically diverse and proper PLUP does take time and is cost intensive to capture, understand, and address the ethnicities and traditional land uses and tenure.

**Box 7: Delineation of forest lands: The impact of different land use planning approaches**

The first map shows the official forest categories in one district in Luang Prabang Province. The second shows a much smaller forest area, as the forest categories have been re-delineated using participatory district-level mapping based on an approach developed under The Agro-Biodiversity Initiative (TABI) working in the upland areas of the northern part of the country with financing from the Swiss Agency for Development Cooperation. As a result, the forest area was confined mainly to areas not used for agriculture or other livelihoods.



Source: TABI 2015.



*Forest Law: Clarifying interpretations involving objectives of production forests; the roles, rights, and responsibilities of villages and firms; and delineations of three forest categories*

**Governance is also hindered by a lack of clarity in Lao PDR’s legal and regulatory framework.** While significant improvements in the regulatory framework have been achieved, most notably the promulgation of the Forestry Law in 2019 and the revised Penal Code in 2019, there are still several gaps and inconsistencies hampering forest law enforcement and forest management. The final version of the Land Law is not yet available, depriving officials of clear guidance on how to deal with key legal issues such as customary tenure of forestlands or communal ownership of forests. The implementing regulations under the Forestry Law have not been revised for consistency and many of the new directions introduced in the law are not covered in the implementing regulations. The rapid development in the plantation sector will require a dramatic administrative reform to cope with the increased need to plan, monitor, and control plantation areas and processing industry. While a series of recently approved regulations<sup>25</sup> provide overall directions for plantation development, a number of details in the legal framework are still inconsistent or are lacking (ProFeb 2019), especially with respect to social issues.<sup>26</sup>

**Classifications pertaining to village land are complex and sometimes unclear.** Village forests exist within and outside the larger designated national, provincial, and district forest production, protection, and conservation forest areas. Within village forests, the same three forest categories are commonly used. Thus, there may be village protection forest within a national Production Forest Area. The designation of land inside the three forest categories needs further clarification. There are many villages with, for example, agricultural land and plantations owned by the village or by individuals inside the three forest categories. It is not clear whether agricultural land or fallow agricultural land within the three forest categories is forestland or agricultural land.

**Land rights at the village level are ambiguous.** Land rights of the communities have become a pivotal issue for sustainable forest management in Lao PDR, as commercial tree plantation investors are expanding operations. Tenure is generally governed by a mix of local tradition and formal laws. Tenure practices vary significantly depending on the local context, especially in rural communities where instruments for formal recognition such as land titling have relatively low coverage. Recognition of communal forms of tenure has not yet been extended to forest areas. However, despite the minimal formalization of their land and forest tenure, communities have often proven to have sufficient tenure rights, in practice, to negotiate compensation from the private developers to whom their land has been allocated or to resist attempts to allocate village lands to investors (Box 7). Nevertheless, being de facto, tenure is never fully reliable but is subject to changes in a constantly evolving environment (Dwyer 2017).

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<sup>25</sup> The Prime Minister’s Order 09 concerning the enhancement of governance in the use of concession lands for industrial tree plantation and the plantation of other crops within the country; guideline on the implementation under the instruction No. 09/NA and on incentive land use management for concessions of industrial and other plants across the country No. 1758/MAF; 247/GOL Decree on Promotion of Tree Planting for Commercialization.

<sup>26</sup> Protection and sustainable use of forest ecosystems and biodiversity (ProFEB) is a project funded by the German Federal Ministry for Economic Cooperation and Development (BMZ).

**Box 8: Village land rights as a basis for compensation paid by private developers**

**The land rights in the context of determining compensation paid by private developers are largely defined in terms of de facto access rather than formal ownership.** While some companies have proven willing and able to meet this standard, across-the-board enforcement has been controversial within government and has not been pursued. In practice, this has meant a relatively ad hoc approach to the application of land rights. Low or even inadequate compensations and vague definition of ‘national interest’ related to eminent domain are also remaining issues. Both private developers and local government officials often play a significant role in determining how local tenure rights (both formal and customary) are interpreted and how compensation is allocated in return. The interpretations of land rights are based on multiple factors, including investors’ resources and tolerance for risk, communities’ ability to stand up for their collective and individual interests, and local authorities’ understanding and interpretation of relevant laws and locally available documents. Communities in various areas have used customary forms of land tenure, both communal and individual, in their efforts to resist uncompensated area loss by investment projects. In one example from Oudomxai Province, villagers used land sales among themselves to resist the enclosure of shifting cultivation lands by a Chinese rubber company, justifying these sales as within the bounds of traditional land use when challenged by local officials. The smallholder cash cropping and contract farming, which have proliferated in the last decade, have been a factor in providing a degree of de facto tenure security to many farmers even in the absence of land titles.

*Source: Dwyer 2017.*

**Another remaining challenge is to address agricultural land within state land for each of the three forest categories.** Local villagers’ rights to agricultural land with the three forest categories is a long-standing issue which has not yet been conclusively resolved. The government has been reluctant to award formal tenure to land under shifting cultivation and permanent agricultural lands that have developed through encroachment into forest land. The government’s reticence to strengthen local tenure to shifting cultivation areas may stem from the fact that they cover extensive areas and awarding tenure rights to local residents could decimate the area of state land and limit the government’s capacity to guide development and implement land-based policies. Encroachment is illegal and awarding tenure to these areas is not possible in legal terms, but it does sometimes occur due to poor governance. The strongest legal case for local tenure inside the three categories may relate to permanent agricultural land that existed before the three forest categories were established. As forestry and land laws mainly focus on tenure of forests and forestland uses inside three forest categories, the agricultural lands slip through the legal cracks, which has potential to become a serious development challenge and source of inequality given that 25 percent of the population lives in these areas and 35 percent of the three forest categories are non-forested.

*Improving efficiency of protected area management*

**Current objectives for managing natural forests inside PFAs do not reflect current situation on the ground.** Despite some logging activities in Production Forests, timber harvesting has not been authorized since 2012 due to the logging ban. This made it increasingly difficult to protect the remaining natural forests from unauthorized logging activities without any revenue stream. Initially, the logging ban was justified by the fact that forest management plans were not available to all PFAs, but this condition was met in 2017. According to DOF, the reason for not lifting the logging ban is that the volume of logs available (seized timber and salvage logging) is sufficient to meet the demand on the domestic market.

**The designation of PtFAs is sometimes not consistent with the adopted criteria.** The identification of PtFAs was based on a multivariate analysis run as part of the regional Watershed Classification Project applying various physical criteria to catchment forests (SUFORD-AF 2011). While some adjustments were done when the boundaries were fixed, ground checks were sometimes done hastily, resulting in inaccurate designations. Grace, Prixar, and Phengsopha (2012) found that often the areas mapped on the national level as protection forest were used for agricultural production and even included major town areas. In one case, an entire district was mapped as protection and production forests but, in reality, contained the district's capital, large lowland agricultural areas, and a coal mining concession. In addition, protection forests are also heavily degraded as 2.7 million ha or 35 percent consist of fallow forests and 360,000 ha or 5 percent are classified as agricultural areas (DOF FIPD 2018).

**Deforestation and forest degradation continue in the three forest categories, increasing divergence between actual and planned land use.** Given that full zonation and demarcation has not yet been finalized, this challenge continues to grow. In addition, unfinished delineation of protection forest and NPAs limits efforts to combat encroachment.

#### *Lack of integrated infrastructure planning*

**Inadequate infrastructure is often referred to as a major constraint on the socioeconomic development of Lao PDR.** Thus, it has been a major goal of the GoL to upgrade infrastructure in line with the request for environmental sustainability. This includes built assets that facilitate functional industries, enterprises, and society such as roads, railways, airports, communication systems, electricity, and water and sanitation infrastructure. In general, capacity constraints limit the provision of infrastructure services outside of major cities in Lao PDR.<sup>27</sup> Despite the many socioeconomic advantages of road expansion and railroad construction in Lao PDR, criticism has also been aimed at some of the negative environmental impact of these projects. Large-scale economic land concessions linked to roads have been used as legal loopholes to justify logging outside of national quotas and production forest zones.<sup>28</sup> Hydropower and railroad have similar impacts on primary forest removal and fuel land speculation which also changes land uses and tends to push agriculture to further encroach on forests.

**In particular, road construction is a significant driver of deforestation and degradation in hotspot areas.** While investment in roads and other transport infrastructure is a key element in any growth strategy to enhance connectivity of markets, it can also have important ecological consequences (for example, increased illegal logging and wildlife trade, reduced biodiversity), with feedback effects on economic development possibilities going forward. The length of the Lao PDR road network is also quite extensive and difficult to manage and maintain. An analysis conducted by the World Bank suggests that upgrading secondary and tertiary roads to primary status has little effect in areas where forests already have been reduced, but there were more significant impacts in areas with high forest cover. (World Bank 2018a). It is essential that trade-offs between road system improvements and areas for nature-based development be further examined for well-informed and effective choices to be made.

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<sup>27</sup> UN in the Lao PDR 2017. *From Millennium Development Goals to Sustainable Development Goals: Laying the base for 2030*. Accessed December 2017.

<sup>28</sup> Forest Trends. 2010. *Timber Markets and Trade Between Laos and Vietnam: A Commodity Chain Analysis of Vietnamese Driven Timber Flows*. Accessed December 2017.

### *Lack of integrated disaster risk management*

**Smallholders and the landless poor in Lao PDR face high risk of natural hazards and climate change.** More than 95 percent of the farming systems are vulnerable to flooding, drought, and delayed onset of the rainy season. In general, the most common hazards for the agricultural sector in Lao PDR are annual river and flash floods, landslides, occasional storms and typhoons during the wet season, drought and acute water shortages during the dry season, forest and community fires, agricultural pests, rodent infestations, and animal epidemics. Among these, the three most common weather- and climate-related hazards with the highest impacts on agricultural production are floods, droughts, and storms, which often trigger secondary hazards such as landslides, forest and community fires, pest or rodent infestations, and outbreaks of animal disease. Cost of road infrastructure is already high, and increased disaster risks will further increase those maintenance costs. Healthy forests can be an essential part of the solution and control water flow and secure hillsides, but forests are also increasingly becoming victim of disasters, due to degradation, increased temperature, and more intense and frequent fires. Development of green infrastructure to secure slopes and avoid landslides and floods would increase water retention and not only help avoid costs but also increase revenue from forest management and provide other economic benefits to communities. Forests that remain intact also store carbon and reduce carbon emissions from land use change.

## 2.2 Private sector challenges

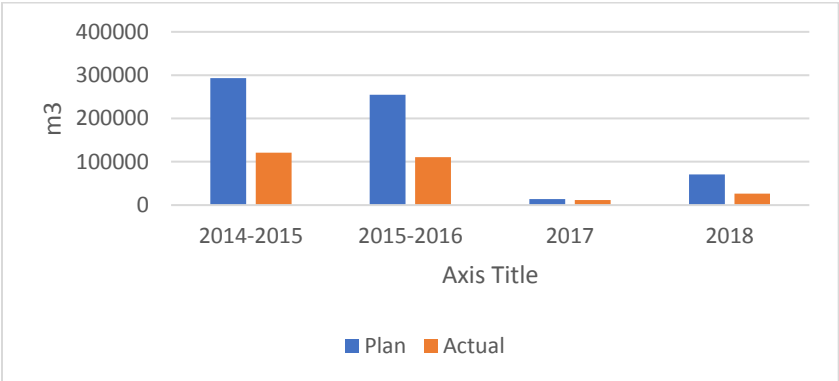
### *Advance the potential for forest plantation and wood industry*

**Except for recent large-scale investments in the pulp industry (Box 9), forest-based industries remain largely underdeveloped, typically relying on outdated technology, inadequate processing capacities, and low-skill labor.** Wood product exports from Lao PDR have historically been dominated by unprocessed and semi-processed products. There are a few companies with capacity to export finished goods such as parquet and tabletops, but production volumes are small. The export of higher value wood products such as high-quality furniture only accounted for between 1 and 3 percent of the total value in 2017. Between 2006 and 2018, the number of processing units shrank from more than 2,100 facilities to less than 1,150, largely in response to low wood supply and the large number of unregistered and illegal operators being closed. The forest industry remains dominated by individuals and micro, small, and medium enterprises (MSMEs), with furniture manufacturing (51 percent) as the dominant production type, followed by wood processing facilities (44 percent), veneer producers (2 percent), and sawmills (3 percent) (World Bank 2019e). The allocation of more than half of the survey rights to plantation land to one company carries the risk of creating a monopolistic situation on the market. This could depress prices for smallholders and hinder the entry of other investments.

**The impact of the global COVID-19 pandemic will further compound the challenges of the Lao wood industries, as income losses lead to reduced demand and manufacturing and trade disruptions limit supplies in the wood and furniture industries.** China, where the economy has been severely disrupted by COVID-19, accounted for two-thirds of the value of Lao PDR wood and furniture exports in 2017. Prolonged outbreaks, disruptions to logistics, and border processes can have notable impacts on its wood and furniture industries (World Bank 2020c).

**The erratic and limited timber supply is one of the main constraints to the investment in and development of wood industries.** With the reduction of viable forest areas for extraction and the enactment of the logging ban, national industry has relied mostly on logs sourced from salvage logging or illegal sources. The legally sanctioned supply has been limited to logs becoming available from infrastructure harvesting (clearing of dam reservoirs, roads, powerlines). In 2014–2018, the annual harvesting volume from infrastructure sites ranged from 121,000 m<sup>3</sup> to 11,900 m<sup>3</sup>, with a remarkable drop in volume after the log export ban was introduced in 2016 (Figure 11). The planned harvesting volume for 2020 is about 70,000 m<sup>3</sup>, but harvesting plans are usually fulfilled only 20–40 percent due to inaccurate survey data, poor execution of plans, and changing priorities. Thus, the supply of logs has been unreliable (in terms of species, timing, and quality) and decreasing in volume. Sustainable harvesting volumes are projected to remain low in the near term, leaving most companies without an adequate raw material base. Also, decisions on harvesting are made only for one year at a time and the timing is based on the highly variable needs in the infrastructure sector, not the needs of the wood industry sector (DOF and Souksay 2019). In 2014–2018, the average annual amount of timber royalties, originating mainly from salvage logging, was about US\$30 million (Bank of Lao 2019).

**Figure 11. Volume of Salvage Logging in 2014–2018**



Source: DOF 2019 (unpublished data).

**Box 9: Sun Paper mill highlights the potential for increasing industrial wood processing**

**Recent foreign investments in the country's first pulp mill, Sun Paper, represents an opportunity to move toward a plantation industry in Lao PDR.** The mill started trial operations in May 2018 and has gradually built up toward production capacity of 1.2 million tons roundwood equivalent per year input to produce 300,000 tons of dissolved pulp (largest in Asia) for the Chinese clothing market. The company reports that the mill currently employs a total of some 1,000 staff, of whom 630 are the Lao and that mill operations generate 9,900 indirect jobs. Since raw material is not yet available in Lao PDR to satisfy the installed capacity of the mill, the company currently procures its wood from Thailand and Vietnam to an estimated mill-gate cost of US\$183 million<sup>a</sup> (Sun Paper 2019). Vietnamese smallholder producers report economic returns of up to US\$4,900 per ha from eucalyptus plantations (Tran et al. 2020). Replacing these imports with legal, in-country supply of wood is a major opportunity for the forest sector to contribute to socioeconomic development.

According to the government, two more pulp mills are planned by Sun Paper, in Southern Laos and BLX Province.

*Note:* a. From Sun Paper's own presentations, some 600,000 tons of acacia is imported from Vietnam annually and 700,000 tons of eucalypt from Thailand. Delivered costs to mill about US\$130 for acacia and US\$150 for eucalypt = imported wood to the value of US\$183 million<sup>29</sup>

**This development is both a significant opportunity and a risk, with approximately 400,000 ha of degraded forestlands being identified by the government for private plantation investments from three to four firms as of June 2020.** While there is strong interest from plantation companies and local farmers to participate in tree plantation investments, restrictive policies and procedures for ensuring secure rights over land have critically limited their opportunities. First, there is no clear guidance on how selections will be made with respect to investors. The allocation of land survey areas inside PFAs was reportedly based on 'requests'. As of March 2020, five companies had targeted more than 400,000 ha of degraded and barren land inside selected PFAs (Table 3) (DOF 2020b) for plantation establishment.

**Competing land uses.** Some private sector actors indicate that project approvals have been rejected in areas currently under mineral sector exploration and survey concessions even though there is no legal basis for it. These concessions cover more than 44 percent of the territory of Lao PDR, and thus such a restriction presents a major obstacle to investment (Ingalls 2019). Second, based on some initial surveys in zones that PFA management plans identify as degraded or barren lands, the demand for plantation land may have already exceeded its availability. The actual area available is much smaller than identified on maps, as it is constrained by villagers' de facto tenure or other limiting environmental factors. Although villagers have no formal land rights inside PFAs, they often lay claims to areas they cultivate or use in other ways. The first round of land surveys on approximately 30,000 ha shows that a large portion of the areas were under customary land uses (shifting cultivation) before the establishment of PFAs (DOF 2020a). The survey results also suggest that the villagers are willing to cede only 15–30 percent of the area even though the companies expect that eventually, once they become familiar with the agroforestry model offered, they might be willing to make available up to 50 percent of the area. Still, it is unlikely that the companies would gain access to the entire area of degraded lands inside the PFAs. Thus, there is a significant risk that the rapid expansion of plantation area will stir up land conflicts similar to those experienced during the 'rubber boom' about a decade ago.

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<sup>29</sup> Stephen Midgley, pers communication 2020

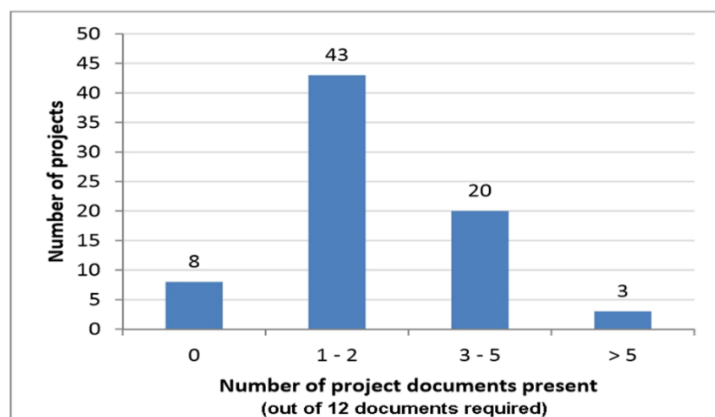
**Table 3: Allocation of areas for surveying land suitability for tree plantations in PFAs (ha)**

Company	Target	Current	Needed
Khamseng company (subcontractor to Sun Paper)	260,000	29,000	231,000
Mekong Timber	50,000	29,110	20,890
Burapha	60,000	4,500	55,500
Stora Enso	35,000	3,000	32,000
Lao Agro Tech Limited	10,000		10,000
<b>Total</b>	<b>415,000</b>	<b>65,610</b>	<b>349,390</b>

Source: DOF 2020b.

**There have also been enforcement challenges associated with land concession agreements.** Irregularities and noncompliance were the primary reasons for the 2012 moratorium on land concessions. A survey conducted in Luang Prabang and Xiengkhouag Provinces in 2014 established that out of the 74 land deals reviewed, only three could provide more than five documents out of the total of 12 required by the concessions law (Figure 12). It has also proven to be highly challenging to revoke existing concession licenses, even if there have been clear violations of the law and regulations; once the crops/trees have been planted, it is often too late.

**Figure 12: Legal compliance with concessions**



Source: Hett et al. 2015.

**Onerous licensing is another key obstacle to private sector investments in tree plantations.** The licensing procedure is not fully clear as some investors in tree plantations go through the ‘one-stop shop’ at the Ministry of Planning and Investment whereas others approach MAF/DOF. The current ESIA guidelines were developed based on models from hydropower and mining, which are complex and time-consuming when applied to the plantation sector. To alleviate the problem, the government has developed a number of guidance notes and is now also considering dropping the ESIA requirement for plantations established inside PFAs; instead an Initial Environmental Examination (IEE) would be sufficient. While the government’s quick response to emerging issues must be welcomed, the planned intervention may put responsible investors to a disadvantage since they are often subject to corporate social responsibility (CSR) standards that require an ESIA. Also, the vagueness of many regulations creates loopholes for irresponsible players. For instance, current directions under PMO/09 and MAF/1758 suggest that commercial plantation investments must consist of a mix of native and non-native species, but the details

of this requirement have not been elaborated. It also needs to be observed that there are few examples of good mixed species plantations worldwide. There are also no standards for benefit-sharing arrangements with the local population, nor for the regulatory obligation to reforest plantation areas upon expiration of concession agreements. While responsible investors are likely to apply standards that are sustainable (Box 10), ambiguous requirements and lax enforcement place irresponsible investors in an advantageous position (Ingalls 2019).

**Box 10: Burapha Agroforestry demonstrates a model for sustainable plantation production**

**Burapha Agroforestry Ltd intended to increase its current plantation area in Vientiane and Xayaboury Provinces from 4,500 ha to 60,000 ha.** Burapha's focus is primarily on *Eucalyptus* and *Acacia* species. Their plantations are Forest Stewardship Council (FSC) certified. The company rents land from households or the village community over a 30-year period. While the company owns the trees that are planted, the farmers receive benefits such as income from managing the plantation, having their land cleared and ploughed, access to processing for crops such as cassava, and marketing assistance. Under the model, trees are planted in rows among crops such as rice or cassava and grown on a seven-year rotation. Harvested small diameter eucalyptus logs are used to make value-added wood products at Burapha's sawmill and manufacturing factory near Vientiane. The company also undertakes an US\$20 million investment in a veneer/plywood processing facility at Hin Heup which will process 150,000 tons of veneer logs annually. It is estimated that through this agroforestry model, participating families will, on average, earn an additional US\$4,800 per year (Bartlett 2014). In addition, the company has plans to build a 400,000 air-dried metric ton (ADMIT) pulp mill with an annual wood supply of 1.8 million m<sup>3</sup> per year which, the company claims, would generate annual tax income of US\$20.7–26.5 million, annual concession fee revenues of US\$450,000–600,000, annual plantation wood income of US\$16–19 million, and full-time direct employment of some 8,000 person-years per year.

**In addition, the tree plantation industry is faced with critical environmental challenges but has limited management capacities to address them.** Poorly designed and managed plantations can result in large-scale monocultures and encroachment into forested areas and have negative impacts on biodiversity and water management. However, limited management capacities of MSMEs and communities in the tree plantation industry leave the sector vulnerable to critical biophysical risks such as pest control, climate adaptation and disaster risk management, and fire management. There may also be 'leakage' of deforestation if the villagers attempt to compensate the loss of land access by clearing forests elsewhere. The same risk is involved in outgrower schemes; if the farmers choose to plant trees in their agricultural fields (for example, because of higher tenure security), they may then clear forest to move their crops to a new location.

**The impact of the global COVID-19 pandemic will further compound these challenges, as income losses lead to reduced demand and manufacturing and trade disruptions limit supplies in the wood and furniture industries.** China, where the economy has been severely disrupted by COVID-19, accounted for two-thirds of the value of Lao PDR wood and furniture exports in 2017. Prolonged outbreaks, disruptions to logistics, and border processes can have notable impacts on its wood and furniture industries (World Bank 2020c).

*Scale up nature-based tourism*

**Despite Lao PDR's wealth of natural capital, including lush forest landscapes and globally significant biodiversity, its nature-based tourism potential has been restricted by significant barriers to business**



**investment and an underprioritization of Protected Areas and other natural attractions.** Despite recognition of the potential, some stakeholders have been reluctant to invest in the development of nature-based tourism products and markets. Key barriers include (a) basic services; (b) insufficient legal frameworks, procedures, and transparency; (c) limited protected area management and financing; (d) limited institutional and human capacity; (e) insufficient infrastructure (rural roads, water supply, and institutional support); and (f) underdeveloped tourism products and offerings. Without significantly simplifying the business environment for the private sector, investment to develop demand-led tourism activities is likely to remain limited. It would limit entry of new actors as well as competition in the industry, negatively affecting quality, diversity, and pricing of the tourism services offered and affecting the overall development of the tourism sector (World Bank 2019a).

**In addition, due to the COVID-19 pandemic, the number of visitors is expected to remain low until the end of 2020.** Travel restrictions have been imposed in origin countries and Lao PDR has suspended visa on arrivals until further notice. As a result, there will be knock-on effects on the tour operators, accommodation, transport, logistics companies, and trading, including those involved in nature-based tourism (World Bank 2020c).

#### *Weak enabling environment forest SMEs*

Forest SMEs consist mainly of small sawmills, furniture factories, and timber outlets. Onerous licensing requirements and unclear taxation system can be a disincentive for the following of professional business practices. They have problems with access to timber sources that are approved as legal, as evidenced by their temporary forced closure following the 2015 ban on logging and timber processing due to their inability to prove the legality of their timber sources. Sourcing significant quantities of timber can be difficult due to the demand for these scarce resources from larger and often export-driven companies.

### 2.3 Village development challenges

#### *Untapped potential for village forest management to fully empower local people*

**Implementation of decentralized community forestry ('Village Forestry' in Lao PDR) is hindered by unclear tenure and definition of rights and responsibilities.** The 2019 Forestry Law clarifies that the villagers can have full rights to trees planted by them even if they are located on state land. It is, however, less clear how the villagers' role was intended to change in areas where the forests inside village territory are owned and managed by the state (for example, PFAs) or are allocated to the private sector (concessions). At the field level, the main resource available to manage forests is the local residents. However, without more clarity on their rights and roles, it will be challenging to mobilize them to contribute to forest protection. Ownership, interest, and capacity will be critical for the implementation and maintenance of long-term investments in sustainable forest management and conservation.

**Tenure of forestland continues to be a contentious issue, especially regarding forests which have been degraded by expansion of local agricultural livelihoods.** While these areas are usually in state ownership and slated for forest cover restoration, the expectation of the local people is to continue practicing their livelihoods. This is often encouraged by local government staff working in the agriculture sector despite the policy conflict with the forest sector. The unclear situation poses a risk for government investments in reforestation as the government's capacity to protect the restored sites against encroachment is

limited. Unsecure tenure is likely to deter smallholders from making long-term investments, especially forest-related investments which are long term in nature.

**The rapidly expanding plantation forestry in PFAs adds urgency to clarifying land rights.** The draft Land Law and the discussions around it suggest that granting a full land title to forest areas will not be an option. The 2018 Politburo Resolution on Land and the draft Land Law contain provisions for customary tenure, but it is not clear to what extent they apply to forest areas. Clarifying the rights of local villagers is important for any activity on forestlands but is particularly important for the rapidly expanding plantation forestry in PFAs. Degraded or barren lands where plantations shall be established are mostly fallow areas and part of the shifting cultivation cycle or are used locally for some other purpose. Formally, they are government land, but villagers still lay tenure claims on them based on customary rights or de facto ownership. The unclear interpretation of communities' rights within the PFAs also presents major environmental and social risks, given that conducting a free, prior, and informed consent (FPIC) process is not a legal requirement in Lao PDR but is certainly best practice and applied under forest certification requirement as a way to address social risks associated with plantations.

**In addition, women's participation and leadership in village forest management is currently underutilized.** While gender issues have made their way in practical policy implementation in the forest sector and progress in female empowerment has been made, women continue to be disadvantaged in several ways. Women's work burdens (home and farm) often constrain them from undertaking new agroforestry or forest-related livelihood opportunities. Land use planning approaches have also not been fully inclusive of women and other marginalized groups. Moreover, not only provincial and district forestry agencies have limited awareness as to the relevance of gender-responsive measures in their sector, but national-level agencies also overlook gender issues. Traditional social norms and weak ability to understand gender issues are the underlying issues that affect gender aspects in forestry.

*Limited efforts to scale up sustainable livelihoods and jobs that compete with those that incentivize encroachment, along with further job and income shortages due to COVID-19*

**Despite the importance of current small-scale livelihood interventions in Lao PDR, it is challenging to achieve lasting poverty alleviation through livelihood activities in a manner that contributes to the expansion of forest cover.** A study on the welfare impacts of the Scaling-Up Sustainable Participatory Forest Management (SUFORD-SU) project suggests that the villagers do not have a clear understanding of the links between VLDG and forest conservation program due to timing of the activities (Box 11) (World Bank and FIP 2019). Other studies prepared by the project indicate that better-off people engage less in pioneering shifting cultivation, but the impact on deforestation is less clear (SUFORD-SU 2018a).

**Scalability of village-level livelihood activities is a major constraint to achieving nationally or even regionally significant impacts.** As an illustration, the SUFORD-SU project spent US\$6-7 million to launch more than 20,000 village-level projects on livelihood development. The direct contribution of livelihood activities (from agroforestry) to increasing forest cover was estimated at about 2,500 ha (SUFORD-SU 2018a). At the project level, SUFORD-SU's livelihood activities were a success—more than 90 percent were still under implementation five years after their launch, but from a national perspective, the scale remains modest. There are a few potential 'game changers' that the government can undertake such as the construction of irrigation systems increasing the availability of arable land.

**Box 11: Livelihood experiences in SUFORD-SU**

One of the largest forestry projects in Lao PDR, the SUFORD-SU project and its predecessors launched altogether some 40,000 village-level projects. Studies done on these projects suggest that the livelihood projects have generally been successful in that they have improved and diversified livelihoods, they are sustainable, and they have been able to accelerate poverty reduction (Piechotta 2012, SUFORD-SU 2018a, World Bank and FIP 2019). There are, however, difficulties in reaching out to the poor who are risk averse and reluctant to take out loans. Women are even more underprivileged in this context. The long gestation period in forest-based investments is also a hindrance to their participation (World Bank and FIP 2019).

*Increasing demand for firewood*

**Demand for energy wood is also contributing to deforestation and forest degradation, but there are few policies and incentives in Lao PDR to promote alternative sources of energy or sustainable firewood harvesting.** About 2.4 million m<sup>3</sup> of wood fuel is used annually, as most people still use firewood or charcoal for cooking and heating (World Bank 2020d).

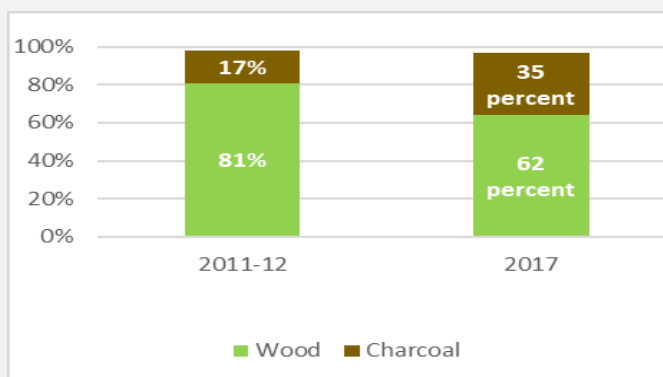
**The prospects for moving toward modern forms of cooking energy in Lao PDR remain limited,** particularly in rural areas where there is an abundance of readily available firewood that can be freely collected from the local environment. By contrast, most households consider electricity too expensive for cooking and the use of liquefied petroleum gas (LPG) is limited to financially better-off urban areas located close to the distribution networks. In addition, the Lao PDR cuisine is largely grill based and using electric stoves would ultimately mean a change in the taste of food, which is also a reason for the low uptake of cooking with electricity and LPG (World Bank 2013, 2019b).

**Box 12: Wood fuels in Khammounane**

As much as 97 percent of Khammouane's population used wood fuels as their primary cooking fuel, whereas only 3 percent used clean cooking energies such as electricity and LPG . About 35 percent used charcoal as their main cooking fuel in 2017, up from 17 percent in 2011/12 (World Bank 2020f), and 62 percent used wood as the main cooking fuel in 2017, down from 81 percent in 2011/12 (Figure 13).

Charcoal was the primary cooking fuel for over 74 percent of people in urban areas and nearly 77 percent of people in rural areas. Clean energies were used by more than 8 percent of people in urban areas but only by 1 percent in rural areas. In Nakai and Bualapha, nearly 96 percent used wood as their primary cooking fuel while less than 5 percent used charcoal.

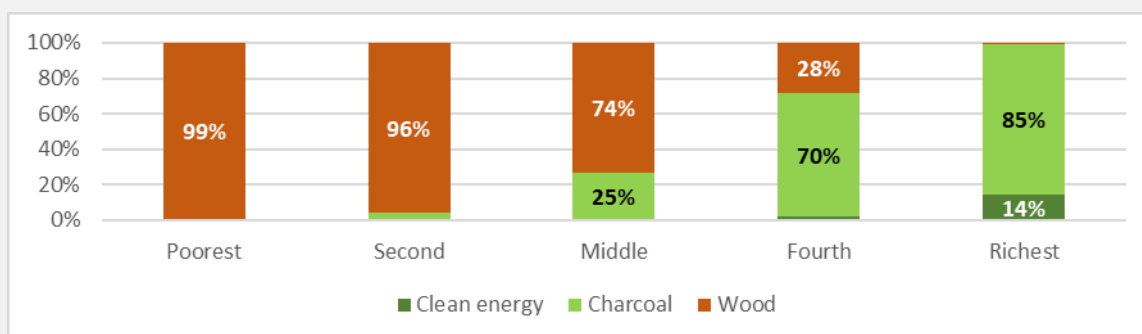
**Figure 13: % of population in Khammouane, main cooking fuels**



Source: MOH/LSB (2012) and LSIS II 2017 household data from LSB (2018b).

**Differences in primary cooking fuel were even more distinctive across household living standards.** Over 99 percent of the poorest quintile of the population in Khammouane used wood as their primary fuel in 2017 while 85 percent of the wealthiest quintile used charcoal. Clean energies were used almost exclusively by the richest quintile of the population (Figure 14).

**Figure 14: % of population in Khammouane, main cooking fuels, by income quintile**



Source: Produced from the LSIS II 2017 household data from LSB (2018b).

In addition, nearly 20 percent of Khammouane’s population used solid fuels (mainly fuelwood) for space heating when needed during the cold season in 2017. Overall, consumption of fuelwood and charcoal for cooking and other domestic purposes translates to over 280,000 tons of wood consumption per year in Khammouane. Because about 6 m<sup>3</sup> of wood is needed to produce 1 ton of charcoal, consumption would have been 76,000 tons less if households had used fuelwood instead of charcoal (even though charcoal’s energy content is about 80 percent higher than fuelwood) (World Bank 2020f). Burning charcoal, however, causes fewer health effects from smoke inhalation than burning wood. Nevertheless, the use of biomass fuels causes over 4,000 deaths annually in Lao PDR, imposing costs equivalent to 5.7 percent of GDP in 2017; their use is the country’s largest identified environmental health risk (World Bank 2020b).

## 2.4 Financing challenges

### *Addressing gaps in government financing to manage the forest estate effectively*

**The government lacks both investment and operational funds to effectively manage the current forest area.** Increasing forest cover from 58 to 70 percent through government interventions alone would require at least US\$200 million to US\$1.4 billion, or US\$80–500 per ha in investment cost, depending on

the technology and approach used.<sup>30</sup> Using local estimates, the total operational costs of forest management across the country would be about US\$15 million per year,<sup>31</sup> but the actual financing from government sources is just a fraction of this cost. The activities in the forestry sector are funded from the Forest Resource Development Fund.<sup>32</sup> The Forest Resource Development Fund budget was reduced from LAK 15 billion (US\$1.7 million) during FY2008/09–FY2013/14 to LAK 6.8 billion (US\$0.8 million) in FY2017 (MAF, 2020). This lack of funding could negate the good progress made on policies and hinder effective implementation of policies and plans. For instance, the implementation of the draft Master Plan for National Protected Areas (2020–2025) requires funding that is manyfold compared to the current level.

**Current activities of the public forest administration are highly dependent on external support.** For instance, DOFI, which is one of the agencies responsible for investigations and enforcement of forest and wildlife crime, is heavily dependent on external funding. During 2013–2018, only 7 percent, or on average LAK 140 million per year (US\$16,000), of its operational budget was financed by the government; the rest came from donor projects (Flanagan 2019).

### *Improving enabling conditions to increase public-private financing for forests*

**The forest sector has potential to become a major contributor to the country's economy by creating an enabling environment for environmentally, socially, and financially sustainable private investments.** For the government, the main revenue stream would no longer come predominately from timber royalties but from the tax revenue collected from profitable industries and their employees. This could come from both the tourism sector, as discussed in the governance opportunities section, and from the tree plantation industry.

**The envisaged scale of forest management does not appear feasible unless private sector resources, including from the tree plantation and wood industries and nature-based tourism, can be leveraged.** The commercial tree plantation sector could contribute to national targets by reforesting degraded lands. Even if only about half of the area, or 200,000 ha, were planted, the investment value would be about US\$500 million.<sup>33</sup> Still, more investment is needed, but attracting it could be a challenge unless the regulatory framework and governance are improved, including enhanced transparency and conditions favoring sustainable practices that responsible investors require. In addition, wood processing and nature-

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<sup>30</sup> This would require reforestation of about 2,800,000 ha of degraded forest. Typical methods used by the government are gap planting and assisted natural regeneration. The total investment cost applying gap planting would be US\$1.4 billion (= 2.8 million ha × US\$500 per ha) and using assisted natural regeneration the investment cost would be about US\$ 200 million (=2.8 million × US\$80 per ha). The estimate is from the SUFORD-SU project.

<sup>31</sup> The operational cost of managing PFAs has been estimated at US\$0.65 per ha or about US\$2 million per year (SUFORD-SU 2019). The cost of managing Protected Areas ranges from US\$1 to US\$2 per ha (ICBF 2018) or US\$5 million per year. The cost of protection forest management and forest areas outside the three forest categories is estimated at US\$1 per ha or about US\$8.2 million per year (SUFORD-AF 2011). In an international comparison, these are low figures; the average cost of forest management in tropical countries has been estimated at US\$6.25 per ha (Köthke 2014).

<sup>32</sup> The GoL established the Forestry and Forest Resource Development Fund in 2005 with the aim of developing a special fund for management and development of forest resources. It is a special account with explicit sources of revenue and purposes of spending. Forest Resource Development Fund is virtually the only domestic financial source for forest management due to very limited budget allocation from the GoL general budget. Forest Resource Development Fund funding sources come from timber sales from PFAs, fees for the use of forest, forestland and forest resources, fees for planting trees and NTFPs, fees for inventory of forest, forestland and forest resources, and contributions from various other sources.

<sup>33</sup> The estimate is based on consultations with industry representatives familiar with conditions in Lao PDR. The figure assumes a company-managed eucalyptus plantation on a seven-year rotation and comprising the variable costs of plantation establishment and maintenance, surveying and land cost, and annual fixed costs (Midgley, pers. comm. 2020).

based tourism enterprises have substantial potential to generate revenue from taxes and fees, in addition to supporting the livelihoods of local villagers. While entrance and concession fees for national parks and Protected Areas in the United States and Canada contribute to only about a quarter of protected area budgets, an analysis conducted in 25 countries found that, in Botswana, Kenya, and the Philippines, more than half of the funding for Protected Areas was derived from tourism revenue, the bulk of it coming from entrance fees (Buckley et al. 2012). In Lao PDR, further investment in nature-based tourism is hindered, in part, by the lack of a framework for partnerships between the private sector, communities, and Protected Areas or other natural attractions (World Bank 2019a).

**Finally, based on the recognition of forests for the overall economy, innovative public-private financing mechanisms are emerging, but there are still challenges.** There has been some initial success with setting up the REDD+ framework and there are also a few functioning payment for ecosystem services (PES) schemes. For instance, the Nam Theun hydropower facility provides funds for the conservation of the upstream watershed and the Nam Nern Night Safari offers incentives to local villagers to protect the wildlife population observed by tourists (Box 13). However, untapped opportunities include the potentially significant PES scheme established under Decree 333 on Protection Forests. Under the scheme, hydropower companies or tourism enterprises that draw direct or indirect benefits from protection forests are obliged to pay 1 percent of their annual sales value to support the management of protection forest they benefit from. Even though the decree was approved in 2010, it has not been activated. There are also challenges in the implementation of PES schemes. The Australian National University recently completed a pilot project in one of the NPAs, but it found that the high transaction costs prevented the scheme from being effective (Scheufele and Jeff 2019).

**Box 13: PES schemes under Nam Theun hydropower facility and the Nam Nern Night Safari**

The 4,000 km<sup>2</sup> Nakai Nam Theun National Park is wedged between Vietnam and the Nam Theun hydropower facility. The park is a key biodiversity area in Southeast Asia and globally. Its biodiversity is matched by its cultural diversity as the park is home to 32,000 people speaking 28 languages. The National Park Authority receives US\$1.3 million of the hydropower project revenues, each year through 2035, for conservation. For patrolling, the National Park Authority has trained local community members as rangers and has formally partnered with the military on international border areas. Some areas of the national park are zoned as total protection zones with no natural resource extraction allowed, while others provide controlled use for NTFPs, subsistence logging for new house construction, or other low-impact needs of the nearby villages. Since 2010, forest cover in the watershed has been maintained. However, loss of wildlife and high-value timber remains. These pressures—particularly wildlife threats from poaching—have, unfortunately, been pervasive in all Protected Areas across Lao PDR during this time.

The Nam Nern Night Safari is a tour created in Nam Et-Phou Louey National Park that creates incentives for 14 villages surrounding the tour area inside the Protected Areas to protect wildlife. Tourists joining the tour are required to pay into a village fund, which is dispersed to the villages annually, based on wildlife sightings made by tourists. Village revenues are also reduced based on illegal activities reported inside the park to provide maximum incentives to reduce hunting and illegal sale of wildlife. The project won the ‘World Responsible Tourism Award for Best Responsible Wildlife Experience’ in 2013 and has continued to provide wildlife viewing experiences for visitors despite hunting pressures in other parts of the country.

*Source:* World Bank 2019a, 2019d.

### 3. Opportunities and Proposed Interventions

**While the government has made tremendous improvements in the policies, approaches, and technologies used for sustainable forest landscape management over the last three decades, there remain major untapped opportunities that could help in reaching its long-standing objective of 70 percent forest cover.** Going forward, effective management will require reorientation of skill development and capacity building, reforms to the legal framework, scale-up of sustainable livelihoods, strengthened village forest management, an adequate resource allocation from the government coupled with enhanced effectiveness in using available resources, increased financing and collaboration with the private sector, and innovative public-private management approaches. The government could also benefit across sectors by adopting a holistic approach to development where forest-smart, cross-sectoral interventions under an integrated landscape framework clarify and manage trade-offs and opportunities between various land uses, including forests. The interventions would accommodate a range of cross-cutting themes such as empowering women and other marginalized groups, mitigating flood and erosion risks, addressing climate change, and providing inclusive and affordable access to forest and nonfarm livelihoods and green jobs. The government should seek ‘win-win’ solutions that enable integration of forests in interventions in related sectors. In this view, good forest governance and management contribute to better sector performance of hydropower, agriculture (especially downstream irrigated crops), and tourism, while good transport planning and maintenance should contribute to maintaining forest health.

#### 3.1 Governance reforms and strengthening

*1) Further invest in capacity building, with emphasis on establishing a well-functioning authorizing environment for public-private partnerships (PPPs) and utilizing law enforcement technologies*

**Following the ongoing shift toward increased private sector involvement, capacity building should be reoriented away from self-execution of activities toward a well-functioning authorizing environment.** Key areas that need strengthening including (further details in annex 3):

- **Planning.** Build capacities for land use planning, including supporting local authorities to establish village forest management plans, raising awareness, and strengthening enforcement.
- **Operations.** Build capacities to carry out operational processes, including selecting and preparing forest landscape projects as well as understanding and improving accounting systems.
- **Monitoring and evaluation.** Build capacities for managing data collection and sharing systems and using the existing land use information system and GIS software.

Targeted efforts should be made to hire and train women, youth, and ethnic minorities in forest agencies.

**Develop a sectoral spatial information framework** to share and use data across government in a more transparent way. The framework should allow higher level recognition of the value of data to the economy—this needs to go beyond just the forestry sector given the interplay between sectors. The framework could subsequently be translated into standards and policies that direct the development, implementation, and management of data and information custodianship roles and responsibilities and

the formal arrangements that create those roles and responsibilities within the government; it becomes easier to target capacity building and funding.

**In addition, to strengthen law enforcement, capacities should be built in the use of technologies such as remote sensing systems, big data, and artificial intelligence.** The systems and methods already developed in DOFI, such as the Strategic and Tactical Enforcement Patrol Programme (STEPP), Risk Assessment, and SPIRIT, should be consolidated as well as those in DCNEC. New technologies and approaches related to anti-money laundering and intelligence can be pursued (World Bank 2019a). Capacity for conducting investigations and presenting evidence could be enhanced to increase success rate in court cases. Training and collaboration with the Office of the Supreme People’s Prosecutor (OSPP) could be continued. Attention could also be given to getting illegal timber and wildlife trade issues onto the agenda of mainstream policing institutions. The Lao-WEN interagency platform could be strengthened to better share information in support of joint or coordinated investigations and prosecutions of forest and wildlife crimes.

*2) Establish a Landscape Investment Platform to support multisector dialogue and decision-making to balance trade-offs of land uses and secure mutual opportunities among sector projects*

**For the concept of forest landscape management to gain traction among decision-makers across a wide range of sectors, a collaborative government-led ‘Landscape Investment Platform’ is recommended to facilitate to discussion and decision-making on programs, projects, and policies.** These discussions could gain importance when they revolve around ‘major’ economic and other development activities initiated by private and/or public stakeholders (for example, tree plantations, nature-based tourism enterprises, wood processing plants, and infrastructure) or other key features (for example, high-profile forest conservation areas, forest watersheds highly vulnerable to floods, and landslides).

A government-led ‘Landscape Investment Platform’ should provide not only the opportunity for better cooperation but also the space for agencies to share data and discuss and make decisions on programs, projects, and policies. Together, they would cover several green growth topics, including climate change, production and conservation forests, agriculture and agroforestry, biodiversity, land tenure, mining, flood and erosion risks, rural development, river basin management, hydropower, infrastructure, and tourism. Coordinated action would deliver a complementary range of environmental and economic benefits from better functioning and more resilient landscapes.

*3) Revise the implementing regulations related to the Forestry Law to enhance clarity and consistency and to eliminate inconsistencies and gaps in the legal framework*

**The recently approved Forestry Law (2019) should be assessed on consistency with other forest-related laws and policies and implementation arrangements.** In particular, the inconsistencies and gaps in the legal framework for plantations should be eliminated and clear criteria for their social and environmental sustainability should be developed. In addition, the concept codified in the Forestry Law that forest management is to be “led by the villagers” would benefit from further development to ensure that the incentives, rights, and benefits to the local people are real and constitute an incentive for sustainable forest management and protection. For clarity, it is recommended that a decree and implementing procedures on village forest management be formulated by MAF.



#### *4) Review options to streamline the institutional framework for forest law enforcement*

**For administrative clarity, the option to place Provincial Offices of Forest Inspection (POFIs) administratively under the Department of Forestry Inspection (DOFI) could be explored.** The institutional structure for law enforcement is complex and sometimes not consistent with principles of good governance. By subordinating POFIs to DOFI instead of Provincial Agricultural and Provincial Offices (PAFOs), the line of command between the central and provincial levels would be strengthened and the independence of POFIs could be enhanced. The need for a broader institutional reform to further enhance the independence of enforcement units and to strengthening the overall capacity by merging agencies could be explored.

#### *5) Decide on the continuity of the logging ban to consequently adjust (or not) management objectives of the Production Forest Area (PFAs)*

**If the timber ban remains in place, the government should review whether it is still justified to maintain the forest category of PFAs or whether they should be converted into other forest categories.** Lifting (or not lifting) of the logging ban is also relevant to village forest management, as the new Forestry Law enables villagers to engage in commercial activities, including timber harvesting in the Village Use Forests in PFAs. If the logging ban is not lifted, this option could be unavailable. Consequently, this decision will also affect ongoing efforts on forest certification of PFAs, benefit-sharing mechanisms for villages and law enforcement arrangements, and other public services.

#### *6) Consider re-delineation of three forest categories to ensure their structure is optimized*

**To ensure that all remaining valuable and potentially valuable forests are brought into the network of three forest categories, the government could consider relaunching the re-delineation of their boundaries.** This would also be an opportunity to review whether the management of the area is feasible with the current financial and human resources available. The process, which was initiated by the National Assembly in 2014, was halted due to disagreements on the objectives and the technical design of the process, but this decision could now be reconsidered. The process for making these decisions has to include women and minority ethnic groups.

Re-delineation efforts should also take into account watershed prioritization undertaken at the river basin scale (that is, the MONRE strategy has identified 10 priority river basins out of the 62 in Lao PDR). Both, sub-river basin scale prioritization and alignment with the re-delineation of boundaries of the three forest categories would help focus efforts and resources and create synergies between watershed, resilience, and biodiversity objectives.

In addition to the 58 percent of forest land, there is a 19 percent (or around 4.5 million ha) of potential forest area (degraded or barren lands) inside and outside the three forest categories which are the primary target for restoration. However, if all of them were restored, the total forest area would reach 77 percent, exceeding the target by a large margin and leaving agricultural and construction land only 23 percent. As the target for agricultural land is 19 percent and for construction land 11 percent, the combined allocation for them is 30 percent, which is substantially more than the area that would be left available if all potential forests were restored.

### *7) Consider allowing private investment in PFAs*

**To restore degraded areas within PtFAs and facilitate adequate access to land for private enterprises (for example, forest plantations and tourism), the government could review the option to open selected zones in PtFAs for sustainable and effectively regulated commercial activities, providing clear benefits to local people.** Were commercial activities allowed, their identification would build on the proposed re-delineation of forest categories and would follow good examples in other neighboring countries that have shown success in opening up less sensitive areas for sustainable commercial activities. This would require an amendment to Decree 333, which states that PtFAs shall be divided into two zones—a strictly protected core zone and a controlled use zone designed for ‘traditional’, noncommercial practices. If the private sector is properly guided, this could generate revenue and employment as well as make a significant contribution to reforestation and environmental protection.

**However, before allowing commercial activities in PtFAs, a fully functional safeguard system should be in place.** The safeguard system in PFAs where commercial activities are already allowed should be considerably strengthened. This includes appropriate social safeguards preventing negative impacts on the local people and the framework for monitoring compliance and sanctioning noncompliance. As the ongoing process in production forests shows, once the implementation of the policy is under way, reversing it or even effectively guiding it is very challenging.

### *8) Consider the formation of a Department of National Parks and Wildlife Conservation in MAF*

**The Prime Minister’s Decree on Protected Areas could be accompanied by the establishment of an independent Department of National Parks and Wildlife Conservation.** This would reflect the strengthened commitment of the GoL to the emerging national park agenda and the adoption of the internationally recognized protected area categories of the International Union for Conservation of Nature (IUCN).

### *9) Plan for rural roads and infrastructure with a landscape perspective to minimize risks to biodiversity and forests*

**Given the wide-ranging direct and indirect impacts that rural roads and infrastructure can have on natural ecosystems, including deforestation and forest degradation, infrastructure development should be based on a more holistic landscape-level planning approach.** Although roads are an integral part of economic development, it is important that they are properly planned, based on a consultative process and that adequate environmental and social safeguards are applied. First, greenfield construction (that is, new roads) should be avoided unless it can be justified from the perspective of economic, environmental, social, and natural resources management. For existing roads, the focus should be on how to improve the quality of the network, including making it more climate resilient and providing effective maintenance. In cases where last-mile upgrading or construction of small-scale rural roads is needed (for example, to enable nature-based tourism development), it is recommended that construction be coupled with investments in law enforcement, nature-based revenue generation models (for example, entrance fees), and livelihoods to avoid increases in illegal extraction of wood or illegal wildlife trade.

**To ensure that the decisions are well informed, the environmental impact assessments (EIAs) of proposed roads should include the impacts on forest encroachment and hunting, in addition to the road route itself.** In the case of large highways, the potential for secondary-road expansion should also be

considered. In connection with mines, hydroelectric dams, and other large developments, the EIA should consider the impact of the roads to be constructed. Mitigation measures should look beyond the road itself to the landscape level, especially in roadless core areas and other areas of high conservation significance where road density should be minimized. Addressing environmental risks may require finding alternative routings or increased control mechanism or even cancelling projects. While current guidelines for EIA and environmental safeguards in connection with road construction are satisfactory in IDA projects, it will be important to ensure that they are well prepared and fully implemented across all types of public and private investments in the country.

### *10) Scale up nature-based solutions for disaster resilience*

**Forests play a crucial role in disaster preparedness and management and nature-based infrastructure should be enhanced as a broad-based cross-sectoral effort.** Well-functioning forest ecosystems enhance natural resilience to adverse impacts of hydrological variability. High resilience of forest ecosystems leads to reduced vulnerability of the local population, if these measures are understood by local stakeholders and ownership of these measures can be created. Nature-based solutions aim at the conservation, rehabilitation, and sustainable management of ecosystem, such as forests, water bodies, and agriculture; provide livelihood and human well-being; and are instrumental for mitigating disasters and adapting to a changing climate. As such, they can be a cost-efficient and highly effective measures to complement to traditional infrastructure developments. For mitigation and adaptation to be effective, disaster risks need to be understood and mapped in more detail, and appropriate, multisectoral responses should be formulated. This should be done selectively in specific high-priority watersheds within large interconnected productive and conservation forest landscapes, inhabited by a large number of communities. Specifically, the GoL will need to

- Further identify and map the most vulnerable villages and major forest, food, and livelihood production systems within these landscapes, including critical rice production areas that are vulnerable to landslides, flooding, or drought;
- Develop options for green and green/grey infrastructure solutions for water resource management such as terracing, drainage, and small reservoirs, buffer strips between agricultural land and rivers, wetlands, and floodplains and river restoration; and increase resilience of roads, bridges, hydro dams and other infrastructure by slope, lake, and riverbank stabilization through revegetation, forest restoration, and reforestation with partial economic uses;
- Further develop early warning and response systems; and
- Identify specific investments across sectors for more resilient infrastructure and resilient economic landscapes in targeted areas such as productive agroforestry, plantation forests, and systems of rice intensification. To facilitate this, universities and the private sector should cooperate to carry out needs assessments and deliver extension services.

## 3.2 Private sector engagement

*11) Streamline and standardize key investment and licensing processes for the plantation industry, promote environmentally and socially sustainable practices, and improve governance to attract responsible companies*

**To make it more suitable for the plantation sector and potential investors to engage in Lao PDR, procedures on awarding concession, IEE/ESIA, and monitoring and compliance should be streamlined and standardized.** This will ensure that all regulations apply equally to all investors. The fact that large areas have already been allocated for plantation companies to conduct land surveys adds to the urgency. Specifically, it is recommended that the GoL performs the following:

- **Clarify the roles and responsibilities of the Ministry of Planning and Investment and MAF/DOF** in initiating the plantation investment process.
- **Conduct a rapid assessment of current land availability in PFAs and assess carrying capacity of lands**, combining land surveys and remote sensing analysis using satellite images, and improve access to information around the availability of suitable land for investments, growth and yield, growing conditions, and risks. These assessments should be done upstream, before licensing of large pulp mills to anticipate the amount of land needed to supply their estimated capacity.
- **Prepare guidelines for investors**, based on the findings from the rapid assessment. These should include information on site identification, engagement with communities, dealing with customary tenure when making land available to investors, and defining investors' responsibilities in maintaining and improving local livelihoods. Water requirements for existing and planned native and commercial plantations should be taken into account with these assessments, which can build on the Four River Basin Water Balance Assessments.
- **Review and streamline public licensing and supervision procedures** so that they are predictable and transparent to all parties involved. These procedures will need to allow communities to engage early on in the scope and nature of plantations to address potential social conflicts and to explore the partnerships for outsourcing and outgrower schemes, intercropping, and other possibilities for economic participation. These arrangements with communities and/or farmers are likely necessary to reduce the likelihood of conflicts, encroachment, and timber theft.
- **Standardize the benefit-sharing arrangement and the requirements for regeneration practices and project closure across all tree plantation investments.** Conditions for plantation investment to benefit from carbon payments should be clarified. The process for making these decisions has to include women and minority ethnic groups.
- **Improve the IEE/ESIA process** by allowing it to be suitably tailored to plantation investments while ensuring that necessary requirements and safeguards are not undermined. These reformulated requirements need to be legally binding and properly monitored and enforced by MONRE and MAF.

**Given the resource constraints in public administration, it is necessary to seek a new balance between enforcement and guidance by the government and self-regulation by the private sector.** It is in the interest of the government to attract responsible investors capable of self-regulation. To encourage their entry, the government could make sure that they do not face unfair competition from companies resorting to unsustainable practices. Independent monitoring through forest certification bodies could also be considered. Options include the Voluntary Partnership Agreement (VPA) licensing process under FLEGT and the levers related to the MOIC's requirements for processors to plant trees to ensure

sustainable supply. There may be opportunities to engage with government bodies promoting sustainable practices in countries where investors come from.

*12) Invest in public-private research and development (R&D) on good silvicultural practices*

**To improve the silvicultural practices of local communities, public-private cooperation on R&D should be promoted.** Whereas larger companies typically adopt good practices, communities often do not have access to pest control, quality planting material, and management practices to address biophysical risks to forest plantations. In Lao PDR, it will be important to strengthen the public service (NAFRI<sup>34</sup>) to lead such cooperation, including on maintaining seed production areas and seed stands, developing species and site matching, and identifying and mitigating biological (for example, diseases and pests) and climate (for example, prolonged drought) risks.

*13) Increase the supply of legal wood products by strengthening and formalizing the framework for timber tracking, building on the ongoing European Union (EU) VPA work*

**While there is high potential for increasing the value of wood exports, more needs to be done to increase the supply of legal wood and wood products from Lao PDR.** This would facilitate the access of Lao wood products to lucrative international markets in the EU and North America. Specifically, the ongoing work under the EU VPA on developing legality definitions and framework for timber tracking should be continued and accelerated. National Timber Legality Assurance Systems (TLASs) are the cornerstone of a VPA which in turn is the key supply-side measure of the EU FLEGT Action Plan. The government should furthermore encourage private companies to apply either national or international certification standards for forest plantations and consider grant fiscal incentives if applied.

*14) Improve the destination management planning and enabling environment for nature-based tourism investment in and around Protected Areas and consider private investments in Protected Areas*

**Lao PDR has the opportunity to promote greener economic growth that creates jobs by investing in its tourism sector, especially nature-based tourism.** The country's comparative advantage in tourism is its stunning natural landscapes and biodiversity, including world-class caves, rivers, waterfalls, and forests. With the right investment, capacity, and controls, this natural wealth can be harnessed to promote investment opportunities that support nature-based tourism for greener economic growth (World Bank 2019a). In the aftermath of COVID-19, it would be worthwhile to work across borders to allow regional nature-based tourism within the Mekong Subregion.

**Despite COVID-19 and the current low tourism flow globally, it will be essential to think long term and reduce barriers related to tourism business investment in Lao PDR by simplifying business registration process and streamlining regulatory requirements and procedures for licensing.** For forest nature-based tourism, it is recommended to start strategic destination management planning of nature-based tourism in Protected Areas, including the regulations and procedures for tourism concessions in Protected Areas and other natural landscapes that provide clear steps and incentives for businesses to invest in nature-based tourism. Further investment in implementing destination management strategies in selected highly viable areas should be considered. As recent assessments in Cambodia demonstrate, there is a good

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<sup>34</sup> NAFRI = National Agriculture and Forestry Research Institute.

opportunity that nature-based tourism might be one of the most preferred options for tourism in the recovery phase after COVID-19, as it allows social distancing and does not promote mass tourism. In particular, improvements needed in the enabling environment to attract responsible businesses and meet the demand for sustainable and profitable tourism include the following:

- **Improving the business environment for private enterprises**, including streamlining business licensing and regulations for investment in Protected Areas, providing investors with secure opportunities for long-term investment in or around NPAs, establishing an investment protection mechanism, and adopting clear regulations and procedures for concessions and land use. Ensuring that strategies, investment plans, and product development are in line with market demand and requirements will be a critical key to success
- **Strengthening the revenue management of NPAs** by developing a transparent system for entrance and concession fees and the proper use of revenues for conservation and livelihoods in and adjacent to Protected Areas, with a focus on vulnerable sites near high-profile attractions, as well as finalizing the Master Plan for NPAs (2020–2025).
- **Establishing partnerships with local communities for good ecosystem and visitor experience management** and reviewing and potentially expanding Community Conservation Agreements between relevant authorities and communities within or adjacent to NPAs. Women entrepreneurs should be supported to lead local business development. Investments in best practices around health/hygiene and risk mitigation for local population once borders reopen will be essential
- **Financing last-mile infrastructure**, including roads, in and around priority conservation landscapes. This includes ensuring that all infrastructure is planned and constructed in an environmentally and socially responsible manner, based on a consultative process.

Carrying out these actions in a coordinated way can put tourism development on a sustainable path that fosters green growth and thereby contributes to jobs, livelihoods, and poverty reduction.

### 3.3 Village empowerment

#### *15) Clarify land tenure arrangements in the three forest categories*

**Strengthening local tenure of forestland is expected to encourage villagers' investments in forest-based activities, especially forest-related investments which are long term in nature.** While the draft Land Law seems to exclude full titles to forestland for the local residents, other options to enhance tenure security should be sought to encourage investments and enhance their permanence. In particular, it is recommended that the government clarifies whether agricultural land, including fallow land, that is located inside the three forest categories is classified as agricultural or forestland and what tenure rights apply to them. Based on the experience with the Forest Management and Conservation Project (FOMACOP),<sup>35</sup> strengthened tenure and rights combined with capacity building provide villagers with a

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<sup>35</sup> FOMACOP implemented in 1995–2000 introduced a model where the entire forest area in selected PFAs in Khammouane and Savannakhet were managed by Village Forestry Committees with technical support and supervision from government agencies. At the time, the model was considered a success, but its implementation was eventually discontinued by the government as a government-led model was considered more sustainable.

sense of ownership and an interest in protecting and making long-term investments in forest management. In addition, the government should accelerate the ongoing process to develop and test guidelines on how to determine and apply customary rights inside the three forest categories and develop Village Development Plans. This should be done as a cross-sectoral exercise, including the private sector, which is increasingly the driving force behind agricultural expansion and potentially a major user of degraded forests in Production Forests through the ongoing expansion of commercial plantations. The role of Village Forestry and the role private companies can play in forest management should also be further clarified. In doing so, it will be critical to balance economic and environmental trade-offs. While the overall policy objectives such as the expansion of forest cover should not be compromised, for any tenure option to be sustainable, it must be able to maintain local livelihoods.

Engage gender experts to analyze and recommend revisions to relevant regulations and guidelines to reflect gender considerations as critical for forest protection, monitoring, equal user rights and benefit sharing, and resource management

*16) Scale up livelihood development around forest areas through intensification, nature-based infrastructure, and cross-sectoral collaboration*

**Apart from contributing to poverty reduction, livelihood development in Protected Areas aims to reduce demand for agricultural land so that the pressure to encroach into forest areas is reduced.**

Currently, the main strategy to achieve this is to induce a switch from shifting cultivation to sedentary practices. While this approach remains valid, the strategies could be diversified to increase promotion of off-farm employment and expand the land area around forests that is suitable for permanent agriculture (for example, through irrigation). To enable a sufficiently large scale of livelihood activities, coordinated action between forestry and large-scale agricultural/rural development projects could be established and improved.

**Livelihood development should be scaled up through long-term cross-sectoral collaboration and immediate public sector investment programs in response to job scarcity resulting from the COVID-19 pandemic.** Immediate investments should focus on labor-intensive activities that could provide rapid economic relief to rural communities, including forest restoration activities and establishing infrastructure for tourism. Non-timber products have been playing a crucial role in satisfying immediate economic needs and have great economic potential in the cosmetic, food, and medicine sectors. More sophisticated approaches paired with better access to NTFPs could represent an immediate solution for many villagers.

**One notable opportunity for coordination is to increase agricultural productivity in areas with high pressure on forests.** It is estimated that, even without changing the extent of irrigation, attainable yields can be doubled by improved management and, with irrigation in place, it could be tripled (World Bank 2020d). Priority approaches include increasing productivity by introducing improved techniques and expanding the area of suitable land for permanent agriculture. Where feasible, promotion of labor-intensive and high-income activities should be favored because they reduce the time and need for farmers to engage in shifting cultivation. Diversification should focus more on high-yield crops such as vegetables, fruits, animal husbandry, livestock, and aquaculture to improve livelihood of local communities. Support to some forms of livestock production is questionable due to emissions and other environmental impacts from some animals. To ensure that the intensification of crop production does not lead to uncontrolled

expansion of the cultivated area, the effort at intensification should be coupled with enhanced enforcement and/or other negative incentives for deforestation.

**In addition, extension services and technical assistance (TA) to promote verticalization of agroforestry and NTFP processing and diversification will be needed.** Extension services and TA should increasingly promote value chain work to expand from assisting primary producers to putting increased emphasis on assisting traders and SMEs, as the benefits in terms of increased income could be higher when working higher up in the value chain. The extension service needs to focus on women and youth in a more targeted way. The niche for forest-based livelihoods lies in the farmers' interest to diversify their economy. Opportunities exist in promoting new products such as *mai tiew* for white charcoal production or forest tea as well as in sustainable timber harvesting and sales in Village Use Forests in PFAs. For the latter, regulatory reforms are needed to simplify the complex requirement to sell timber through auctions.

*17) Develop policies and incentives to promote sustainable wood fuels, increase efficiencies of kilns and cookstoves, and promote alternative energy sources*

**While wood fuel and charcoal are expected to remain the dominant cooking fuels in Lao PDR in the years ahead, there are opportunities to reduce demand in both urban and rural areas.** In urban areas, the best opportunities are to encourage households and business to switch to other energy sources for cooking such as electricity and gas and to promote sustainable wood fuels. Incentives and control mechanism to enforce legal charcoal sources for the hotel and restaurant industry can also make a difference. Biomass fuels such as pellets also provide a low-carbon alternative to coal and oil for direct heat applications and steam production for industry.

In the rural areas, the introduction of better biomass stoves and biogas systems and awareness raising are key measures. These will not only address a higher caloric efficiency but also have significant impacts on respiratory health. Improvement of market mechanisms and value chains for stoves and biogas systems could make the products more affordable and accessible to consumers. These processes should be led by women to increase quality of engagement. Decentralized, mixed-use tree growing for multiple purposes is a viable option for supplying wood fuels in areas of high deficit, in multi-strata home gardens and woodlots, and along field boundaries. There is a need to ease the regulatory conditions applicable to sustainable charcoal, to encourage compliance and bring the industry fully into the formal economy.

### 3.4 Financing

*18) Increase public financing for monitoring and law enforcement, extension, and activities that have potential to leverage financing from the private sector*

**With the increased recognition of environmental services of forests and the shift toward increased private sector participation, the government should place a high priority on public funding for forest monitoring, law enforcement, extension services, and public-private cooperation.** Monitoring, law enforcement, and extension services are particularly important for adequately supporting and monitoring private investments (for example, maintaining assets for ecotourism in Protected Areas, engaging with communities to prevent timber theft, and improving extension to community outgrower schemes). Many of those areas are currently covered by donor financed initiatives (Annex 2). It is however uncertain how long-term support from bilateral and multilateral support for forest landscapes will evolve, therefore it is



strategic to identify other revenue sources over the next years to address this potential funding gap in future. Appropriate private sector revenue management systems also need to be improved or established to appropriately fund forest management in areas that they benefit from and share those benefits with communities.

#### *19) Seize untapped opportunities to benefit from PES schemes for hydropower and other sectors*

**In addition to reducing forest degradation and biodiversity loss, good forest management is also good for business, mainly for sectors that receive downstream services from forests such as agriculture, water supply, and hydropower.** This presents opportunities for rural communities to be compensated for the value of conserving and maintaining these ecosystem services through PES mechanisms. However, the existing legislation enabling the establishment of PES in protection forests (Decree 333) has not been activated to date. Since the hydropower sector has the capacity to compensate for the high value of services it receives from protection forest, the opportunity to activate the scheme should be explored as a priority. Revenue potential is significant; the average value of indirect ecosystem services of the forest in the Lower Mekong Basin, including Lao PDR, has been estimated at US\$183 per ha per year with the range of US\$3–399 ha per year (World Bank 2020d). Benefits of forests for increasing resilience of rural roads, water supply, and agriculture productivity are also recognized, but revenues from private operators and government revenues are not yet captured or directed to the forest service providers and villages. In the mining industry, benefits for establishing direct links exist, but the catchment size is generally smaller than hydropower dams. Mining and exploration projects are, as part of license requirements, required to pay into five funds, one of which is an Environmental Fund and another is a Community Development Fund, but they have yet to be applied for environmental or community purposes despite previous recommendations of the Strategic Environmental and Social Assessment undertaken in 2016 and the push by mining companies themselves. Finally, it will be important that all of these functions are incorporated in the assessment of the economic value of Lao PDR's forests.

#### **Box 14. Building on global and local experiences in PES**

**Payment for environmental services could build on global experience on PES, as well as emerging good experience in Lao PDR,** such as Nakai Nam Theun National Park, which receives significant operational park budget and livelihoods grants for enclave villages from the Nam Theun Power Company for erosion prevention services from biodiversity conservation. In this way the life of the reservoir is extended and local benefits can be better shared.

In Nam Et Phou Louey National Park, the acclaimed night safari provides payments to villages next to the park when safari participants spot various species of wildlife, providing an added incentive to villagers for wildlife conservation (insert reference from Nature 2019). The World Bank is providing financing to both parks through the LENS2 operation, reinforced by the Green Growth Development Policy Operation (GGDPO) series which provided support to establish Nakai Nam Theun National Park.

#### *20) Seize untapped opportunities to benefit from REDD+ and other climate finance options*

**Lao PDR is positioning itself well to benefit from carbon financing associated with REDD+.** The World Bank and its Forest Carbon Partnership Facility (FCPF) are negotiating an Emissions Reduction Purchase Agreement from its Carbon Fund in six northern provinces of up to US\$42 million from the World Bank's Carbon Fund to Lao PDR for 2020–2024, building on the over US\$8 million in TA for national REDD readiness. In addition, the Green Climate Fund is allocating resources to a Results-Based Payment Pilot

Program and providing grant financing of approximately US\$12 million through the German Agency for International Cooperation (*Deutsche Gesellschaft für Internationale Zusammenarbeit, GIZ*) to support MAF to implement its emissions reductions program. A large portfolio of public sector and private investments, including from IDA, Global Environmental Facility (GEF), other development partners, and the private sector, are or will be providing the up-front financing to deliver the emissions reductions. To ensure that these benefits are shared in an equitable and inclusive manner, it will be critical to involve women, ethnic minorities, and youth in the decision-making related to these projects and investments as well as develop related regulations and guidelines on the conditions for benefitting from carbon payments.

*21) Improve the enabling environment and access to finance for environmentally responsible companies, especially for SMEs*

**The forest sector has the potential to become a major contributor to the economy of Lao PDR, with a transition of the government's main revenue source away from timber royalties and toward tax revenue collected from profitable industries and their employees.** This could come from both the tourism sector, as discussed in the governance opportunities section, and the tree plantation industry, as discussed in the private sector opportunities section. This will require a range of interventions, including (a) removing various barriers to private investment, (b) strengthening value chains for sustainable and profitable tree-based industries, and (c) promoting high-quality nature-based tourism products that respond to market demand.

**To promote productivity, the government plans to name priority SMEs that will benefit from tax incentives and low-interest loans.** These SMEs will also be given the necessary information and technology to improve productivity. The government has allocated a budget of US\$23 million and US\$100 million from China for SME promotion and development under the 2020 National Socio-Economic Development Plan (NSEDPP). The government will also impose measures to promote and support Lao PDR manufacturing firms that use local natural resources as their raw materials to add value to their products. The SMEs in wood processing and furniture industry are well positioned to take advantage of these opportunities and to increase the value added generated by the sector. It will be important to include relevant forest SMEs in this emerging support system. Furthermore, a strategic assessment of the enabling environment for forest SMEs should be undertaken, analyzing credit and finance systems, information systems, tax and incentives systems, and regulatory environment. Considering fiscal incentives for those industries that are certified under international or national standards would be an important signal for companies to apply due process and would reduce overall management and monitoring costs at the public side.

### 3.5 Opportunities for regional collaboration

**Lao PDR's neighbors in the Mekong Region have significantly advanced policy reforms on forest landscapes over the last few years.** Following high deforestation rates in the past, all governments are going through impressive reform processes, including on forest and land legislation. Countries are opening up for dialogue and recognize the concept of cross-sectoral forest landscapes as a pathway to economic and environmental resilience. Yet, those policy reforms lack implementation. There are significant opportunities for collaboration which would benefit Lao PDR in several areas relevant to economic development option but also address aspects of resilience, trade, and biodiversity.

- Tourists typically travel in the entire region, but nature-based tourism is not yet well connected, which could mainly benefit Myanmar and Lao PDR, where ecotourism is still underdeveloped. Countries from the greater Mekong region could also introduce a “*travel bubble*” to promote regional ecotourism opportunities on short haul routes;
- Vietnam, southern China, and Thailand have vibrant plantation industries, and Myanmar and Lao PDR can benefit from that experience through PPPs, private investors, and advanced regulatory support for SMEs as their markets are opening up
- No country in the Greater Mekong Region can solve global or regional environmental challenges alone; road networks and infrastructure development, wildfires, droughts, floods, illegal timber and biodiversity trade, coastal erosion, watershed management, deforestation and degradation, and climate resilience are just a few of the issues that will need both multicountry and regional solutions and cooperation which are currently not facilitated to address the increasing threats

**The World Bank is the development partner of choice in all Mekong countries for supporting forest landscapes with approximately US\$650 million** of IDA/IBRD for forest landscape operations, including Investment Project Financing (IPF) and Advisory Services and Analytics (ASAs) (the largest World Bank wide). Coordination with GPs and departments of Water, Land, Agriculture, Mining, Governance, Tourism, and the International Finance Corporation (IFC) is increasingly part of the operations and policy dialogue at the national level. Having a presence in all countries offers the opportunity to think across borders and connect national projects to address the new drivers of deforestation.

### 3.6 Draft Road map for implementing recommendations

Challenge	Recommendation	Priority Actions	<1 year	2–3 Years	3+ Years	Institutions
<b>Governance</b>						
Limited capacities to plan, implement, monitor, and enforce existing policies and plans	1. Further invest in capacity building, with emphasis on establishing a well-functioning authorizing environment for PPPs and utilizing law enforcement technologies.	<b>1.1 Conduct a capacity needs assessment in forest administration</b> to plan for developing new skills needed in the ongoing policy transition, with focus on hiring women and youth in forest agencies.				MAF/DOF NAFRI
		<b>1.2 Conduct trainings on national and local levels</b> on land use planning and enforcement, village forest management planning, monitoring and evaluation, and selected operations, including identification and preparation of forest landscape projects, advanced accounting systems, and implementing targeted efforts to enhance the participation of women and minority ethnic groups in forest management.				MONRE, MAF National University of Lao PDR, Faculty of Forestry Science and Faculty of Social Science
		<b>1.3 Conduct trainings on the use of new technologies</b> for forest monitoring and enforcement such as remote sensing.				DOFI, Environmental Police, NUOL
		<b>1.4 Conduct trainings on existing systems and methods of forest law enforcement</b> including STEPP, SPIRIT, and Risk Assessment.				DOFI NUOL
		<b>1.5 Conduct trainings on advanced investigation techniques</b> , focusing on illegal timber and wildlife trade.				DOFI, Environmental Police, Environmental Police, Customs, DOI at MAF NUOL
		<b>1.6 Introduce succession planning</b> in agencies that do not yet have it.				As relevant
		<b>1.7 Develop language capacity of key staff</b> to enable their participation.				All agencies
Institutional arrangements for forest and wildlife law	2. Review the institutional setup for forest and wildlife law enforcement	<b>2.1 Consider placing POFI administratively under DOFI</b>				
		<b>2.2 Conduct an assessment of opportunities to streamline the institutional framework for forest law</b>				

Challenge	Recommendation	Priority Actions	<1 year	2–3 Years	3+ Years	Institutions
enforcement are complex but interagency collaboration is required for effective law enforcement	to make it more effective and to eliminate potential for conflicts of interest	<b>enforcement and to strengthen Lao-WEN.</b>				
Ineffective national and provincial coordination to reconcile competing interest for land uses	3. Establish Landscape Investment Platform to support multisector dialogue and decision-making to balance trade-offs of land uses and secure mutual opportunities among sector projects.	<b>3.1 Establish a government-led ‘Landscape Investment Platform’</b> , including setting up a management framework (for example, steering committee, ministry focal points, initial six-month calendar).				Led by MoF or MPI provincial authorities
		<b>3.2 Prepare a three-year work plan/strategy for the platform</b> (for example, identify priority landscape decisions that need to be discussed, by whom, and detail the steps required to reach these decisions).				Led by MoF or MPI (Participating ministries TBD in year 1)
Unclear and conflicting interpretations of Forest Law, objectives of production forests, and delineations of three forest categories	4. Revise the implementing regulations related to the Forestry Law to enhance clarity and consistency and to eliminate inconsistencies and gaps in the legal framework.	<b>4.1 Develop and adopt a decree on village forest management</b> that clarifies the legal framework for plantations and provides clear criteria on environmental and social sustainability and local benefit sharing.				MAF
		<b>4.2 Prepare implementing procedures on village forest management.</b>				MAF, DOF/Village Forest and NTFPs Management Division (VFNMD)
		<b>4.3 Provide training on applying the Village Forestry implementing procedures</b> at the local level.				MAF, DOF/VFNMD
	5. Decide on continuity of the logging ban to consequently adjust (or not) management objectives of the PFAs.	<b>5.1 Determine whether or not to lift the logging ban.</b>				Prime Minister’s Office
		<b>5.2 – If the ban is lifted, then review whether the PFA category should remain</b> or should be converted into other forest categories.				MONRE, MAF
		<b>5.3 (TBD) – If the ban is lifted, develop guidelines and regulatory framework for villagers to engage in sustainable timber harvesting</b> in Village Use Forests in PFAs.				MONRE, MAF, MPI

Challenge	Recommendation	Priority Actions	<1 year	2-3 Years	3+ Years	Institutions
		<b>5.4. – Determine if certification efforts in PFAs should continue.</b>				MONRE, MAF
	6. Consider re-delineation of three forest categories to ensure their structure is optimized.	<b>6.1 Relaunch the re-delineation of the three forest category boundaries</b> , including reaching agreement on their objectives				MAF, MONRE, Ministry of National Defense
		<b>6.2 Review whether the management of all forest areas is feasible</b> with the current financial and human resources available.				MONRE, MAF, MoF
Inefficient management arrangements for protection and conservation areas	7. Consider allowing private investment in PtFAs.	<b>7.1 Prepare an amendment to Decree 333, based on a review</b> of the conditions for opening selected less sensitive, degraded areas of PtFAs for sustainable commercial activities, including tourism.				Prime Minister’s Office, MAF/DOF, DALaM
		<b>7.2 Develop a fully functioning system of environmental and social safeguards</b> , before allowing commercial activities inside PFAs and PtFAs.				MONRE, MAF Lao Front for National Development Lao Women Union
		<b>7.3 Adopt the amendment to Decree 333</b> (after the environmental and social system is in place).				MONRE, MAF
		<b>7.4 Support the implementation of the amendment to Decree 333</b> through investments and trainings				MONRE, MAF
	8. Consider the formation of a Department of National Parks and Wildlife Conservation in MAF.	<b>8.1 Establish an independent Department of National Parks and Wildlife Conservation</b> (Phase 1 activities to include defining an institutional framework and first-year implementation road map, with detailed roles and responsibilities, budgets, priority activities, and key performance indicators).				Prime Minister’s Office
		<b>8.2 Adopt the internationally recognized protected area categories</b> of the IUCN.				MONRE, MAF, ministry of Information, Culutre and Tourism
		<b>8.3 Develop a high-level 5-year strategy</b> for the Department of National Parks and Wildlife				MONRE, MAF

Challenge	Recommendation	Priority Actions	<1 year	2-3 Years	3+ Years	Institutions
		Conservation.				
		<b>8.4 Develop a detailed 1-year work plan</b> for year 2 of the Department of National Parks and Wildlife Conservation.				MONRE, MAF
Lack of integrated infrastructure planning	9. Improve the implementation of existing environmental and social guidelines in the context of planning rural roads and infrastructure paying special attention to landscape-level impacts	<b>9.1 Conduct an assessment of the landscape-level effects of recently developed infrastructure.</b>				Ministry of Public Works and Transport
		<b>9.2 Update guidance on enhancing the quality of the road network, including making it more climate resilient and providing effective maintenance.</b>				
		<b>9.3 Conduct training in applying the ESIA on road projects.</b>				MONRE
		<b>9.4 Strengthen oversight on implementation of ESIA in the context of infrastructure planning (mining, hydro, railroad, or other infrastructure).</b>				
Lack of integrated disaster risk management	10. Scale up nature-based solutions for disaster resilience.	<b>10.1 Conduct a detailed disaster risk and vulnerability mapping.</b>				National Disaster Management Office (NDMO)
		<b>10.2 Elaborate concepts for resilient economic landscapes in targeted areas</b> , such as productive agroforestry and systems of rice intensification, <b>and conduct needs assessments</b> for green and green/grey infrastructure.				NDMO in collaboration with universities
		<b>10.4 Further develop early warning and response systems.</b>				NDMO
		<b>10.5 Invest in priority</b> green and green/grey infrastructure.				Government, development partners, private enterprises
		<b>10.6 Develop and deliver extension services</b> on productive agroforestry, plantation forests, and other priority nature-based solutions identified.				MAF

Challenge	Recommendation	Priority Actions	<1 year	2-3 Years	3+ Years	Institutions
<b>Private sector</b>						
Untapped potential for forest plantation and wood industry	11. Streamline and standardize key investment and licensing processes for the plantation industry, promote environmentally and socially sustainable practices, and improve governance to attract responsible companies.	<b>11.1 Clarify the roles and responsibilities of the Ministry of Planning and Investment</b> and MAF/DOF in initiating the plantation investment process.				Prime Minister's Office
		<b>11.2 Conduct a rapid assessment of current land availability in PFAs</b> combining land surveys and remote sensing analysis using up-to-date satellite images and improve access to information.				DOF DALaM
		<b>11.3 Prepare guidelines for investors</b> , with information on site identification, engagement with communities, dealing with customary tenure, and defining investors' responsibilities on livelihoods.				DOF and DALaM (MAF) DoL (MONRE)
		<b>11.4 Review and streamline public licensing and supervision procedures</b> so they are predictable and transparent to all, address potential social conflicts, enable partnerships for economic participation, and reduce encroachment and timber theft.				MPI
		<b>11.5 Update IEE/ESIA process requirements and guidance</b> for plantation investments.				MONRE, MAF
		<b>11.6 Provide capacity building to strengthen monitoring and enforcement of IEE/ESIA.</b>				MONRE, MAF
		<b>11.7 Standardize benefit-sharing arrangements and requirements for regeneration practices and project closure for plantations investments</b> , and clarify conditions for private sector to benefit from carbon payments.				MPI, MAF
	12. Invest in public-private R&D on good silvicultural practices.	<b>12.1 Identify opportunities for public-private cooperation and investments in R&amp;D to improve silviculture practices.</b>				Universities, NAFRI
		<b>12.2 Finance priority investments in silviculture R&amp;D</b> related to seed production and site matching, biological risks, and climate risks.				Universities, NAFRI
	13. Increase the supply of legal wood products by	<b>13.1 Accelerate ongoing work under the EU VPA</b> on developing legality definitions and framework for				DOF



Challenge	Recommendation	Priority Actions	<1 year	2–3 Years	3+ Years	Institutions
	strengthening and formalizing the framework for timber tracking, building on the ongoing EU VPA work.	timber tracking.				
		<b>13.3 Provide technical assistance to strengthen application of certification standards.</b>				DOF, MOIC
Undeveloped nature-based tourism	14. Improve the destination management planning and enabling environment for nature-based tourism investment in and around Protected Areas and consider private investments in Protected Areas.	<b>14.1 Streamline business licensing and regulations for investment in Protected Areas and consider partnerships with private investors in Protected Areas.</b>				Prime Minister's Office, MPI
		<b>14.2 Establish an investment protection mechanism.</b>				MPI
		<b>14.3 Adopt clear regulations and procedures for concessions and land use.</b>				MPI
		<b>14.4 Develop a transparent system for entrance and concession fees</b> and the proper use of revenues for conservation and livelihoods in and adjacent to Protected Areas.				MAF
		<b>14.5 Finalize the Master Plan for NPAs (2020–2025).</b>				MAF
		<b>14.6 Establish partnerships with local communities for good ecosystem and visitor experience management,</b> reviewing and potentially expanding Community Conservation Agreements between relevant authorities and communities within or adjacent to NPAs.				MAF, private sector
		<b>14.7 Finance last-mile infrastructure,</b> including roads in and around priority conservation landscapes, and ensure that all infrastructure is planned and constructed in an environmentally and socially responsible manner, based on a consultative process.				MPI
<b>Village empowerment</b>						
Untapped potential for village forest management to fully empower local people	15. Clarify land tenure arrangements in the three forest categories.	<b>15.1 Clarify the tenure classification and rights of agriculture land and fallow land</b> located inside the three forest categories.				MONRE (DoL), MAF (DOF and DALaM)
		<b>15.2 Develop and test guidelines on customary rights</b> inside the three forest categories				MONRE

Challenge	Recommendation	Priority Actions	<1 year	2-3 Years	3+ Years	Institutions
		<b>15.3 Clarify the role of Village Forestry.</b>				MAF, DOF/VFNMD
		<b>14.4 Clarify the role that private companies can play in forest management.</b>				MAF
Limited efforts to scale up sustainable livelihoods that compete with those that incentivize encroachment, along with further job and income shortages due to COVID-19	16. Scale up livelihood development around forest areas through intensification, nature-based infrastructure, and cross-sectoral collaboration.	<b>16.1 Invest immediately in public sector programs in response to job scarcity resulting from the COVID-19 pandemic</b> , including forest restoration activities and establishing infrastructure for tourism.				MoF with implementation assigned to MAF and Ministry of Public Works and Transport Ministry of Labor and Social Welfare
		<b>16.2 Identify sustainable approaches to expand the area of suitable land for permanent agriculture.</b>				MAF (DOF and DALaM)
		<b>16.3 Provide extension services and TA on techniques to increase agricultural productivity</b> in areas with high pressure on forests.				MAF
		<b>16.4 Provide extension services and TA to promote NTFP processing and diversification</b> , including new products such as <i>mai tiew</i> for white charcoal production or forest tea.				MAF (Department of technical Extension and Agro-processing), DALaM and DOF
		<b>16.5 Develop and adopt regulatory reforms on Village Use Forests in PFAs</b> to simplify the complex requirement to sell timber through auctions.				MAF
		<b>16.6 Provide extension services and TA to promote verticalization of agroforestry</b> , including in sustainable timber harvesting and sales in Village Use Forests in PFAs.				MAF
		Increasing demand for wood fuel	17. Develop policies and incentives to promote sustainable wood fuels, increase efficiencies of kilns and cookstoves, and promote alternative energy sources.	<b>17.1 Identify and invest in activities/projects that increase the supply of sustainable wood fuels</b> , including biomass pellets and sustainable charcoal production from decentralized, mixed-use tree growing.		
<b>17.2 Reform regulations applicable to sustainable charcoal</b> to make it easier for the industry to integrate						MAF Ministry of Energy

Challenge	Recommendation	Priority Actions	<1 year	2-3 Years	3+ Years	Institutions
		into the formal economy and strengthen compliance.				and Mines
		<b>17.3 Design and implement a behavior change program to encourage households and businesses to purchase sustainable firewood and, in urban areas, to switch to alternative energy source.</b> This will include a range of incentives, communications and awareness strategies, and other social and psychological design elements.				Ministry of Energy and Mines/ MAF/ DAEC / MONRE
		<b>17.4 Conduct a needs assessment on the biomass and biogas value chains.</b>				MONRE, MAF and MEM
		<b>17.5 Implement priority biomass and biogas enabling environment and market mechanism reforms/activities</b> identified in the needs assessment to make them more affordable and accessible options for rural consumers, including efficient cookstoves and charcoal kilns.				DAEC
<b>Financing</b>						
Insufficient government financing to manage the forest area effectively	18. Increase public financing for monitoring and law enforcement, extension, and activities that have potential to leverage financing from the private sector.	<b>18.1 Increase public funding for forest monitoring, law enforcement, and extension services,</b> including the development of a 6-year strategy for the use of the funds, to be updated biannually.				MoF
		<b>18.2 Increase public funding for activities and partnerships that leverage private financing for forests.</b>				MoF
		<b>18.3 Establish and improve appropriate private sector forest revenue management systems and benefit-sharing arrangements with communities.</b>				MAF
Insufficient enabling conditions to increase public-private financing for forests	19. Seize untapped opportunities to benefit from PES schemes for hydropower and other sectors.	<b>19.1 Conduct a Wealth Accounting and the Valuation of Ecosystem Services (WAVES)</b> to incorporate economic value in the assessment of Lao PDR's forests.				Universities, NAFRI
		<b>19.2 Strengthen the implementation of Decree 333 on PES in protection forests.</b>				MONRE
		<b>19.3 Strengthen guidance on the use of resources in Environmental Protection and Community</b>				Ministry of Energy and Mines

Challenge	Recommendation	Priority Actions	<1 year	2–3 Years	3+ Years	Institutions
		<b>Development Funds financed by mining projects.</b>				
		<b>19.4 Establish a pilot PES mechanism</b> focused on hydropower.				MONRE
		<b>19.5 Establish 3 additional PES mechanisms</b> in priority target areas and sectors identified through a consultative process.				MONRE
	20. Seize untapped opportunities to benefit from REDD+ and other climate finance options.	<b>20.1 Finalize the Emissions Reduction Purchase Agreement for Northern Lao PDR</b> , of up to US\$42 million from the World Bank’s Carbon Fund to Lao PDR for 2020–2024.				MAF
		<b>20.1 Implement the Emissions Reduction Program for Northern Lao PDR</b> , with support from the World Bank, Carbon Fund, GIZ, and other public and private sector partners and funding mechanisms.				MAF
Weak enabling environment for private companies and forest SMEs	21. Improve the enabling environment and access to finance for environmentally responsible companies, especially for SMEs.	<b>21.1 Remove barriers to private investment</b> in forest-related sectors, including forest plantations and nature-based tourism.				MONRE, MAF and MPI
		<b>21.2 Strengthen value chains for sustainable and profitable tree-based industries.</b>				MOIC, MAF
		<b>21.3 Conduct a strategic assessment of the enabling environment for forest SMEs</b> , including analyses on regulations and on credit and finance, information, and tax and incentives systems.				MPI
		<b>21.4 Include Forest SME in the 2020 NSEDP</b> and measures that support manufacturing firms using local natural resources as raw materials and add value to their products.				MPI

## 4. World Bank Group Engagement in Sustainable Forest Landscapes in Lao PDR

**The known and anticipated investment by development partners in the Lao forest sector (including selected activities in related sectors with impact on the forest sector) between 2008 and 2027 totals US\$326 million.** The World Bank Group with its partners (Forest Investment Program [FIP], FCPF, and GEF) has the largest and most versatile portfolio covering topics such as climate/change REDD+, forest production, forest conservation, village forest management, forest law enforcement and governance, agriculture and livelihoods, poverty reduction, tourism, land titling, and planning for green growth.

### 4.1 World Bank Group-financed operations in Lao PDR related to forest and climate change

**The World Bank's sectorwide approach to forests and land use in Lao PDR is aligned with its corporate commitments to forests and climate change.** The World Bank is promoting a transition from individual projects toward a more integrated programmatic approach to forest landscapes through multiple complementary instruments and lending and non-lending operations, including

- (a) A programmatic Green Growth Development Policy Operations (GGDPO) series;
- (b) Two phases of the Green Growth Advisory Program (P162394, P171011); and
- (c) Complementary World Bank Group-supported investments.

**Forest landscapes operations and policy dialogue, well integrated into the Lao PDR Green Growth Program, would further support the country's transition to a greener, more sustainable development path.** In calendar year 2019, complementary financing was under implementation, including

- Second Green Growth Development Policy Operation (GGDPO2, P166839);
- IDA financing for a flagship forestry IPF (SUFORD, P130222);
- Second Laos Environmental and Social Project (LENS2, P128393/P128392);
- An Emissions Reduction Purchase, to be negotiated in 2020 (P165751); and
- Confirmation of a request for the IDA/GEF Landscapes and Livelihoods Project (P171406/P170559), which has since January 2020 been under preparation.

**The Green Growth Program has leveraged multisectoral dialogues and tasks above to support the development of a strong 9th National Social Environmental Development Plan .** The national development planning process is now integrating stronger policies and approaches on the EIA, pollution management, sustainable forestry, conservation, nature-based tourism, and climate action, building on the country's NDC and NGGS, which are supported by the Green Growth Program team. In addition to having long-lasting impacts on mainstreaming climate and sustainability into sectoral planning and implementation, this sets the basis for a stronger COVID-19 recovery.

### **Analytical work under the Green Growth Advisory related to forest and forest landscapes includes**

- Partnerships and Opportunities for a New Green Forest Economy in Lao PDR: Sustaining Forest Landscapes and Livelihoods (P164376, delivered, World Bank/IFC/GoL);
- Developing Nature-based Tourism as a Strategic Sector for Green Growth in Lao PDR (P164372, delivered 2019, World Bank/GoL);
- Landscape Valuation (P169455, ongoing);
- Lao PDR Biodiversity: A Priority for Resilient Green Growth (P174103, delivery to client in June 2020, World Bank/GoL);
- Environmental Challenges and Opportunities for Green Growth in Lao PDR (Assessment on the State of Environment) (P164374, World Bank/GoL);
- Policy notes on topics such as cookstoves (Energy/Environment, Natural Resources, and Blue Economy [ENB] Global Practices [GPs]), pesticides management (ENB/Agriculture GPs), and environmental management;
- High-level public-private policy dialogues on forest sector investment (World Bank/IFC/GoL/firms);
- High-level dialogues on green growth;
- Support to NSEDP-9 development (ongoing); and
- Support to policy development in the GGDP series.

**This strategic portfolio has led, and is further expected to lead, to several important impacts to sustainably reduce poverty, boost prosperity, and set the stage for recovery from COVID-19.** Already, approximately 600,000 rural people (nearly 9 percent of the population) have been reached by forest projects implemented during 2019.

**Going forward, cross-sectoral approaches involving multiple ministries, which are being put in practice in other sectors in Lao PDR, should be further integrated in forest sector projects.** Two projects, the Reducing Rural Poverty and Malnutrition Project and the Scaling-Up Water Supply, Sanitation, and Hygiene Project, involve five different ministries and engage multiple sectors to address the causes of childhood undernutrition. In the forest sector, the government's willingness to engage in cross-sectoral activities could be capitalized on in the future, starting with two pipeline operations:

- (a) The Laos Landscape and Livelihoods Project is a large-scale landscape engagement addressing Protected Areas, forestry, and nature-based tourism for multiple economic, environmental, and climate benefits (P170559 IDA/P171406 GEF). It will also leverage IFC and private sector investments in plantation forestry and tourism. It is expected to take on most of the recommendations from this Country Forest Note and support the transition to a green forest economy.
- (b) The Carbon Fund Emission Reductions Payment Agreement (ERPA) implements the Lao PDR REDD+ framework. This operation will directly support several interventions under the World Bank Forest Action Plan Focus Areas (Sustainable Forestry and Forest Smart Interventions) and

Cross-Cutting Themes (Climate Change and Resilience, Rights and Participation, Institutions and Governance).

**Both of these operations are also aligned with the World Bank Climate Change Action Plan's top-level priorities** on (a) supporting transformational policies and institutions by translating Lao PDR's NDC into climate policies and investment plans into actions and (b) scaling up climate action by mobilizing REDD+ financing to support a large-scale, multisectoral land use program that, in Lao PDR, focuses on forest resources. It builds on activities funded by the FCPF Readiness Fund, which have principally supported the formulation of an enabling policy framework for REDD+ at the national level and broad-based implementation plan at the sub-national level.

**Cross-sectoral approaches within the World Bank through collaboration between ENB and other GPs.** Several active and pipeline World Bank operations in Lao PDR show how collaboration can strengthen analytical work and project preparation and implementation, including the following examples of the interface of Lao Landscape and Livelihoods (LLL) IPF preparation with other projects:

- **Agriculture and livelihoods.** Collaboration between AGF on crop value chains and ENB on NTFP and agroforestry value chains has been productive during the ongoing design of LLL. The two projects would benefit from spatial coordination in districts to crowd in livelihoods support. The Poverty Reduction Fund (PRF) operation (SUR) could also provide local livelihoods and infrastructure support where relevant and present. These synergies would be identified at the district level and operationalized at local levels, when villages are mobilized and village-level integrated forest and land use plans are developed.
- **Tourism.** Collaboration between the Macroeconomics Trade and Investment (MTI) GP and ENB on analytical and policy work on nature-based tourism strengthened the market and investment outlook in a report delivered under the Green Growth Advisory Program (P162374) and is informing LLL design. Follow-up analytics and implementation of tourism-related project activities would continue to leverage this collaboration.
- **Water and disaster risk management.** Collaboration between the Water GP, SUR GP, and ENB on the IWRM and disaster risk management projects. The sharing of information and data on floods and high disaster risk areas in key basins informed the development of detailed terms of reference for the conduct of an assessment on and preliminary site selection of priority climate and disaster risk reduction activities in the upcoming LLL operation under preparation (P170559). Information from the hydromet services supported in the two current projects can be deployed to the approximately 800–1000 villages to be targeted in LLL.
- **Land.** Collaboration between the preparation of the proposed Systematic Land Registration Project (P169669, SUR) and ENB's LLL IPF is helping to provide viable, legal solutions for forest interventions. Joint dialogue with client counterparts is ongoing on how to complement respective designs of the GPSURR project, which targets land outside the three forest categories, with activities of the ENB project, which focuses on forestlands. Given that there is currently no clear legal framework to land titling inside forest areas, the initial stage of the ENB project would not finance land titling inside forestlands but would strengthen the policy dialogue with relevant counterparts to clarify the process.

**In addition, the Green Growth Program has created synergies between the World Bank and IFC policy and technical advice and convened the private and public sectors to improve the enabling environment for sustainable forestry.** This is expected to create good jobs while partnering with villages to improve livelihoods. IFC Advisory Services have been crucial to push forward policies on reforestation and plantations and the dialogue with prospective private plantation companies. IFC is also supporting ecotourism engagement of the World Bank.

#### **External partner support on forests and related sectors in Lao PDR includes**

- EU support for FLEGT;
- The Asian Development Bank (ADB) and EU support for sustainable rural infrastructure and watershed management;
- German (GIZ, Kreditanstalt für Wiederaufbau [KfW]) support on climate protection, protected area management, Village Forestry, and forest governance;
- JICA support on sustainable forest management and REDD+;
- Food and Agriculture Organization of the United Nations (FAO) support on climate-smart agriculture;
- Australian Centre for International Agricultural Research (ACIAR)
- International Fund for Agricultural Development (IFAD) support on irrigation and commercialization of smallholder agriculture; and
- Asia-Pacific Network for Sustainable Forest Management and Rehabilitation (APFNet) support for the development of methods on sustainable forest management.

Annex 2 has a more detailed list of donor-financed interventions and projects (ongoing and planned).

## 4.2 Lao Landscape and Livelihoods Project

**The upcoming Lao Landscape and Livelihoods Project (P170559) will support an emerging government platform for strategically converging World Bank and partner-supported operations in spatially explicit forest landscapes.** The convergence mechanism aims to address programs, projects, and policies involving the forest estate on green growth, climate change, disaster risks, land tenure, agriculture and agroforestry, rural development, river basin management, hydropower, infrastructure, and tourism. The operation would build on the achievements of the IDA/FIP-supported Scaling-Up Participatory Sustainable Forest Management Project (P130222) and the IDA/GEF-supported Second Lao PDR Environment and Social Project (P128393) as well as coordinate with the Smallholder Forestry Project supported by IFC and FIP. It would also serve as a key coordination and delivery mechanism for the next Country Partnership Framework (CPF).

**The project will continue to provide support to the government to spatially and technically coordinate landscape management efforts by key development partner operations (Annex 2).** The project engagement and consultative process has been ongoing for more than one year through formal settings such as the Forest Sector Working Group, Green Growth Forum, missions for SUFOR and LENS2 IPFs, and REDD+ readiness and ERPA. Informal and bilateral consultations were also held with GIZ and KfW (on



biodiversity conservation, Protected Areas management, Village Forestry, and REDD+), *Agence Française de Développement* (AFD) (sustainable forest management, livelihoods, green growth), ADB (biodiversity conservation, FIP), IFC (FIP and sustainable agroforestry), JICA (Monitoring and verification (MR) and emissions reduction monitoring), GEF (Biodiversity and Land Degradation), United Nations Office for Drugs and Crimes (UNODC) (IWT and forest law enforcement), ACIR (action research agenda and legal support to policy development), WCS (technical support to protected area management), and Swedish Chamber of Commerce (vocational training in forestry and timber plantations). During implementation, the Landscape and Livelihood operation will further document and promote examples of local landscape management-level practices and build on the monitoring and evaluation experiences and strengths of the FIP and FCPF operations. For example, during an implementation support mission for the SUFORD project, the LLL task team visited a village also being supported by another World Bank-financed project (the PRF) and documented a landscape management agreement established by villagers (Box 15).

**Box 15. Local Landscape Management Agreement established by villages supported by the World Bank PRF in Lao PDR**

**The PRF funded a small-scale irrigation system in the northern province of Luang Namtha to divert a portion of a small forest stream passing through a village to irrigate mountain paddies during the dry season.** In addition to enabling a second rice harvest, which has positive impacts on livelihoods and nutrition, it is designed to encourage forest conservation by making it less attractive to continue traditional slash and burn rotational agriculture, which often results in deforestation and long-term land conversion.

**Building on this investment, the villagers made an agreement with a more remote village upstream of the small mountain stream.** The agreement committed the village upstream (of a different ethnic group) to maintain the riparian forest in good health to guarantee a steady and reliable water flux for the irrigation scheme. In exchange, the downstream village would commit to give a portion of the irrigated dry-season rice. This type of agreement was done outside the project scope (which stopped financing the community irrigation scheme for the downstream village). It reveals the refined understanding of the value of ecosystem services and of forests in maintaining them, which is rooted in centuries of traditional 'landscape management'.

**The project will also continue to engage with other GPs on both analytical work and investments that directly or indirectly support sustainable forest management in Lao PDR.** Most of these activities are already well coordinated through the Green Growth Trust Fund (GGTF) or through the current forest IPFs.

- **The Agriculture GP's support for PRF-III**, wherever technically and ecologically feasible, includes a combination of crops and integrated farming and agroforestry interventions at the household and group levels. As a community-driven development (CDD) project, PRF-III + AF supports small-scale community-based subprojects, including rehabilitation of existing irrigation schemes and construction of reservoirs/ponds for crop production, home gardening, and small livestock. To preserve and protect water resources, irrigation schemes, and reservoirs/riverbanks (both upstream and downstream), the local communities are promoted and trained on conservation and protection of the forest areas, particularly those in and around the spring sources/intakes of water and along the irrigation canals. A village implementation team (VIT) is established and trained for implementation and operations and maintenance of the subprojects, including periodical cleanup maintenance.
- **The Energy and Mining GP** is supporting better practices for mining, to address the management of mine waste (including tailings) and mine closure and repurposing of land. Policy dialogue

supports development of regulations and guidelines and development of capacity for monitoring and support enforcement. Although they are not major drivers of deforestation, both LSM and ASM activities have affected natural resources, especially forest and water resources. Important, however, is increasing landscape-level planning and licensing and increasing certainty that inactive sites will be restored.

**Table 4: World Bank Group-financed operations in Lao PDR related to forest and climate change**

Project title	Donor(s)	Amount (US\$, millions)	Calendar year	Theme	Lead government institution
SUFORD Project	FIP/IDA/MAF	44.39	2012–2021	Forestry, REDD+	MAF
GGDPO 1,2	IDA	80.00	2016–2019	Green Growth, Protected Areas, Forestry, Environment	MPI + MAF for Forestry
Second Lao Environment and Social Project (LENS2)	IDA	32.00	2014–2021	Protected Areas and Wildlife, Environment	MAF
REDD Readiness TA	FCPF	8.30	2014–2020 (possible extension to 2021)	Forestry, REDD+	MAF
Smallholder Forestry Project	FIP/IFC	7.30	2016–2020	Forestry	MAF
Poverty Reduction Fund III	IDA	22.50	2020–2024	Agriculture and Rural Development	MAF
Agriculture Competitiveness Project	IDA	25.00	2018–2023	Agriculture	MAF
<i>Subtotal amount (portfolio):</i>		<i>194.49</i>			
Carbon Fund (FCPF) ERPA	FCPF	55.00 <sup>a</sup>	TBD	Forestry and Climate Change (REDD+)	MAF
GGDPO 3	IDA	40.00	2021	Forest Governance	MPI and MAF for Forestry
Lao Landscapes and Livelihood Project	(IDA/GEF	57.30 <sup>b</sup>	2021–2027	Forest Landscape Management	MAF
<i>Subtotal amount (pipeline/potential funding)</i>		<i>152.30</i>			
<b>Total amount (current portfolio + pipeline/potential funding)</b>		<b>346.79<sup>c</sup></b>			

Note: a. Subject to outcomes of the ERPA negotiations and agreement on emission reduction volume (Letter of Intent states 8.4 million emission reductions while the GoL is proposing 11 million).

b. Significant parallel financing from IFC and/or other private sector entities expected.

c. Private sector financing is not reflected in this figure.

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## Annex 1. Development Partner Operations in Forests and Land Use

Development partner/time frame/status	Operation	Location		Budget (US\$, million)		Themes
		GFL	National	GFL	National	
World Bank FCPF Carbon Fund ERPA 2020-2025 Appraisal	Governance, Forest Landscapes and Livelihoods in Northern Laos (GFL ERPA)	Bokeo Huaphan Luang Namtha Luang Prabang Oudomxay Sayabouri		Up to 55		To make payments to the Program Entity for measured, reported and verified Emissions Reductions (ER) from reduced deforestation, forest degradation and enhancement of forest carbon stocks (REDD+) in six Lao PDR provinces and to distribute ER payments in accordance with an agreed benefit sharing plan (BSP).
World Bank IDA/FIP 2013-2021 Implementation	Scaling-Up Participatory Sustainable Forest Management Project (SUFORD series including 2020-2021 Additional Financing)	Bokeo Huaphan Luang Namtha Luang Prabang Oudomxay Sayabouri	National	13.2 estimate	44.39	The project objective is to strengthen participatory sustainable forest management in targeted PFAs, and forest landscape management in targeted provinces (Revised February 2020). Also addressing forest crimes, landscape investment planning, policy development, certification, institutional capacity, forest planning, village forest management, and REDD+. 1.8m tCO <sub>2</sub> e net emissions reduction achieved nationally as of January 2020.
World Bank IDA 2018-2019 Implementation	GGDPO 2	All	National	5 estimate	40	Forest governance, forest production, conservation, environmental and social impact assessment, strategic environmental assessment, national planning for green growth.
World Bank IDA 2020-2022 Implementation	GGDPO 3	All	National	5 estimate	40	Forest governance, forest production, conservation, environmental and social impact assessment, strategic environmental assessment, national planning for green growth.
World Bank IDA/GEF 2014-2021 Implementation	Second Lao Environment and Social Project (LENS2)	Luang Prabang, Huaphan	National	4 (10%)	38	Protected Areas, illegal wildlife and forest crimes.



Development partner/time frame/status	Operation	Location		Budget (US\$, million)		Themes
		GFL	National	GFL	National	
World Bank FCPF 2014-2020 Implementation	REDD Readiness TA	All	National	3.3	8.3	To contribute to Lao PDR's efforts to design and implement a sound national REDD+ strategy. Also includes funding of the REDD+ team, and GFL and ERPA preparation and, if extended, implementation. <i>Note:</i> Extension to 2021 under consideration once FCPF is extended globally.
World Bank IDA 2018-2024 Implementation	Agriculture Competitiveness Project (ACP)	Sayabouri	National	6	25	Sustainable smallholder agriculture, focusing on upland maize, rice and vegetable value chains in five provinces.
World Bank IDA 2020-2024 Implementation	Poverty Reduction Fund III Additional Financing	Oudomxay, Huaphan	National	8 estimate	22.5	Support Self-Help Groups, Production Groups and Farmers Nutrition Groups to invest in their activities (small animal raising, aquaculture, cash crop and rice production, home gardening, buffalo dairy farming being piloted) which may help reduce pressures on forest resources. Also, Community Development Sub-grants will support construction and rehabilitation of complementary small such as irrigation, selected access road to farm land or markets, harvest and post-harvest processing technology/facilities animal raising facilities, fish raising/pond, improved watershed schemes, and storage for vegetable/home gardening.
World Bank IDA/GEF 2021-2027 Preparation	Lao Landscapes and Livelihood Project (LLL)	TBD	TBD	12 estimate	57.3	To improve sustainable forest management and enhance livelihoods and tourism opportunities in selected landscapes in northern, central and southern Lao PDR.
World Bank IDA/GEF 2020-2025 Preparation	Enhancing Systematic Land Registration Project	TBD	National	1 estimate	25	Focuses on land titling in specific provinces to be determined (outside the north), and the institutional environment nationally.
IFC/FIP 2016-2020 Implementation	Smallholder Forestry Project	Sayabouri	National	1.5	7.3	Promotes sustainable models of plantation partnerships among government, firms and smallholders

Development partner/time frame/status	Operation	Location		Budget (US\$, million)		Themes
		GFL	National	GFL	National	
IFAD 2020-2026 Negotiation	PICSA Partnerships for Irrigation and Commercialization of Smallholder Agriculture	Huaphan Luang Prabang Sayabouri	-	29	-	Profitable smallholder irrigated agriculture, improved diets, encompassing increased dietary intake and improved diet quality for nutritionally vulnerable group, school-based nutrition interventions
ADB/EU 2019-2027 Implementation	Sustainable Rural Infrastructure and Watershed Management Sector Project	Huaphan Luang Prabang	National	5 estimate	US\$49.46	The project will increase the profitability of agriculture, natural resources and rural development by enhancing sustainable, market oriented agricultural production together with natural resources management.
APFNet 2015-2022 Implementation	SFM-NL Sustainable Forest Management in the Northern part of Lao PDR	Bokeo Luang Namtha Odomxay		3.56		To explore, test and demonstrate effective approaches on forest restoration and forest management and responding mechanism to generate sustainable flow of benefit to closely related stakeholders; To strengthen forest law enforcement and promote cooperation on trans-boundary biodiversity conservation; To share information and knowledge of best practices on forest restoration and rehabilitation.
EU 2013-2021 Implementation	FLEGT	-	National	4.50 (25%)	13.50	To improve opportunities for the Lao timber industry to access the EU market, diversify timber industry and products, and increase revenue from timber exports
GIZ 2019-2021 Implementation	CliPAD Climate Protection through Avoided Deforestation	Houaphan, Luang Prabang, Sayaboury	National	2.8	-	The framework conditions for implementing the GoL's ERP have been improved at national level and in six northern provinces
GIZ 2008-2020 Implementation	CliPAD – FC Climate Protection through Avoided Deforestation- Financial Cooperation Module	-	National	2.75	8.25	To regulate and promote sustainable management, protection and conservation of village forests by establishing a legal basis and framework to link all village forest categories with international funding for climate change mitigation, and to channel it down to the village-level through performance-based payments
GIZ 2020-2024 Implementation	I-GFL Implementation Plan – Governance, Forest Landscapes and Livelihoods – Northern Laos	Huaphan Luang Prabang Sayabouri	-	22.70	-	Objective is to support the Government and people of Laos in changing the present-day use of forests and landscapes and to ensure a transition to sustainable management at scale. This will reduce close to 58m tCO <sub>2</sub> eq over the project's duration.

Development partner/time frame/status	Operation	Location		Budget (US\$, million)		Themes
		GFL	National	GFL	National	
	Sub-Project 1, Phase 1					
JICA 2015-2020 Implementation	F-REDD Sustainable Forest Management and REDD+ Support Project	Luang Prabang Oudomxay	National	2 estimate	6.9	Capacity for Sustainable Forest Management is strengthened through incorporation of REDD+ into the sector strategy and improved forest resource information.
KfW 2019-2025 Implementation	VFMP Village Forestry Management Project	Luang Prabang Sayabouri	National	TBD	TBD	The condition of forest ecosystems and the livelihood of the population in the project areas are improved by the sustainable management of village forests.
KfW 2015-2022 Implementation	ICBF Integrated Conservation of Biodiversity and Forests	Bokeo Luang Namtha	National	9.4	1.3	Effective management of two target landscapes (NPAs, corridors) contributes to sustaining biodiversity in forest ecosystems, while supporting livelihoods of forest-dependent communities. ICBF supports various measures to address the loss of biodiversity/ forests (threats/ drivers)
FAO 2020-2025 formulation	Climate Smart Agriculture alternatives for upland production systems in Lao PDR	Huaphan Luang Prabang	National	1-2	2-4	To enhance resilience of vulnerable upland communities to climate change impacts through CSA practices in upland production systems
Sub-Total				132.71	193.41	
TOTAL (including pipeline)				326.12		

## Annex 2. Institutional Capacity Gaps and Capacity Response

*(Assessment summarized in the disclosed Environmental and Social Management Framework for the Emissions Reduction Program for Northern Lao PDR)*

<b>Institution</b>	<b>Capacity gaps</b>	<b>Capacity response</b>	<b>Priority</b>
Department of Agricultural Land Management	Land use plan implementation and extension services	Support for a survey to understand how land use plans are implemented on the ground	Medium
DOFI	Informing stakeholders of their rights and responsibilities	Increase support for awareness- raising activities	Medium
	Monitoring and evaluation	Support for data collection system; data-sharing systems established; IT infrastructure including cloud-based systems to ensure that data maintenance, security and access; Standard Operating Procedures and training	High
	Staff turnover	Support for training staff	Low
Department of Technical Extension and Agro-Processing	Inadequate staff to support field programs and extension services	Provide staffing support through the provision of five contractors/ consultants; support for training staff	Medium
Division of Land Use Planning	Land use plan implementation	Support for awareness-raising and enforcement	Medium
	Monitoring and evaluation	Trainings on the existing land use information system	High
Forestry and Forest Resource Development Fund Office	Managing workloads	Provide staffing support through the provision of five contractors/ consultants	Medium
	Understanding of REDD+	Further workshops and training in REDD+; secondment to REDD Division	Low
	Operating policies and guidelines	Support to establish formal and transparent operating processes around project selection, appraisal and approval	High
	Monitoring and evaluation	Data-sharing systems established; IT infrastructure including cloud-based systems to ensure data maintenance, security and access; Standard Operating Procedures and training	High
	Understanding of budgets	Improved accounting systems	High
Forestry Promotion, Plantation & Reforestation Division	Managing workloads	Provide staffing support through the provision of seven contractors/ consultants	Medium
Plantation & Reforestation Division	Extension services	Support for providing seedlings and training to local communities	Medium
	Understanding of REDD+	Further workshops and training in REDD+; secondments to REDD Division	Medium
Production Forests Management Division	Monitoring and evaluation	GIS software and training	Medium
	Communication with international donors	English language training	Low
Protected Areas Management Division	Managing workloads	Provide staffing support through the provision of eight contractors/ consultants	Medium

<b>Institution</b>	<b>Capacity gaps</b>	<b>Capacity response</b>	<b>Priority</b>
	Limited and unpredictable budgets	Support in establishing income- generating activities, such as payment for ecosystems services (for example, eco- tourism)	Medium
	Monitoring and evaluation	Data-sharing systems established; IT infrastructure including cloud-based systems to ensure data maintenance, security and access; Standard Operating Procedures and training	High
REDD+ Division	Managing workloads	Provide staffing support through the provision of six contractors/ consultants	Medium
	Understanding of REDD+ across government institutions	Increase support for education and awareness raising activities, to promote REDD+ across government	Low
Village Forests & NTFPs Management Division	Monitoring and evaluation	Data-sharing systems established; IT infrastructure including cloud-based systems to ensure data maintenance, security and access; Standard Operating Procedures and training	High
	Capacity to establish village forest management plans throughout the country	Support to continue work to establish village forest management plans	

## Annex 3. Policy documents with relevance to forest sector

Policy Document	Contents most relevant to forest sector
National Green Growth Strategy 2030	Tourism is identified as a priority sector to deliver greener and more resilient economic growth. Enhanced environmental quality including the status of forests is seen as key in generating new growth opportunities from nature-based tourism. Target for certified forests is set at 230,000 ha.
National Land Use Master Plan (2019)	The Plan determines the strategic direction on the land development and use in line with the national socio-economic development. The allocation of main land uses includes the target of reaching 70% forest cover nationwide; 19% is set aside for agricultural production to ensure the support for food security, while 11% is assigned for residential areas, public infrastructure development, expansion of industries and for other land-use purposes.
8th National Socio-Economic Development Plan (2016-2020)	Sets the outcomes, outputs and targets for Lao PDR for five years, including with respect to forests, land, agriculture and water. Quantitative targets for the forest sector include allocation of 600,000 hectares to forestry, certification of 30% of total PFA, restoration of 500,000 hectares of production forest, forest allocation and management plans at village level in 1,500 villages, reduction of illegal trade of wood products and wildlife trafficking by 5%
Five-year Agriculture and Forestry Development Plan (2016-2020)	MAF prepares and submits five-year plans and annual plans for the forestry sector. The plan for the period 2016-2020 includes the following expected outputs 1) Manage, protect and develop forest under MAF's responsibility in order to contribute to forest cover of 70%, through reforestation of degraded forest in PFA of 650,000 hectares and planting of the trees over 100,000 hectares; 2) increase the area of forest certified forest to 20% of total forest production area, 3) establish and manage village forest in 1,500 villages across the country, 4) carry out the 2nd National Forest Inventory (NFI), 5) prepare and develop techniques and standard procedures to access (sell) carbon credits beyond 2020.
National Strategy on Climate Change (2013-2020) and Climate Change Action Plan (2013-2020)	Calls for mainstreaming climate change to the policy and forestry management activities; forest planning and development programs must be consistent with the productivity of the forest. The main intervention for mitigation is to stop "slash and burn" agriculture by forest management, afforestation of degraded forest and reforestation to increase the forest cover to 65% by 2015 and 70% by 2020.
Biodiversity Strategy and Action Plan (2016-2025)	Outlines the issues, goals and actions needed to protect biodiversity resources and ensure their sustainable use. The goal of the NBSAP is to maintain biodiversity as a key to poverty reduction and to protection of the current asset base of the poor by 1) institutionalizing innovative multi stakeholder efforts to arrest the degradation and enhance conservation of ecosystems and biodiversity resources therein, 2) providing clear and enforceable guidance for the sustainable use of biodiversity resources to support poverty alleviation and sustainable economic growth, and 3) establishing practical mechanisms for ensuring fair and equitable sharing of benefits from the use of biodiversity resources.
Intended Nationally Determined Contribution (2015)	Regarding forest sector the NDC sets the goal of increasing national forest cover to 70% of the total land area by 2020. It also includes the objectives of promoting climate resilience in forestry production and forest ecosystems, as well as technical capacity in the forestry sector to manage forests for climate change adaptation. FLEGT is identified as a key instrument to implement NDC.
Ten Year Natural Resources and Environment Strategy 2016-2025 (NRES 2016-2025):	The vision is to make Lao DPR green, clean and beautiful, based on green economic growth, ensuring ensure sustainable, resilient economic development. The strategy includes 2030 targets that address, inter alia, forest cover, biodiversity protection, use of hazardous chemicals in the agriculture and forestry sector, climate change mitigation, resource consumption from industry and tourism. The objectives to be

<b>Policy Document</b>	<b>Contents most relevant to forest sector</b>
	achieved by 2025 include ensure sustainable use, management, protection and conservation of natural resources to support long term sustainable economic development, ensure Lao PDR is informed and prepared for adapting climate change, responding to climate change impacts (natural disasters) and contributing to global greenhouse gas (GHG) emission reductions.
REDD+ Strategy (2025) and Vision (2030), (draft under review)	The objective is reduce emissions from deforestation and forest degradation through the strengthening of: (1) forestland and forest planning and allocation in cooperation with relevant stakeholders, (2) the practices of stakeholders who use and manage forests and forestland, including for mixed agriculture and rural development, (3) collaboration with stakeholders to protect forest landscapes effectively, and (4) support to stakeholders for the sustainable management of forestland and forests
Master Plan for the National Protected Areas of Lao PDR 2020-2025 (draft under review)	The vision for the NPAs in Lao PDR - until 2025 – and beyond, is to have a NPA system, well-represented in terms of both different ecosystem representation as well as protecting internationally significant biodiversity, which are effectively managed to protect and conserve the unique biodiversity through collaborative management involving stakeholders at all levels, and equitable benefit sharing.

## Annex 4. Glossary

<b>Adaptation</b>	The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects (Intergovernmental Panel on Climate Change, 2014).
<b>Adventure tourism</b>	Tourism that usually takes place in natural environments that is the venue for adventure activities and the focus is often, but not always, on the activities more than the environment.
<b>Agroforestry</b>	Land-use systems and practices in which trees are deliberately integrated with crops and/or animals on the same land management unit (Food and Agriculture Organization, 2011).
<b>Assisted natural regeneration (ANR)</b>	ANR is a method for enhancing the establishment of secondary forest from degraded grassland and shrub vegetation by protecting and nurturing the mother trees and their wildlings inherently present in the area. ANR aims to accelerate, rather than replace, natural successional processes by removing or reducing barriers to natural forest regeneration such as soil degradation, competition with weedy species, and recurring disturbances (for example, fire, grazing, and wood harvesting).
<b>Barren land</b>	Treeless land inside designated forest, as defined by the GoL.
<b>Basins, river basins</b>	See watershed below.
<b>Biodiversity</b>	Diversity of the ecosystems consisting of various types and species of living things such as plants, animals, insects and micro-organism in a given natural area.
<b>Buffer zone</b>	Buffer zone means the area with or without forest, which is part of the Conservation Forests area and surrounding areas which the state allocates for the villages to use and to prevent the encroachment in and surrounding of Conservation Forests. This ensures the prevention of negative impacts to the forest ecosystem within the Conservation Forests area.
<b>Chain of custody</b>	Chain of custody is a documented system of verifiable ownership that establishes the traceability of individual timber or timber products from the end user through its various processing and transportation steps back to the forest of origin.
<b>Controlling the supply chain</b>	Timber-tracking systems to help demonstrate that timber originates from legal sources, focusing on critical control points and the collection and management of information related to timber flow at those control points. The timber-tracking system covers the entire supply chain from point of harvest or point of import to point of export.
<b>Conservation forest (CFA)</b>	Lao PDR's forest estate comprises three official forest categories – conservation, production, and protection -- that together form most of the natural wealth in the forest landscape. These lands are managed by MAF DOF and account for 70 percent of the country's total land area. Conservation Forest (CF), also known generally as Protected Areas, are managed primarily for biodiversity conservation in two national parks, 22 NPAs, 66 provincial and 143 district Protected Areas; together these areas total 4.8 million ha, of which 3.5 million ha are forested. Most have not been formally delineated.
<b>Convention on International Trade in Endangered Species (CITES)</b>	An intergovernmental agreement to ensure that international trade in specimens of wild animals and plants does not threaten their survival.
<b>Conversion Forestland</b>	A term commonly used in Lao PDR, this refers to a change from a forestland to another land use, often infrastructure.
<b>Deforestation</b>	The act of cutting, clearing, burning, and killing trees by using chemical or other methods that cause damages to forests.



<b>Degraded forest</b>	The forest area that has been heavily damaged, such as land without forest or fallow forestland, which are designated for reforestation, permanent agroforestry or other land use purposes in accordance with the NSEDP.
<b>Ecotourism</b>	Responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education (TIES, 2015). Education is meant to be inclusive of both staff and guests.
<b>Encroachment of forest and forestland</b>	Unlawful acts of conversion, acquisition, reservation, and utilization of forestland.
<b>Forest</b>	Lao forest definition, or “current forests,” includes a diameter breast height >10 cm, crown cover >20 percent, minimum area >0.5 ha, while canopy cover between 10 and 20 percent are defined as “potential forests.”
<b>Forestland</b>	Every land area, with or without forest cover, that is determined by the State to be forestland under one of the three official forest categories.
<b>Forest cover</b>	Forest cover is defined by forested land (Lao and FAO standards)
<b>Forest landscape restoration</b>	An active process that brings people together to identify, negotiate and implement practices that restore an agreed optimal balance of the ecological, social and economic benefits of forests and trees within a broader pattern of land uses (FAO and UNCCD, 2015).
<b>Illegal logging</b>	Illegal logging means that timber is not being harvested according to the laws of the country in which the trees grow.
<b>Impacts</b>	Positive and negative, primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended (OECD, 2004).
<b>Industrial wood processing factory</b>	Sawmills, lumber mills, furniture factories, flooring factories, veneer factories, pulpwood factories and plywood factories.
<b>Integrated landscape management</b>	Long-term collaboration among different groups of land managers and stakeholders to achieve the multiple objectives required from the landscape, including agricultural production, provision of ecosystem services, protection of biodiversity, and local livelihoods, health and well-being. Stakeholders seek to solve shared problems or capitalize on new opportunities through technical, ecological, market, social or policy means that reduce trade-offs and strengthen synergies among different landscape objectives (Shames, Clarvis and Kissinger, 2014).
<b>Landscape</b>	A mosaic of natural and/or human-modified ecosystems, with a characteristic configuration of topography, vegetation, land use and settlements that is influenced by the ecological, historical, economic and cultural processes and activities of the area. Both the mix of land cover and use types that make up the larger mosaic, including forests, agricultural lands, native vegetation and urban areas (landscape composition), and the spatial arrangement of different land uses and cover types (landscape structure) contribute to the character of a landscape. Depending on the management objectives of the stakeholders, landscape boundaries may be discrete or fuzzy, and may correspond to watershed boundaries, distinct land features and/or jurisdictional boundaries, or may cross-cut such demarcations. Because of the broad range of factors, a landscape may encompass an area of 100 to 10,000 km <sup>2</sup> (Shames, Clarvis and Kissinger, 2014).
<b>Lease or concession of Forestland</b>	The utilization of forestland for forestry activities, such as forest restoration, forest planting, NTFP and industrial plantations.
<b>National park</b>	Large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities. In the Decree on Protected Areas No. 134, a national park is a protected area that has particular characteristics with a variety of ecosystems that are outstanding, with values for science, research, tourism, environmental conservation, and culture.

<b>National protected area</b>	Large natural or near natural areas which conserve ecosystems and habitats, together with associated cultural values and traditional natural resource management systems. They are generally large, and most of the area is in a natural condition, where a proportion is under sustainable natural resource management and where low-level non-industrial use of natural resource compatible with nature conservation is seen as one of the main aims of the area.
<b>Nature-based tourism</b>	A broad term that covers all environmentally sustainable tourism experiences centered on wild or natural environments. Also known as nature tourism.
<b>Non-timber forest products</b>	All kinds of plants growing naturally or through propagation including trunks, stems, vines, tubers, roots, buds, shoots, leaves, flowers, fruits, grains or seeds, bark, oil, resin, mushrooms, honey and medicinal plants and so on.
<b>Plantation forest</b>	<b>This forest</b> is a type of managed <b>forest</b> in which the trees are planted (as opposed to naturally regenerated) of the same age and generally of the same species, and are intended to maximize the production of wood fiber.
<b>Production forest area</b>	Natural forests and planted forests classified for the utilization purposes for the supply of wood and forest products in the socio-economic development and livelihoods of the people. Lao PDR's forest estate comprises three official forest categories – conservation, production, and protection -- that together form most of the natural wealth in the forest landscape. These lands are managed by MAF DOF and account for 70 percent of the country's total land area. PFAs are managed primarily for production of wood, fiber, fuel and (NTFPs in 51 national PFAs (105 FMAs in 17 provinces) that total over 3.1 million ha, of which 2.2 million ha are forested. Forty of 51 PFAs have been formally delineated.
<b>Protected area</b>	See conservation forest.
<b>Protection forest area</b>	Lao PDR's forest estate comprises three official forest categories – conservation, production, and protection -- that together form most of the natural wealth in the forest landscape. These lands are managed by MAF DOF and account for 70 percent of the country's total land area. PtFAs are managed primarily for soil, water and natural disaster protection, such as for strategic reservoirs, and a total 8 million ha of national, provincial and district PtFAs, of which 4.8 million ha are forested. None have been formally delineated.
<b>Forest landscape restoration</b>	A planned process to regain ecological integrity and enhance human well-being in deforested or degraded landscapes. (Yale University Global Forest Atlas)
<b>Resilience</b>	The capacity of social, economic and environmental systems to cope with a hazardous event or trend or disturbance; responding or reorganizing in ways that maintain their essential function, identity and structure, while also maintaining the capacity for adaptation, learning and transformation (IPCC, 2014).
<b>Sustainable forest management</b>	The stewardship and use of forests and forestlands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfil, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems (Forest Europe and adopted by the FAO)
<b>Timber Legality Assurance System (TLAS)</b>	A timber legality assurance system is a system assures that timber or timber products exported from a VPA partner country to the EU comply with national legislation. It consists of: <ul style="list-style-type: none"> <li>• A definition of legally produced timber</li> <li>• A system to track timber products from point of harvest or import to point of export</li> <li>• A system to verify compliance with the definition and the tracking system</li> <li>• Licensing of exports to attest to their legality</li> <li>• Independent audit of all components.</li> </ul>

<b>Timber supply chain</b>	A timber supply chain is a system of organizations, people, technology, activities, information and resources involved in moving timber and timber products from the moment the timber is harvested to the moment it is sold, including transformation and transport.
<b>Village forest</b>	All types of forestland located within village boundary according to the Village Land Use Plan and Land and Forest Allocation Program at village level. This includes village-managed forests with conservation, production and/or protection objectives. Village forests can appear within any of the three official forest categories or outside any officially designated forestland.
<b>Super clean cookstove</b>	A Super Clean cookstove is a stove that rates Tier 4 across all of the International Organization for Standardization (ISO) tiers of performance for cookstoves. Cookstoves are rated based on their performance against four indicators (efficiency/fuel use, indoor emission, total emission, and safety) across five tiers from 0-4 (4 being the best rating). To satisfy World Health Organization's (WHO) Guidelines on Indoor Air Pollution a stove must be rated Tier 4 (the highest rating) for indoor emission. The super clean stove also rates Tier 4 (highest) in terms of efficiency and emissions. The stove uses no charcoal, and burns most efficiently using pellets, which can be produced from a variety of biomass such as wood chippings, rice husk, coconut and husks.
<b>Watershed</b>	The geographical area drained by a watercourse. The concept applies to small or very large units ranging from a farm crossed by a creek to large river or lake basins (FAO, 2006). Equivalent to "catchment." The 2017 Lao PDR Water Law states that: "River basins of small size are the river basins of the Mekong River basins and other rivers which are tributaries of the Mekong Rivers or other rivers with the areas less than one thousand kilometer squares."
<b>Wildlife tourism</b>	Tourism that provides close contact with wildlife and nature in general. Similar to nature-based tourism.